This catalog describes the curriculum, programs, and academic regulations of Northern. 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 insure 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.

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CAMPUS LOCATIONS

El Rito Campus
El Rito, NM 87530
(505) 581-4100
FAX (505) 581-4130

Espanola Campus
921 Paseo de Onate
Espanola, NM 87532
(505) 747-2100
FAX (505) 747-2180

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Note: The Student Handbook, although a separate publication, is considered an integral part of this catalog.
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Students can now access BANNER online to obtain:

- Grades
- Transcripts
- Schedule
- Invoice
- & More

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<td>Convocation</td>
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<td>Open Registration</td>
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<td>Late Registration - one day only</td>
<td>Tuesday, 15 Jan</td>
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<td>Last Day to Change Schedule (ADD OR DROP/ADD)</td>
<td>Friday, 18 Jan</td>
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<td>Last Day to Drop from a Full-Term Course with a Refund</td>
<td>Friday, 25 Jan</td>
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<tr>
<td>Last Day to Change from CR-AU/AU-CR</td>
<td>Friday, 25 Jan</td>
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<td>Monday, 2 Jun</td>
</tr>
<tr>
<td>Last Day to Change Schedule (ADD OR DROP/ADD)</td>
<td>Wednesday, 4 Jun</td>
</tr>
<tr>
<td>Last Day to Change from CR-AU/AU-CR</td>
<td>Friday, 6 Jun</td>
</tr>
<tr>
<td>Last Day to Drop from a Full-Term Course with 100% Refund</td>
<td>Friday, 6 Jun</td>
</tr>
<tr>
<td>Last Day to Drop from a Full-Term Course with 50% Refund</td>
<td>Friday, 13 Jun</td>
</tr>
<tr>
<td>Holiday (Independence Day)</td>
<td>Friday, 4 Jul</td>
</tr>
<tr>
<td>Last Day to Withdraw from a Full-Term Course</td>
<td>Friday, 11 Jul</td>
</tr>
<tr>
<td>Final Exams</td>
<td>Saturday-Thursday, 19-24 Jul</td>
</tr>
<tr>
<td>Last Day of Term</td>
<td>Friday, 25 Jul</td>
</tr>
<tr>
<td>Final Grades Due</td>
<td>Tuesday, 29 Jul</td>
</tr>
</tbody>
</table>
HISTORY

Northern New Mexico College and its differing missions have always played an integral role in the State of New Mexico’s goal to provide educational opportunities for its residents.

In the early 1900’s 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.

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 mandated that the institution provide training not available in public schools and implement a secondary school curriculum. Six years later, in 1959, the Board of Regents adopted the name of Northern New Mexico College. Under this designation the new institution continued to maintain secondary educational functions (grades 7-12) as well as a 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, in 1970, the Board of Regents again adopted a new name to indicate the change in course offerings. Thus, the New Mexico Technical-Vocational School became the common designation.

Operating under its new name, the Technical-Vocational School expanded its curriculum and faculty and, in 1969, developed a campus in Espanola, approximately 30 miles from El Rito. In 1972, the school assumed the Practical Nurse program from St. Vincent’s Hospital in Santa Fe. Then, as educational needs in northern New Mexico evolved, educators and legislators began to feel a need for a more comprehensive delivery of educational services, in 1976 a task force was created to assess the feasibility of establishing a community college. The task force membership included representatives from the New Mexico Technical-Vocational School, the University of New Mexico, local school boards, and citizens. The recommendation of the task force was that the University of New Mexico-Northern Branch (at Santa Cruz) be dissolved and the delivery of academic course offerings be combined with those of the New Mexico Technical-Vocational School. The Legislature accepted the recommendations of the task force and provided for the expansion of the institution’s mission.

In July 1977, the Board of Regents accepted the new mission of the institution, adopted the name of Northern New Mexico Community College, and began the enormous task of joining the existing programs, philosophies, and procedures to establish a comprehensive community college.

The new institution, the first community college in the state, 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 (CEU’s), 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 changed the name to Northern New Mexico College, permitting it to offer four-year degrees in any program deemed necessary and appropriate.
ACCREDITATION

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

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.

The 2005 change in name and return to the original mission of a teaching college to seek and obtain (in 2006) a change in its scope of accreditation to cover all four-year degrees as they are developed to meet the needs of its communities.

In addition to regional accreditation, Northern’s educational offerings are accredited or approved by other agencies. The College’s occupational courses are approved by the New Mexico State Department of Public Education; the barbering, cosmetology, massage therapy, and nursing programs are approved by their respective state licensing boards; the Radiographic Technology program is accredited by the Joint Review Committee on Education and Radiographic Technology; and the business programs are accredited by the Association of Collegiate Business Schools and Programs.

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.

Vision Statement

By the year 2010, Northern will have six distinct colleges that each offer at least one baccalaureate degree and will be a regionally recognized college that will excel and expand in quality education while maintaining the community college mission.

Mission Statement

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

Setting

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

The Espanola 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. Espanola is the center of commerce for the area which has a growing population of approximately 35,000. The Espanola campus is located 25 miles north of Santa Fe and 40 miles south of Taos.

The El Rito campus is 32 miles north of Espanola on a sixty-acre tract on the southernmost slope of the San Juan Mountains at an elevation of 6,800 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.
ADMISSION TO NORTHERN

POLICY STATEMENT

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

ADMISSION CATEGORIES

Northern admits students in various categories based on their intention for taking courses; i.e., whether working to earn a degree or certificate, or merely taking courses for personal interest. Students are accepted who have never attended college before, as well as those who have attended other colleges, whether or not they may have earned other degrees.

Regular

If you wish to obtain a degree or certificate from Northern, you may apply for regular admission status (matriculation) 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; or

4. if you are at least 18, but have not earned a high school diploma or a GED, or attended any other college prior to Northern, you may achieve matriculation to Northern if you pass the authorized test (COMPASS) showing completion of at least the 10th grade level in each of two areas, English and math, by achieving the following minimum scores: English (Reading, 62; Language, 32) and math 25. If you should fail to meet the required standards, you may choose to pursue the GED diploma through our HEP or ABE departments, or you may choose to enroll in non-degree status. Admission described in this paragraph is referred to as demonstrating your “Ability to Benefit” and is permitted by federal regulations to enable those who fall into this category to obtain federal financial assistance. 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 with Northern in Non-Degree 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.

Some programs have their own special admission standards (e.g., Nursing, Education) so when you apply to the college for those majors, you will be coded as 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 you application has been accepted.

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.

If you have stopped out, when you return to Northern you will have to submit a new application. 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 you had previously been eligible for.

Non-Degree

This status if for those who do not meet or who 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.

Please note that no type of financial assistance is extended to students in non-degree status.
EARLY ADMISSION of Public High School Students:

Concurrent Admission

Concurrent admission is a term used to define the relationship existing between public secondary schools and public colleges and universities in New Mexico. This is a privilege, not an absolute right. For that reason, Northern applies the following criteria for admission:

For Part-Time Attendance

If you are a junior or senior in a public high school in New Mexico and if you have a cumulative GPA of 2.00, you are eligible to apply for concurrent status on a part-time basis. In any case, if you are under 18, you must have parental/guardian permission to be admitted and enroll, in addition to an authorization from your high school. In this status you will normally be restricted to carrying no more than 7 credit hours (about two courses) per term at Northern.

For Full-Time Attendance

If you are a high school senior with a 3.00 cumulative grade point average (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. In other words, there must be general agreement among the school district, 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.

To accomplish this move, you will have to have your high school send Northern an official transcript showing your course work from grades 9 through 11. If you are admitted under this special status, 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.

OTHER CONCURRENT ADMISSION: Non-Public Schools and Home School Students

You also may seek “early” part-time or full-time admission while still classified as a high school junior or senior using the same criteria as applied to students in pubic high schools. If your high school issues an official transcript, the school must send one to Northern’s Office of Admissions and Records. If your school does not or cannot provide an official transcript, you must provide adequate evidence that you are properly classified as either a high school junior or senior. Such evidence will be looked at on an individual basis. If the Director of Admissions does not feel that what is presented is adequate for the purpose, you will be asked to demonstrate equivalency by taking an approved test in English and math (TABE, Level A) to demonstrate mastery of a grade level at/above 11th grade. If you fail to score adequately, you may retest to qualify at a later time.

APPLICABLE TO ALL “CONCURRENT” OR “EARLY ADMISSION” STUDENTS

Enrollment into any specific course is dependent on your establishing that you have met all prerequisites and/or corequisites for the course.

At the discretion of your high school, the credits you earn at Northern may be applied against your high school diploma. And, dependent on the contract between your school district and Northern, your school district may or may not pay for your tuition; if it does not, your parents are responsible for the payment of tuition and fees. Regardless, if you qualify, you or your family will normally be responsible for books and supplies. Check with your school counselor for further details.

Usually, public school districts which pay for tuition require that you complete each credit course with a grade of C or better; failure to do so usually results in the school district reimbursement from your parents for its expenses or its refusal to pay the college, thus moving the burden of payment unto your parents.

Concurrent status is extended on a term-by-term basis as long as you maintain a 2.0 cumulative GPA in high school. Prior to enrolling for each new term, you will have to have your high school mail Northern an up-to-date transcript showing your cumulative grade point average. And, when you can provide a high school diploma showing graduation, you will make an easy transition into regular status.

If you should withdraw from high school for any reason while enrolled at Northern, you must notify the Admissions Office immediately so that your status may be adjusted without problem.

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 policy to the Director of Admissions, providing such evidence of ability to benefit as may be required by that official. In any case, if the Director of Admissions does not grant your appeal, your appeal may be referred to Northern’s Student Appeals Committee. This committee is composed of students, faculty, and professional staff. If the committee hears your appeal, although a parent may accompany you, you must be present at the hearing. The Committee will make its recommendation to the Dean of Student Services who will decide the issue.

READMISSION

If you have previously been a student at Northern in other than concurrent status and if it has been at least one fall or spring semester 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 that college before your status will be granted. In the meantime, you will be classified in non-degree status.

If you interrupt your attendance by one or more regular semesters of non-attendance, you will be bound by the terms of the catalog in effect at the time of your latest re-admission to the College.

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.

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 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 (with a copy of your transcript) 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. Your appeal will be processed and you will be notified of acceptance or denial.

* Good Standing means that you are not on an academic or disciplinary suspension.

Until all transcripts have been received at the Office of Admissions, you will not be able to qualify for financial assistance or be able to graduate.

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

If you are a non-immigrant alien who wishes to apply to Northern, please contact the Enrollment Manager (mikec@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 for details/choices of instruments.

The contact person at Northern is the Registrar (mikec@nnmc.edu or 747-2193).

SPECIAL PROGRAM CRITERIA
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 (listed at the back of this catalog) or program directors of specific programs for admission criteria if you are interested in: educational programs, such as our AA or BA in Elementary Education; vocational occupations such as Barbering or Cosmetology, or health occupations such as Massage Therapy Practical Nurse, Nurse (ADN), or Radiography.

ADMISSION TO BACCALAUREATE PROGRAMS
See the standards for matriculation to each BA/BS program as shown in the degree section of this catalog. In general, you must have completed at least 45 credit hours of college-level work, including the 35-credits of General Education Common Core, and have at least 2.5 cumulative grade point average (excluding any remedial courses) before being eligible to apply for acceptance to these program.

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. For all practical purposes, these credits include any remediation you may have taken. The breakdown on these classifications:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>1.00 to 32.9 crs</td>
</tr>
<tr>
<td>Sophomore</td>
<td>33.0 to 67.9 crs</td>
</tr>
<tr>
<td>Junior</td>
<td>68.0 to 100.9 crs</td>
</tr>
<tr>
<td>Senior</td>
<td>101.0 to 999.9 crs</td>
</tr>
</tbody>
</table>

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

ENROLLMENT IN CREDIT COURSES
Once you have been admitted to Northern, you may enroll in any credit course for which you meet the published pre- or co-requisites. Eligibility for enrollment is primarily determined by scores derived from standardized English and/or mathematics placement tests given by Northern. Other test instruments and transcripts from other colleges may also be used in determining eligibility for placement into courses. Northern reserves the right to administratively drop students from courses into which they have registered, but for which they have not met the pre-requisites.

See the Course Placement section under Advisement and Assessment Services.
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.
   2. receipt at Northern of an official transcript from another regionally or nationally accredited college or university showing successful completion (grade of C or better) of an equivalent credit-bearing course. Evaluations for transfer of credit are done upon request, but only for those who have successfully matriculated into a specific major; evaluations are not done for those in Non-Degree status. Grades from other institutions are not accepted, only grades of TR are posted. At the time your admission status has been finalized with the receipt of all required college transcripts, you may request that your transcripts be evaluated and appropriate credit posted to your official Northern record. See the end of this section for details concerning transfer of credit from accredited New Mexico public institutions of higher education. Updated 2/12/07

Note: Northern does not indiscriminately accept courses in transfer. Only those courses which are required for graduation or to establish pre-requisites are considered.

3. receipt at Northern of official AP/CLEP/DSST scores which meet minimum cut-off scores as listed below.

Advanced Placement (AP):
minimum score = 3.0, except English, a 4.0. Updated 2/12/07

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 115 (3)
Studio Art = ART 110 (3): additional 3 credits available upon portfolio evaluation
US History = HIST 161 (3) & HIST 162 (3)

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 $60.00 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 202 (3)
Introduction to Marketing (50) BA 251 (3)
Introduction to Business Law (50) BA 266 (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 History (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 50-65 will earn 6 crs.
College Spanish I and II (66) ^ SPAN 201/202 (6)
^A score of 66 or better will earn 12 crs.

DSST (DANTES) Subject Exams
The following DSST exams (paper-based) are made available for testing at the Student Success Center. Call (505) 747-2199 for details. The cost per test is $40 (payable to The Chauncey Group).

Business Mathematics (48) BA 205 (3)
Criminal Justice (49) CJ 111 or CJ 132 (3)
Here's to Your Health (48) HPER EL (3)
Human Resource Management (46) BA 360 (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)
Management 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)
Technical Writing (46) ENG 116 (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 against Northern’s degree major requirements. American Council on Education (ACE) guidelines are used for the evaluation of credit.

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)*
   - New Mexico Corrections Academy (3 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. Updated 2/12/07

7. successful completion of one of Northern’s approved Locally Developed Subject Examinations [see the Registrar for further details]; or
   - If your examination score is acceptable, your permanent record (transcript) will reflect the notation that you completed Northern’s equivalent course with a grade of “TR” (credit in transfer). The credit value of Northern’s equivalent will be posted to your transcript. Although these credits may count toward graduation, your cumulative grade point average will not be affected as it will not reflect honor points for the examination. If your examination score is unacceptable, you will have to take the course or re-test. Updated 2/20/07

8. receipt of an acceptable transcript showing courses taught at foreign colleges or universities for which an adequate determination can be made by the Enrollment Manager as to the equivalency of the course content and the student’s satisfactory progress as 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. 11/2003

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

Credit for non-required courses or for community service/continuing education (CEU) courses is not granted.

B. Aside from the residency policy which requires that the last fifteen (15) credits counted toward graduation be earned in residence at Northern (30 for a baccalaureate degree), no maximum limitation is imposed 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 insure that the course competencies that you possess are not out of date. Such restrictions are clearly defined in Northern’s College catalog and/or in the individual program’s handbook.

C. Any student may at any time submit official scores based on such nationally standardized tests as AP/CLEP/DANTES without respect to the student’s status of matriculation or the number of terms completed at Northern.

**TRANSFER AMONG NEW MEXICO HIGHER EDUCATION INSTITUTIONS**

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

**Student Responsibility**

New Mexico’s colleges and universities have collaborated to produce guides to assist students who plan to transfer before completing a program of study. Course modules are designed to help students 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 the student’s 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**

<table>
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<tr>
<th>Select 9 sem hrs</th>
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</thead>
<tbody>
<tr>
<td>(a) College-level English Composition</td>
</tr>
<tr>
<td>(b) College-level Writing (2nd course building on above)</td>
</tr>
<tr>
<td>(c) Oral Communication</td>
</tr>
</tbody>
</table>

**Area II: Mathematics**

<table>
<thead>
<tr>
<th>Select 3 sem hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) College Algebra</td>
</tr>
<tr>
<td>(b) Other math course at/above level of College Algebra</td>
</tr>
</tbody>
</table>

**Area III: Laboratory Science**

<table>
<thead>
<tr>
<th>Select 8 sem hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) General Biology, with laboratory</td>
</tr>
<tr>
<td>(b) General Chemistry, with laboratory</td>
</tr>
<tr>
<td>(c) General Physics, with laboratory</td>
</tr>
<tr>
<td>(d) Geology/Earth Science, with lab.</td>
</tr>
<tr>
<td>(e) Astronomy, with laboratory</td>
</tr>
</tbody>
</table>

**Area IV: Social/Behavioral Sciences**

<table>
<thead>
<tr>
<th>Select 6-9 sem hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Economics (Macro- or Microeconomics)</td>
</tr>
<tr>
<td>(b) Introduction to Political Science</td>
</tr>
<tr>
<td>(c) Introduction to Psychology</td>
</tr>
<tr>
<td>(d) Introduction to Sociology</td>
</tr>
<tr>
<td>(e) Introduction to Anthropology</td>
</tr>
</tbody>
</table>

**Area V: Humanities and Fine Arts**

<table>
<thead>
<tr>
<th>Select 6-9 sem hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Introduction to History Survey</td>
</tr>
<tr>
<td>(b) Introduction to Philosophy</td>
</tr>
<tr>
<td>(c) Introduction to course in history, theory, or aesthetics of the arts or literature *</td>
</tr>
</tbody>
</table>

- This may include HIST 260, History of New Mexico.

**Total to be selected**

35 semester hours

See the section dealing with General Curriculum Requirements for a list of those courses which Northern considers as meeting its General Education Common Core. (p.33)

**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 during their freshman and sophomore years to take courses outlined in one of the Lower-Division 64-hour Transfer Modules. 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
- Teacher Education
- Engineering
- Social/Behavioral Sciences
- Physical Sciences
- Early Childhood Education
- Criminal Justice

Modules for additional areas of study are being developed. Copies of these Transfer Modules may be obtained at Northern’s Student Advisement Center or from the web site for the institution to which they 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 through the Student Advisement Center.

**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 Community College’s complaint policy may be accessed on line at Northern’s website (www.nnmc.edu). Complaints not resolved at the lower level will be referred to Northern’s Scholastic Standards Committee. If you have not received satisfaction from internal college processes, you may complain to the New Mexico Higher Education Department, 1068 Cerrillos Road, Santa Fe, NM 87501-4295, (505) 827-7383 [www. www.hed.state.nm.us].
TUITION AND FEES

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 your being billed, as well as in a failing grade.

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.

Personal checks submitted for any fees will 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, when appropriate, cash. The cashier will write your student ID number on checks if you have not already done so.

RESIDENCY REGULATIONS

Tuition charges for purposes of residency or non-residency in public institutions of higher education in New Mexico are defined and governed by Section 21-1-4E NMSA 1978 and are not controlled by any other public official’s recognition of claimed residency for other purposes. Address any inquiries concerning residency for tuition purposes or legal procedures to Northern’s Director of Admissions.

If, after your residency classification has been assigned, you feel that the classification officer (the Registrar) has made a wrongful determination, you should contact the Registrar for clarification. 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 Commission on Higher Education, Northern’s appellate process is your last recourse prior to the courts (citation: CHE Rule 910.10, effective 6/19/92).

SCHEDULE OF TUITION AND FEES

<table>
<thead>
<tr>
<th>New Mexico residents</th>
<th>All Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower division courses (1-2xx)</td>
<td>$36.00/credit *</td>
</tr>
<tr>
<td>Upper division courses (3-4xx)</td>
<td>$85.00/credit *</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-New Mexico residents</th>
<th>All Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower division courses (1-2xx)</td>
<td>$85.00/credit *</td>
</tr>
<tr>
<td>Upper division courses (3-4xx)</td>
<td>$360.00/credit *</td>
</tr>
</tbody>
</table>

* 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.

**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 $5.00 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 $36.00 per credit. New Mexico Senior Citizens are subject to all regular student fees.

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 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 form [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. 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 which is 150% of the in-state rate ($54.00 per lower-division credit and $127.50 per upper-division credit): 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.*

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.

**OTHER FEES**

Registration (non-refundable; each term) .................. $5.00
Late Registration (non-refundable; added. fee) ........... $5.00
Graduation (non-refundable) + ................................ $35.00
Additional diploma (ordered at the same time as first diploma) + ........................................... $7.50
Replacement diploma, each .................................. $7.50
Lab/course fee ** ............................................ $20-30.00
Damage/key dep. (dorm residents) ......................... $55.00
In-house examinations (per course) ....................... $20.00
CLEP examinations (per course) ......................... $20.00
Transportation between campuses (varies - check each published schedule of classes)

**The exact amount is designated in each schedule of classes.

+ The graduation fee of $35 covers all costs of graduation, including the diploma, cover, cap & gown, etc. Additional diplomas in the same fiscal year (1 July - 30 June) are $7.50 each.

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**ESTIMATED EXPENSES FOR ON-CAMPUS NEW MEXICO RESIDENTS - PER SEMESTER**

Tuition: see pertinent section about resident vs. non-resident and lower-division vs upper-division rates.

Books, Supplies, and Equipment (avg.) ............... $300.00
Dormitory room
  - Single occupancy ........................................... $900.00
  - Double occupancy ........................................... $650.00
Damage & key deposit ........................................ $55.00
Board: 5-day meal plan ........................................ $1,280.00
Personal ............................................................. $650.00
Transportation ..................................................... $600.00

**SPECIAL ASSESSMENTS**

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

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**REFUNDS**

**TUITION AND FEES**

Tuition and fees are refundable only upon receipt by the Business Office of an official withdrawal or course drop form or, in lieu of such, a written declaration of intent. You are responsible for submitting this form or letter, through the Registrar’s office, except when classes are canceled. Refunds are computed from the date of drop or withdrawal according to the following schedules

<table>
<thead>
<tr>
<th>Length of Courses (in weeks)</th>
<th>Percentage of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
</tr>
<tr>
<td>16-longer</td>
<td>100%</td>
</tr>
<tr>
<td>12-15</td>
<td>100%</td>
</tr>
<tr>
<td>9-11</td>
<td>100%</td>
</tr>
<tr>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>6-7</td>
<td>100%</td>
</tr>
<tr>
<td>3-5</td>
<td>100%</td>
</tr>
<tr>
<td>1-2</td>
<td>None</td>
</tr>
</tbody>
</table>

**Note:**

1. No refund is made on regular or late registration fees, or in the case of disciplinary suspension or dismissal.

2. If you are dismissed for falsification of records, eligibility for refund will be entirely at the option of the College.

3. If you mail a notice of withdrawal, the rate of refund will be based upon the **date the notice is received** at the College.
Withdrawing from Courses

Once you have registered, you may withdraw from any course without special permission. You must, however, do so by completing a Change of Schedule form or by submitting your intentions to the Registrar’s Office in some written form (with your signature). You may not drop a course by telephone, nor under normal circumstances may anyone other than 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 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, do not assume that you will be dropped — follow the instructions in the previous paragraph to avoid receiving an “F” for the course(s).

If you withdraw from a course within the refund period (the first three weeks of a regular fall or spring semester), nothing will appear on your transcript to show enrollment. If, however, you withdraw after the third week, a grade entry of “W” will be recorded for each withdrawn course.

Dropping courses

<table>
<thead>
<tr>
<th>Courses whose length is</th>
<th>deadline to drop is</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>
</tr>
<tr>
<td>8 weeks</td>
<td>end 6th week</td>
</tr>
<tr>
<td>9 weeks</td>
<td>end 7th week</td>
</tr>
<tr>
<td>10 weeks</td>
<td>end 8th week</td>
</tr>
<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 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.

Detailed information concerning the method of calculating such a refund may be obtained on Northern’s website (www.nnmc.edu) or through Northern’s Office of Financial Aid.

Note that, if you withdraw from partially or completely, you will have one week from the date of your withdrawal to rescind the action (in writing), thus reinstating yourself with a commitment to finish the term. For specific additional details, see the section in this catalog dealing with "withdrawals.”

Room and Meal Plan Refunds

Room and meal plan contracts are negotiated each semester. If you cancel a room contract (with the approval of the administration) before the middle of the installment period, you are eligible for a refund of one-half the installment rate for the room. If you withdraw after the middle of the installment period, you will receive no refund. Unless you provide sufficient notice of departure, you may also forfeit your room deposit. In any case, canceling a room contract requires clearance by the Student Life Coordinator.

If you have a meal plan, refunds will be based on a daily pro rata basis from the official date of the meal plan cancellation.

Transportation Fee Refunds

Refunds of transportation fees will be based on a daily pro rata basis from the last day certified by the driver. However, if you withdraw after the middle of the enrollment period, you will receive no refund.

Course Cancellation Refunds

Normally prior to the first day of class, the Dean of Instruction will cancel those classes having insufficient enrollment. If it is 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.

All refundable fees associated with course registration
will be refunded. 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 5 working days from the start of classes. If you return purchases between 6-10 working days after classes start, you will be entitled to only 50% refund. 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 5 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. Shrink-wrapped books and books with disks are non-refundable if the seal has been opened.

Non-text merchandise is fully refundable within 30 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 will have a 10-15-day waiting period before refunds are made.

**Graduation Fee Refunds**

The $35 graduation fee (or $7.50 charge per extra or replacement diploma) is refundable only if the Registrar has denied the Petition to Graduate before any service has been rendered. Once any service has been rendered, no refund will be granted. 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, or if you withdraw from a course required for graduation, you will receive no refund.
Northern is committed to ensuring that the opportunity for a post secondary education not be denied to any student because of that 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 Office of Financial Aid, located at the Espanola Campus in the Montoya Administration Building, is open Monday, Thursday, and Friday from 8 a.m. to 5 pm, and on Tuesday and Wednesday from 8:00 a.m. to 6:00 p.m.. Staff stand ready to assist you in meeting your financial needs in person or by phone at (505) 747-2128. We also encourage you to visit our web site at www.nnmcc.edu.

Applying for Financial Assistance
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, it will be considered as funding permits.

GENERAL ELIGIBILITY REQUIREMENTS
You may apply for all federal, state or institutional programs available by completing the Free Application for Student Financial Assistance (FASFA).

To receive assistance under any program administered by Northern, you must:

1. meet United States citizenship requirements for federal aid and, for non-citizens, State requirements; and
2. establish financial aid eligibility; and
3. enroll in an eligible course of study on at least a half-time basis (six credit hours minimum), although Pell Grant recipients may be less than half-time; and
4. make satisfactory progress toward the completion of your program of study (refer to Satisfactory Program Requirement later in this section); and
5. not be in default on a Federal Perkins Loan or on a Federal Stafford Loan; and
6. not owe a refund on a Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, or a New Mexico Student Incentive Grant; and
7. have declared a specific degree or certificate major and have been admitted in regular status (See the section in this Catalog on “Admissions.”); and
8. meet New Mexico residency requirements for tuition purposes (as determined by the Higher Education Department and as administered by the College Enrollment Manager) for New Mexico Student Incentive Grant, New Mexico College Work Study, and for Institutional Scholarships. (See the section in this Catalog on “Residency.”)

TYPES OF AID
Northern participates in the following federal and state financial assistance programs:

Federal Pell Grant: Intended to be the “floor” of a your financial assistance package and is usually combined with other forms of student financial assistance to meet your financial need.

Federal Supplemental Educational Opportunity Grant (SEOG): Available if you have exceptional financial need. We give priority to students who receive Federal Pell Grants. an SEOG does not have to be repaid.

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 (FCWSP): Provides jobs for students who need financial assistance, allowing you to earn money to help pay your educational expenses. When awarded FCWS, you can work on-campus or at selected off-campus employment sites.

New Mexico Work Study Program (NMWSP): Helps provide employment opportunities to qualified students. Although the program parallels the Federal College Work Study Program, an eligible student may not necessarily have to show need to participate. To be eligible, you must be New Mexico resident, have at least a 2.0 grade point average, and be enrolled for at least 12 credit hours.

Academic Competitiveness Grant (ACG): To be eligible for this grant as a first-year student, you must have completed a rigorous secondary school program of study after 1 January 2006, and you may not have been previously enrolled while in high school as a regular student in an ACG eligible program.

As a second-year student, you must have completed a rigorous secondary school program of study after 1 January 2005 and have a 3.0 or higher GPA at the end of the first year.

National Smart Grant: In February 2006, Congress passed the Higher Education Reconciliation Act of 2005 (HERA). The national Science and Mathematics Access to Retain Talent (SMART) was established as part of that act. You are potentially eligible for this grant if you have declared and are actively pursuing (as demonstrated by pattern of coursework) one of the following majors: Computer Science, Engineering, Technology, Life Sciences, Mathematics, Physical Sciences, or Designated Critical Foreign Languages.
Federal Stafford Loan Program: These loans (subsidized and unsubsidized) are available to eligible students to help pay for educational expenses that are not covered by other financial aid. To qualify for such a loan, you must be enrolled in at least six credit hours. All funds received must be used for educational expenses. A FAFSA form is required.

Federal Perkins Loan. This is a low-interest loan that can be used to help pay for educational expenses that are not covered by other financial aid. To qualify, you must be enrolled in at least six credit hours. All funds received must be used for educational expenses. A FAFSA form is required.

New Mexico Health Professions: Student Loan-for-Service Programs: Provides New Mexico residents with loans to complete nursing or radiology education programs and allow them to be repaid through service in a designated area that is under-served by licensed registered nurses or certified radiologists. To be eligible, the recipient must be enrolled for six or more credit hours per semester.

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 or visit the Financial Aid Office on the Espanola campus.

OTHER TYPES OF ASSISTANCE

Hope Tax Credit: Northern participates in the Hope Tax Credit, part of the Taxpayer Relief Act of 1997. The Hope Scholarship Credit may be claimed for the qualified tuition and related expenses for each student in the taxpayer’s family (i.e., the taxpayer, the taxpayer’s spouse, or an eligible dependent) who are enrolled in eligible educational institutions. The amount that may be claimed as a credit is equal to 20 percent of the taxpayer’s first $5,000 of out-of-pocket qualified tuition and related expenses for all of the students in the family. If a taxpayer is claiming a Hope Tax Credit for a particular student, none of that student’s expenses for that year may be applied toward the Lifetime Learning Credit.

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 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 (747-2151) who is responsible for certifying to the VA the enrollment of eligible persons.

SATISFACTORY ACADEMIC REQUIREMENTS

Recipients of financial assistance must fulfill various requirements, both quantitative and qualitative, for retention in the program at Northern. Statements of specific, detailed requirements are given to each financial assistance recipient, and requirements for all assistance programs are available in the Office of Financial Aid.

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 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. Although this policy establishes the minimum standards for all financial aid programs at Northern, an individual aid program may have unique qualitative and/or quantitative standards specific to the program, as mandated by law or the program’s governing agency (e.g., Legislative 3% Scholarship and the Legislative Scholarship).
OUR STANDARDS

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)
   You must meet the following cumulative GPA requirement:
   - 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
   You will be limited to the following number of attempted hours to complete your degree or certificate program:
   - Associate Degree = 120 attempted hours
   - Baccalaureate Degree = 201 attempted hours

3. Successful Credit Hour Completion Rate
   Each semester, your 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, or D). This includes any course for which you have remained enrolled past the drop/add period. You must earn 70 percent of credit attempted to maintain academic progress.

If your financial aid should be suspended and if you feel you have justifiable reasons for appealing, you may file a written appeal to the Director of Financial Aid. (See the appeal process under the section of this catalog dealing with "Student Appeals.")

GENERAL POLICIES

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 must remain with you and, if you are dependent upon them financially, with your parents. Financial assistance 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.
ENROLLMENT SERVICES

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 program.

Our Student Advisement Center is staffed by trained professionals who provide a full range of academic advisement to any person seeking assistance. We make referrals to local agencies for personal counseling which might be indicated as necessary to your success.

All first-time-at-Northern students must process through the Advisement Center prior to being allowed to register for classes. Continuing students are encouraged to use the Center’s services which include referrals for placement evaluations and course placement. In addition, if you wish to drop a course or withdraw completely from Northern, you will do this through the Student Advisement Center.

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.

A related program, 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 as tutorial assistance and providing tickets and transportation to cultural events.

Course Placement
This service includes our Course Placement Evaluation (CPE) process, appraisal of ACT/TABE test scores, and evaluation of previous college courses to determine the proper level of English, math, or science courses in which you may enroll.

CPE is mandatory if you are a new student, unless:
1. 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
2. you want to enroll in a course which does not have a math or English pre-or co-requisite; or
3. you can provide appropriate-level ACT/TABE evaluation scores which are no more than 2 years old.

ACT scores used in placement into courses:

<table>
<thead>
<tr>
<th>Range</th>
<th>Place into</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
</tr>
<tr>
<td>18-20</td>
<td>ENG 111</td>
</tr>
<tr>
<td>21-36</td>
<td>ENG 112</td>
</tr>
<tr>
<td>Math</td>
<td></td>
</tr>
<tr>
<td>19-21</td>
<td>MATH 102N</td>
</tr>
<tr>
<td>22</td>
<td>MATH 130</td>
</tr>
<tr>
<td>23-25</td>
<td>MATH 150 or 155</td>
</tr>
<tr>
<td>26-36</td>
<td>MATH 162</td>
</tr>
</tbody>
</table>

Note that testing above a required course into the next higher level does not relieve you of the necessity to take that lower course if it is required for graduation. Updated 2/20/07

You may schedule one or more of these placement evaluations by visiting the Student Success Center or by calling 747-2199.

Special Needs
If you have any type of physical or mental disability, or have any type of learning disability, you may wish to 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 Ms. Kim Dickman, the Coordinator of our Special Needs department (747-2152). For special assistance with registration activities, contact the Registrar’s Officer (747-2114).

English Requirements
If you are seeking a degree or certificate which requires ENG 111 (English Composition I), you should enroll in ENG 111 during the first year of study at Northern or consistently take English courses preparatory to ENG 111 until you have completed ENG 111 with a grade of “C” or better.

Vertical Transfer
Northern recognizes that no diagnostic test (such as its CPE or ASSET) 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, Spanish, or typing 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.

Student Enrollment Limitations
In general, the maximum number of credits in which you may enroll in any semester is limited to 21 (9 in a summer session), subject to the following stipulations:
1. If you are on “academic probation,” you must have special permission from your advisor to enroll for more than 12 credits; and/or
2. If you wish to exceed the limit, you must have special permission from the Dean of Instruction.

The minimum full-time load is 12 credit hours. This is designed around the requirements for full-time financial aid.
(grants, loans, VA, etc.); however, in order to complete a degree or certificate program within two years, you will need to enroll for 16-18 credits per semester (not including summer sessions and not including any remediation courses which may be required).

REGISTRATION

Pre-registration, open registration, and late registration are enrollment options available to students at different times during the year.

1. **Pre-registration** is available to currently enrolled students for the approaching term (for spring students this means the chance to pre-register for both summer and fall classes). In addition, first-time college students who have completed the matriculation process are invited to special orientation/pre-registration sessions to facilitate their entry into college. Pre-registration sessions usually end approximately a week to ten days before open registration begins for the next term.

2. **Open registration** during a regular fall or spring term takes place on the 2nd Saturday before the term starts and again on the Tuesday, Wednesday, and Thursday prior to the first day of class. In the summer, this activity takes place on the Wednesday and Thursday prior to the scheduled start of classes.

   Open registration provides an opportunity to enroll for those who were not enrolled in the immediate past term. During open registration, course enrollments are available on a first-come, first-served basis; however.

3. **Late registration** is available (at an extra charge of $5) to those students who did not participate in either pre- or open registrations. This activity is permitted on only one day per term: the first scheduled day of class in that term.

   Note: Regardless of when you register, you pay an up-front, non-refundable fee of $5.00 (not covered as part of financial aid).

Enrollment Verifications

One of the services provided by the Office of Admissions and Records 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 pre-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.

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 one class and enrolling in another; however, you may wish to just drop one class or drop all classes. In any case, Change of Schedule forms are routed for clearance through the Student Advisement Center and the Financial Aid Office.

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

Personnel in the Office of Admissions and Records will be happy to help you with any type of change necessary, but remember that the deadline for adding new classes/switching courses, changing from “credit” to “audit” (or vice versa), and dropping/withdrawing is strictly enforced.
OTHER SUPPORT SERVICES

In addition to the services provided by the Student Advisement Center, Northern’s Student Success Center and Success, Opportunity, and Learning (SOL) departments offer a variety of services in support of your academic and personal goals. Classes, tutoring, support for special needs, job placement assistance, student government, and student activities are among those services.

Personal and Career Development

You may find interesting and helpful courses among our offerings, such as Reading and Study Skills. These courses are offered to help you develop basic skills and to enhance your educational and career outlook. For more detailed information, contact our Student Advisement Center (747-2150) or the Student Success Center (747-2199).

Writing Center

Do you want to improve your writing skills? If you feel challenged with your writing process, from brainstorming and organization to drafting and revising, the tutors at Northern’s Writing Center are available 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 the Student Success Center. To make an appointment, for hours of operation, or further information, call the Writing Center (747-2294).

Tutorial Program

As a student at Northern, you are eligible for free tutoring in many academic and vocational subject areas (with a special emphasis on reading, writing, and math).

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 writing essays and term papers, understanding texts, preparing for exams, or developing good study habits. To take advantage of this service, contact Brenda Martinez in the Student Success Center (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 Student Government 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).

You may obtain more detailed information about the Student Senate and college clubs by contacting the Director of Student Activities, Mr. Richard Sedillo (505-747-2287). For information about Phi Theta Kappa, contact the Registrar (505-747-2193).

Student Photo ID

Each credit-student will be issued an unrestricted photo ID immediately upon payment of the term’s full tuition and fees. 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.

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 ID’s will be issued to those enrolled in CE/CS courses which have a minimum length of seven weeks. Beginning and ending dates of the courses will be put onto the cards.

Students who withdraw from college prior to the end of the term must turn in their photo ID’s to the Admissions Office prior to their withdrawal being accepted.

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.

Insurance

Information about available insurance programs and claims is available through the Coordinator of Student Activities (747-2287).

If you will be living in the College residence halls (dorms) and attending under a student visa, you are required to obtain health and accident insurance. In addition, students in some 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, Radiographic Science, Cosmetology, etc.
AUXILIARY SERVICES

Residence Halls
Northern provides residence halls on its El Rito campus, and daily transportation is available, at a reasonable fee, to the Espanola campus. Living quarters in the residence hall are available to students enrolled for at least nine credit hours on a first-come, first-served basis determined by the date of the receipt of the security deposit.

Most rooms are designed for double-occupancy and are equipped with two beds, two chests of drawers, two wastebaskets, two desks, and limited closet space. If you apply for the residence hall, you will have to supply your own blankets, linen, and other personal items.

You may obtain a copy of the residence hall contract, which all resident students are required to sign, from the Student Life Coordinator (581-4120).

The College operates the residence halls on a self-supporting basis, with all charges paid in advance of service. Published rates are, therefore, subject to change if necessary to meet operating costs. The Administration reserves the right to reassign students within the dormitory if occupancy problems make such action necessary.

Information about current room costs and associated fees is shown in this catalog in the section devoted to “Tuition and Fees.”

Transportation Services
Northern provides transportation on a daily basis between the El Rito and Espanola campuses. This service is provided on a self-supporting basis and costs may change as necessary. For any given semester, the costs are published in the schedule of classes. For additional information, call the Cashier’s office at either campus.

Transportation from surrounding communities will be provided at nominal cost, depending on the availability of vehicles and demonstrated need.

Food Services
Northern provides food services on both the El Rito and Espanola campuses. Students living in the residence halls at El Rito are required to purchase a meal plan contract (15 meals per week), and 30-day’s notice is required to change a meal plan contract. Students may change a meal plan contract only once per semester.

Bookstore Services
The College Bookstore at the Espanola campus provides full service; however, only limited books/program supplies are available at the El Rito campus. Students should familiarize themselves with the Bookstore hours and policies which are posted at each campus. If you will be enrolling in Auto Mechanics, Barbering, Cosmetology, Electricity, Plumbing, or Spanish Colonial Furniture Making, you will need to order a kit at the time you register for classes.

The Bookstore policy allows book-buy-backs during finals week in fall and spring terms. No receipt is necessary. Textbook purchases are fully refundable within 21 days of the start of classes, or within 2 days of purchase thereafter—but you must present a receipt for this service.

Library Services
The main library facility is at Northern’s Espanola campus; materials appropriate to El Rito vocational programs are available in the library facility on the El Rito campus. All facilities are open to students, faculty, staff, and the community. A Northern ID card is required to check out materials, and you may apply for a card at the Library. 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 students may pay a fee of $25.00 per term to cover use of Northern’s library and computer labs.

The Library has a variety of materials available. The collections consist mainly of books (approximately 30,000 volumes) specifically for the academic and vocational programs offered at each campus. In addition, the Library provides journals (both electronically and in print form), a limited audio-visual collection, a small amount of recreational material in the form of paperback fiction and magazines. It provides access to thousands of journal citations and full-text articles through special subscription databases. Authorization numbers or passwords, available through the library, are required to access databases. The book catalog is also accessible through the web. These databases and book catalog may be accessed by going to the library’s website.

Services that the Library provides: assistance in finding and retrieving information, instruction on database utilization, interlibrary loan, and reciprocal borrowing privileges from other academic libraries. The library also provides study facilities, DVD/VCR and monitor, and a copy machine for student use. All computers have internet access and Microsoft Office.

For detailed information, look on Northern’s website under “Library” or call (505) 747-2243.

Updated Feb 2007

Parking
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.

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.
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; New Mexico Educational Opportunity Center (NM-EOC); Community Services and Continuing Education; College Level Examination Program (CLEP) testing; and DSST/DANTES testing.

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 747-2195 or 747-2198.

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 the El Rito campus (581-4139 or 581-4434).

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 El Rito campus (581-4139 or 581-4434).

Amnesty Training
Operating under a contract with the Department of Justice, Northern’s Developmental Studies department provides its service area with the basic training necessary to qualify for the Amnesty Program. For information, call 747-2198.

GED Testing
Northern is the designated testing center for Rio Arriba County, and tests are given at the El Rito and Espanola campuses. For further information, contact Ms. Pam Montrose at the Espanola campus (747-2151).

New Mexico Educational Opportunity Center (EOC)
This is a federally-funded project, authorized by Public Law 94-482, which provides services to eight north central New Mexico counties to people who are low income, first-generation, college-bound adults. Its primary function is to recruit for any and all New Mexico colleges and to assist applicants with the admission and financial aid processes.

The Educational Opportunity Center’s main office is located on the Espanola campus with satellite offices in Bernalillo, Santa Fe, and Taos. Its personnel inter-relate with Northern’s other departments in providing quality service to our students. For assistance, call 747-2200.

Success, Opportunity, and Learning (SOL)
A federally-funded project, SOL assists full-time students with their academic and personal needs by providing an array of comprehensive support services. The potential benefits of these additional services include better grades, improved chances of graduation, increased potential to transfer to a baccalaureate program, more defined educational goals, and an enhanced academic experience. SOL is designed for those students who have the academic potential to succeed, but whose background and/or extenuating circumstances place them at additional risk of not fulfilling their educational goals.

In order to participate in these benefits, you must:
1. be a U.S. citizen or meet New Mexico residency requirements;
2. have an academic need;
3. be preparing to earn an associate degree and/or certificate, or transfer to a four-year college or university;
4. meet one or more of the following criteria:
   a. low income
   b. first generation college student
   (neither parent having a four-year degree)
   c. documented disability

For specific information, contact the SOL Office:
H. Guido Gellis, Director ....................................... 747-5407

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 meetings to discuss topics of special interest may contact the Office of Continuing Education and Community Services at 747-2118.

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 Community 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 biannual 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 media 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.

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, 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 particular information to use 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 17 and those 17 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 thirty-five.

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 Espanola Campus. Complaints about failure of the College to comply with the Family Educational Rights and Privacy Act may be made, in writing, to the FERPA Office, Department of Education, Washington, D.C.

**Restriction of Access**

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 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 the beginning of the next academic year (i.e., the next fall semester).

**Transcripts**

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

In order to obtain a transcript for yourself or to have one sent to someone else (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, or even request a transcript by e-mail (mikec@nnmc.edu). If you have questions, please call 747-2111.

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). **Northern does not charge for transcripts.**

**Transcripts from other institutions**

Transcripts from other institutions that are sent to Northern for purposes of establishing admission eligibility do not belong to students and are not copied for or returned to students. 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.

**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.
**ACADEMIC INFORMATION**

**GRADING SYSTEM**

Letter grades are issued by instructors to indicate the quality of work done. The meaning of the letter grades and their grade/honor point equivalents which are used in computing your grade point average include:

- **A** - Excellent: earns four grade points per credit hour.
- **B** - Above Average: earns three grade points per credit hour.
- **C** - Average: earns two grade points per credit hour.
- **D** - Passed: earns one grade point per credit hour.
- **F** - Failed: earns zero grade points per credit hour.

However, a “D” does not count for graduation requirements and does not satisfy pre-requisite requirements for entry to higher level courses.

NC - No Credit: a failing grade, but one which is not used in computing your grade point average.

TR - a grade used to show that credit has been accepted in transfer for a course taken at other than Northern. Updated 2/20/07

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.

Changing from Credit to Audit/audit to Credit may be accomplished only within the first two weeks of a regular term (fall or spring) or within 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 the term). “Officially” describes a process in which you submit an official form or other request in writing (within given deadlines) to the Registrar’s office. 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.

**Special note:**

Under recently promulgated financial aid regulations applicable only to students receiving federal assistance under Title IV funds, if you are receiving such funds and if you exercise your right to 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 withdrawal 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 request to withdraw. 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.

- **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 went into labor or had a baby in the last couple of weeks of the term), you were not able to complete that last little bit of the course requirements. By mutual, signed agreement between you and the instructor, countersigned by the department chairperson and by the Dean of Instruction, 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”).

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.

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 this has happened, 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 Director of Enrollment Management will exercise the responsibility for the student.

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.

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 to challenge a grade, refer to the section of this catalog dealing with appeals of grade changes, or contact the Registrar for details (747-2193). If you wish to challenge a grade, you should first contact the instructor (of each course) as soon as possible. Because of unforeseen circumstances, you should inform the instructor (of each course) as soon as possible of a grade you question has been issued by a former instructor (full-time or part-time), you should first contact the chairperson responsible for that department.

The change in grade or the correction of an improperly recorded grade may normally be made only by the originating instructor as above. 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. You will be mailed grade reports at the end of each term. If there is anything incorrect about the grade, it is your responsibility to promptly alert the Office of Admissions and Records.

Grade Point Average (GPA)

You may calculate your GPA by dividing the number of grade points earned by the total number of credit hours attempted, 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

Because all grades are available online, Northern mails mid-term grade reports only to those who receive a grade of D, F, or NC. You will receive such mid-term grades and final grade reports for each fall and spring semester, normally as soon as possible after the grades have been turned in by the instructors. Because of the shortness of the summer session, only final grade reports are issued.

Up-dated 2/12/07

Repeating Courses

You may re-register, 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. 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 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 C or better before being able to enroll in ENG 110 or 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.

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.

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.
**SCHOLASTIC STANDARDS**

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 announced 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.

Updated 2/20/07

**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 one’s 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.

**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.

If you should find 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 Dean of Instruction. 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.

**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.

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.
As a student, you may appeal any policy decision or administrative decision which you feel has been arbitrarily or improperly rendered. A special committee, the Student Appeals Committee, has been created to handle all such appeals excepting appeals of grades received.

There are, however, specific procedures which must be followed in terms of appealing certain types of situations. These procedures exist solely to protect your rights and to afford you “due process.” If, at the end of the appellate process, you are still not satisfied, you will have protected your right to due process through the courts. If you fail to follow the established process, you will probably have lost any right to due process through civil suit.

The College Registrar is responsible for providing you with any information you may need to help you with an appeal. In general, appeals should begin at the lowest level possible (i.e., a grade appeal starts with you, the student, meeting with the instructor who issued the grade in question).

Appeals to the chairperson and/or to the committee must be in writing in order to protect your rights.

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

1. Providing the Director of Admissions with a letter of appeal, stating in detail what you believe to be inappropriate or incorrect with the decision. If the Director of Admissions upholds your appeal, you will be admitted or re-admitted, as appropriate, or your residency classification adjusted. If the Director of Admissions denies your appeal, you may appeal to the Student Appeals Committee.

2. In the case of residency classification, under state law and the New Mexico Higher Education Department regulations, Northern’s appellate process is your last and highest appeal prior to exercising your right to take court action if you are unsatisfied.

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 in their first term(s) which follow them throughout their academic careers and even affect them to the point that they drop out of college, 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 five years prior to your formal request for forgiveness, and your semester GPA at that time must have been below 2.00; and

2. The terms involved are limited to your first or first two consecutive 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 semester grade point average of 2.00 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.

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

1. Providing the Director of Enrollment Management (the Registrar) 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 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. If the Director denies your appeal, you may appeal to the Student Appeals Committee.

2. Provide the Student Appeals Committee with a written summary of the situation and a detailed, specific statement of what you want. The Committee recommendation will be forwarded to the Dean of Student Services for appropriate action.

Financial Aid
If you have been receiving financial aid and have been denied further assistance, you may appeal that decision by:

1. Providing the Director of Financial Aid with a letter of appeal, stating the unusual circumstances which caused you to not meet financial aid requirements for demonstrating progress. If the Director of Financial Aid denies your appeal...
appeal, you may appeal to the Student Appeals Committee.

2. Provide the Committee with a written summary of the situation and a detailed, specific statement of what you want. The Committee recommendation will be forwarded to the Dean of Student Services for appropriate action.

Refunds

If you believe that the College’s policy for the refunding of charges has not been properly implemented, you may appeal by:

1. Providing the Director of the Business Office 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, the refund will be adjusted appropriately. If the Director denies your appeal, you may appeal to the Student Appeals Committee.

2. Providing the Student Appeals Committee with a written summary of the situation and a detailed, specific statement of what you want. The Committee recommendation will be forwarded to the Vice President for Finance for appropriate action.

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, the department 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. Updated April 2007

STANDARD 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.
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.” Certain programs with professional accreditation may require special or even additional standards for graduation.

2. You may not count toward associate degree requirements any course considered to be remedial in nature (i.e., normally 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.

Residency Requirements
3. For a certificate or associate degree program, you must have earned at least the last 15 credit hours toward an associate degree or certificate here at Northern; for a BA or BS 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.

Updated Apr 2007

4. You must complete a “Petition to Graduate” form, pay the required graduation fee, and submit the form through various college departments, then to your faculty advisor and department chairperson, and finally to 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.

Note: 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 term in which the last requirements are met (payment, for example).

You must submit a properly and completely documented Petition-to-Graduate form within two years of the date on which you completed the program requirements. Failure to do so will be cause for Northern to deny graduation under an outdated catalog; you would have to reapply for admission and graduate under the term of the latest catalog.

Updated May 2007

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 one or more regular semesters of non-attendance, you will be bound by the terms of the catalog in effect at the time of your latest re-admission to the College.

5. You cannot graduate if you owe a debt of any kind to the College.

6. 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”).

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

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

Cum Laude 3.50 - 3.74 cum. GPA
Magna Cum Laude 3.75 - 3.99 cum. GPA
Summa Cum Laude 4.00 cum. GPA

Graduation with Mention of Honor Society Membership
If you are a member in good standing in Northern’s Alpha Iota Sigma chapter of Phi Theta Kappa, the international honor society for two-year colleges, 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.
GENERAL CURRICULUM REQUIREMENTS

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 degree majors shown in this catalog:
   Communications 6 #
   Humanities 3
   Math/Computer Science/Lab Science 6**
   Social/Behavioral 3
   18

   ** Six credit hours in mathematics, computer science and/or laboratory sciences.
   # Must include ENG 111 (English Composition I)

3. Health, Physical Education, or Recreation courses: all 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
- Literature
- Music (theory only)

Mathematics *
- MATH 130 or higher
*Excludes Literature courses and Creative Writing

Laboratory Sciences **
- Astronomy
- Biology
- Chemistry
- Geology
- Physics

Social/Behavioral
- Anthropology
- Economics
- Geography
- Political Science
- Psychology
- Sociology

*Excludes Literature courses and Creative Writing

** In an AAS degree not requiring a 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. These courses have deliberately been designed around the Transfer Common Core to enhance transferability.

Northern’s Courses

Area I: Communications (9 hrs)
ENG 111 English Composition I
SPCH 130 Public Speaking
Choose one of the following:
ENG 112 English Composition II
ENG 116 Technical Writing

Area II: Mathematics (3 hrs)
MATH 145 Introduction to Probability & Stats
MATH 150 College Algebra
MATH 155 Trigonometry
MATH 162 Calculus I
MATH 163 Calculus II
MATH 264 Calculus III

Area III: Laboratory Science (8 hrs)
ASTR 110 Introduction to Astronomy
ASTR 110L Introduction to Astronomy Lab
BIOL 110 Current Topics in Biology
BIOL 110L Current Topics in Biology Lab
CHEM 110 Introduction to Chemistry
CHEM 110L Introduction to Chemistry Lab
ES 112 Introduction to Environmental Science I (3)
ES 112L Intro to Environmental Science I Lab (1)
GEOL 101 Physical Geology
GEOL 101L Physical Geology Lab
GEOL 102 Historical Geology
GEOL 102L Historical Geology Lab
PHYS 110 Introduction to Physics
PHYS 110L Introduction to Physics Lab

Area IV: Social/Behavioral Sciences (6-9 hrs)*
You must select courses from at least two different discipline areas from the following:
ANTH 101 Physical Anthropology
ANTH 101L Physical Anthropology Lab
ANTH 102 Introduction to Social/Cultural Anth
ANTH 207 Cultures of New Mexico
ECON 200 Macroeconomics
ECON 201 Microeconomics
GEOG 111 World Geography
PSCI 110 The Political World
PSCI 200 American Politics
PSY 105 General Psychology
SOC 101 Introduction to Sociology
SOC 220 Social Problems
SOC 225 Marriage and the Family

Area V: Humanities and Fine Arts (6-9 hrs)*
You must select courses from at least two different discipline areas from the following:
ART 105 Introduction to Art
ART 107 History of Art I
ART 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 265 Native American Literature II
ENG 280 Readings in Literature
ENG 290 Study of Literature
ENG 239 Mythology
HIST 101 Western Civilization I
HIST 102 Western Civilization II
HIST 161 History of U.S. to 1877
HIST 162 History of U.S. from 1877
HIST 260 History of New Mexico
MUS 102 Theory of Music
MUS 105 Music Appreciation
MUS 130 History of Music
MUS 140 History of Music
PHIL 110 Introduction to Philosophical Problems
PHIL 220 Ethics
THE 120 Introduction to Theatre I

Total to be selected 35 semester hours

* If your transfer major is in the area of the Humanities/Fine Arts, 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.

Note: 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 major core requirements. For example, if your major requires ECON 200 and ECON 201, you may not count these courses 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, by the faculty senate, and finally by the academic dean.

If you have any questions concerning the application of the General Education Common Core, please check with the Registrar (747-2193) before you sign up for an inappropriate course.
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.
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 New Mexico Department of Public Safety website (www.nmsexoffender.com).

* Commonly referred to as the Megan Act.

Specific questions concerning this policy should be directed to the Dean of Student Services.
Northern New Mexico College offers online courses as an alternative to the traditional campus experience. Students with scheduling problems, full-time employment, or who live at a distance from our two campuses may want to consider taking a class online as a way to advance their education. Courses are completed electronically from a computer with Internet/Web access. Students are assured an interactive relationship with the instructor throughout the semester. Online 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 to students who participate in online courses. Online courses are identified in our schedules as “WEB” or “ITV” to assist you in choosing the type of instruction you prefer. **Each online course is assessed a media fee of $25 at the time of registration.**

Northern currently uses WebCT for online instruction. WebCT is a web-based course management system that Instructors use to develop, organize and administer online classes. Instructors post syllabi, lecture notes and assignments to course web-pages, accessible to enrolled students via a secure login. Courses may be supplemented with multimedia content including video and audio, depending upon course needs. Students participate in WebCT courses in a familiar Web environment and interact with instructors and other students using familiar tools such as email and discussion boards. Students may also submit assignments and take quizzes and exams online. WebCT’s biggest advantage is that it allows students access to information at any time of the day or night.

Taking an online course is very different from the traditional classroom environment. Participation requirements vary from instructor to instructor. Please be aware that some instructors have additional requirements for their courses such as online live-chats, proctored exams, attending field trips, or other face-to-face meetings. Most online courses are not self-paced and have a schedule of due dates as posted in the course syllabus. A typical 3 credit–hour course may require an average of 6-9 hours of online coursework and homework per week. Please keep in mind that online instruction is not for everyone and requires a high degree of self direction and discipline.

User support and assistance is provided via telephone or email. For questions concerning individual courses or assignments, please contact that course’s instructor or department. **For technical assistance call Tom Vallejo at 747-5418 or email tomas@nnmc.edu.** If you are off-campus go directly to http://nnmc.org/ for a faster connection.

**Requirements for accessing online courses:**
- access to a computer system that meets the minimum technical requirements (see next page)
- familiarity with the Internet and browsing the web
- a Northern email address is optional– call 747-2100 to request an email account
- Log in information:
  - username = first two initials of first name attached to whole last name (ex. Tom Vallejo would be tovallejo),
  - password = the five digits of student ID (banner ID)
- Training for students and instructors:
  - Thursday & Friday before & after first day of regular class
  - 9-12 for instructors;
  - 1:30-3:00 pm on both days of both weeks
As a Northern student, you have access to the computer lab in the Student Success Center on the Espanola campus. If you have a computer that has been purchased within the last 3 years, you will probably meet the following requirements:

**MINIMUM Hardware and Software Requirements**
- **Operating System** - Windows 2000 or above, 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 6.0 (do not use version 7), Mozilla Firefox 2 w/flash, java, & Real Player plugin
- **Modem** - 28.8 kbps or higher speed (DSL recommended)
- **Printer** - graphics-capable (inkjet or laser) printer (may not be needed in some classes)
- **Monitor** - 15” monitor (1024 x 768 resolution)
- **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.

If you do not understand these requirements or have a computer that is more than 3 years old, please have someone who knows about computers help you.
The Department of Business and Office Administration houses a number of associate degree and certificate programs which are designed to provide solid employment skills as well as facilitate transfer to a four-year college or university in the general areas of business and accounting, and in the areas of information management and office administration. It also offers a Bachelor of Business Administration, with majors in general Business Administration/Management, Accounting, and Project Management. The programs in this department are accredited by the Association of Collegiate Business Schools and Programs.

Associate of Applied Science
ACCOUNTING
06.0201

If you wish to seek employment in the field of accounting, this program will provide a solid background in accounting at the same time it provides a basic core in general education.

GENERAL EDUCATION (18 hr)
Communications (6 hrs)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Electives (3)

Math/Computers/Lab Sciences (6 hrs)
BA 200 Business Computer Applications (3)
BA 205 Business Statistics (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (2 hr)
Elective (2)

PROGRAM REQUIREMENTS (45 hrs)
BA 117 Business Math (3)
BA 210 Principles of Finance (3)
BA 220 Introduction to Business (3)
BA 225 Excel (3)
BA 230 Intermediate Accounting I (3)
BA 231 Intermediate Accounting II (3)
BA 232 Income Tax Accounting (3)
BA 233 Accounting Principles I (3)
BA 234 Accounting Principles II (3)
BA 235 Governmental Accounting (3)
BA 236 Computerized Accounting (3)
BA 245 Cost Accounting (3)
BA 240 Principles of Management (3)
BA 266 Business Law (3)
OA 118 Professional Development (3)

TOTAL CREDIT HOURS 64
Certificate
BOOKKEEPER
07.0103

This program will prepare you for entry-level positions as a Bookkeepers. 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 hrs)
Communications (3 hrs)
ENG 109N Basic English II (3) or a higher level course

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (15 hrs)
BA 200 Business Computer Applications (3)
BA 225 Excel (3)
BA 233 Accounting Principles I (3)
BA 234 Accounting Principles II (3)
BA 236 Computerized Accounting (3)

TOTAL CREDIT HOURS 22
BACHELOR OF
BUSINESS ADMINISTRATION
52.0201

Students in Northern’s Business Administration program develop competency in applying technology to business strategy, management and decision-making through case studies, team projects, Internet use, as well as computer applications and systems integration.

Matriculation into one of these three majors requires that you: 1) have already completed at least 45 credit hours of college-level work, including the 35 credit hours of General Education Common Core; 2) have at least a 2.50 cumulative GPA in all college-level courses, especially business courses; and 3) submitted a letter of intent to the program director, showing evidence of written communication skills, leadership skills, community activities, and the promise of achievement in a business or professional career. Your application to the program director must be on file at least two weeks before the beginning of the term for which you seek acceptance.

GENERAL EDUCATION (35 hrs)

Communications (9)
ENG 111    English Composition I (3)
SPCH 130   Public Speaking (3)
Choose one of the following:
    ENG 112    English Composition II (3)
    ENG 116    Technical Writing (3)

Mathematics (3)
MATH 150    College Algebra (3)

Laboratory Science (8)
Choose two survey courses (with labs) from the following list:
    ASTR 110/L Introduction to Astronomy w/lab (4)
    BIOL 110/L Survey of Modern Biology 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)

Humanities and Fine Arts (6-9*)
You must select survey courses from at least two different discipline areas from the following list:
    ART 105    Introduction to Art (3)
    ART 107    History of Art (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 260   History of New Mexico (3)
    HUM 101    Humanities I (3)
    HUM 102    Humanities II (3)
    MUS 105    Music Appreciation (3)
    PHIL 110   Intro to Philosophical Problems (3)
    PHIL 220   Ethics (3)
    THE 120    Introduction to Theatre I (3)
    THE 130    History of Theatre (3)
    THE 220    Introduction to Theatre II (3)
    THE 225    Creative Drama Techniques for the K-8 classroom (3)
    THE 238    Teatro Chicano (3)
Social/Behavioral Sciences (6-9)
You must select survey courses from at least two different discipline areas from the following list:

- ANTH 101/L Physical Anthropology w/Lab (4)
- ANTH 102 Introduction to Social and Cultural Anthropology (3)
- ANTH 111 Language and Culture (3)
- ANTH 207 Cultures of New Mexico (3)
- GEOG 111 World Geography (3)
- PSCI 110 The Political World (3)
- PSCI 200 American Politics (3)
- PSY 105 General Psychology (3)
- SOC 101 Introduction to Sociology (3)
- SOC 220 Social Problems (3)
- SOC 225 Marriage and the Family (3)

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

BUSINESS CORE (33)
- BA 200 Business Computer Applications (3)
- BA 205 Business Statistics (3)
- BA 220 Introduction to Business (3)
- BA 233 Accounting Principles I (3)
- BA 234 Accounting Principles II (3)
- BA 240 Principles of Management (3)
- BA 242 Business Information Systems (3)
- BA 250 Business Communications (3)
- BA 251 Principles of Marketing (3)
- ECON 200 Macroeconomics (3)
- ECON 201 Microeconomics (3)

Common Degree Requirements (18)
- BA 300 Business Law (3)
- BA 310 Principles of Finance (3)
- BA 313 Organizational Behavior (3)
- BA 330 Principles of Project Management (3)
- BA 344 Cost Accounting (3)
- BA 461 Ethical and Legal Issues in Business (3)

MAJORS

The Business Administration/Management major is the breadth of business-related disciplines as defined in the business core curriculum. The major does not provide specific specialization but rather exposes the student to various business functions. This major is ideally suited to the new or transfer upper-division business student or for the student interested in concurrently pursuing a business area of study.

Business Administration/Management (30)
- BA 315 Organizational Theory and Design (3)
- BA 350 Entrepreneurship (3)
- BA 351 Advertising and Public Relations (3)
- BA 354 E-Commerce (3)
- BA 360 Human Resource Management (3)
- BA 432 Strategic Management (3)
- BA 460 Labor Relations (3)
- BA 462 International Business and Management (3)
- BA 485 Internship (6)
The Accounting major is designed to prepare students for employment opportunities that exist in public accounting practice and in business, government, and nonprofit organizations. It is also appropriate for those students who may choose to seek either a Master of Accountancy or Master of Business Administration after graduation.

**Accounting (30)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BA 304</td>
<td>Intermediate Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA 305</td>
<td>Intermediate Accounting II</td>
<td>3</td>
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<tr>
<td>BA 324</td>
<td>Federal Tax Accounting I</td>
<td>3</td>
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<tr>
<td>BA 352</td>
<td>Accounting Information Systems</td>
<td>3</td>
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<tr>
<td>BA 405</td>
<td>Accounting for Not-For-Profit Organizations</td>
<td>3</td>
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<tr>
<td>BA 411</td>
<td>Managerial Accounting</td>
<td>3</td>
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<tr>
<td>BA 429</td>
<td>Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 446</td>
<td>Auditing Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>BA 485</td>
<td>Internship</td>
<td>6</td>
</tr>
</tbody>
</table>

The Project Management major is designed to meet the professional development needs of individual program and project responsibilities. Project management is applicable in a wide range of business activities as it involves the application of knowledge, skills, tools and techniques shaped by the specifications and requirements of particular projects. While project management skills have long since been recognized as important in engineering and development organizations, now many new industries are also realizing that the planning and action skills fundamental to project management are applicable and of great value.

Based on this trend, Northern’s degree is designed as an interdisciplinary program and is developed to meet the needs of project/program managers interested in professional training and certification. The program offers two completion options:

1. A professional certificate in project management after completion of 24 hours (See catalog for specific courses). Students are considered ready to take the PMI (Project Management Institute), PMP (Project Management Professional) certification exam.
2. A Bachelor of Arts in Business Administration — Project Management after completion of an additional 19 hours of course work.

**Project Management (30)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 331</td>
<td>Spreadsheet Modeling and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>BA 332</td>
<td>Management Processes and Functions</td>
<td>3</td>
</tr>
<tr>
<td>BA 333</td>
<td>Project Planning and Execution</td>
<td>3</td>
</tr>
<tr>
<td>BA 353</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 432</td>
<td>Strategic Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 434</td>
<td>Project Execution and Closeout</td>
<td>3</td>
</tr>
<tr>
<td>BA 435</td>
<td>Procurement Contracting and Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 436</td>
<td>Advanced Project Management and Simulation</td>
<td>3</td>
</tr>
<tr>
<td>BA 485</td>
<td>Internship</td>
<td>6</td>
</tr>
</tbody>
</table>

**UPPER DIVISION BUSINESS ELECTIVES (12)**

You may take any 300- or 400-level course in Business Administration (BA) not required in your major to satisfy this 12 credit hour elective requirement.

**TOTAL CREDITS** 129
Associate of Arts
BUSINESS ADMINISTRATION
06.0401

This program is a transfer degree designed for students who want to major in the field of business or accounting at a four-year college or university. It will provide you a solid background in general education at the same time it provides the basic core of transfer business courses.

GENERAL EDUCATION (35 hrs)
Communications (9 hrs)
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)

Mathematics (3 hrs)
MATH 150 College Algebra (3)

Laboratory Science (8 hrs)
Choose two survey courses (with labs) from the following list:
   ASTR 110/L Introduction to Astronomy w/lab (4)
   BIOL 110/L Survey of Modern Biology w/lab (4)
   BIOL 112/L Environmental Science w/Lab (4)
   CHEM 110/L Introduction to Chemistry w/lab (4)
   GEOL 101/L Physical Geology w/Lab (4)
   GEOL 102 Historical Geology w/Lab (4)
   PHYS 110/L Introduction to Physics w/Lab (4)

Social/Behavioral Sciences (6-9 hrs) *
You must select survey courses from at least two different discipline areas from the following list:
   ANTH 101/L Physical Anthropology w/Lab (4)
   ANTH 102 Introduction to Social and Cultural Anthropology (3)
   ANTH 111 Language and Culture (3)
   ANTH 207 Cultures of New Mexico (3)
   GEOG 111 World Geography (3)
   PSCI 110 The Political World (3)
   PSCI 200 American Politics (3)
   PSY 105 General Psychology (3)
   SOC 101 Introduction to Sociology (3)
   SOC 220 Social Problems (3)
   SOC 225 Marriage and the Family (3)

Humanities and Fine Arts (6-9 hrs) *
You must select survey courses from at least two different discipline areas from the following list:
   ART 105 Introduction to Art (3)
   ART 107 History of Art (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 260 History of New Mexico (3)
   HUM 101 Humanities I (3)
   HUM 102 Humanities II (3)
   MUS 105 Music Appreciation (3)
   PHIL 110 Introduction to Philosophical Problems (3)
PHIL 220 Ethics (3)
THE 120 Introduction to Theatre I (3)
THE 130 History of Theatre (3)
THE 220 Introduction to Theatre II (3)
THE 225 Creative Drama Techniques for the K-8 classroom (3)
THE 238 Teatro Chicano (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (33 hrs)
BA 205 Business Statistics (3)
BA 210 Principles of Finance (3)
BA 225 Excel (3)
BA 233 Accounting Principles I (3)
BA 234 Accounting Principles II (3)
BA 242 Business Information Systems (3)
BA 251 Principles of Marketing (3)
BA 266 Business Law (3)
ECON 200 Macroeconomics (3)
ECON 201 Microeconomics (3)
Electives (3)

TOTAL CREDIT HOURS 69
Certificate
PROPERTY MANAGEMENT
52.0203

This program is designed to enhance the skills of current property professionals and is restricted to Los Alamos National Lab (LANL) employees.

**GENERAL EDUCATION (6 hrs)**

**Communications (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 109N</td>
<td>Basic English II (3)</td>
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</table>

**Mathematics (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 117</td>
<td>Business Math (3)</td>
<td></td>
</tr>
</tbody>
</table>

**PROGRAM REQUIREMENTS (14 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BA 127</td>
<td>Business Ethics (3)</td>
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</tr>
<tr>
<td>BA 136</td>
<td>Property Management Baseline Training (2)</td>
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</tr>
<tr>
<td>BA 225</td>
<td>Excel (3)</td>
<td></td>
</tr>
<tr>
<td>BA 242</td>
<td>Administrative Systems and Procedures (3)</td>
<td></td>
</tr>
<tr>
<td>OA 215</td>
<td>Business Communications (3)</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL CREDITS 20
This program provides the skills necessary for you to function in terms of successfully managing a small business operation.

GENERAL EDUCATION (18 hrs)
Communications (6 hrs)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Electives (3)

Math/Computers/Lab Sciences (6 hrs)
BA 200 Business Computer Applications (3)
BA 205 Business Statistics (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (45 hrs)
BA 117 Business Math (3)
BA 210 Principles of Finance (3)
BA 220 Introduction to Business (3)
BA 225 Excel (3)
BA 233 Accounting Principles I (3)
BA 234 Accounting Principles II (3)
BA 236 Computerized Accounting (3)
BA 240 Principles Management (3)
BA 242 Business Information Systems (3)
BA 251 Principles of Marketing (3)
BA 266 Business Law (3)
ECON 200 Macroeconomics (3)
ECON 201 Microeconomics (3)
OA 118 Professional Development (3)
Choose one of the following:
   OA 260 Adobe PageMaker (3)
   OA 261 Desktop Publishing: MS Publisher (3)

TOTAL CREDIT HOURS 64
This program trains you for entry-level employment supervising the data processing needs of a small business or department.

**GENERAL EDUCATION (18 hrs)**

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

**Humanities (3 hrs)**
- Electives (3)

**Math/Computers/Lab Sciences (6 hrs)**
- BA 200 Business Computer Applications (3)
- BA 205 Business Statistics (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Elective (1)

**PROGRAM REQUIREMENTS (46-hrs)**
- BA 117 Business Math (3)
- BA 225 Excel (3)
- BA 226 PowerPoint (3)
- BA 233 Accounting Principles I (3)
- BA 240 Principles of Management (3)
- BA 242 Business Information Systems (3)
- BA 266 Business Law (3)
- CS 132 Introduction to Programming I (3)
- CT 125 TCP/IP (3)
- CT/VC 175 Internet Publications I (4)
- CT 220 Networking with Microsoft (3)
- BA/CT 140 e-Commerce (3)
- OA 118 Professional Development (3)
- OA 261 Desktop Publishing – MS Publisher (3)
- OA 265 Access (3)

**TOTAL CREDIT HOURS** 65
This program will provide you with the course work necessary for employment above the entry level in the secretarial fields in the private and governmental sectors.

**GENERAL EDUCATION (18 hrs)**

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

**Humanities (3 hrs)**
- Elective (3)

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

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Elective (1)

**PROGRAM REQUIREMENTS (51 hrs)**
- BA 225 Excel (3)
- BA 226 PowerPoint (3)
- BA 227 Advanced Excel (3)
- BA 242 Business Information Systems (3)
- BA 250 Business Communications (3)
- OA 101 Business Editing Skills (3)
- OA 104 Principles of Keyboarding (3)
- OA 113 Notehand (3)
- OA 115 Files Management (3)
- OA 117 Time Management (3)
- OA 118 Professional Development (3)
- OA 135 Introduction to Accounting (3)
- OA 249 Microsoft Word (3)
- OA 251 Advanced Word (3)
- OA 265 Access (3)
- OA 267 Advanced Access (3)

Choose one of the following:
- OA 260 Adobe Pagemaker (3)
- OA 261 Desktop Publishing: MSPublisher (3)

**TOTAL CREDIT HOURS** 70
Certificate

ADMINISTRATIVE ASSISTANT

07.0104

This program provides you with the basic to advanced skills required to work in the Windows environment. The practical, hands-on approach will enable you to use the skills learned with all the software used in an administrative position.

GENERAL EDUCATION (6 hrs)
Communications (3 hrs)
ENG 109N Basic English II (3) or a higher level course

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

PROGRAM REQUIREMENTS (34 hrs)
BA 200 Business Computer Applications (3)
BA 225 Excel (3)
BA 227 Advanced Excel (3)
OA 101 Business Editing Skills (3)
OA 104 Principles of Keyboarding (3)
OA 118 Professional Development (3)
OA 249 Microsoft Word (3)
OA 251 Advanced Word (3)
OA 265 Access (3)
OA 267 Advanced Access (3)
OA 260 Adobe PageMaker (3)
OA 261 Desktop Publisher: MS Publisher (3)

TOTAL CREDIT HOURS 42
This program will provide you with course work necessary to find employment as an administrative assistant in business and government offices.

**GENERAL EDUCATION (6 hrs)**

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

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

**PROGRAM REQUIREMENTS (24 hrs)**
- BA 200 Business Computer Applications (3)
- OA 101 Business Editing Skills (3)
- OA 104 Principles of Keyboarding (3)
- OA 117 Time Management (3)
- OA 118 Professional Development (3)
- OA 249 Microsoft Word (3)

Choose **one** of the following two courses:
- BA 225 Excel (3)
- OA 265 Access (3)

Choose **one** of the following two courses:
- OA 260 Adobe PageMaker (3)
- OA 261 Desktop Publishing: MS Publisher (3)

**TOTAL CREDIT HOURS** 30
Certificate
LEGAL OFFICE PROFESSIONAL
07.0604

This program will provide you with course work necessary to find employment as a secretary in legal offices.

GENERAL EDUCATION (6 hrs)
Communications (3 hrs)
ENG 109N Basic English II (3) or a higher level course

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

PROGRAM REQUIREMENTS (32 hrs)
BA 115 Introduction to MS Excel (1)
BA 116 Introduction to MS PowerPoint (1)
BA 200 Business Computer Applications (3)
BA 242 Business Information Systems (3)
BA 250 Business Communications (3)
OA 101 Business Editing Skills (3)
OA 102 Introduction to the Internet (3)
OA 104 Principles of Keyboarding (3)
OA 115 Files Management (3)
OA 117 Time Management (3)
OA 118 Professional Development (3)
OA 134 Legal Transcription (3)
OA 139 Introduction to MS Word (1)
OA 155 Introduction to MS Access (1)

TOTAL CREDIT HOURS 40
Certificate
MEDICAL OFFICE PROFESSIONAL
07.0605

This program will provide you with course work necessary to find employment as a secretary in medical offices.

**GENERAL EDUCATION (6 hrs)**

**Communications (3 hrs)**

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

**Mathematics (3 hrs)**

BA 117 Business Math (3)

**PROGRAM REQUIREMENTS (34 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 115</td>
<td>Introduction to MS Excel</td>
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<tr>
<td>BA 116</td>
<td>Introduction to MS PowerPoint</td>
<td>1</td>
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<tr>
<td>BA 200</td>
<td>Business Computer Applications</td>
<td>3</td>
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<tr>
<td>BA 242</td>
<td>Business Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>OA 101</td>
<td>Business Editing Skills</td>
<td>3</td>
</tr>
<tr>
<td>OA 104</td>
<td>Principles of Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>OA 113</td>
<td>Notehand</td>
<td>3</td>
</tr>
<tr>
<td>OA 115</td>
<td>Files Management</td>
<td>3</td>
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<tr>
<td>OA 117</td>
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<tr>
<td>OA 118</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>OA 132</td>
<td>Medical Transcription</td>
<td>3</td>
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<tr>
<td>OA 139</td>
<td>Introduction to MS Word</td>
<td>1</td>
</tr>
<tr>
<td>OA 155</td>
<td>Introduction to MS Access</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS**  40
Certificate
HOSPITALITY, TOURISM, AND RESTAURANT MANAGEMENT
52.0901

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

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

PROGRAM REQUIREMENTS (18 hrs)
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 CREDIT HOURS  24
Certificate
BARBERING
12.0402

This program provides courses required by the New Mexico Board of Barbers and Cosmetologists to be taken before you are eligible to take the New Mexico State Board exam for licensure as a Barber. Employment opportunities include working with an existing barber or opening your own shop. New students are accepted into this program only in the fall or spring semesters.

The Barbering program will operate on a two-semester system, providing sufficient clock hours to enable you to complete in two semesters if your attendance/participation has been at a high level. If you should need additional clock hours to meet Board requirements, you will register into BARB 280L on the basis of 1 credit for each 30 clock hours needed. Completion of the program and release of a transcript showing completion is predicated on your completing all hours and operations called for by Board regulations, as well as completion of the English and math requirements set by the College. If you should withdraw or fail the courses for which you enroll in a particular term, the clock hours represented by that term will not be reported to the State Board on your transcript.

In order to insure compliance with the State Board requirements for training, before attempting to register for barbering courses you must first have been admitted to the college and then have supplied the campus director with the following documents: 1) proof of being at least 16 years of age; 2) proof of having completed a high school diploma or GED, or proof of having completed at least the 10th grade if attending in non-degree status; 3) a $15 money order payable to the New Mexico Board of Barbers and Cosmetologists; and 4) a completed, notarized Board-registration form. Proof of completion of at least the 10th grade can be satisfied only through test scores from the COMPASS test (Reading, 74; Writing, 41; and mathematics, 39).

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (29-37 hrs.)
BARB 110 Barbering I (5)
BARB 110L Barbering I Lab (9)
BARB 120 Barbering II (5)
BARB 120L Barbering II Lab (9)
BARB 280L Barbering Practice (1-9)

TOTAL CREDIT HOURS 37-40
Certificate
BARBERING INSTRUCTOR
13.1319

This program provides theoretical and practical training to prepare you to take the New Mexico State Board of Barbers and Cosmetologists licensure examination to become a Barbering Instructor. Pre-requisite for enrollment: current license as a barber in New Mexico.

GENERAL EDUCATION (6 hrs)
Communications (3 hrs)
ENG 111 English Composition I (3)

Math/Computers/Lab Science (3 hrs)
CS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (28 hrs.)
BARB 290 Barbering Instructor Theory I (5)
BARB 290L Barbering Instructor Internship I (9)
BARB 291 Barbering Instructor Theory II (5)
BARB 291L Barbering Instructor Internship II (9)

TOTAL CREDIT HOURS 34
This program provides you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure and expands those skills with the addition of General Education courses. Upon completion of 1,600 clock hours of cosmetology instruction, as mandated by the Board of Cosmetology, you will be eligible to go before the Board of Barbers and Cosmetology and take the exam for licensure as a cosmetologist. Employment opportunities include working with an existing shop or opening your own shop. New students are accepted into this program only in the fall or spring semesters.

The Cosmetology program will operate on a semester system, providing sufficient clock hours to enable you to complete within three semesters if your attendance/participation has been at a sufficiently high level. If you should then need additional clock hours to meet Board requirements, you will register into BARB 280L on the basis of 1 credit for each 30 clock hours needed. Completion of the program and release of a transcript showing completion is predicated on your completing all hours and operations called for by Board regulations, as well as completion of the English and math requirements set by the College. If you should withdraw or fail the courses for which you enroll in a particular term, the clock hours represented by that term will not be reported to the State Board on your transcript.

In order to insure compliance with the State Board requirements for training, before attempting to register for cosmetology courses you must have been admitted to the college and then have supplied the campus director with the following documents: 1) proof of being at least 16 years of age; 2) proof of having completed a high school diploma or GED, or proof of having completed at least the 10th grade if attending in non-degree status; 3) a $15 money order payable to the New Mexico Board of Barbers and Cosmetologists; and 4) a completed, notarized Board-registration form. Proof of completion of at least the 10th grade can be satisfied only through test scores from the COMPASS test (Reading, 74; Writing, 41; and mathematics, 39).

GENERAL EDUCATION (18-19hrs)
Communications (7 hrs)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Electives (3)

Math/Computers/Lab Sciences (6-7 hrs)
CS 102 Computer Literacy (3)
Elective (3-4)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (3 hrs)
Electives (3)

PROGRAM REQUIREMENTS (43-51 hrs)
COSM 110 Cosmetology I (5)
COSM 110L Cosmetology I Lab (9)
COSM 120 Cosmetology II (5)
COSM 120L Cosmetology II Lab (9)
COSM 210 Cosmetology III (5)
COSM 210L Cosmetology III Lab (9)
COSM 280L Cosmetology Practice (1-9)

TOTAL CREDIT HOURS 64-73
Certificate
COSMETOLOGY
12.0403

This program provides you with the courses required by the New Mexico Board of Barbers and Cosmetology for licensure and expands those skills with the addition of General Education courses. Upon completion of 1,600 clock hours of cosmetology instruction, as mandated by the Board of Cosmetology, you will be eligible to go before the Board of Barbers and Cosmetology and take the exam for licensure as a cosmetologist. Employment opportunities include working with an existing shop or opening your own shop. New students are accepted into this program only in the fall or spring semesters.

The Cosmetology program will operate on a semester system, providing sufficient clock hours to enable you to complete within three semesters if your attendance/participation has been at a sufficiently high level. If you should then need additional clock hours to meet Board requirements, you will register into BARB 280L on the basis of 1 credit for each 30 clock hours needed. Completion of the program and release of a transcript showing completion is predicated on your completing all hours and operations called for by Board regulations, as well as completion of the English and math requirements set by the College. If you should withdraw or fail the courses for which you enroll in a particular term, the clock hours represented by that term will not be reported to the State Board on your transcript.

In order to insure compliance with the State Board requirements for training, before attempting to register for cosmetology courses you must have been admitted to the college and then have supplied the campus director with the following documents: 1) proof of being at least 16 years of age; 2) proof of having completed a high school diploma or GED, or proof of having completed at least the 10th grade; and 3) a $15 money order payable to the New Mexico Board of Barbers and Cosmetologists; and 4) a completed, notarized Board-registration form. Proof of completion of at least the 10th grade can be satisfied only through test scores from Level A of the Test of Adult Basic Education (TABE).

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (43-51 hrs)
COSM 110 Cosmetology I (5)
COSM 110L Cosmetology I Lab (9)
COSM 120 Cosmetology II (5)
COSM 120L Cosmetology II Lab (9)
COSM 210 Cosmetology III (5)
COSM 210L Cosmetology III Lab (9)
COSM 280L Cosmetology Practice (1-9)

TOTAL CREDIT HOURS 49-57
This program provides theoretical and practical training to prepare you to take the New Mexico State Board of Barbers and Cosmetologists licensure examination to become a Cosmetology Instructor. Pre-requisite for enrollment: current license as a cosmetologist in New Mexico.

**GENERAL EDUCATION (6 hrs)**

**Communications (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
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</table>

**Math/Computers/Lab Science (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 102</td>
<td>Computer Literacy</td>
<td>3</td>
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</table>

**PROGRAM REQUIREMENTS (28 hrs.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>COSM 290</td>
<td>Cosmetology Instructor Theory I</td>
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</tr>
<tr>
<td>COSM 290L</td>
<td>Cosmetology Instructor Internship I</td>
<td>9</td>
</tr>
<tr>
<td>COSM 291</td>
<td>Cosmetology Instructor Theory II</td>
<td>5</td>
</tr>
<tr>
<td>COSM 291L</td>
<td>Cosmetology Instructor Internship II</td>
<td>9</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** 34
DEPARTMENT OF
CAREER AND TECHNICAL EDUCATION
EL RITO CAMPUS

The Department of Career and Technical Education supervises the instruction over all of the vocational service and trade programs at the El Rito Campus, in addition to some fine art programs which are housed at the El Rito Campus.

These many programs which lead to associate of applied science degrees and certificates include programs within the fields of service trades: auto body repair, automotive technology, construction trades, electrical technology, and fiber arts (weaving).

Certificate
ADOBE CONSTRUCTION
46.0201

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 material are also covered. As a graduate, you will be capable of being employed with construction firms, being self-employable in specialized subcontractor trades, or you can build your own traditional or modern Southwestern structures using adobe.

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (27-28 hrs)
ADOB 100 Adobe Construction Basics (3)
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 Interior Finish Practices (4)
ADOB 106 Exterior Finish Practices (4)
ADOB 107 Heating (2)

Choose one elective from the following courses:
ADOB 110 Adobe Preservation, Conservation, and Renovation (2)
ADOB 111 Horno Design/Construction (2)
ADOB 112 Arches, Domes, and Vaults (2)
CONS 155 Construction Math and Blueprint Reading (3)
CONS 158 Foundation Theory and Construction (2)

TOTAL CREDIT HOURS 33-37
Completion of the Automotive Technology program is designed to provide you with entry level employment. You must attend on a full-time basis. By the time you complete this program, you should to be able to achieve Automotive Service Excellence (ASE) certification in four or more competency areas.

GENERAL EDUCATION (18 hrs)
Communications (6 hrs)
ENG 111  English Composition I (3)
SPCH 130  Public Speaking (3)

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (6 hrs)
CS 102  Computer Literacy (3)
Elective (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (47 hrs)
ATEC 101L  Basic Service Fundamentals (4)
ATEC 102L  Engine Repair (5)
ATEC 104L  Brake Systems (5)
ATEC 105L  Suspension and Alignment (4)
ATEC 109L  Air Conditioning and Heating (5)
ATEC 203L  Electrical and Electronics (5)
ATEC 206L  Manual Transmission and Differential (5)
ATEC 207L  Automatic Transmission (5)
ATEC 210L  Engine Performance (5)
Electives Choose one of the following:
  ATEC 280L  Practicum (3)
  WELD 110  Introduction to Welding(3)

TOTAL CREDIT HOURS 66
The Automotive Service Fundamentals certificate is designed to prepare you for an entry-level position as an automobile service technician. The brake systems, suspension and alignment, and air conditioning courses are part of the core automotive certificate program as well as the AAS degree.

GENERAL EDUCATION (9-12 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (6-9 hrs)
MATH 100N (6) or a higher level math course (3)
CS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (13 hrs.)
Enrollment in ATEC courses is based upon completion of MATH 100N or a higher level math course, course placement evaluation scores, or instructor permission.
ATEC 101L Basic Service Fundamentals (4)
ATEC 104L Brake Systems (5)
ATEC 105L Suspension and Alignment (4)

TOTAL CREDIT HOURS 22-25
Certificate

AUTOMOTIVE MECHANICAL REPAIR

47.0606

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. You must attend on a full-time basis. By the time you complete this program and the necessary work experience, you should be able to achieve Automotive Service Excellence (ASE) in four or more competency areas. Enrollment is based on having completed Fundamentals of Math (MATH 100N) and Basic English I (ENG 108N) or tested above those levels, or with permission of the instructor. The total program hours meet or exceed NATEF Program standards and are not reflected by credit hours.

GENERAL EDUCATION (9-12 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (6-9 hrs)
MATH 100N (6) or a higher level math course (3)
CS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (43 hrs.)
Enrollment in ATEC courses is based upon completion of MATH 100N or a higher level math course, course placement evaluation scores, or instructor permission.
ATEC 101L Basic Service Fundamentals (4)
ATEC 102L Engine Repair (5)
ATEC 104L Brake Systems (5)
ATEC 105L Suspension and Alignment (4)
ATEC 109L Air Conditioning and Heating (5)
ATEC 203L Electrical and Electronics (5)
ATEC 206L Manual Transmission and Differential (5)
ATEC 207L Automatic Transmission (5)
ATEC 210L Engine Performance (5)

TOTAL CREDIT HOURS 52-63
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 hrs)**

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

**Humanities (3 hrs)**
- Electives (3)

**Math/Computers/Lab Sciences (10 hrs)**
- CS 102 Computer Literacy (3)
- MATH 130 Intermediate Algebra (3)
- PHYS 110 Introduction to Physics I (3)
- PHYS 110L Introduction to Physics I Lab (1)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)**
- Elective (2)

**PROGRAM REQUIREMENTS (39 hrs)**
- ADOB 100 Traditional Dwelling Design (3)
- BA 240 Principles Management (3)
- BA 266 Business Law (4)
- 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)
- PLB 131 Plumbing Code I (2)
- PLB 141 Plumbing Code II (2)

**TOTAL CREDIT HOURS** 66
This program provides you with the skills necessary to enter the construction industry at high 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 Southwestern Building Construction program or the Telecommunications Builder I program with classes to build business and management skills.

**GENERAL EDUCATION (18 hrs)**

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

**Humanities (3 hrs)**
- Elective (3)

**Math/Computers/Lab Sciences (6 hrs)**
- CS 102 Computer Literacy (3)
- Elective (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)**
- Electives (2)

**PROGRAM REQUIREMENTS (64-74 hrs)**
- BA 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 (27 hrs)
  - Electives (10 hrs) from ADOB, CARP, CONS, or DRFT courses

- **Option 2:** Wood/Steel Frame Building Construction (38 hrs)
  - Five courses from CARP 171-178 (30 hrs)
  - Electives (8 hrs) from ADOB, CONS, CARP, or DRFT courses

**TOTAL CREDIT HOURS** 67-76 HRS
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 (25 hrs)**

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

**Humanities (3)**
- Elective (3)

**Math/Computers/Lab Sciences (10)**
- CS 102  Computer Literacy (3)
- ENGR 110  Intro to Engineering Technology (4)
- MATH 130  Intermediate Algebra (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Elective (1)

**PROGRAM REQUIREMENTS (39 hrs.)**
- BA 240  Principles of Management (3)
- CONS 207  Construction Materials & Estimating (3)
- 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 Code (6)
- ELEC 160  Motor Controls (3)
- ELEC 160L  Motor Controls Lab (3)
- Elective (3)

**TOTAL CREDIT HOURS 65**
Certificate
ELECTRICAL TECHNOLOGY
46.0302

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 (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N or a higher level math course

PROGRAM REQUIREMENTS (24 hrs)
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 Code (6)

TOTAL CREDIT HOURS 33
This program trains you to work in galleries, with other weavers, or to start your own business at home.

GENERAL EDUCATION (25 hrs)
Communications (6 hrs)
EN 111 English Composition I (3)
Choose one of the following:
EN 112 English Composition II (3)
EN 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Humanities (6 hrs)
Two courses from Humanities or Fine Arts (lecture only) (6)

Math/Computers/Lab Sciences (6-7 hrs)
Elective: (6-7)

Social/Behavioral Sciences (6 hrs)
Electives (6)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
 Elective (1)

PROGRAM REQUIREMENTS (44 hrs)
FA 101 Weaving I (1)
FA 101L Weaving I Lab (6)
FA 103 Spinning I (3)
FA 105 Dyeing (3)
FA 107 Textile Color & Design (2)
FA 110 History of Textiles (2)
FA 208 Marketing of Woven Goods (2)
FA 210 Weaving II (1)
FA 210L Weaving II Lab (6)
FA 213 Weaving III (1)
FA 213L Weaving III Lab (1)
FA 225 Four Harness Weave (4)
FA 230 Weaving Practicum (4)
Choose 8 credit hours from the following courses:
FA 109 Loom Building (1)
FA 112 Vegetable Dyes: Identification and Selection (5)
FA 116 Quilting (2)
FA 202 Spinning II (2)
FA 216 Rug Restoration (2)
FA 218 Rag Rug Weaving (2)

TOTAL CREDIT HOURS 69
Certificate  
WEAVING  
50.0713

This program prepares you for entry-level jobs in the weaving industry, working with others or on your own.

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (41 hrs.)
FA 101 Weaving I (1)
FA 101L Weaving I Lab (6)
FA 103 Spinning I (3)
FA 105 Dyeing (3)
FA 107 Textile Color & Design (2)
FA 110 History of Textiles (2)
FA 208 Marketing of Woven Goods (2)
FA 210 Weaving II (1)
FA 210L Weaving II Lab (6)
FA 213 Weaving III (1)
FA 213L Weaving III Lab (6)
FA 225 Four Harness Weave (4)
FA 230 Weaving Practicum (4)

TOTAL CREDIT HOURS 47-50
This program will train you for the more technical aspects of the plumber's trade, particularly toward job opportunities in the government sector or in operating your own business.

GENERAL EDUCATION (21 hrs)
Communications (9 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (6 hrs)
CS 102 Computer Literacy (3)
Elective (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (42 hrs)
PLB 130 Plumbing Systems I (3)
PLB 130L Plumbing Systems Lab I (5)
PLB 131 Plumbing Code I (2)
PLB 132 Blueprint Reading (2)
PLB 140 Plumbing Systems II (3)
PLB 140L Plumbing Systems Lab II (5)
PLB 141 Plumbing Code II (2)
PLB 142 Blueprint Reading and Drawing (2)
BA 240 Principles of Management (3)
DRFT 100 Computer Aided Drafting I (4)
CONS 206 Building Construction (3)
Electives (8)

TOTAL CREDIT HOURS 64
Certificate
PLUMBING TECHNOLOGY
46.0502

This program prepares you for entry-level employment as a plumber’s helper or as an apprentice plumber with an existing shop or company. In addition, it prepares you to take the state examination for licensure as a journeyman plumber.

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (24 hrs.)
PLB 130 Plumbing Systems I (3)
PLB 130L Plumbing Systems Lab I (5)
PLB 131 Plumbing Code I (2)
PLB 132 Blueprint Reading (2)
PLB 140 Plumbing Systems II (3)
PLB 140L Plumbing Systems Lab II (5)
PLB 141 Plumbing Code II (2)
PLB 142 Blueprint Reading and Drawing (2)

TOTAL CREDIT HOURS 30-33
This program will provide you with the skills necessary to enter environmental fields — the renewable energy, alternative technology, and construction industries — at higher than entry level. You will be capable of entering at supervisory or management internship levels or of establishing 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)

#### Humanities (3)
- Elective (3)

#### Math/Computers/Lab Sciences (14)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)
- CHEM 121 General Chemistry I (3)
- CHEM 121L General Chemistry I Lab (1)
- PHYS 121 Applied Physics I (3)
- PHYS 121L Applied Physics I Lab (1)

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

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

### PROGRAM REQUIREMENTS (36 hrs)
- Completion of Renewable Energy Certificate Program (26)
- Electives from: RE, ECET, ELEC, ES, ADOB, CONS, CARP, DRFT (10)

TOTAL CREDITS 67
Certificate
RENEWABLE ENERGY
15.0504

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 capable of being employed with construction firms, renewable energy firms, alternative technology firms, design and planning firms, or of being self-employed as a specialized subcontractor. You will be capable of designing and building your own off-the-grid homes and vehicles.

GENERAL EDUCATION (10-13 hrs)
Communications (3)
ENG 108N Basic English I (3) or a higher level English course.

Math/Computers/Lab Sciences (7-10)
MATH 100n Fundamentals of Math (6) or a higher level math course

PROGRAM REQUIREMENTS (26 hrs)
General: Complete 9 crs from the following:
ES 112 Environmental Science (3)
ES 112L Environmental Science Lab (1)
ES 224 Environmental and Community Planning (3)
ES 126 Introduction to Waste Management (3)
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)

Renewable Electric: Complete 8 crs from the following:
ECET 100 Introduction to Electronics (3)
ECET 120 Introduction to Advanced Technology (3)
ECET 160 Alternative Power Systems (2)
ELEC 140 Electrical Theory I (3)
ELEC 141 Electrical Code I (3)
ELEC 190 Solar and Wind Systems in the Electric Code (2)
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/ATEC 144 Bio-Diesel Fuel Production and Engine Requirements (3)
RE/ATEC 146 Bio-Hybrid Fuel Production and Engine Requirements (3)
ECET 140 Electric Vehicle Conversion: Nuts and Bolts (2)

Geothermal, Biomass, and Emerging Heat and Power: Complete 2 crs from the following
RE 127 Geothermal Systems for Heat and Power (4)
RE 128 Biomass Systems for Heat, Power, and Cogeneration (4)
RE 129 Trends and Emerging Energy Sources (2)

TOTAL HOURS 36-39
Associate of Applied Science

SERVICE MANAGEMENT

If you have completed vocational training in Barbering or Massage Therapy, this program will serve to enhance your abilities to successfully enter the field of small business ownership/management.

GENERAL EDUCATION (18 hrs)
Communications (6 hrs)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (6 hrs)
CS 102 Computer Literacy (3)
Elective (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)
Electives (2)

PROGRAM REQUIREMENTS (47 hrs)
BA 117 Business Math (3)
BA 220 Introduction to Business (3)
BA 234 Accounting Principles I (3)
BA 240 Principles of Management (3)
BA 225 Excel (3)
BA 266 Business Law (3)

Major Concentration
Barbering (29-37 hrs)

TOTAL CREDIT HOURS 69-77
Associate of Applied Science
SPANISH COLONIAL FURNITURE MAKING
48.0703

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

GENERAL EDUCATION (18 hrs)

Communications (6 hrs)
ENG 111 English Composition I (3)
Choose one of the following:
- ENG 112 English Composition II (3)
- ENG 116 Technical Writing (3)
- COMM 111 Business and Professional Communication Studies (3)
- SPCH 130 Public Speaking (3)

Humanities (3 hrs)
HIST 260 History of NM (3)

Math/Computers/Lab Sciences (6 hrs)
CS 102 Computer Literacy (3)
MATH Elective at/above MATH 145 (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (46 hrs)
SCFM 150 Introduction to Spanish Colonial Furniture (3)
SCFM 150L Introduction to Spanish Colonial Furniture Lab (9)
SCFM 160L Spanish Colonial Furniture Making Lab (12)
SCFM 170L Advanced Spanish Colonial Furniture Making Lab (12)
DRFT 100 Introduction to Computer Aided Drafting (4)
ART 170 Photography I (3)
Elective (3)

TOTAL CREDIT HOURS 65
Certificate

SPANISH-COLONIAL FURNITURE MAKING:

48.0702

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 (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (36 hrs.)
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 CREDIT HOURS 42-45
This program is designed to prepare you for a career as a Wildland Fire Fighter. The program provides entry- and advanced-level fire fighting skills in areas such as safety, firefighter preparedness, tools and equipment, firing devices, use of water, fire suppression, securing the control line and the use of maps, scouting, hazardous materials, and standards for survival. This program is also targeted for logistics and financial/administration positions, helicopter manager, and single resource positions in the incident command system. All of the Wildland Fire Science courses meet the USDA Forest Service standards for trained fire fighters.

**GENERAL EDUCATION (19 hrs)**

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

**Humanities (3 hrs)**
- HIST 162 History of the U.S. from 1877 (3)

**Math/Computers/Lab Sciences (7 hrs)**
- ES 112 Environmental Science (3)
- ES 112L Environmental Science Problems (1)
- CS 102 Computer Literacy (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (5 hrs)**
- HPER Electives (5)

**PROGRAM REQUIREMENTS (40 hrs)**
- DRFT 110 GIS/GPS (3)
- ES 134 OSHA Safety and Health (3)
- FOR 101 Introduction to Forestry (3)
- FOR 123 Forest Ecology (3)
- HSCI 109 CPR/First Aid (.5)
- WFS 110 Wildland Fire Technician I (2)
- WFS 112 Wildland Fire Fighter Training (3)
- WFS 118 Interagency Incident Business (1)
- WFS 125 Basic Air Operations (1)
- WFS 127 Advanced Fire Fighting Training (2)
- WFS 201 Wildland Fire Technician II (3)
- WFS 215 Interagency (IA) Helicopter Training (3)
- WFS 232 Fundamentals of Fire Behavior (3)
- WFS 235 Ignition Operation (2)
- WFS 237 Crew Boss (2)
- WFS 281 Field Training (3)
- WFS 282 Wildland Chainsaws (3)

**TOTAL CREDIT HOURS** 64
**Associate of Applied Science**  
**WILDLAND FIRE SCIENCE**  
43.0203

**Required Sequence of Courses**

### First Year

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<th>Fall Semester</th>
<th>Spring Semester</th>
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<td>FOR 101 (3)</td>
<td>ES 134 (3)</td>
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<td>FOR 123 (3)</td>
<td>PSY 105 (3)</td>
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<td>BIOL 112/L (4)</td>
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### Summer Session

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<th>WFS 281 (3)</th>
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</thead>
</table>

### Year Two

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFS 201 (3)</td>
<td>WFS 232 (3)</td>
</tr>
<tr>
<td>WFS 215 (3)</td>
<td>WFS 235 (2)</td>
</tr>
<tr>
<td>SPCH 130 (3)</td>
<td>WFS 237 (2)</td>
</tr>
<tr>
<td>HPER Elective (1)</td>
<td>HPER Elective (1)</td>
</tr>
<tr>
<td>ENG 111 (3)</td>
<td>DRFT 110 (3)</td>
</tr>
<tr>
<td></td>
<td>HIST 162 (3)</td>
</tr>
<tr>
<td><strong>Sub-total (14)</strong></td>
<td><strong>Sub-total (14)</strong></td>
</tr>
</tbody>
</table>
The mission of the Communications, Humanities, and Social Sciences Department is to provide you with high quality academic course work 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 if you are pursuing any degree program at Northern. Our programs are relevant to your personal and professional needs; they develop critical thinking skills, enhance self-esteem, and assist in your development into an organized, focused, empowered, and independent lifelong learner.

Our programs are organized into Humanities and Social Science programs which include all of those associate of arts degree programs which are designed to be fully or almost fully transferable to four-year colleges and universities. In addition, this department also offers several associate of applied science degrees which are designed to prepare you for employment opportunities as well as for limited transfer of course work to four-year colleges and universities.

**Associate of Arts**

**CRIMINAL JUSTICE**  
43.0104

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 hrs)**

**Communications (9 hrs)**

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

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Mathematics (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Laboratory Science (8 hrs)**

Choose two survey courses (with labs) from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 110/L</td>
<td>Introduction to Astronomy w/lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 110/L</td>
<td>Survey of Modern Biology w/lab</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110/L</td>
<td>Introduction to Chemistry w/lab</td>
<td>4</td>
</tr>
<tr>
<td>ES 112/L</td>
<td>Environmental Science w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 101/L</td>
<td>Physical Geology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Historical Geology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110/L</td>
<td>Introduction to Physics w/Lab</td>
<td>4</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (9 hrs)** *

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one survey course from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 101/L</td>
<td>Physical Anthropology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 102</td>
<td>Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 111</td>
<td>Language and Culture</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>
</tbody>
</table>
GEOG 111 World Geography (3)
PSCI 110 The Political World (3)
PSCI 200 American Politics (3)
SOC 220 Social Problems (3)
SOC 225 Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs)***
Choose two survey courses from the following list:
- ART 105 Introduction to Art (3)
- ART 107 History of Art (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 260 History of New Mexico (3)
- HUM 101 Humanities I (3)
- HUM 102 Humanities II (3)
- MUS 105 Music Appreciation (3)
- PHIL 110 Introduction to Philosophical Problems (3)
- PHIL 220 Ethics (3)
- THE 120 Introduction to Theatre I (3)
- THE 130 History of Theatre (3)
- THE 220 Introduction to Theatre II (3)
- THE 225 Creative Drama Techniques for the Classroom K-12 (3)
- THE 238 Teatro Chicana/o (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
Elective (1)

**PROGRAM REQUIREMENTS (31 hrs)**
- 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 233 Juvenile Justice Procedures (3)
- CJ 235 Introduction to Corrections (3)
Choose one of the following two courses:
- CJ 231 Criminal Investigation (3)
- CJ 228 Forensic Investigation (3)
Elective (3)

TOTAL CREDITS 64
This program, which allows you to take courses for personal growth or for transfer to a four-year college or university, allows a great deal of flexibility in choosing courses. In this way, you can work with an advisor to put together a degree major which may not be offered by Northern, thus establishing a solid foundation of courses for transfer to a four-year institution.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**

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

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II (3)</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing (3)</td>
</tr>
</tbody>
</table>

**Mathematics (3 hrs)**

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

**Laboratory Science (8 hrs)**

Choose two survey courses (with labs) from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 110/L</td>
<td>Introduction to Astronomy w/lab (4)</td>
</tr>
<tr>
<td>BIOL 110/L</td>
<td>Survey of Modern Biology w/lab (4)</td>
</tr>
<tr>
<td>CHEM 110/L</td>
<td>Introduction to Chemistry w/lab (4)</td>
</tr>
<tr>
<td>ES 112</td>
<td>Environmental Science w/Lab (4)</td>
</tr>
<tr>
<td>GEOL 101/L</td>
<td>Physical Geology w/Lab (4)</td>
</tr>
<tr>
<td>GEOL 102/L</td>
<td>Historical Geology w/Lab (4)</td>
</tr>
<tr>
<td>PHYS 110/L</td>
<td>Introduction to Physics w/Lab (4)</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (6-9 hrs)** *

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 101/L</td>
<td>Physical Anthropology w/Lab (4)</td>
</tr>
<tr>
<td>ANTH 102</td>
<td>Introduction to Social and Cultural Anthropology (3)</td>
</tr>
<tr>
<td>ANTH 111</td>
<td>Language and Culture (3)</td>
</tr>
<tr>
<td>ANTH 207</td>
<td>Cultures of New Mexico (3)</td>
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<tr>
<td>ECON 200</td>
<td>Macroeconomics (3)</td>
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<td>The Political World (3)</td>
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<tr>
<td>PSCI 200</td>
<td>American Politics (3)</td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology (3)</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology (3)</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems (3)</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Marriage and the Family (3)</td>
</tr>
</tbody>
</table>

**Humanities and Fine Arts (6-9 hrs)** *

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art (3)</td>
</tr>
<tr>
<td>ART 107</td>
<td>History of Art (3)</td>
</tr>
<tr>
<td>ENG</td>
<td>Literature courses numbered 260-298 (3)</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Western Civilization I (3)</td>
</tr>
<tr>
<td>HIST 102</td>
<td>Western Civilization II (3)</td>
</tr>
<tr>
<td>HIST 161</td>
<td>History of the U.S. to 1877 (3)</td>
</tr>
<tr>
<td>HIST 162</td>
<td>History of the U.S. from 1877 (3)</td>
</tr>
<tr>
<td>HIST 260</td>
<td>History of New Mexico (3)</td>
</tr>
<tr>
<td>HUM 101</td>
<td>Humanities I (3)</td>
</tr>
</tbody>
</table>
HUM 102  Humanities II (3)
MUS 105  Music Appreciation (3)
PHIL 110  Introduction to Philosophical Problems (3)
PHIL 220  Ethics (3)
THE 120  Introduction to Theatre I (3)
THE 130  History of Theatre (3)
THE 220  Introduction to Theatre II (3)
THE 225  Creative Drama Techniques for the Classroom K-12 (3)
THE 238  Teatro Chicano (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)
Elective (2)

PROGRAM REQUIREMENTS (27 hrs.)
General Education Electives (24)*
*Must be taken from the following discipline areas and must include at least 3 crs Fine Arts (lecture only):
Communications
Mathematics
Fine Arts (lecture only)
Laboratory Sciences
Humanities
Social/Behavioral Sciences

Electives (from any discipline) (3)

TOTAL CREDITS 64
Associate of Arts
HUMAN SERVICES IN THE SOCIAL SCIENCES
44.0702

This program is designed for students wishing to transfer to a four-year institution in the social sciences, including psychology, sociology, or social work. The program specifically meets criteria to transfer to New Mexico Highlands University’s program in Social Work.

GENERAL EDUCATION (35 hrs)
Communications (9 hrs)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)
ENG 112 English Composition II (3)

Mathematics (3 hrs)
MATH 145 Introduction to Probability and Statistics (3)

Laboratory Science (8 hrs)
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 Historical Geology w/Lab (4)
PHYS 110/L Introduction to Physics w/Lab (4)
** You may substitute BIOL 201/L for BIOL 110/L.

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

Humanities and Fine Arts (6 hrs) *
You must select two survey courses from the following list:
ART 105 Introduction to Art (3)
ART 107 History of Art (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 260 History of New Mexico (3)
HUM 101 Humanities I (3)
HUM 102 Humanities II (3)
MUS 105 Music Appreciation (3)
PHIL 110 Introduction to Philosophical Problems (3)
PHIL 220 Ethics (3)
THE 120 Introduction to Theatre I (3)
THE 130 History of Theatre (3)
THE 220 Introduction to Theatre II (3)
THE 225 Creative Drama Techniques for the Classroom K-12 (3)
THE 238 Teatro Chicano (3)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)
**PROGRAM REQUIREMENTS (33 hrs)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 210</td>
<td>Theories of Personality &amp; Counseling</td>
<td>3</td>
</tr>
<tr>
<td>PSY 217</td>
<td>Interviewing and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>PSY 232</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 260</td>
<td>Family Systems Theory and Counseling Applications</td>
<td>3</td>
</tr>
<tr>
<td>PSY 275</td>
<td>Group Process</td>
<td>3</td>
</tr>
<tr>
<td>PSY 280</td>
<td>Practicum for Human Services</td>
<td>3</td>
</tr>
<tr>
<td>PSY 290</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 105</td>
<td>Introduction to Human Services</td>
<td>3</td>
</tr>
<tr>
<td>SOC 140</td>
<td>Sociology of Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>SOC 216</td>
<td>Ethnic and Intercultural Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Marriage &amp; Family</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS** 69
This program provides competencies at the paraprofessional level in various fields of human services in public or private social welfare agencies, working with a diverse group of people.

**GENERAL EDUCATION (28 hrs)**

**Communications (6 hrs)**

ENG 111 English Composition I (3)

Choose one of the following

- ENG 112 English Composition II (3)
- SPCH 130 Public Speaking (3)

**Humanities (3 hrs)**

Elective (3)

**Math/Computer/Lab Sciences (7 hrs)**

Choose one of the following two BIOL courses:

- BIOL 110 Survey of Modern Biology (3)
- BIOL 110L Survey-Modern Biology Lab (1)
- BIOL 201 Principles of Molecular and Cell Biology (3)
- BIOL 201L Principles of Molecular and Cell Biology Lab (1)

Choose one of the following:

- CS 102 Computer Literacy (3)
- MATH 145 Introduction to Probability and Statistics (3)

**Social/Behavioral Sciences (12 hrs)**

ANTH 102 Introduction to Social & Cultural Anthropology (3)

PSCI 200 American Politics (3)

PSY 105 General Psychology (3)

SOC 101 Introduction to Sociology (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hrs)**

Elective (1)

**PROGRAM REQUIREMENTS (36 hrs)**

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)

Elective in Social/Behavioral Sciences (3)

**TOTAL CREDITS** 65
Northern’s Library Technology program will prepare you for rewarding entry-level career opportunities in public, school, academic, or special libraries.

**GENERAL EDUCATION (25 hrs)**

**Communications (6 hrs)**

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

**Humanities (6 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 101</td>
<td>Humanities I</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Math/Computer/Lab Sciences (10 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Science Elective with lab</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CS 102</td>
<td>Computer Literacy</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 130</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**PROGRAM REQUIREMENTS (37-40 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 202</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>ENG</td>
<td>Chose either ENG 280 or 290</td>
<td>3</td>
</tr>
<tr>
<td>LT 201</td>
<td>Technical Services - Cataloging</td>
<td>3</td>
</tr>
<tr>
<td>LT 202</td>
<td>Technical Services - Acquisition</td>
<td>3</td>
</tr>
<tr>
<td>LT 205</td>
<td>Library Public Services</td>
<td>3</td>
</tr>
<tr>
<td>LT 207</td>
<td>Basic Reference Mats</td>
<td>3</td>
</tr>
<tr>
<td>LT 209</td>
<td>Media Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OA 103</td>
<td>Introduction to Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>OA 104</td>
<td>Principles of Keyboarding</td>
<td>3</td>
</tr>
</tbody>
</table>

LT Electives: Choose two of the following four courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT 213</td>
<td>Special Libraries</td>
<td>3</td>
</tr>
<tr>
<td>LT 215</td>
<td>Public Libraries</td>
<td>3</td>
</tr>
<tr>
<td>LT 217</td>
<td>School Libraries</td>
<td>3</td>
</tr>
<tr>
<td>LT 219</td>
<td>Academic Libraries</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives: Choose three of the following seven courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
<td>3</td>
</tr>
<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>HIST 260</td>
<td>History of New Mexico</td>
<td>3</td>
</tr>
<tr>
<td>LT 220</td>
<td>Adv. Reference Materials</td>
<td>3</td>
</tr>
<tr>
<td>LT 221</td>
<td>Media Production</td>
<td>3</td>
</tr>
<tr>
<td>SPAN Elective</td>
<td>any course</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS** 64-66
Certificate
LIBRARY TECHNOLOGY
25.0302

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 hrs)
Communications (4 hrs)
ENG 110 Writing the Research Paper (1)
ENG 111 English Composition I (3)

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

PROGRAM REQUIREMENTS (28-30 hrs)
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)
Choose one of the following two courses:
OA 103 Introduction to Keyboarding (1)
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
43.0107

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 hrs)**

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

**Humanities (3 hrs)**
- PHIL 220 Ethics (3)

**Math/Computer/Lab Sciences (6 hrs)**
- CS 102 Computer Literacy (3)
- MATH 145 Intro to Probability & Statistics (3)

**Social/Behavioral Sciences (6 hrs)**
- PSCI 210 State and Local Government (3)
- SOC 101 Introduction to Sociology (3)

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

**NM law Enforcement Academy Certification which includes credit for the following courses (31 hrs):**
- 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 First Responder for Law Enforcement (1)
- LE 237 Police Proficiency I (3)
- LE 238 Police Proficiency II (3)
- LE 239 Police Proficiency III (3)

**TOTAL CREDITS** 64
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 hrs)**

**Communications (9 hrs)**

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

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Mathematics (3 hrs)**

<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>
</tr>
</tbody>
</table>

**Laboratory Science (8 hrs)**

Choose two course (with labs) from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 110/L</td>
<td>Introduction to Astronomy w/ lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 110/L</td>
<td>Survey of Modern Biology w/ lab</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110/L</td>
<td>Introduction to Chemistry w/ lab</td>
<td>4</td>
</tr>
<tr>
<td>ES 112/L</td>
<td>Environmental Science w/ Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 101/L</td>
<td>Physical Geology w/ Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Historical Geology w/ Lab</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110/L</td>
<td>Introduction to Physics w/ Lab</td>
<td>4</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (6-9 hrs)** *

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 101/L</td>
<td>Physical Anthropology w/ Lab</td>
<td>4</td>
</tr>
<tr>
<td>ANTH 102</td>
<td>Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 111</td>
<td>Language and Culture</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>PSCI 110</td>
<td>The Political World</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 200</td>
<td>American Politics</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</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>

**Humanities and Fine Arts (6-9 hrs)** *

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 107</td>
<td>History of Art</td>
<td>3</td>
</tr>
</tbody>
</table>
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 260  History of New Mexico (3)
HUM 101  Humanities I (3)
HUM 102  Humanities II (3)
MUS 105  Music Appreciation (3)
PHIL 110  Introduction to Philosophical Problems (3)
PHIL 220  Ethics (3)
THE 120  Introduction to Theatre I (3)
THE 130  History of Theatre (3)
THE 220  Introduction to Theatre II (3)
THE 238  Teatro Chicano (3)
THE 260  Teaching Creative Drama for Children (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (30 hrs)
Choose 30 credits from the following:

PIS 200  Introduction to Pueblo Indian Studies (3)
PIS 220  Pueblo arts, Crafts, and Culture (3)
PIS 242  Pueblo Indian Women's Lives (3)
PIS 252  Pueblo Indian History (3)
PIS 256  Pueblo Indian Government (3)
PIS/ENG 265  Native American Literature I (3)
PIS/ENG 266  Native American Literature II (3)
PIS 270  Pueblo Indians and Education (3)
PIS 272  Pueblo Health Concepts and Practices (3)
PIS 283  Tewa Ethnobiology: Plants and Animals of the Tewa World (3)
PIS 284  Agriculture Practices of the Pueblo World (3)

TOTAL CREDITS  66
Certificate
RESIDENTIAL ASSISTANT
13.1101

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 Highly Qualified requirements for staff working in a residential setting.

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

GENERAL EDUCATION (12 hrs)
Communications (3)
ENG 109N Basic English II (3) or a higher level English course.

Humanities (3-6)
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 (3-6) *
MATH 100N Fundamentals of Mathematics (6) or higher level math course.

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

PROGRAM REQUIREMENTS (21 hrs)
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)
PSY 262 Interviewing in Adolescent Behavior (3)
SOC 140 Sociology of Substance Abuse (3)

TOTAL CREDITS 33
Combining broad based general education courses with area studies, you will be exposed to much of the lower division foundation courses required by four-year colleges as well as to a solid foundation in intercultural and international relations.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**

- **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)

**Mathematics (3 hrs)**

- **MATH 150** College Algebra (3)

**Laboratory Science (8 hrs)**

Choose two course (with labs) from the following list:

- **ASTR 110/L** Introduction to Astronomy w/lab (4)
- **BIOL 110/L** Survey of Modern Biology 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** Historical Geology w/Lab (4)
- **PHYS 110/L** Introduction to Physics w/Lab (4)

**Social/Behavioral Sciences (6-9 hrs)** *

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

- **ANTH 101/L** Physical Anthropology w/Lab (4)
- **ANTH 102** Introduction to Social and Cultural Anthropology (3)
- **ANTH 111** Language and Culture (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 200** American Politics (3)
- **PSY 105** General Psychology (3)
- **SOC 101** Introduction to Sociology (3)
- **SOC 220** Social Problems (3)
- **SOC 225** Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs)** *

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

- **ART 105** Introduction to Art (3)
- **ART 107** History of Art (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 260** History of New Mexico (3)
- **HUM 101** Humanities I (3)
- **HUM 102** Humanities II (3)
MUS 105 Music Appreciation (3)
PHIL 110 Introduction to Philosophical Problems (3)
PHIL 220 Ethics (3)
THE 120 Introduction to Theatre I (3)
THE 130 History of Theatre (3)
THE 220 Introduction to Theatre II (3)
THE 238 Teatro Chicano (3)
THE 260 Teaching Creative Drama for Children (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (30 hrs)
Choose 30 credit hours from the following courses:

ANTH 207 Cultures of NM (3)
ANTH 210 Southwestern Folklore (3)
ART 208 History of NM Art and Architecture (3)
ENG 262 Southwest Literature (3)
ENG 265 Native American Literature I (3)
ENG 266 Native American Literature II (3)
ENG 290 Study of Literature: Chicano Literature (3)
HIST 220 Southwest Women’s History (3)
HIST 230 Chicano Experience in U.S. (3)
HIST 250 American Indian History (3)
HUM 105 Humanities and the Southwest (3)
HUM 204 Chicana Feminist Thought (3)
PSCI 211 American Indian Government (3)
PIS 200 Introduction to Pueblo Indian Studies (3)
PIS 220 Pueblo Arts, Crafts, and Culture (3)
PIS 242 Pueblo Indian Women’s Lives (3)
PIS 284 Agriculture Practices of the Pueblo World (3)

You may choose up to 6 credit hours from the following if you choose to include language in the program requirements:

SPAN 101 Spanish I (3)
SPAN 102 Spanish II (3)
SPAN 111 Spanish for Native Speakers I (3)
SPAN 112 Spanish for Native Speakers II (3)

TOTAL CREDIT HOURS 66
Associate of Arts

SUBSTANCE ABUSE COUNSELOR

17.0402

This program is designed for students wishing to transfer to a four-year institution in the social sciences, including psychology, sociology, or social work, with an emphasis in substance abuse counseling. Students who complete this program are eligible to enter NMHU’s Social Work program.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**

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

**Mathematics (3 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 145</td>
<td>Introduction to Probability and Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Laboratory Science (8 hrs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 110/L</td>
<td>Survey of Modern Biology w/Lab</td>
<td>4</td>
</tr>
</tbody>
</table>

Choose **two survey courses (with labs)** from the following list: **

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 110/L</td>
<td>Introduction to Astronomy w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110/L</td>
<td>Introduction to Chemistry w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>ES 112/L</td>
<td>Environmental Science w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 101/L</td>
<td>Physical Geology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110/L</td>
<td>Introduction to Physics w/Lab</td>
<td>4</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (9 hrs) **

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 102</td>
<td>Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Humanities and Fine Arts (6 hrs) **

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 105</td>
<td>Introduction to Art</td>
<td>3</td>
</tr>
<tr>
<td>ART 107</td>
<td>History of Art</td>
<td>3</td>
</tr>
<tr>
<td>ENG</td>
<td>Literature courses numbered 260-298</td>
<td>3</td>
</tr>
<tr>
<td>HIST 101</td>
<td>Western Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIST 102</td>
<td>Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 161</td>
<td>History of the U.S. to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 162</td>
<td>History of the U.S. from 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 260</td>
<td>History of New Mexico</td>
<td>3</td>
</tr>
<tr>
<td>HUM 101</td>
<td>Humanities I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 102</td>
<td>Humanities II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 105</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 110</td>
<td>Intro to Philosophical Problems</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 220</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 130</td>
<td>History of Theatre</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 238</td>
<td>Teatro Chicano</td>
<td>3</td>
</tr>
</tbody>
</table>

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)
PROGRAM REQUIREMENTS (33 hrs)

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 69
This program is designed to prepare you to become a Substance Abuse Counselor.

**GENERAL EDUCATION (25 hrs)**

**Communications (6 hrs)**

ENG 111 English Composition I (3)

Choose one of the following:

- ENG 112 English Composition II (3)
- SPCH 130 Public Speaking (3)

**Humanities (3 hrs)**

Elective (3)

**Math/Computer/Lab Sciences (7 hrs)**

Choose one of the following two BIOL courses:

- BIOL 110 Survey of Modern Biology (3)
- BIOL 110L Survey-Modern Biology Lab (1)

or

- BIOL 201 Principles of Molecular and Cell Biology (3)
- BIOL 201L Principles of Molecular and Cell Biology Lab (1)

Choose one of the following:

- CS 102 Computer Literacy (3)
- MATH 145 Introduction to Probability and Statistics (3)

**Social/Behavioral Sciences (9 hrs)**

ANTH 102 Introduction to Social and Cultural Anthropology (3)

PSY 105 General Psychology (3)

SOC 101 Introduction to Sociology (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS (39 hrs)**

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** 65
The Department of Computers and Engineering Technology provides a Bachelor of Science degree in Information Technology, as well as associate degrees and certificate programs in Computer Science and Technology, Drafting and Machine Technology, Electronics and Computer Engineering Technology, Auto Body Repair, and Welding Technology.

Because the mission of this department is to provide job-ready programs as well as enable its students to transfer courses to four-year colleges and universities, we can say that almost all General Education courses required to satisfy degree requirements should transfer to four-year institutions, but we cannot say that all of the program-specific courses will transfer.

Bachelor of Science in INFORMATION TECHNOLOGY: Applied Networking
11.0401

This degree is designed to produce graduates who possess the right combination of knowledge and practical, hands-on expertise to take care of both an organization’s information technology infrastructure and the people who use it. IT specialists assume responsibility for selecting hardware and software products appropriate for an organization, integrating those products with organizational needs and infrastructure, and installing, customizing, and maintaining those applications for the organization’s computer users.

As a graduate, you will be able to evaluate existing networks and computing systems, suggest improvements, monitor for faults, and plan for growth. You will achieve a level of specialization in networking that goes beyond that provided by typical information technology programs. You will be provided more courses and greater depth in networking than commonly available.

If you wish to be admitted into this program and take upper-division courses under the advisement of an IT faculty advisor, you must comply with the following requirements:

- Submit a one-page, typed letter of intent requesting admission to the program. You should talk about why you want to become an IT professional.
- Demonstrate that you have completed the following courses with a minimum GPA of 2.50: IT 101, 110, 130, 150, 160; MATH 145, 150, and 155; CS 105 and 142; and ENG 111.
- Prove a satisfactory proficiency level by passing a department proficiency exam over the material in the courses listed above.
- Demonstrate a minimum cumulative GPA of 2.0.

GENERAL EDUCATION (43 hrs)
Communications (9 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Humanities (9)
PHIL 220 Ethics (3)

Electives (6)

Mathematics (11)
MATH 145 Introduction to Probability and Statistics (3)
MATH 160 College Algebra and Trigonometry (4) *
*MAY SUBSTITUTE MATH 150 AND 155
MATH 162 Calculus I (4)
Laboratory Science (8 hrs)
PHYS 121  Applied Physics I (3)
PHYS 121L  Applied Physics I Lab (1)
PHYS 122  Applied Physics II (3)
PHYS 122L  Applied Physics II Lab (1)

Social/Behavioral Sciences (6 hrs)
ECON 200  Macroeconomics (3)
SOC 211  Small Group Communications Studies (3)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

PROGRAM CORE REQUIREMENTS (49 hrs)
CS 105  Introduction to Databases (3)
CS 142  Computer Science I (3)
CS 170  Math for Computer Science (3)
CS 210  Database Design and Programming (3)
CS 242  Computer Science II (3)
ECET 130  Microcomputer Systems I (3)
ECET 130L  Microcomputer Systems I Lab (1)
IT 101  IT Fundamentals (3)
IT 110  Introduction to IT Lab (2)
IT 130  Networking Fundamentals (3)
IT 150  Unix OS and Scripting (4)
IT 160  Computer Architecture and Operating Systems (4)
IT 210  IT Systems (4)
IT 220  Network and Server Software (4)
IT 250  Web Systems (3)
ENG 300  Professional Communications (3)

MAJOR REQUIREMENTS (21 hrs)
IT 330  Networking (3)
IT 350  Database Management (3)
IT 370  Human Computer Interaction (3)
IT 410  Information Assurance and Security (3)
IT 480  IT Capstone I (3)
IT 481  IT Capstone II (3)
IT 490  Professional Ethics (3)

NETWORKING EMPHASIS Minor (15)
Electives: Choose 15 hrs from the following networking elective courses:
IT 341  Distributed Systems (3)
IT 342  Wireless and Mobile Computing (3)
IT 343  Cluster Computing (3)
IT 440  Advanced Computer Networks (3)
IT 445  Advanced Network Security (3)
IT 446  Enterprise Networking (3)
IT 447  Routing and Switching (3)

TOTAL CREDITS 129
# Course Sequencing

## Year 1

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECET-130/L Microcomputer Sys I /Lab</td>
<td>CS-142 Computer Science 1</td>
</tr>
<tr>
<td>IT-110 Intro to IT Lab</td>
<td>IT-130 Networking Fundamentals</td>
</tr>
<tr>
<td>IT-101 IT Fundamentals</td>
<td>IT-150 Unix OS and Scripting</td>
</tr>
<tr>
<td>MATH-145 Intro to Prob. &amp; Statistics</td>
<td>MATH-160 College Algebra &amp; Trigonometry</td>
</tr>
<tr>
<td>ENG-111 English Composition</td>
<td>CS-105 Introduction to Databases</td>
</tr>
<tr>
<td>HPER-XXX Health, Physical Ed. or Rec.</td>
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## Year 2

<table>
<thead>
<tr>
<th>First Semester</th>
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<tbody>
<tr>
<td>IT-160 Computer Architecture and OS</td>
<td>IT-220 Network and Server Software</td>
</tr>
<tr>
<td>IT-210 IT Systems</td>
<td>IT-250 Web Systems</td>
</tr>
<tr>
<td>CS-170 Math for Computer Science</td>
<td>CS-242 Computer Science 2</td>
</tr>
<tr>
<td>PHYS-121/L Applied Physics 1/Lab</td>
<td>PHYS-122/L Applied Physics 2/Lab</td>
</tr>
<tr>
<td>ENG-116 Technical Writing</td>
<td>CS-210 Database Design &amp; Programming</td>
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## Year 3

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<tbody>
<tr>
<td>IT-330 Networking</td>
<td>IT-370 Human Computer Interaction</td>
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<tr>
<td>IT-350 Database Management</td>
<td>IT-XXX Major Concentration Electives</td>
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<tr>
<td>MATH-162 Calculus 1</td>
<td>ECON-200 Macroeconomics</td>
</tr>
<tr>
<td>PHIL-220 Ethics</td>
<td>SPCH-130 Public Speaking</td>
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<tr>
<td>ENG-300 Professional Communication</td>
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## Year 4

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<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-410 Inform. Assurance &amp; Security</td>
<td>IT-490 Professional Ethics</td>
</tr>
<tr>
<td>IT-480 IT Capstone I</td>
<td>IT-481 IT Capstone II</td>
</tr>
<tr>
<td>IT-XXX Major Concentration Electives</td>
<td>IT-XXX Major Concentration Elective</td>
</tr>
<tr>
<td>SOC-211 Small Group Communication</td>
<td>Humanities/Social Science Elect.</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Total Credits Required 129**
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 (22 hrs)**

**Communications (6 hrs)**

- 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)

**Humanities (3 hrs)**

- PHIL 220 Ethics (3)

**Math/Computer/Lab Sciences (10 hrs)**

- CS 102 Computer Literacy (3)
- BA 117 Business Math (3)
- CHEM 110 Introduction to Chemistry (3)
- CHEM 110L Introduction to Chemistry Lab (1)

**Social/Behavioral Sciences (3 hrs)**

- PSY or SOC Elective - approved by advisor (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)**

- Electives (2)

**PROGRAM REQUIREMENTS (40 hrs)**

Choose one of the following concentrations:

**Refinishing (40 hrs)**

- ABR 110 Introduction to Auto Body Repair (4)
- ABR 111 Metal Work I (4)
- ABR 112 Refinishing I (5)
- ABR 120 Body Welding Methods (4)
- ABR 212 Refinishing II (5)
- ABR 214 Refinishing III (5)

Approved Electives - 13 credit hours of other ABR course work.

**Non-structural Analysis and Damage Repair (40 hrs)**

- ABR 110 Introduction to Auto Body Repair (4)
- ABR 111 Metal Work I (4)
- ABR 112 Refinishing I (5)
- ABR 114 Unitized Body Repair (5)
- ABR 120 Body Welding Methods (4)
- ABR 211 Metal Work II (4)
- ABR 213 Metal Work III (4)

Approved Electives - 10 credit hours of other ABR course work.

**Estimation of Body Repair (40 hrs)**

- ABR 110 Introduction to Auto Body Repair (4)
- ABR 111 Metal Work I (4)
- ABR 112 Refinishing I (5)
- ABR 115 Estimation of Auto Body Repair (4)
- ABR 120 Body Welding Methods (4)
- ABR 215 Software Applications (3)

Approved Electives - 16 credit hours of other ABR course work.

**TOTAL CREDIT HOURS 64**
Certificate
AUTO BODY REPAIR - REFINISHING
47.0608

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

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or higher level math course (3) or BA 117 (3)

PROGRAM REQUIREMENTS (23 hrs)
ABR 110 Introduction to Auto Body Repair (4)
ABR 111 Metal Work I (4)
ABR 112 Refinishing I (5)
ABR 212 Refinishing II (5)
ABR 214 Refinishing III (5)

TOTAL CREDITS HOURS 29-32
Certificate
AUTO BODY REPAIR - NON-STRUCTURAL ANALYSIS AND DAMAGE
47.0607

This program will prepare you with the skills needed to specialize in the area of non-structural analysis and damage repair.

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or higher level math course (3) or BA 117 (3)

PROGRAM REQUIREMENTS (30 hrs)
ABR 110 Introduction to Auto Body Repair (4)
ABR 111 Metal Work I (4)
ABR 112 Refinishing I (5)
ABR 114 Unitized Body Repair (5)
ABR 120 Body Welding Methods (4)
ABR 211 Metal Work II (4)
ABR 213 Metal Work III (4)

TOTAL CREDITS HOURS 36-39
Certificate
ESTIMATION OF AUTO BODY REPAIR
47.0606

This program will prepare you with the skills needed to specialize in the area of estimating auto body repair.

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or higher level math course (3) or BA 117 (3)

PROGRAM REQUIREMENTS (20 hrs.)
ABR 110 Introduction to Auto Body Repair (4)
ABR 111 Metal Work I (4)
ABR 112 Refinishing I (5)
ABR 115 Estimation of Auto Body Repair (4)
ABR 215 Software Applications (3)

TOTAL CREDITS HOURS 26-29
When you successfully complete this program you will be prepared for entry level CAD positions in engineering, architectural, construction, or surveying firms.

**GENERAL EDUCATION (21-22 hrs.)**

**Communications (6 hrs)**

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)

**Humanities (3 hrs)**

Elective (3)

**Math/Computer/Lab Sciences (9-10 hrs)**

CS 102 Computer Literacy (3)

MATH 130 Intermediate Algebra (3)

Elective: ENGR 110 or PHYS 110 and PHYS 110L, or PHYS 121 and PHYS 121L, or other approved math, science, or engineering courses (3-4)

**Social/Behavioral Sciences (3 hrs)**

Elective (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Electives (1)

**PROGRAM REQUIREMENTS**

**General Drafting (42 crs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRFT 100</td>
<td>Computer Aided Drafting I (4)</td>
<td></td>
</tr>
<tr>
<td>DRFT 101</td>
<td>Residential CAD I (4)</td>
<td></td>
</tr>
<tr>
<td>DRFT 102</td>
<td>Mechanical Engineering CAD I (4)</td>
<td></td>
</tr>
<tr>
<td>DRFT 103</td>
<td>Surveying and CAD Mapping I (4)</td>
<td></td>
</tr>
<tr>
<td>DRFT 111</td>
<td>Commercial Building CAD (4)</td>
<td></td>
</tr>
<tr>
<td>DRFT 112</td>
<td>Mechanical Engineering CAD II (4)</td>
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<tr>
<td>DRFT 113</td>
<td>Surveying and CAD Mapping II (4)</td>
<td></td>
</tr>
<tr>
<td>DRFT 199</td>
<td>How to Get a Job (1)</td>
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<tr>
<td>DRFT 209</td>
<td>Computer Aided Drafting II (3)</td>
<td></td>
</tr>
</tbody>
</table>

Choose two of the following three courses:

- DRFT 201 Residential CAD II (4)
- DRFT 202 Mechanical Engineering CAD III (4)
- DRFT 203 Civil Engineering CAD (4)

Electives (2 crs): Choose from DRFT, CONS, VC, ENGR, ECET, CT/CS/IT, PHYS, or WELD.

**TOTAL CREDIT HOURS** 64-65
When you successfully complete this program you will be prepared for entry level CAD positions in engineering, architectural, construction, or surveying firms.

GENERAL EDUCATION (21-22 hrs.)
Communications (6 hrs)
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)

Humanities (3 hrs)
Elective (3)

Math/Computer/Lab Sciences (9-10 hrs)
CS 102 Computer Literacy (3)
MATH 130 Intermediate Algebra (3)
Elective: ENGR 110 or PHYS 110 and PHYS 110L, or PHYS 121 and PHYS 121L, or other approved math, science, or engineering courses (3-4)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

PROGRAM REQUIREMENTS
Mechanical/Electronics (42 crs)
DRFT 100 Computer Aided Drafting I (4)
DRFT 102 Mechanical Engineering CAD I (4)
DRFT 112 Mechanical Engineering CAD II (4)
DRFT 132 Printed Circuit Board Design (4)
DRFT 199 How to Get a Job (1)
DRFT 202 Mechanical Engineering CAD III (4)
DRFT 209 Computer Aided Drafting II (3)
DRFT 122 Geometric Dimensioning & Tolerancing (3)
DRFT 215 Computer Aided Machining I (3)
DRFT 238 3-D Mechanical Modeling (2)
ECET 100 Introduction to Electronics (3)
ECET 100L Introduction to Electronics Lab (1)
Electives (6 hrs): Choose from DRFT, VC, ENGR, ECET, CT/CS/IT, PHYS, or WELD

TOTAL CREDIT HOURS 64-65
When you successfully complete this program you will be prepared for entry level CAD positions in engineering, architectural, construction, or surveying firms.

**GENERAL EDUCATION (22 hrs.)**

**Communications (6 hrs)**

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II</td>
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</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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</tbody>
</table>

**Humanities (3 hrs)**

Elective (3)

**Math/Computer/Lab Sciences (9-10 hrs)**

<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>MATH 130</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective: ENGR 110 or PHYS 110 and PHYS 110L, or PHYS 121 and PHYS 121L, or other approved math, science, or engineering courses (3-4)

**Social/Behavioral Sciences (3 hrs)**

Elective (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Electives (1)

**PROGRAM REQUIREMENTS**

**Architectural/Civil (42 crs)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRFT 100</td>
<td>Computer Aided Drafting I</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 101</td>
<td>Residential CAD I</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 103</td>
<td>Surveying and CAD Mapping I</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 110</td>
<td>GIS/GPS</td>
<td>3</td>
</tr>
<tr>
<td>DRFT 111</td>
<td>Commercial Building CAD</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 113</td>
<td>Surveying and CAD Mapping II</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 199</td>
<td>How to Get a Job</td>
<td>1</td>
</tr>
<tr>
<td>DRFT 201</td>
<td>Residential CAD II</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 203</td>
<td>Civil Engineering CAD</td>
<td>4</td>
</tr>
<tr>
<td>DRFT 209</td>
<td>Computer Aided Drafting II</td>
<td>3</td>
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</table>

Elective: (3): Choose CONS 206 or CONS 207

**TOTAL CREDITS** 64-65
Certificate
ARCHITECTURAL DRAFTING
48.0108

This program prepares you for entry-level positions in architectural drafting. You will be skilled in both manual and computer-aided drafting.

GENERAL EDUCATION (9 hrs)
Communications (3 hrs)
ENG 109N Basic English II (3) or a higher level course

Math/Computer/Lab Sciences (6 hrs)
MATH 102 Basic Algebra (3)
CS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (27 hrs.)
DRFT 100 Computer Aided Drafting I (4)
DRFT 101 Residential CAD I (4)
DRFT 103 Surveying and CAD Mapping I (4)
DRFT 111 Commercial Building CAD (4)
DRFT 199 How to Get a Job (1)
DRFT 201 Residential CAD II (4)
DRFT 209 Computer Aided Drafting II (3)
Elective (3): Choose CONS 206 or CONS 207:

TOTAL CREDIT HOURS 36
Certificate
CIVIL ENGINEERING CAD
48.0110

This program prepares you for entry-level positions in civil engineering firms.

GENERAL EDUCATION (9 hrs)
Communications (3 hrs)
ENG 109N Basic English II (3) or a higher level course

Math/Computer/Lab Sciences (6 hrs)
MATH 102 Basic Algebra (3)
CS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (27 hrs.)
DRFT 100 Computer Aided Drafting I (4)
DRFT 101 Residential CAD I (4)
DRFT 103 Surveying and CAD Mapping I (4)
DRFT 113 Surveying and CAD Mapping II (4)
DRFT 199 How to Get a Job (1)
DRFT 203 Civil Engineering Drafting (4)
DRFT 209 Computer Aided Drafting II (3)
Elective (3) Choose CONS 206 or CONS 207

TOTAL CREDITS 36
Certificate
ENGINEERING CAD
48.0111

This program prepares you for entry-level CAD positions in machine drafting.

GENERAL EDUCATION (9 hrs)
Communications (3 hrs)
ENG 109N Basic English II (3) or a higher level course

Math/Computer/Lab Sciences (6 hrs)
MATH 102 Basic Algebra (3)
CS 102 Computer Literacy (3)

PROGRAM REQUIREMENTS (26 hrs.)
DRFT 100 Computer Aided Drafting I (4)
DRFT 102 Mechanical Engineering CAD I (4)
DRFT 112 Mechanical Engineering CAD II (4)
DRFT 122 Geometric Dimensioning & Tolerancing (3)
DRFT 199 How to Get a Job (1)
DRFT 202 Engineering Graphics III using CAD (4)
DRFT 209 Computer Aided Drafting II (3)
DRFT 215 Computer Aided Machining I (3)

TOTAL CREDITS 35
This degree program is designed to prepare you for entry-level positions as a programmer, applications specialist or transfer to a four-year college or university. The curriculum emphasizes the fundamental principles needed for success as a computer programmer. Many of the CS degree requirements articulate with the Bachelor of Science in Information Technology degree.

**GENERAL EDUCATION (23 hrs)**

**Communications (9 hrs)**

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

**Humanities (3 hrs)**

Electives (3)

**Mathematics (8 hrs)**

MATH 160 College Algebra and Trigonometry (4) *
* May substitute MATH 150 and 155.
MATH 162 Calculus I (4)

**Social/Behavioral Sciences (3 hrs)**

Elective (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Electives, including DANC (1)

**PROGRAM REQUIREMENTS (41-43 hrs)**

*Pre-requisites for entry to this program include CS 102, and ENG 109N and MATH 102N, or adequate scores on the Course Placement Evaluation.*

CS 105 Introduction to Databases (3)
CS 132 Introduction to Programming (3)
CS 142 Computer Science I (3)
CS 170 Mathematics for Computer Science (3)
CS 210 Database Design & Programming (3)
CS 242 Computer Science II (3)
CS 295 Computer Science Project (3)
ECET 130 Microcomputer Systems I (3)
ECET 130L Microcomputer Systems I Lab (1)

**Elective: Choose 16-18 hrs from the following courses:**

CS 167 C Programming (3)
CS 200 C++ Programming (3)
CS 220 Advanced Java (3)
CS 280 GUI/Windows Programming (3)
CT 200 Advanced Web Page Techniques (3)
CT 205 Database Web Applications (3)
IT 130 Networking Fundamentals (3)
IT 150 Unix OS and Scripting (4)

Choose up to 4 hours from:

ECET 100/L Intro. to Electronics with lab (4)
ECET 115/L Digital Fundamentals with lab (5)
ECET 230/L Microcomputer Systems II with lab (4)

**TOTAL CREDIT HOURS** 65-69
Associate of Applied Science
COMPUTER SCIENCE
11.0101

Recommended Course Sequence

First Semester (Fall)  
ENG 111 (3)  
Hum/SS Elective (3)  
HPER Elective (1)  
ECET 130/130L (4)  
CS 132 (3)  

Second Semester (Spring)  
ENG 116 (3)  
MATH 150 (3)  
CS 142 (3)  
CS 170 (3)  
Program Elective (2-3)

Third Semester (Fall)  
SPCH 130 (3)  
Hum/SS Elective (3)  
MATH 155 (3)  
CS 242 (3)  
CS 210 or CT 205 (3)  
Program Elective (3)  

Fourth Semester (Spring)  
MATH 162 (4)  
CS 295 (3)  
Program Electives (9-10)
This degree program is designed to create or enhance the skill set required to configure and maintain Microsoft or Linux networking systems. The program prepares you for entry-level positions in desktop or network support. The curriculum offers a comprehensive program if you want to be involved in the support and maintenance of interconnected computers and want to learn in a hands-on workshop environment with real-time activities. Most of the CS degree requirements articulate with the Bachelor of Science in Information Technology degree.

Your advisors for this program are
Michael Maddex, 747-2264, or michaelm@nnmc.edu

GENERAL EDUCATION (19 hrs)
Communications (9 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Electives (3)

Mathematics (4 hrs)
MATH 160 College Algebra/Trigonometry (4) *
* May substitute MATH 150 and 155

Social/Behavioral Sciences (3 hrs)
Electives (3)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives, including DANC (1)

PROGRAM REQUIREMENTS (48 -50 hrs)
Pre-requisites for entry to this program include CS 102, and ENG 109N and MATH 102N, or adequate scores on the Course Placement Evaluation.

CS 105 Introduction to Databases (3)
CS 132 Introduction to Programming (3)
CS 142 Computer Science I (3)
IT 130 Networking Fundamentals (3)
IT 150 UNIX OS and Scripting (4)
IT 220 Network and Server Software (4)
CT 230 Network Security (3)
CT 280 Networking Team Project (3)
ECET 130 Microcomputer Systems I (3)
ECET 130L Microcomputer Systems I Lab (1)
ECET 230 Microcomputer Systems II (3)
ECET 230L Microcomputer Systems II Lab (1)

Electives : Choose 12-14 hrs from the following courses:
CS XXX One programming courses chosen from
CS 167, 200, 220, 242, or 280
CS 210 Database Design and Programming (4)
CS 242 Computer Science II (3)
CT 115 Introduction to Web Technology (2)
CT 150 Web Programming (2)
CT 205 Database Web Applications (3)
CT 295 Computer Technology Project (3)
ECET 100/L Introduction to Electronics with Lab (4)
ECET 115/L Digital Fundamentals with Lab (5)
IT 101 IT Fundamentals (3)
IT 110 Introduction to IT Lab (2)
IT 160 Computer Architecture and Operating Systems (4)
IT 210 Information Technology Systems (4)
IT 250 Web Systems (3)

TOTAL CREDIT HOURS 68-70

Recommended Course Sequence

First Semester (Fall)    Second Semester (Spring)
ENG 111 (3)            ENG 116 (3)
Hum/SS Elective (3)    MATH 150 (3)
CS 105 (3)            CS 142 (3)
ECET 130/130L (4)    IT 150 (4)
CS 132 (3)            IT 130 (3)
HPER Elective (1)

Third Semester (Fall)    Fourth Semester (Spring)
SPCH 130 (3)            CT 230 (3)
Hum/SS Elective (3)    CT 280 (3)
ECET 230/230L (4)    Program Electives (7-8)
CT 220 (3)
Program Elective (1-3)
This program is designed to provide training for entry level positions as web administrators or programmers with a Web Site Hosting business or a local Internet Service Provider. Web administrators manage web databases and services, collect and maintain end-user information, evaluate website effectiveness, and ensure web security. Web programmers write CGI scripts and other programs for incorporation into the web site. Many of these degree requirements articulate with the Bachelor of Science in Information Technology degree.

### GENERAL EDUCATION (19 hrs)

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

**Humanities (3 hrs)**
- Electives (3)

**Mathematics (4 hrs)**
- MATH 160 College Algebra/Trigonometry (4) *
  * May substitute MATH 150 and 155

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

### HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
- Electives, including DANC (1)

### PROGRAM REQUIREMENTS (49-50 hrs)

*Pre-requisites for entry to this program include CS 102, and ENG 109N and MATH 102N, or adequate scores on the Course Placement Evaluation.*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 105</td>
<td>Introduction to Databases</td>
<td>3</td>
</tr>
<tr>
<td>CS 132</td>
<td>Introduction to Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 142</td>
<td>Computer Science I</td>
<td>3</td>
</tr>
<tr>
<td>IT 130</td>
<td>Networking Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>IT 150</td>
<td>UNIX OS and Scripting</td>
<td>4</td>
</tr>
<tr>
<td>IT 220</td>
<td>Network and Server Software</td>
<td>4</td>
</tr>
<tr>
<td>CT 115</td>
<td>Introduction to Web Technology</td>
<td>2</td>
</tr>
<tr>
<td>CT 150</td>
<td>Web Programming</td>
<td>2</td>
</tr>
<tr>
<td>CT 200</td>
<td>Advanced Web Page Techniques</td>
<td>3</td>
</tr>
<tr>
<td>CT 205</td>
<td>Databases Web Applications</td>
<td>3</td>
</tr>
<tr>
<td>CT 215</td>
<td>Server Software</td>
<td>3</td>
</tr>
<tr>
<td>CT 290</td>
<td>Web Team Project</td>
<td>3</td>
</tr>
<tr>
<td>ECET 130</td>
<td>Microcomputer Systems I</td>
<td>3</td>
</tr>
<tr>
<td>ECET 130L</td>
<td>Microcomputer Systems I Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

**Electives: Choose 12-13 hrs from the following 9 courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS XXX</td>
<td>One programming course chosen from</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS 167, 200, 220, 242, or 280</td>
<td></td>
</tr>
<tr>
<td>CS 210</td>
<td>Database Design and Programming</td>
<td>4</td>
</tr>
<tr>
<td>CT/VC 175</td>
<td>Internet Publications I</td>
<td>4</td>
</tr>
<tr>
<td>CT 220</td>
<td>Networking with Microsoft</td>
<td>3</td>
</tr>
<tr>
<td>CT 295</td>
<td>Computer Technology Project</td>
<td>3</td>
</tr>
<tr>
<td>CT 230</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ECET 230</td>
<td>Microcomputer Systems II</td>
<td>3</td>
</tr>
<tr>
<td>ECET 230L</td>
<td>Microcomputer Sys II Lab</td>
<td>3</td>
</tr>
</tbody>
</table>
IT 101  IT Fundamentals (3)
IT 110  Introduction to IT Lab (2)
IT 160  Computer Architecture and Operating Systems (4)
IT 210  Information Technology Systems (4)
IT 250  Web Systems (3)

TOTAL CREDIT HOURS 69-70

Recommended Course Sequence

First Semester (Fall)  Second Semester (Spring)
ENG 111 (3)  ENG 116 (3)
ECET 130/130L (4)  MATH 150 (3)
CT 175 (4)  CS 132 (3)
CT 115 (3)  IT 130 (3)
CS 105 (3)  IT 150 (4)
HPER Elective (1)

Third Semester (Fall)  Fourth Semester (Spring)
SPCH 130 (3)  Program Electives (6-8)
Hum/SS Elective (3)  Hum/SS Elective (3)
CS 142 (3)  IT 220 (4)
CS 150 (2)  CT 200 (3)
CT 205 (3)  CT 290 (3)
Program Elective (3-4)
This degree program is designed to provide training for entry-level positions as a web designer or content provider with a Web Site Design or Web Management business. Web designers create the images and define the “look” of the site. Content providers work on the data itself: creating or editing HTML documents, incorporating images and forms, and maintaining the integrity of the links. Web designers are proficient in design principles, scripting languages, animation software, computer technology, and business essentials. Many of these degree requirements articulate with the Bachelor of Science in Information Technology degree.

**GENERAL EDUCATION (18 hrs)**

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

**Humanities (3 hrs)**
Electives (3)

**Mathematics (3 hrs)**
- MATH 150 College Algebra (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
Electives, including DANC (1)

**PROGRAM REQUIREMENTS (48-49 hrs)**
Pre-requisites for entry to this program include CS 102, and ENG 109N and MATH 102N, or adequate scores on the Course Placement Evaluation.

- CS 105 Introduction to Databases (3)
- CS 132 Introduction to Programming (3)
- CT 115 Introduction to Web Technology (2)
- CT/VC 175 Internet Publications I (4)
- CT 150 Web Programming (2)
- CT 200 Advanced Web Page Techniques (3)
- CT 205 Database Web Applications (3)
- CT 290 Web Team Project (3)
- ECET 130 Microcomputer Systems I (3)
- ECET 130L Microcomputer Systems I Lab (1)
- VC 280 Design History (3)

Choose at least 15 hours from the following courses:

- CS 142 Computer Science I (3)
- CT 135 Web Page Animation (3)
- CT/BA 140 e-Commerce (3)
- IT 130 Networking Fundamentals (3)
- IT 150 UNIX OS and Scripting (4)
- IT 220 Network and Server Software (4)
- CT 215 Server Software (3)
- VC 110* Found. of Visualization (3)
- VC 111* 2-D Computer Visualization (4)

* ART 122 and 125 may substitute for the VC 110 and 111 sequence.

Choose 3-4 hours from the following courses:

- CS XXX One computer programming course from CS 167, 200, 220, 242, or 280
Recommended Course Sequence

First Semester (Fall)          Second Semester (Spring)
ENG 111 (3)                   ENG 116 (3)
Hum/SS Elective (3)           CT 175 (4)
ECET 130/130L (4)             Program Electives (9-12)
CS 105 (3)                    CS 132 (3)
CT 115 (2)                    CT 200 (3)
HPER Elective (1)             Program Elective (7-8)

Third Semester (Fall)         Fourth Semester (Spring)
SPCH 130 (3)                  Program Electives (10-12)
Hum/SS Elective (3)           CT 290 (3)
CT 205 (3)                    VC 280 (3)
Program Elective (7-8)        VC 280 (3)
This program offers three areas of concentration: electronics, computer electronics, and semiconductor manufacturing technology. The program core requirements provide a general education background in basic electronics. Both the electronics and computer electronics curricula prepare you to be an electronic equipment technician. The computer electronics concentration prepares you to work on microprocessor-based electronic equipment as well as personal computers. Both degree concentrations articulate with NMSU’s Engineering Technology in Electronics bachelor program. The semiconductor manufacturing technology (SMT) curriculum prepares you to work in the semiconductor manufacturing industry. Northern is a partner college in SMT with the Intel Corporation.

Placement scores which allow you to enroll in ENG 111 and MATH 130 are required for entrance into the degree program (ECET courses above ECET 100). You must also demonstrate computer literacy or have completed CS 102.

GENERAL EDUCATION (26 hrs)
Communications (6 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (14 hrs)
MATH 150 College Algebra (3)
MATH 155 Trigonometry (3)
PHYS 121 Applied Physics I (3)
PHYS 121L Applied Physics I Lab (1)
PHYS 122 Applied Physics II (3)
PHYS 122L Applied Physics II Lab (1)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

PROGRAM CORE REQUIREMENTS (23 hrs)
ECET 100 Introduction to Electronics (3)
ECET 100L Introduction to Electronics Lab (1)
ECET 110 Electronic I (3)
ECET 110L Electronics I Lab (2)
ECET 111 AC Circuits Analysis (3)
ECET 111L AC Circuits Analysis Lab (1)
ECET 115 Digital Fundamentals (3)
ECET 115L Digital Fundamentals Lab (2)
ECET 150 Electromechanical Devices (3)
ECET 150L Electromechanical Devices Lab (2)

PROGRAM CONCENTRATION
Electronics (20-21 hrs)
ECET 130 Microcomputer Systems (3)
ECET 130L Microcomputer Systems Lab (1)
ECET 213 Digital Systems I (3)
ECET 213L Digital Systems I Lab (2)

**Electives Choose 11-12 hours from the following:**

- EPDT 110 Printed Circuit Board Design (4)
- ECET 210 Electronics Systems (3)
- ECET 210L Electronics Systems Lab (2)
- ECET 250 Electromechanical Systems (2)
- ECET 250L Electromechanical Sys Lab (2)
- ECET 295 Electronics Project (3)

Any program advisor-approved ECET, EPDT, SMT, or ENGR course.

**TOTAL CREDITS** 70-71
This program offers three areas of concentration: electronics, computer electronics, and semiconductor manufacturing technology. The program core requirements provide a general education background in basic electronics. Both the electronics and computer electronics curricula prepare you to be an electronic equipment technician. The computer electronics concentration prepares you to work on microprocessor-based electronic equipment as well as personal computers. Both degree concentrations articulate with NMSU’s Engineering Technology in Electronics bachelor program. The semiconductor manufacturing technology (SMT) curriculum prepares you to work in the semiconductor manufacturing industry. Northern is a partner college in SMT with the Intel Corporation.

Placement scores which allow you to enroll in ENG 111 and MATH 130 are required for entrance into the degree program (ECET courses above ECET 100). You must also demonstrate computer literacy or have completed CS 102.

GENERAL EDUCATION (26 hrs)
Communications (6 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (14 hrs)
MATH 150 College Algebra (3)
MATH 155 Trigonometry (3)
PHYS 121 Applied Physics I (3)
PHYS 121L Applied Physics I Lab (1)
PHYS 122 Applied Physics II (3)
PHYS 122L Applied Physics II Lab (1)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

PROGRAM CORE REQUIREMENTS (23 hrs)
ECET 100 Introduction to Electronics (3)
ECET 100L Introduction to Electronics Lab (1)
ECET 110 Electronic I (3)
ECET 110L Electronics I Lab (2)
ECET 111 AC Circuits Analysis (3)
ECET 111L AC Circuits Analysis Lab (1)
ECET 115 Digital Fundamentals (3)
ECET 115L Digital Fundamentals Lab (2)
ECET 150 Electromechanical Devices (3)
ECET 150L Electromechanical Devices Lab (2)

PROGRAM CONCENTRATION
Computer Electronics (20-21 hrs)
ECET 130 Microcomputer Systems (3)
ECET 130L Microcomputer Systems Lab (1)
ECET 213 Digital Systems I (3)
ECET 213L Digital Systems I Lab (2)
ECET 215 Digital Systems II (3)
ECET 215L  Digital Systems II Lab (2)
ECET 230  Microcomputer Systems II (3)
ECET 230L  Microcomputer Systems II Lab (1)
Any program advisor-approved ECET, EPDT, SMT, or ENGR course.

TOTAL CREDITS  70-71
Associate of Applied Science

ELECTRONICS/COMPUTER ENGINEERING TECHNOLOGY
— Semiconductor Manufacturing Technology

This program offers three areas of concentration: electronics, computer electronics, and semiconductor manufacturing technology. The program core requirements provide a general education background in basic electronics. Both the electronics and computer electronics curricula prepare you to be an electronic equipment technician. The computer electronics concentration prepares you to work on microprocessor-based electronic equipment as well as personal computers. Both degree concentrations articulate with NMSU’s Engineering Technology in Electronics bachelor program.

The semiconductor manufacturing technology (SMT) curriculum prepares you to work in the semiconductor manufacturing industry. Northern is a partner college in SMT with the Intel Corporation.

Placement scores which allow you to enroll in ENG 111 and MATH 130 are required for entrance into the degree program (ECET courses above ECET 100). You must also demonstrate computer literacy or have completed CS 102.

GENERAL EDUCATION (26 hrs)

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

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (14 hrs)
MATH 150 College Algebra (3)
MATH 155 Trigonometry (3)
PHYS 121 Applied Physics I (3)
PHYS 121L Applied Physics I Lab (1)
PHYS 122 Applied Physics II (3)
PHYS 122L Applied Physics II Lab (1)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

PROGRAM CORE REQUIREMENTS (23 hrs)
ECET 100 Introduction to Electronics (3)
ECET 100L Introduction to Electronics Lab (1)
ECET 110 Electronic I (3)
ECET 110L Electronics I Lab (2)
ECET 111 AC Circuits Analysis (3)
ECET 111L AC Circuits Analysis Lab (1)
ECET 115 Digital Fundamentals (3)
ECET 115L Digital Fundamentals Lab (2)
ECET 150 Electromechanical Devices (3)
ECET 150L Electromechanical Devices Lab (2)

PROGRAM CONCENTRATION

Semiconductor Manufacturing (21 hrs)
CHEM 121 General Chemistry I (3)
CHEM 121L General Chemistry I Lab (1)
ECET 165 Vacuum, RF-Power, & Pneumatics (3)
ECET 165L Vacuum, RF-Power, & Pneumatics Lab (1)
ECET 250  Electromechanical Systems (2)
ECET 250L  Electromechanical Systems Lab (2)
ECET 260  Statistical Process Controls (3)
SMT 100  Semiconductor Manufacturing Technology I (2)
SMT 100L  Semiconductor Manufacturing Technology I Lab (1)
SMT 200  Semiconductor Manufacturing Technology II (2)
SMT 200L  Semiconductor Manufacturing Technology II Lab (1)

TOTAL CREDIT HOURS  70-71

Recommended Course Sequence

<table>
<thead>
<tr>
<th>First Semester (Fall)</th>
<th>Second Semester (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 (3)</td>
<td>ENG 116 (3)</td>
</tr>
<tr>
<td>ECET 100/100L (4)</td>
<td>MATH 155 (3)</td>
</tr>
<tr>
<td>ECET 115/115L (5)</td>
<td>ECET 110/110L (5)</td>
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<tr>
<td>MATH 150 (3)</td>
<td>ECET 111/111L (4)</td>
</tr>
<tr>
<td>HPER Elective (1)</td>
<td>Hum/SS Elective (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester (Fall)</th>
<th>Fourth Semester (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 121/121L (4)</td>
<td>PHYS 122/122L (4)</td>
</tr>
<tr>
<td>ECET 150/150L (5)</td>
<td>Hum/SS Elective (3)</td>
</tr>
<tr>
<td>Program Electives (8-9)</td>
<td>Program Electives (10-11)</td>
</tr>
</tbody>
</table>
Certificate

ELECTRONICS TECHNOLOGY
15.0311

If you have already completed the associate degree in Electronics/Computer Engineering Technology with a concentration in Computer Electronics or Semiconductor Manufacturing, you may earn this certificate by completing the following courses.

Placement scores which allow you to enroll in ENG 111 and MATH 130 are required for entrance into the program (ECET courses above ECET 100). You must also demonstrate computer literacy or have completed CS 102.

PROGRAM REQUIREMENTS 20-21 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECET 130</td>
<td>Microcomputer Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECET 213</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>ECET 210</td>
<td>Electronics Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECET 210L</td>
<td>Electronics Systems Lab</td>
<td>2</td>
</tr>
<tr>
<td>ECET 250</td>
<td>Electromechanical Systems</td>
<td>2</td>
</tr>
<tr>
<td>ECET 250L</td>
<td>Electromechanical Systems Lab</td>
<td>2</td>
</tr>
<tr>
<td>ECET 295</td>
<td>Electronics Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (Choose 11-12 hours from the following):

- EPDT 110 Printed Circuit Board Design (4)
- ECET 210 Electronics Systems (3)
- ECET 210L Electronics Systems Lab (2)
- ECET 250 Electromechanical Systems (2)
- ECET 250L Electromechanical Systems Lab (2)
- ECET 295 Electronics Project (3)

Any program advisor approved ECET, EPDT, SMT, or ENGR course.

TOTAL CREDIT HOURS 20-21
Certificate
COMPUTER ELECTRONICS TECHNOLOGY
15.0312

If you have already completed the associate degree in Electronics/Computer Engineering Technology with a concentration in Electronics Technology or Semiconductor Manufacturing, you may earn this certificate by completing the following courses.

Placement scores which allow you to enroll in ENG 111 and MATH 130 are required for entrance into the program (ECET courses above ECET 100). You must also demonstrate computer literacy or have completed CS 102.

PROGRAM REQUIREMENTS (20-21 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECET 130</td>
<td>Microcomputer Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECET 130L</td>
<td>Microcomputer Systems Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECET 213</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>ECET 213L</td>
<td>Digital Systems I Lab</td>
<td>2</td>
</tr>
<tr>
<td>ECET 215</td>
<td>Digital Systems II</td>
<td>3</td>
</tr>
<tr>
<td>ECET 215L</td>
<td>Digital Systems II Lab</td>
<td>2</td>
</tr>
<tr>
<td>ECET 230</td>
<td>Microcomputer Systems II</td>
<td>3</td>
</tr>
<tr>
<td>ECET 230L</td>
<td>Microcomputer Systems II Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

Any program advisor-approved ECET, EPDT, SMT, or ENGR course.

TOTAL CREDIT HOURS 20-21
Certificate
SEMICONDUCTOR MANUFACTURING TECHNOLOGY
15.0313

If you have already completed the associate degree in Electronics/Computer Engineering Technology with a concentration in Electronics Technology or Computer Electronics Technology, you may earn this certificate by completing the following courses.

Placement scores which allow you to enroll in ENG 111 and MATH 130 are required for entrance into the program (ECET courses above ECET 100). You must also demonstrate computer literacy or have completed CS 102.

PROGRAM REQUIREMENTS (21 hrs.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 121</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 121L</td>
<td>General Chemistry I Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECET 165</td>
<td>Vacuum, RF-Power, &amp; Pneumatics</td>
<td>3</td>
</tr>
<tr>
<td>ECET 165L</td>
<td>Vacuum, RF-Power, &amp; Pneumatics Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECET 250</td>
<td>Electromechanical Systems</td>
<td>2</td>
</tr>
<tr>
<td>ECET 250L</td>
<td>Electromechanical Systems Lab</td>
<td>2</td>
</tr>
<tr>
<td>ECET 260</td>
<td>Statistical Process Controls</td>
<td>3</td>
</tr>
<tr>
<td>SMT 100</td>
<td>Semiconductor Manufacturing Technology I</td>
<td>2</td>
</tr>
<tr>
<td>SMT 100L</td>
<td>Semiconductor Manufacturing Technology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>SMT 200</td>
<td>Semiconductor Manufacturing Technology II</td>
<td>2</td>
</tr>
<tr>
<td>SMT 200L</td>
<td>Semiconductor Manufacturing Technology II Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL CREDIT HOURS 21
This program is designed to provide general entry-level engineering technician skills for employment in an engineering-related field. Although not fully transferable to four-year programs, a considerable portion of this program will transfer to engineering technology programs. If you desire to continue to a four-year institution, you should meet with the receiving institution to determine the specifics of transfer.

**GENERAL EDUCATION (21 hrs)**

**Communication (6 hrs)**
- ENG 111 English Composition I (3)
- ENG 116 Technical Writing (3)

**Humanities (3 hrs)**
- Elective (3)

**Math/Computer/Lab Sciences (9 hrs)**
- CS 102 Computer Literacy (3)
- MATH 150 College Algebra (3)
- MATH 155 Trigonometry (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hrs)**
- Electives (1)

**PROGRAM REQUIREMENTS (42 hrs)**
- ENGR 110 Intro. to Engineering Technology (4)
- DRFT 100 Computer Aided Drafting I (4)
- DRFT 102 Mechanical Engineering CAD (4)
- DRFT 199 How to Get a Job (1)
- PHYS 121 Applied Physics I (3)
- PHYS 121L Applied Physics I Lab (1)
- PHYS 122 Applied Physics II (3)
- PHYS 122L Applied Physics II Lab (1)
- CHEM 110 Introduction to Chemistry (3)
- CHEM 110L Introduction to Chemistry Lab (1)

Electives (17 crs): Any advisor-approved courses from the following disciplines: BIOL, CHEM, CS/IT/CT, DRFT, ECET, ENGR, GEOL, MATH, PHYS, or WELD, or up to six additional electives from the Humanities and/or Social Science disciplines.

**TOTAL CREDIT HOURS** 64
This program is for students who are actively participating in the Machinist Apprenticeship Program.

**GENERAL EDUCATION (18-19 hrs)**

**Communications (6 hrs)**

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)

**Humanities (3 hrs)**

Elective (3)

**Math/Computer/Lab Sciences (6-7 hrs)**

- CS 102 Computer Literacy (3)
- MATH 130 Intermediate Algebra (3)
  
  or

- ENGR 110 Intro to Engineering Technology (4)

**Social/Behavioral Sciences (3 hrs)**

Elective (3)

**HEALTH, PHYSICAL EDUCATION, AND RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS (52 hrs)**

- MT 110 MAP Basic Machining Operations I (2)
- MT 120 MAP Basic Machining Operations II (2)
- MT 130 MAP Basic Print Reading (2)
- MT 140 MAP Basic Math for Machinists (2)
- MT 210 MAP Advanced Math for Machinists (2)
- MT 220 MAP Advanced Machining Operations I (2)
- MT 230 MAP Adv. Print Reading and Measurement (3)
- MT 240 MAP Adv. Machining Operations II (1)
- MT 190A Machinist Apprenticeship Training A (12)
- MT 191B Machinist Apprenticeship Training B (12)
- MT 290D Machinist Apprenticeship Training D (12)

**TOTAL CREDIT HOUR 71-72**
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 (21-22 hrs)
Communications (9 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Humanities (3 hrs)
Elective (3)

Math/Computer/Lab Sciences (6-7 hrs)
CS 102 Computer Literacy (3)
ENGR 110 Intro to Engineering Technology (4)
or
MATH 130 Intermediate Algebra (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hrs)
Electives (1)

PROGRAM REQUIREMENTS (42-43 hrs)
BA 220 Introduction to Business (3)
DRFT 100 Computer Aided Drafting I (4)
DRFT 199 How to Get a Job (1)
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)
Approved Technical Elective (4-5) such as ABR, ATEC, DRFT, ECET, ELEC, WELD, etc.

TOTAL CREDIT HOURS 64-66
Certificate
WELDING
48.0508

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 (6-9 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (30 hrs.)
WELD 110 Introduction to Welding (3)
WELD 111L Fundamentals of Oxyacetylene 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 CREDIT HOURS 39-42
Northern offers a Bachelor of Arts degree in Elementary Education. This degree 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.

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 Department of Public Education.

Associate of Arts
EARLY CHILDHOOD EDUCATION
13.1204

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 or to the College of Santa Fe. However, to insure 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 hrs)
Communications (9 hrs)
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)

Mathematics (3 hrs)
MATH 150 College Algebra (3)

Laboratory Science (8 hrs)
Choose two course (with labs) from the following list:
ASTR 110/L Introduction to Astronomy w/lab (4)
BIOL 110/L Current Topics in Biology w/lab (4)
CHEM 110/L Introduction to Chemistry w/lab (4)
ES 112 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)
**Social/Behavioral Sciences (6-9 hrs) * **
You must select courses from **at least two different discipline areas** from the following list:

- ANTH 101/l  Physical Anthropology w/Lab (4)
- ANTH 102  Introduction to Social and Cultural Anthropology (3)
- ANTH 111  Language and Culture (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 200  American Politics (3)
- PSY 105  General Psychology (3)
- SOC 101  Introduction to Sociology (3)
- SOC 220  Social Problems (3)
- SOC 225  Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs) * **
You must select courses from **at least two different discipline areas** from the following list:

- ART 105  Introduction to Art (3)
- ART 107  History of Art (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 260  History of New Mexico (3)
- HUM 101  Humanities I (3)
- HUM 102  Humanities II (3)
- MUS 105  Music Appreciation (3)
- PHIL 110  Introduction to Philosophical Problems (3)
- PHIL 220  Ethics (3)
- THE 120  Introduction to Theatre I (3)
- THE 130  History of Theatre (3)
- THE 220  Introduction to Theatre II (3)
- THE 225  Creative Drama Techniques for the Classroom K-12 (3)
- THE 238  Teatro Chicano (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
Elective (1)

**PROGRAM REQUIREMENTS (29 hrs)**

- CS 102  Computer Literacy (3)
- ECE 202  Child Development (3)
- ECE 218  Nutrition, Health, and Safety (3)
- ECE 219  Introduction to Early Childhood Education (3)
- ECE 221  Methods and Materials for Early Childhood Education (3)
- ECE 224  Learning Environments (3)
- ECE 226  Parent/Community Involvement in the School Setting (3)
- ECE 234  Field Based Practicum (2)
- ECE 285  Child Guidance (3)

Choose one of the following courses:

- ECE 235  Student Teaching: Infant/ Toddler (3)
- ECE 236  Student Teaching: Preschool (3)
- ECE 237  Student Teaching: Elem. School (3)

TOTAL CREDIT HOURS 65
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 hrs)**

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

### Fine Arts (6)
- ART 105 Introduction to Art (3)

Choose one introductory course (*no applied courses*) from the following disciplines:
- ART, MUSIC, THEATRE.

### Humanities (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 two courses:
- HIST 101 Western Civilization I (3)
- HIST 102 Western Civilization II (3)

### Literature (3)
- ENG Elective from ENG 260-296 (3)

### 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)

### Laboratory Sciences (12)
- BIOL 110 Current Topics in Biology (3)
- BIOL 110L Current Topics in Biology Lab (1)

Any two laboratory science courses from the following list:
- ASTR 110/L, CHEM 110/L, GEOL 101/L, or PHYS 110/L.

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

**HEALTH, PHYSICAL EDUCATION & RECREATION**
- Elective (1)

**PROGRAM REQUIREMENTS (10)**
- 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 CREDIT HOURS** 65
Bachelor of Arts
EDUCATION
Elementary Education
Major: Humanities/Social Science
13.1205

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.

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.
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 recommends 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 CPA 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 hrs)
Communications (9)
ENG 111 English Comp. I (3)
ENG 112 English Comp. II (3)
SPCH 130 Public Speaking (3)
Fine Arts (6)
ART 105 Introduction to Art (3)
Choose one introductory courses (no applied courses) from the following:
   ART, MUSIC, THEATRE.

Humanities (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 two courses:
   HIST 101 Western Civilization I (3)
   HIST 102 Western Civilization II (3)

Literature (3)
ENG Elective from ENG 260-296 (3)

Mathematics (6)
MATH 150 College Algebra (3)
Choose one of the following three courses:
   MATH 145 Intro to Probability and Statistics (3)
   MATH 155 Trigonometry (3)
   MATH 162 Calculus (4)

Laboratory Sciences (12)
BIOL 110 Current Topics in Biology (3)
BIOL 110L Current Topics in Biology Lab (1)
Any two laboratory science courses from the following list:
   ASTR 110/L, CHEM 110/L, GEOL 101/L, or PHYS 110/L.

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1)
Elective (1)

Program Requirements Common to the AA degree
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 hrs)
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)

HUMANITIES AND SOCIAL SCIENCES - MAJOR* (24 hrs)
HSS 222 Understanding Diverse Communities (3)
HSS 310 Indigenous Perspectives of New Mexico History and Culture (4)
HSS 311 Why the Social Sciences Matter (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)

TOTAL CREDITS 132
ALTERNATIVE LICENSURE
FOR
ELEMENTARY or SECONDARY EDUCATION

The Alternative Licensure Program for Teachers provides a course of study leading to teacher licensure. The program, approved by the New Mexico Department of Public Education and the Professional Standards Commission, offers elementary- and secondary- track course work.

Students enrolled in the Alternative Licensure Program must complete all course work, pass the required New Mexico Teachers Assessment Tests (NMTA), and complete other application requirements for licensure.

DEGREE REQUIREMENTS
Each applicant must hold a degree 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, Middle-Level, or Secondary-level).

GENERAL REQUIREMENTS:
You must have already applied and been accepted to Northern and have had official transcripts from all colleges sent to the Office of Admissions.
Submit to Northern’s Teacher Education Department an application packet 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 Alternative Licensure Program Application form. You will be required to sign an Assurance form.

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)
ED 401  Foundations of Education (3)
ED 410  Teaching and Diagnosis of Reading (3)
ED 450  Pedagogy and Human Learning (3)
ED 460  Reading and Writing Across the Curriculum (3)
ED 493  The Integrated Elementary Classroom (2)
ED 495  Assessment and Evaluation of Student Learning (3)
ED 496  Supervised Field Experience (1)
ED 496L  Supervised Field Experience Lab (2)

TOTAL CREDIT HOURS  20

SECONDARY (7-12)
ED 401  Foundations of Education (3)
ED 450  Pedagogy and Human Learning (3)
ED 462  Reading and Writing Across the Curriculum (3)
ED 474  Methods and Materials in Secondary Education (3)
ED 495  Assessment and Evaluation of Student Learning (3)
ED 496  Supervised Field Experience (1)
ED 496L  Supervised Field Experience Lab (3)

TOTAL CREDIT HOURS  18
ALTERNATIVE LICENSURE
FOR
SPECIAL EDUCATION

The Special Education Alternative Licensure Program for teachers provides a course of study leading to teacher licensure. The program, approved by the New Mexico Department of Public Education and the Professional Standards Commission, offers elementary- and secondary-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, Middle-Level, or Secondary-level).

GENERAL REQUIREMENTS
You must have already applied and been accepted to Northern and have had official transcripts from all colleges sent to the Office of Admissions.
Submit to Northern’s Teacher Education Department an application packet 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 Alternative Licensure Program Application form. You will be required to sign an Assurance form.

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)
SPED 401 Foundations of Education (3)
SPED 455 The Special Education Program: IEP’s and Assessment (4)
SPED 465 Reading for Special Learners (3)
SPED 475 Curriculum Methods and Materials for Special Learners (3)
SPED 485 Teaching Reading in Special Education (3)
SPED 497 Supervised Field Experience (1)
SPED 497L Supervised Field Experience Lab (3)

TOTAL CREDIT HOURS 20
DEPARTMENT OF FINE ARTS

The mission of the Arts Department is to provide you with the opportunity to enrich your life through study of the traditional fine arts, which include art, dance, music, theatre, and southwestern folk arts, as well as to prepare you for entry into baccalaureate programs at four-year colleges and universities.

The Arts Department also offers other programs which are centered around the application of the fine arts as they are applied to a business setting (Arts Entrepreneurship).

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

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**Associate of Arts**

**ART**

50.0101

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 Art.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**

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)

**Mathematics (3 hrs)**

MATH 150 College Algebra (3)

**Laboratory Science (8 hrs)**

Choose two courses (with labs) from the following list:

ASTR 110/L Introduction to Astronomy w/lab (4)
BIOL 110/L Survey of Modern Biology 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 Historical Geology w/Lab (4)
PHYS 110/L Introduction to Physics w/Lab (4)

**Social/Behavioral Sciences (6-9 hrs)** *

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

ANTH 101/L Physical Anthropology w/Lab (4)
ANTH 102 Introduction to Social & Cultural Anthropology (3)
ANTH 111 Language and Culture (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 200 American Politics (3)
PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)
SOC 220 Social Problems (3)
SOC 225 Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs)** *

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

- ART 105 Introduction to Art (3)
- ART 107 History of Art (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 260 History of New Mexico (3)
- HUM 101 Humanities I (3)
- HUM 102 Humanities II (3)
- MUS 105 Music Appreciation (3)
- PHIL 110 Introduction to Philosophical Problems (3)
- PHIL 220 Ethics (3)
- THE 120 Introduction to Theatre I (3)
- THE 130 History of Theatre (3)
- THE 220 Introduction to Theatre II (3)
- THE 225 Creative Drama Techniques for the Classroom K-12 (3)
- THE 238 Teatro Chicana/o (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS**

**Art (33 hrs)**

- ART 105 Introduction to Art (3)
- ART 107 History of Art I (3)
- ART 110 Drawing I (3)
- ART 120 Painting I (3)
- ART 122 Basic Design (3)
- ART 208 History of NM Art and Architecture (3)
- ART 211 History of Art II (3)
- ART 221 Drawing II (3)
- ART 232 Painting II (3)
- ART 233 Printmaking I (3)

Choose one course from the following:

- ART 125 Introduction to Graphic Design (3)
- ART 150 Bookmaking (3)
- ART 160 Pottery (3)
- ART 170 Photography I (3)
- ART 235 Watercolor (3)
- ART 237 Sculpture (3)
- ART 240 Portrait Painting (3)
- DANC 126 Modern Dance (2)
- FA 101 Weaving I (1)
- FA 101L Weaving I Lab (6)
- THE 120 Introduction to Theatre I (3)

**TOTAL CREDIT HOURS** 69
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 Art Entrepreneurship.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>English Composition I</td>
<td>3</td>
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<tr>
<td>SPCH 130</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose **one** of the following two courses:

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</thead>
<tbody>
<tr>
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<td>3</td>
</tr>
<tr>
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<td>Technical Writing</td>
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**Mathematics (3 hrs)**

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</thead>
<tbody>
<tr>
<td>MATH 150</td>
<td>College Algebra</td>
<td>3</td>
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</tbody>
</table>

**Laboratory Science (8 hrs)**

Choose **two courses** (**with labs**) from the following list:

<table>
<thead>
<tr>
<th>Course</th>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ASTR 110/L</td>
<td>Introduction to Astronomy w/lab</td>
<td>4</td>
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<td>Survey of Modern Biology w/lab</td>
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</tr>
<tr>
<td>PHYS 110/L</td>
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**Social/Behavioral Sciences (6-9 hrs)** *

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

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<td>SOC 225</td>
<td>Marriage and the Family</td>
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</tr>
</tbody>
</table>

**Humanities and Fine Arts (6-9 hrs)** *

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<td>History of Art</td>
<td>3</td>
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<td>Literature courses numbered 260-298</td>
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<tr>
<td>HIST 260</td>
<td>History of New Mexico</td>
<td>3</td>
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<td>THE 130</td>
<td>History of Theatre (3)</td>
<td></td>
</tr>
<tr>
<td>THE 220</td>
<td>Introduction to Theatre II (3)</td>
<td></td>
</tr>
<tr>
<td>THE 225</td>
<td>Creative Drama Techniques for the Classroom K-12 (3)</td>
<td></td>
</tr>
<tr>
<td>THE 238</td>
<td>Teatro Chicana/o (3)</td>
<td></td>
</tr>
</tbody>
</table>

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS**

**Arts Entrepreneurship (27 hrs)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 170</td>
<td>Photography I (3)</td>
</tr>
<tr>
<td>ART 185</td>
<td>Southwest Crafts (3)</td>
</tr>
<tr>
<td>ART 208</td>
<td>History of NM Art &amp; Architecture (3)</td>
</tr>
<tr>
<td>ART 210</td>
<td>Art Marketing Strategies (3)</td>
</tr>
<tr>
<td>ART 230</td>
<td>Art Business Planning (3)</td>
</tr>
<tr>
<td>ART 290</td>
<td>Studio Planning (3)</td>
</tr>
<tr>
<td>BA 220</td>
<td>Introduction to Business (3)</td>
</tr>
<tr>
<td>BA 251</td>
<td>Principles of Marketing (3)</td>
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</tbody>
</table>

Choose one course from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 115</td>
<td>Traditional Woodcarving (3)</td>
</tr>
<tr>
<td>ART 130</td>
<td>Tinsmithing I (3)</td>
</tr>
<tr>
<td>ART 152</td>
<td>Traditional Spanish Colonial Retablo Making (3)</td>
</tr>
<tr>
<td>ART 180</td>
<td>Micaceous Clay I (3)</td>
</tr>
<tr>
<td>ART 190</td>
<td>Silversmithing (3)</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** 66
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 Flamenco Dance.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**
- **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)

**Mathematics (3 hrs)**
- **MATH** 150 College Algebra (3)

**Laboratory Science (8 hrs)**
Choose two courses (with labs) from the following list:
- **ASTR** 110/L Introduction to Astronomy w/lab (4)
- **BIOL** 110/L Survey of Modern Biology 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 Historical Geology w/Lab (4)
- **PHYS** 110/L Introduction to Physics w/Lab (4)

**Social/Behavioral Sciences (6-9 hrs) * **
You must select courses from at least two different discipline areas from the following list:
- **ANTH** 101/L Physical Anthropology w/Lab (4)
- **ANTH** 102 Introduction to Social & Cultural Anthropology (3)
- **ANTH** 111 Language and Culture (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** 200 American Politics (3)
- **PSY** 105 General Psychology (3)
- **SOC** 101 Introduction to Sociology (3)
- **SOC** 220 Social Problems (3)
- **SOC** 225 Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs) * **
You must select courses from at least two different discipline areas from the following list:
- **ART** 105 Introduction to Art (3)
- **ART** 107 History of Art (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** 260 History of New Mexico (3)
- **HUM** 101 Humanities I (3)
- **HUM** 102 Humanities II (3)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 105</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 110</td>
<td>Introduction to Philosophical Problems</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 220</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 130</td>
<td>History of Theatre</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 238</td>
<td>Teatro Chicana/o</td>
<td>3</td>
</tr>
</tbody>
</table>

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS**

**Flamenco Dance (29-30 hrs)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 126</td>
<td>Modern Dance</td>
<td>2</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</td>
<td>3</td>
</tr>
<tr>
<td>DANC 222</td>
<td>Rhythmic Fund</td>
<td>2</td>
</tr>
<tr>
<td>DANC 269</td>
<td>Flamenco Dance II</td>
<td>2</td>
</tr>
<tr>
<td>DANC 292</td>
<td>Dance Repertory</td>
<td>1</td>
</tr>
<tr>
<td>MUS 102</td>
<td>Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 134</td>
<td>Introduction to Costuming</td>
<td>2</td>
</tr>
</tbody>
</table>

Choose one of the following (2-3 hrs)

<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>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>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>THE 132</td>
<td>Stagecraft Sound</td>
<td>3</td>
</tr>
<tr>
<td>THE 238</td>
<td>Chicana/o Theatre</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** 65-66
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 Flamenco Music.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**

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)

**Mathematics (3 hrs)**

MATH 150 College Algebra (3)

**Laboratory Science (8 hrs)**

Choose two courses (with labs) from the following list:

ASTR 110/L Introduction to Astronomy w/lab (4)
BIOL 110/L Survey of Modern Biology 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 Historical Geology w/Lab (4)
PHYS 110/L Introduction to Physics w/Lab (4)

**Social/Behavioral Sciences (6-9 hrs) * **

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

ANTH 101/l Physical Anthropology w/Lab (4)
ANTH 102 Introduction to Social & Cultural Anthropology (3)
ANTH 111 Language and Culture (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 200 American Politics (3)
PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)
SOC 220 Social Problems (3)
SOC 225 Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs) * **

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

ART 105 Introduction to Art (3)
ART 107 History of Art (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 260 History of New Mexico (3)
HUM 101 Humanities I (3)
HUM 102 Humanities II (3)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 105</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 110</td>
<td>Introduction to Philosophical Problems</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 220</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Intro to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 130</td>
<td>History of Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THE 220</td>
<td>Intro 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 238</td>
<td>Teatro Chicana/o</td>
<td>3</td>
</tr>
</tbody>
</table>

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
Elective (1)

**PROGRAM REQUIREMENTS**

**Flamenco Music (34 hrs)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 222</td>
<td>Rhythmic Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>MUS 101</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>
<tr>
<td>MUS 121</td>
<td>Dance Accompaniment I</td>
<td>2</td>
</tr>
<tr>
<td>MUS 216</td>
<td>Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 222</td>
<td>Dance Accompaniment II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 223</td>
<td>Applied Music: Flamenco Guitar II</td>
<td>2</td>
</tr>
<tr>
<td>MUS 227</td>
<td>Tradition in Flamenco</td>
<td>3</td>
</tr>
<tr>
<td>MUS 231</td>
<td>Structural Study of Flamenco Music</td>
<td>2</td>
</tr>
</tbody>
</table>

Choose two of 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>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 CREDIT HOURS** 70
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 Music.

**GENERAL EDUCATION (35 hrs)**

**Communications (9 hrs)**
- 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)

**Mathematics (3 hrs)**
- MATH 150 College Algebra (3)

**Laboratory Science (8 hrs)**
Choose two courses (with labs) from the following list:
- ASTR 110/L Introduction to Astronomy w/lab (4)
- BIOL 110/L Survey of Modern Biology 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 Historical Geology w/Lab (4)
- PHYS 110/L Introduction to Physics w/Lab (4)

**Social/Behavioral Sciences (6-9 hrs) * **
You must select courses from at least two different discipline areas from the following list:
- ANTH 101/l Physical Anthropology w/Lab (4)
- ANTH 102 Introduction to Social & Cultural Anthropology (3)
- ANTH 111 Language and Culture (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 200 American Politics (3)
- PSY 105 General Psychology (3)
- SOC 101 Introduction to Sociology (3)
- SOC 220 Social Problems (3)
- SOC 225 Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs) * **
You must select courses from at least two different discipline areas from the following list:
- ART 105 Introduction to Art (3)
- ART 107 History of Art (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 260 History of New Mexico (3)
- HUM 101 Humanities I (3)
- HUM 102 Humanities II (3)
**FINE ARTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 105</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 110</td>
<td>Introduction to Philosophical Problems</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 220</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 130</td>
<td>History of Theatre</td>
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</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 238</td>
<td>Teatro Chicana/o</td>
<td>3</td>
</tr>
</tbody>
</table>

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS**

**Music (33 hrs)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<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 221</td>
<td>Applied Music: Piano II</td>
<td>2</td>
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</tbody>
</table>

Choose **one** course from the following:

<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 126</td>
<td>Modern Dance</td>
<td>2</td>
</tr>
<tr>
<td>MUS 214</td>
<td>Chorus</td>
<td>3</td>
</tr>
<tr>
<td>MUS 220</td>
<td>Applied Music: Folkloric Vocal/Instrument Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>MUS 225</td>
<td>Musica Folklorica: La Nueva Cancion</td>
<td>3</td>
</tr>
<tr>
<td>MUS 226</td>
<td>Music Composition</td>
<td>3</td>
</tr>
<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
</tr>
<tr>
<td>THE 238</td>
<td>Teatro Chicana/o</td>
<td>3</td>
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</tbody>
</table>

**TOTAL CREDIT HOURS** 69
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 hrs)

**Communications (9 hrs)**

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

Choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116</td>
<td>Technical Writing</td>
<td>3</td>
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</tbody>
</table>

**Mathematics (3 hrs)**

<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>

**Laboratory Science (8 hrs)**

Choose two courses (with labs) from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 110/L</td>
<td>Introduction to Astronomy w/lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 110/L</td>
<td>Survey of Modern Biology w/lab</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110/L</td>
<td>Introduction to Chemistry w/lab</td>
<td>4</td>
</tr>
<tr>
<td>ES 112/L</td>
<td>Environmental Science w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 101/L</td>
<td>Physical Geology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 102</td>
<td>Historical Geology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 110/L</td>
<td>Introduction to Physics w/Lab</td>
<td>4</td>
</tr>
</tbody>
</table>

**Social/Behavioral Sciences (6-9 hrs)***

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 101/L</td>
<td>Physical Anthropology w/Lab</td>
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<td>ANTH 102</td>
<td>Introduction to Social &amp; Cultural Anthropology</td>
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<td>ANTH 111</td>
<td>Language and Culture</td>
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<td>ANTH 207</td>
<td>Cultures of New Mexico</td>
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<tr>
<td>ECON 200</td>
<td>Macroeconomics</td>
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<td>ECON 201</td>
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<tr>
<td>GEOG 111</td>
<td>World Geography</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 110</td>
<td>The Political World</td>
<td>3</td>
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<tr>
<td>PSCI 200</td>
<td>American Politics</td>
<td>3</td>
</tr>
<tr>
<td>PSY 105</td>
<td>General Psychology</td>
<td>3</td>
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<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</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>
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</tbody>
</table>

**Humanities and Fine Arts (6-9 hrs)***

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>ART 105</td>
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<tr>
<td>ART 107</td>
<td>History of Art</td>
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<tr>
<td>ENG</td>
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</tr>
<tr>
<td>HIST 101</td>
<td>Western Civilization I</td>
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<tr>
<td>HIST 102</td>
<td>Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 161</td>
<td>History of the U.S. to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 162</td>
<td>History of the U.S. from 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 260</td>
<td>History of New Mexico</td>
<td>3</td>
</tr>
<tr>
<td>HUM 101</td>
<td>Humanities I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 102</td>
<td>Humanities II</td>
<td>3</td>
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</tbody>
</table>
* You must complete at least 15 crs between these two areas, maintaining at least two disciplines in each area.

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS
Southwest Folk Art (30 hrs)
ART 115 Traditional Woodcarving (3)
ART 130 Tinsmithing I (3)
ART 150 Basic Jewelry and Metalworking (3)
ART 152 Traditional Spanish Colonial Retablo Making (3)
ART 156 Pueblo Sash Weaving (3)
ART 180 Micaceous Clay I (3)
ART 246 Bookmaking (3)
Choose one of the following:
   ART 160 Pottery (3)
   ART 170 Photography I (3)
   ART 190 Silversmithing (3)
Electives Approved by department chairperson (6)

TOTAL CREDIT HOURS 66
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 hrs)
Communications (9 hrs)
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)

Mathematics (3 hrs)
MATH 150 College Algebra (3)

Laboratory Science (8 hrs)
Choose two courses (with labs) from the following list:
ASTR 110/L Introduction to Astronomy w/lab (4)
BIOL 110/L Survey of Modern Biology 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 Historical Geology w/Lab (4)
PHYS 110/L Introduction to Physics w/Lab (4)

Social/Behavioral Sciences (6-9 hrs) *
You must select courses from at least two different discipline areas from the following list:
ANTH 101/L Physical Anthropology w/Lab (4)
ANTH 102 Introduction to Social & Cultural Anthropology (3)
ANTH 111 Language and Culture (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 200 American Politics (3)
PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)
SOC 220 Social Problems (3)
SOC 225 Marriage and the Family (3)

Humanities and Fine Arts (6-9 hrs) *
You must select courses from at least two different discipline areas from the following list:
ART 105 Introduction to Art (3)
ART 107 History of Art (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 260 History of New Mexico (3)
HUM 101 Humanities I (3)
HUM 102 Humanities II (3)
MUS 105 Music Appreciation (3)
PHIL 110 Introduction to Philosophical Problems (3)
PHIL 220 Ethics (3)
THE 120 Introduction to Theatre I (3)
THE 130 History of Theatre (3)
THE 220 Introduction to Theatre II (3)
THE 225 Creative Drama Techniques for the Classroom K-12 (3)
THE 238 Teatro Chicana/o (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS
Theatre (34 hrs)
THE 120 Introduction to Theatre I (3)
THE 122 Acting I (3)
THE 124 Acting for Film, TV, and Commercial (3)
THE 126 Speech and Movement for Theatre (2)
or
THE 228 Performance Poetry (2)
THE 130 History of Theatre (3)
THE 132 Stagecraft (3)
THE 150 Stage Production (2)
THE 218 Acting II (3)
THE 224 Playwriting (3)
THE 238 Teatro Chicana/o (3)
Choose six (6) credit hours from the following:
THE 134 Introduction to Costuming (2)
THE 196 Introduction to Light and Sound (3)
THE 220 Introduction to Theatre II (3)
THE 225 Creative Drama Techniques for the Classroom K-12 (3)
THE 226 Directing & Play Production (2)
THE 250 Stage Management (2)
THE 290 Design for the Theatre (3)
THE 296 Advanced Light & Sound (3)

TOTAL CREDIT HOURS 70
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 Technical Theatre.

GENERAL EDUCATION (35 hrs)
Communications (9 hrs)
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)

Mathematics (3 hrs)
MATH 150 College Algebra (3)

Laboratory Science (8 hrs)
Choose two courses (with labs) from the following list:
ASTR 110/L Introduction to Astronomy w/lab (4)
BIOL 110/L Survey of Modern Biology 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 Historical Geology w/Lab (4)
PHYS 110/L Introduction to Physics w/Lab (4)

Social/Behavioral Sciences (6-9 hrs) *
You must select courses from at least two different discipline areas from the following list:
ANTH 101/L Physical Anthropology w/Lab (4)
ANTH 102 Introduction to Social & Cultural Anthropology (3)
ANTH 111 Language and Culture (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 200 American Politics (3)
PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)
SOC 220 Social Problems (3)
SOC 225 Marriage and the Family (3)

Humanities and Fine Arts (6-9 hrs) *
You must select courses from at least two different discipline areas from the following list:
ART 105 Introduction to Art (3)
ART 107 History of Art (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 260 History of New Mexico (3)
HUM 101 Humanities I (3)
HUM 102 Humanities II (3)
MUS 105 Music Appreciation (3)
FINE ARTS

PHIL 110 Introduction to Philosophical Problems (3)
PHIL 220 Ethics (3)
THE 120 Introduction to Theatre I (3)
THE 130 History of Theatre (3)
THE 220 Introduction to Theatre II (3)
THE 225 Creative Drama Techniques for the Classroom K-12 (3)
THE 238 Teatro Chicana/o (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS
Technical Theatre (34 hrs)
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 CREDIT HOURS 70
DEPARTMENT OF HEALTH OCCUPATIONS

The Department of Health Occupations offers a Bachelor of Science degree in Integrative Health Studies, plus provides employment-related associate degree and certificate programs in the fields of Applied Integrative Health, Nursing, Massage Therapy, Allied Health, and Radiographic Technology.

Associate of Applied Science

ALLIED HEALTH

51.9999

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 hrs.)

Communications (6 hrs)

ENG 111 English Composition I (3)

Choose one of the following:

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

Humanities (6 hrs)

Elective (6)

Mathematics (3 hrs)

Choose one of the following three courses:

MATH 130 Intermediate Algebra (3)
MATH 145 Introduction to Probability and Statistics (3)
MATH 150 College Algebra (3)

Laboratory Sciences (8 hrs)

BIOL 237 Human Anatomy & Physiology I (3)
BIOL 237L Human Anatomy & Physiology I Lab (1)
BIOL 238 Human Anatomy & Physiology II (3)
BIOL 238L Human Anatomy & Physiology II Lab (1)

Social/Behavioral Sciences (6 hrs)

PSY 105 General Psychology (3)
SOC 101 Introduction to Sociology (3)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)

Electives (1)

PROGRAM REQUIREMENTS (34 hrs.)

CS 102 Computer Literacy (3)
HSCI 105 Nurse Aide (4)
HSCI 105L Nurse Aide Lab (1)
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)

* NURS 243 and 244 may be used to satisfy this requirement.

TOTAL CREDIT HOURS 64
The Bachelor of Science in Integrative Health Studies was created in response to the growing consumer demand for healers and educators trained in holistic approaches to wellness education, assessment and counseling. The program combines Eastern, Western, Indigenous, and Hispanic approaches to health care practice, preparing graduates to contribute to the delivery of appropriate and culturally responsible health services within a flexible range of environments, including hospitals, clinics, private practices, health oriented businesses, departments of health, and more. Through this program, you will receive training to become a Certified Health Education Specialist (CHES) through the National Commission of Health Education Credentialing, and receive preparation to apply to schools of Chiropractic, Chinese, Naturopathic, and Osteopathic Medicines, as well as public health, health psychology, counseling, and other allied health professions.

To apply to be a candidate for this degree, you must 1) be fully admitted to Northern and be in good standing; 2) have completed at least 35 credits in the General Education Common Core, with a GPA of 2.5 or higher; 3) have completed 9 or more credits in lower division HIS courses (including HIS 118) with a GPA of 2.5 or higher; 4) submit a letter of intent for review by the program director; 5) submit two letters of recommendation from instructors, employers, personal references, or a combination thereof; and 6) hold a personal or telephone interview with the program director.

**GENERAL EDUCATION (44 hrs)**

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

**Mathematics (6 hrs)**
- MATH 150 College Algebra (3)

**Laboratory Sciences (16 hrs)**
- BIOL 237 Human Anatomy and Physiology I (3)
- BIOL 237L Human Anatomy and Physiology I Lab (1)
- BIOL 238 Human Anatomy and Physiology II (3)
- BIOL 238L Human Anatomy and Physiology II Lab (1)
- CHEM 110 Introduction to Chemistry (3)
- CHEM 110L Introduction to Chemistry Lab (1)
- CHEM 210 Integrated Organic and Biochemistry (3)
- CHEM 210L Integrated Organic and Biochemistry Lab (1)

**Humanities and Fine Arts (6hrs)**
- IHS/HUM 220 Bioethics (3)
- Elective (3)

**Social/Behavioral Sciences (12 hrs)**
- IHS/ANTH 222 Cross-cultural Health Systems (3)
- PSY 105 General Psychology (3)
- SOC 141 Effects of Alcohol and Drug Abuse (3)
- Choose one of the following courses:
  - PSY 110 Issues of Death and Dying (3)
  - PSY 212 Child Psychology and Development (3)
  - PSY 225 Therapeutic Drama Techniques (3)
  - PSY 230 Psychology of Adjustment (3)
  - PSY 232 Abnormal Psychology (3)
  - PSY 290 Developmental Psychology (3)

**HEALTH, PHYSICAL EDUCATION and RECREATION (1 hr)**
Choose one of the following courses:

- HPER 116 Aikido I (1)
- HPER 117 Introduction to Kundalini Yoga (1)
- HPER 119 Hatha Yoga (1)
- HPER 127 Tai Chi Chuan I (1)

**PROGRAM REQUIREMENTS (83 hrs)**

**Lower Division (28 hrs)**

- IHS 102 Introduction to Homeopathy (3)
- IHS 103 Meditation is Medicine (3)
- IHS 115 Introduction to Traditional Chinese Medicine (3)
- IHS 116 Basics of Essential Oils (3)
- IHS 118 Introduction to Integrative Healing (3)
- HSCI 121 Ayurveda: The Science of Living (3)
- IHS 208 Holistic Nutrition (3)
- IHS 255 Introduction to Herbal Medicine (2)
- IHS 257 Herbal Pharmacy I (2)
- IHS 264 Therapeutic Touch (3)

**Upper Division (34 hrs)**

- NURS 343 Pathophysiology I (3)
- NURS 344 Pathophysiology II (3)
- IHS 301 Fundamentals of Biostatistics and Epidemiology (3)
- IHS/PSY 302 Behavioral and Psychological Foundations of Health (3)
- IHS 303 Principles of Community Health Education (3)
- IHS 304 Marketing and Management for Holistic Health Care (3)
- IHS 305 Historical Development of Health Care Paradigms (2)
- IHS 306 Patient-Practitioner Communication (3)
- IHS 307 Health Care Traditions of the Southwest (2)
- IHS 322 Environmental and Ecological Determinants of Health (3)
- IHS 401 Evaluation Research: Applications to CAM (3)
- IHS 402 Advanced Integrative Healing (3)

Choose one minor concentration from the following four tracks:

**Herbology (16)**

- BIOL 360 General Botany (3)
- BIOL 360L General Botany Lab (1)
- IHS 403 Traditional Remedios of northern New Mexico I (2)
- IHS 404 Summer Herbal Fieldwork (1)
- IHS 405 Fall Herbal Fieldwork (1)
- IHS 406 Spring Herbal Fieldwork (1)
- IHS 407 Traditional Remedios of northern New Mexico II (2)
- IHS 408 Botanical Materia Medica (3)
- IHS 409 Herbal Pharmacy II (1)
- IHS 412 Herbal Practicum (1)

**Acupressure (16)**

- IHS 420 Acupressure: The Extraordinary Vessels (2)
- IHS 421 Introduction to the Five Elements and the Twelve Channels (2)
- IHS 422 Advanced Five Elements: Constitutional Types, Part One (2)
- IHS 423 Advanced Five Elements: Constitutional Types, Part Two (2)
- IHS 424 Assessment: Pulse and Tongue (1)
- IHS 425 Energetic Blocks to Healing (2)
- IHS 426 Myofascial Armoring (2)
- IHS 427 Select Disorders I (1)
- IHS 428 Acupressure Practicum (1)
- IHS 429 Select Disorders II (1)
Aromotology (16)
IHS 430 Chemistry of Essential Oils (2)
IHS 431 Integumentary Application of Essential Oils (1)
IHS 432 Enhancing Creativity with Essential Oils (2)
IHS 433 Essential Oils for Optimal Fitness (2)
IHS 434 Essential Oils for Relieving Addictions (1)
IHS 435 Gender Specific Essential Oils (2)
IHS 436 Spirituality and Essential Oils (2)
IHS 437 Essential Oils for Health Care Professionals (2)
IHS 438 Practical Application of Essential Oils (2)

Pre-Professionals (16)
If you want to complete additional requirements for admission to post-baccalaureate professional graduate schools, you may elect to complete 16 credits from mathematics, sciences, and other relevant courses as needed. Course selections should be approved by the program director.

Electives (2)
Choose one of the following*:
  IHS 402 Bio-mechanical Approaches to Health Care (2)
  IHS 440 Medical Holism and Applications to Health Care (2)
  IHS 441 Personal Journeying (2)
  IHS 442 Comparative Nutrition (2)
  IHS 443 Comprehensive Yogic Philosophy (2)
  PIS 444 Pueblo Health Concepts and Practices (2)
* Other credits may be accepted with director’s approval.

Capstone Thesis
IHS 490 Capstone Thesis (3)

TOTAL CREDITS 130
As the emerging field of Integrative Health has captured the interest of healthcare providers, practitioners, businesses, and consumers, this program was designed with the practitioner (e.g., nurses, massage therapists, yoga instructors, etc.) in mind, although other learners new to the field of health are also welcome. You will achieve the following goals: 1) learn the fundamental applications of a wide range of integrative health systems, including nutrition, homeopathy, herbology, therapeutic touch, Ayurveda, Chinese Medicine, etc; 2) evaluate the fundamental principles, trends, and complexities of the field; 3) demonstrate an understanding of the interconnectedness of mind, body, and spirit of the human system; 4) evaluate the efficacy and role of complementary and alternative medicine (CAM) as part of healthcare; 5) become familiar with ethical and legal responsibilities in the practice of holistic healing; and 6) identify current scientific literature to support the emerging field of Integrative Healing.

Program Admission: As an applicant to this program, you must 1) hold a high school or GED diploma; 2) be fully admitted to Northern and be in good standing; 3) submit a resume reflecting work experience in the field of health or wellness or 4) submit a letter of intent which reflects your interest in working in the field of integrative health.

Program Pre-requisites: Before you may enroll in any of the program required courses, you must have completed Basic English I (ENG 108N) and Fundamentals of Math (MATH 100N) or higher level English and math courses, or their equivalencies.

GENERAL EDUCATION (6-9 hrs)
Communications (3)
ENG 108N or a higher level English course (3)

Mathematics (3-6)
MATH 100N or a higher level math course (3-6)

PROGRAM REQUIREMENTS (23 hrs)
Required Courses* (16 hrs)
IHS 102 Introduction to Homeopathy (3)
IHS 115 Introduction to Traditional Chinese Medicine (3)
IHS 118 Introduction to Integrative Healing (3)
IHS 208 Holistic Nutrition (3)
IHS 255 Introduction to Herbal Medicine (2)
IHS 257 Herbal Pharmacy (2)
Electives: Choose one of the following (3)
IHS 103 Meditation is Medicine (3)
IHS 116 Fundamentals of Essential Oils (3)
IHS 121 Ayurveda: The Science of Living (3)
IHS 264 Therapeutic Touch (3)

Required Seminars (4 hrs)
IHS 205 Evaluation Research on Efficacy of CAM Therapies (1)
IHS 206 Tools for the Integrative Health Educator and Coach (1)
IHS 207 Ethical and Business Issues in Holistic Health Practice (1)
IHS 208 Integrating Holistic and Allopathic Systems of Care (1)

* For those who have no previous coursework or training in anatomy and physiology.
Introduction to the Human Body Module (1 hr) *
IHS 104 Survey of the Human Body: Structure and Systems (1)

TOTAL CREDITS 23-24
Associate of Applied Science
MASSAGE THERAPY
12.0406

This program is for students who have completed the certificate in Massage Therapy and wish to continue their studies and receive an associate 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 hrs)

Communications (6 hrs)
ENG 111 English Composition I (3)
Choose one of the following four 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 hrs)
Elective (3)

Math/Computers/Lab Sciences (11 hrs)
BIOL 237 Human Anatomy and Physiology I (3)
BIOL 237L Human Anatomy and Physiology I Lab (1)
BIOL 238 Human Anatomy and Physiology II (3)
BIOL 238L Human Anatomy and Physiology II Lab (1)
CS 102 Computer Literacy (3)

Social/Behavioral Sciences (6 hrs)
PSY Elective (3)
SOC Elective (3)

HEALTH, PHYSICAL EDUCATION, and RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (38 hrs)
BA 124 Introduction to Business for Massage Therapists (2)
HSCI 112 Pathology for Massage Therapists (3)
HSCI 114 Kinesiology for Massage therapists (2)
HSCI 125 Medical Terminology (2)
HSCI 152 Legal and Ethical Issues in Massage Therapy (2)
MAS 101L Massage Therapy I (4)
MAS 103L Massage Therapy II (4)
MAS 104L Massage Therapy Internship (3)
MAS 108L Massage Therapy Practice Lab (1)
Choose 14 crs from the following electives:
   HSCI 113 Aztec Mexican Healing I (1)
   HSCI 204 Nutrition (3)
   IHS 102 Introduction to Homeopathy (3)
   IHS 103 Meditation is Medicine (3)
   IHS 115 Introduction to Traditional Chinese Medicine (3)
   IHS 116 Essentials of Essential Oils (3)
   IHS 117 Raindrop Technique (1)
   IHS 120 Ayurveda and Energy Healing I (1)
   IHS 122 Ayurveda and Energy Healing II (1)
   IHS 123 Introduction to Acupressure (1)
   IHS 201 Acupressure Facial (1)
<table>
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<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>Introduction to Herbal Medicine</td>
<td>(2)</td>
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<tr>
<td>IHS</td>
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<td>IHS</td>
<td>Therapeutic Touch Techniques</td>
<td>(3)</td>
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<tr>
<td>MAS</td>
<td>Improving Your Body Mechanics</td>
<td>(1)</td>
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<tr>
<td>MAS</td>
<td>Introduction to Foot Reflexology</td>
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<tr>
<td>MAS</td>
<td>Introduction to Cranial Sacral Techniques I</td>
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<td>MAS</td>
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<td>MAS</td>
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<td>PSY</td>
<td>Interviewing &amp; Assessment</td>
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</tbody>
</table>

**TOTAL CREDITS** 65
This program provides 650+ hours of Massage Therapy Training designed to meet the requirements to sit for the state licensure exam which is required for entry-level employment in massage therapy. 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 at least ENG 109N (Basic English II) 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 program.

**GENERAL EDUCATION (6-9 hrs)**

**Communications (3 hrs)**

ENG 109N Basic English II (3)

**Math/Computers/Lab Sciences (3-6 hrs)**

MATH 100N (6) or a higher-level math course (3)

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

**BA 124 Introduction to Business for Massage Therapists (3)**

**HSCI 110 Anatomy & Physiology I (3)**

**HSCI 111 Anatomy & Physiology II (3)**

or

**BIOL 237 Human Anatomy & Physiology I (3)**

**BIOL 237L Human Anatomy & Physiology I Lab (1)**

and

**BIOL 238 Human Anatomy & Physiology II (3)**

**BIOL 238L Human Anatomy & Physiology II Lab (1)**

**HSCI 112 Pathology for Massage Therapists (3)**

**HSCI 114 Kinesiology for Massage therapists (2)**

**HSCI 152 Legal and Ethical Issues in Massage Therapy (2)**

**MAS 101L Massage Therapy I (4)**

**MAS 103L Massage Therapy II (4)**

**MAS 104L Massage Therapy Internship (3)**

**MAS 108L Massage Therapy Practice Lab (1)**

Choose 8 crs from the following electives:

**HSCI 113 Aztec Mexican Healing I (1)**

**HSCI 125 Medical Terminology (2)**

**HSCI 204 Nutrition (3)**

**IHS 102 Introduction to Homeopathy (3)**

**IHS 103 Meditation is Medicine (3)**

**IHS 115 Introduction to Traditional Chinese Medicine (3)**

**IHS 116 Essentials of Essential Oils (3)**

**IHS 117 Raindrop Technique (1)**

**IHS 118 Introduction to Integrative Healing (2)**

**IHS 120 Ayurveda and Energy Healing I (1)**

**IHS 122 Ayurveda and Energy Healing II (1)**

**IHS 123 Introduction to Acupressure (1)**

**IHS 201 Acupressure Facial (1)**

**IHS 255 Introduction to Herbal Medicine (2)**

**IHS 257 Herbal Pharmacy (2)**

**IHS 264 Therapeutic Touch Techniques (3)**

**MAS 110 Improving Your Body Mechanics (1)**

**MAS 113 Introduction to Foot Reflexology (2)**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MAS 115</td>
<td>Introduction to Cranial Sacral Techniques I</td>
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<td>MAS 116</td>
<td>Cranial Sacral Techniques II</td>
<td>2</td>
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<tr>
<td>MAS 117</td>
<td>Introduction to Thai Massage</td>
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<tr>
<td>MAS 118</td>
<td>Develop Your Tradecraft</td>
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<tr>
<td>MAS 119</td>
<td>Traditional Thai Massage I</td>
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<td>MAS 120</td>
<td>Traditional Thai Massage II</td>
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<td>MAS 215</td>
<td>Cranial Sacral Techniques III</td>
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<tr>
<td>MAS 121</td>
<td>Hawaiian Lomi Lomi Massage</td>
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<tr>
<td>PSY 217</td>
<td>Interviewing &amp; Assessment</td>
<td>3</td>
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</table>

**TOTAL CREDIT HOURS 42.5—45.5**

---

### Prerequisites

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

### Required sequence of courses

**Fall semester**

- MAS 101L (4)
- BIOL 237/L or HSCI 110 (3)
- MAS 108L (1)
- BA 124 (3)
- HSCI 152 (2)
- Electives (3)

**Spring semester**

- [BIOL 238/L (4)] or HSCI 111 (3)
- MAS 103L (4)
- MAS 104L (4)
- HSCI 112 (3)
- HSCI 114 (2)
- Electives (5)
NURSING

Northern offers a two-year nursing program leading to an associate degree in nursing (ADN). Upon completion of the program, you will be eligible to take the National Council Licensure Examination for Registered Nursing (NCLEX-RN). After completion of the associate degree in nursing, you may continue to a baccalaureate degree in nursing (BSN) program offered at some four-year colleges.

Upon completion of the first level of courses, you have the option of taking additional required coursework and completing the Certificate of Practical Nursing with eligibility to take the National Council Licensure Examination for Practical Nurses (NCLEX-PN).

Licensed Practical Nurses (LPN/LVN) who are graduates of state approved programs of practical nursing may be admitted directly into Level II of the Nursing program based on individual assessment of transcripts.

If you are interested in the Nursing program, please contact the Director of Nursing for information, advisement, and application packet. Call (505) 747-2207.

Formal application and acceptance into the Nursing program is required before you enroll in any NURS-prefixed courses listed in the program requirements. Support courses may be taken before entry into the program.

The New Mexico Board of Nursing requires fingerprinting for a federal background check before allowing graduates to obtain a license. (Some clinical agencies may also require fingerprinting, criminal background checks, and/or drug screens.) The NM State Board of Nursing may deny, revoke, or suspend any license upon grounds that the licensee or applicant violates any of the following actions: is guilty of fraud or deceit in attempting to procure a license; is unfit or incompetent; has been convicted of a felony; is habitually intemperate, is addicted to habit-forming drugs, or is mentally incompetent. Please consider this before applying to this program.

After entry into the program, you must achieve a grade of “C” or better in each required course in order to remain in the program.

**Prerequisites required for entry into the Nursing Program**

1. Graduation from High School or GED
2. Completion of the following course work or equivalent with a minimum grade of “C” or equivalent:

   - ENG 111 English Composition I
   - BIOL 237 Human Anatomy and Physiology I (within the last five (5) years)
   - BIOL 237L Human Anatomy and Physiology I Lab I (within the last 5 years)
   - BIOL 238 Human Anatomy and Physiology II (within the last five (5) years)
   - BIOL 238L Human Anatomy and Physiology II Lab II (within the last five (5) years)
   - PSY 105 General Psychology

   Demonstrate competency in calculations for administration of drugs and solutions by testing or by completing HSCI 190 Dosage Calculation with a minimum grade of “C” within last two years

   Demonstrate competency in basic nursing skills through testing or by completion of NURS 105/L (Nurse Aide).

   Test of Essential Academic Skills (TEAS) within two years of application (LPN/LVN applicants take the Comprehensive Practical Nurse Predictor exam instead).

   Cumulative GPA of 2.5 or higher

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. Contact the Nursing Office for specifics (747-2207).
Certificate
NURSE AIDE
51.1614

If you are interested in the health field, this program will provide the skills necessary to become a nursing assistant while serving as preparation if you might decide to continue your education in nursing, radiography, or hospice. When you successfully complete this course of study you will be eligible to take the New Mexico Nurse Aide Certification Exam and move immediately into the workplace while completing some of the general education requirements for other health occupation programs.

You must complete or have tested above PD 108N/PD 108L (Basic Computational Skills w/Lab).

GENERAL EDUCATION (6-9 hrs)
Communications (3 hrs)
Choose one of the following two courses:
  ENG 109N  Basic English II (3)
  ENG 111  English Composition I (3)

Mathematics (3-6 hrs)
MATH 100N (6) or a higher level math course (3)

PROGRAM REQUIREMENTS (10 hrs)
HSCI 105  Nurse Aide (4)
HSCI 105L  Nurse Aide Lab (1)
HSCI 125  Medical Terminology (2)
HSCI 204  Nutrition (3)

TOTAL CREDIT HOURS 16-19
Certificate
PRACTICAL NURSE
51.1613

Students who complete the pre-requisites and Level I course work for the Associate of Applied Science in Nursing and NURS 119 Role Transition – Practical Nursing have the option to petition for the Certificate in Practical Nurse and to exit and/or to continue to Year II/Level II.

GENERAL EDUCATION (24 hrs)
Communications (3 hrs)
ENG 111 English Composition I (3)

Math/Computers/Lab Sciences (12 hrs)
BIOL 210 Microbiology (3)
BIOL 210L Microbiology Lab (1)
BIOL 237 Human Anatomy & Physiology I (3)
BIOL 237L Human Anatomy & Physiology I Lab (1)
BIOL 238 Human Anatomy & Physiology II (3)
BIOL 238L Human Anatomy & Physiology II Lab (1)

Social/Behavioral Science (6 hrs)
PSY 105 General Psychology (3)
PSY 290 Developmental Psychology (3)

PROGRAM REQUIREMENTS (23 hrs)
HSCI 204 Nutrition (3)
NURS 105 Pharmacology (4)
NURS 113 Nursing Fundamentals (4)
NURS 113L Nursing Fundamentals Clinical (2)
NURS 115 Medical/Surgical Nursing I (4)
NURS 115L Medical/Surgical Nursing I Clinical (2)
NURS 116 Intro to Maternal/Child Nursing (2)
NURS 116L Intro to Maternal/Child Nursing Clinical (1)
NURS 119 Role Transition – PN (2)

TOTAL CREDIT HOURS 48

Sequence of Courses
Year I, Level I

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
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<tbody>
<tr>
<td>NURS 113</td>
<td>NURS 115</td>
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<td>NURS 113L</td>
<td>NURS 115L</td>
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<td>NURS 105</td>
<td>NURS 116</td>
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<td>BIOL 210</td>
<td>NURS 116L</td>
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<td>BIOL 210L</td>
<td>PSY 290</td>
</tr>
<tr>
<td>HSCI1 204</td>
<td>(NURS 119*)</td>
</tr>
</tbody>
</table>
Associate of Applied Science
NURSING (ADN)
51.1601

GENERAL EDUCATION (27 hrs)

Communications (6 hrs)
ENG 111 English Composition I (3)
Choose one of the following four courses:
   ENG 112 English Composition II (3)
   ENG 116 Technical Writing (3)
   SPCH 130 Public Speaking (3)
   SPAN 230 Span. for Health Professions

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (12 hrs)
BIOL 210 Microbiology (3)
BIOL 210L Microbiology Lab (1)
BIOL 237 Human Anatomy & Physiology I (3)
BIOL 237L Human Anatomy & Physiology I Lab (1)
BIOL 238 Human Anatomy & Physiology II (3)
BIOL 238L Human Anatomy & Physiology II Lab (1)

Social/Behavioral Sciences (6 hrs)
PSY 105 General Psychology (3)
PSY 290 Developmental Psychology (3)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (42-44 hrs)
HSCI 204 Nutrition (3)
NURS 105 Pharmacology (4) [within last 5 years]
NURS 113 Nursing Fundamentals (4)
NURS 113L Nursing Fundamentals Clinical (2)
NURS 115 Medical/Surgical Nursing I (4)
NURS 115L Medical/Surgical Nursing I Clinical (2)
NURS 116 Intro to Maternal/Child Nursing (2)
NURS 116L Intro to Maternal/Child Nursing Clinical (1)
(NURS 200 Role Transition - RN (2) *

*Required as pre- or co-requisite for LPNs who completed two or more years ago.)
NURS 214 Psychiatric/Mental Health Nursing (2)
NURS 214L Psychiatric/Mental Health Nursing Clinical (1)
NURS 215 Medical/Surgical Nursing II (4)
NURS 215L Medical/Surgical Nursing II Clinical (2)
NURS 216 Maternal/Child Nursing (4)
NURS 216L Maternal/Child Nursing Clinical (2)
NURS 228 Integrated Adult Nursing (3)
NURS 228L Integrated Adult Nursing Clinical (2)

TOTAL CREDIT HOURS 70-72
### Sequence of Courses

#### Year I, Level I

<table>
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<tbody>
<tr>
<td>NURS 113</td>
<td>NURS 115</td>
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<tr>
<td>NURS 113L</td>
<td>NURS 115L</td>
</tr>
<tr>
<td>NURS 105</td>
<td>NURS 116</td>
</tr>
<tr>
<td>BIOL 210</td>
<td>NURS 116L</td>
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<tr>
<td>BIOL 210L</td>
<td>PSY 290</td>
</tr>
<tr>
<td>HSCI1 204</td>
<td>(NURS 119*)</td>
</tr>
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</table>

#### Year II, Level II

**Fall Semester**

- (*NURS 200)
- NURS 215
- NURS 215L
- NURS 216
- NURS 216L

Comms Elective

Choose **one** of the following **four** courses:

- ENG 112
- ENG 116
- SPCH 130
- SPAN 230

**Spring Semester**

- HPER Elective
- NURS 228
- NURS 228L
- NURS 214
- NURS 214L
- Humanities Elective

(*NURS 200 (Role Transition – RN) is a pre- or co-requisite for Licensed Practical Nurses who completed their programs two or more years ago)

**Graduation Requirement:** Students must pass the ATI RN Comprehensive Predictor with a score of 60th or greater national percentile in order to graduate from this program.
This degree is designed as an alternative to the Associate of Applied Science degree in Nursing to allow students to more closely meet the baccalaureate requirements of colleges of nursing, such as that at The University of New Mexico and New Mexico state university, while completing their requirements to apply for state licensure as an RN.

GENERAL EDUCATION (39 hrs)

Communications (9 hrs)

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)

Mathematics (3 hrs)

MATH 150 College Algebra (3)

Laboratory Science (12 hrs)

BIOL 210 Microbiology (3)
BIOL 210L Microbiology Lab (1)
BIOL 237 Human Anatomy & Physiology I (3)
BIOL 237L Human Anatomy & Physiology I Lab (1)
BIOL 238 Human Anatomy & Physiology II (3)
BIOL 238L Human Anatomy & Physiology II Lab (1)

Social/Behavioral Sciences (6-9 hrs) *

PSY 105 General Psychology (3)
PSY 290 Developmental Psychology (3)
If you choose to take a third course in this discipline, it must be from a discipline other than PSY. If you choose a third course from this area, you need only complete two (6 crs) of humanities courses.
   ANTH 101/L Physical Anthropology w/Lab (4)
   ANTH 102 Introduction to Social and Cultural Anthropology (3)
   ANTH 111 Language and Culture (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 200 American Politics (3)
   SOC 101 Introduction to Sociology (3)
   SOC 220 Social Problems (3)
   SOC 225 Marriage and the Family (3)

Humanities and Fine Arts (6-9 hrs) *

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 sciences 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)
   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 260 History of New Mexico (3)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>HUM 101</td>
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<td>HUM 102</td>
<td>Humanities II</td>
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<td>MUS 105</td>
<td>Music Appreciation</td>
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<tr>
<td>PHIL 110</td>
<td>Introduction to Philosophical Problems</td>
<td>3</td>
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<tr>
<td>PHIL 220</td>
<td>Ethics</td>
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<tr>
<td>THE 120</td>
<td>Introduction to Theatre I</td>
<td>3</td>
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<tr>
<td>THE 130</td>
<td>History of Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THE 220</td>
<td>Introduction to Theatre II</td>
<td>3</td>
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<tr>
<td>THE 225</td>
<td>Creative Drama Techniques for the Classroom K-12</td>
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<td>THE 238</td>
<td>Teatro Chicano</td>
<td>3</td>
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</table>

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**

Elective (1)

**PROGRAM REQUIREMENTS (42-44)**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>HSCI 204</td>
<td>Nutrition</td>
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<tr>
<td>NURS 105</td>
<td>Pharmacology</td>
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<tr>
<td>NURS 113</td>
<td>Nursing Fundamentals</td>
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<tr>
<td>NURS 113L</td>
<td>Nursing Fundamentals Clinical</td>
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<tr>
<td>NURS 115</td>
<td>Medical/Surgical Nursing I</td>
<td>4</td>
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<tr>
<td>NURS 115L</td>
<td>Medical/Surgical Nursing I Clinical</td>
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<tr>
<td>NURS 116</td>
<td>Intro to Maternal/Child Nursing</td>
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<td>NURS 116L</td>
<td>Intro to Maternal/Child Nursing Clinical</td>
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<td>NURS 200</td>
<td>Role Transition - RN</td>
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*Required as pre- or co-requisite for LPNs who completed two or more years ago.*

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<tr>
<td>NURS 214</td>
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<td>NURS 215</td>
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<td>NURS 215L</td>
<td>Medical-Surgical Nursing II Clinical</td>
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<td>NURS 216</td>
<td>Maternal-Child Nursing II</td>
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<td>NURS 216</td>
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<tr>
<td>NURS 228</td>
<td>Integrated Adult Nursing</td>
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</tr>
<tr>
<td>NURS 228L</td>
<td>Integrated Adult Nursing Clinical</td>
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</table>

(*NURS 200 is a prerequisite for LPN/LVN's who completed their programs two or more years prior to entry into the RN level of training.*

**Graduation Requirement:** Students must pass the ATI RN Comprehensive Predictor with a score of 60th or greater national percentile in order to graduate from this program.

**TOTAL CREDIT HOURS** 79-81
The Radiographic Technology program is a 2-year (22-months) program leading to an associate of applied science degree. As a student in this program, you will prepare to meet the health care needs of the community by functioning as a Radiographer in hospitals, clinics, doctors’ offices, and in similar health delivery agencies. Upon completion of the program, you will be eligible to take the examination for National Registration. Passing the National Registry exam fulfills the New Mexico requirements for licensure.

You will be mixing classroom time with time spent in the clinical setting, working and training with technologists in the field. The classroom (didactic) phase will incorporate the formal education process along with laboratory experience giving you a 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 clinical radiography courses. Acceptance is granted for the fall semester of each year. Applications for the program may be obtained from the Radiographic Technology Department at 505-747-2220 or on the Radiography page at www.nnmc.edu. In general, for acceptance to the program, you must have final, regular admission to the college; you must submit three letters of recommendation; and a handwritten statement of what Radiography means to you and why you would like to be a Radiographer; and have a cumulative GPA of at least 2.50 in all required classes, with no grade less than a C. If you are interested, contact the department at 505-747-2220, or visit www.nnmc.edu for further information.

Pre-requisites
Completion of the following required courses must be done before you apply to the program.
CS 102, ENG 111, HSCI 125, MATH 102N, BIOL 237/L and BIOL 238/L.
You must have current CPR through the American Heart Association by the time clinics begin (mid-term in Fall semester).

Note: Only those accepted into the program may take RAD courses, which are sequential. You are responsible for providing your own transportation to and from clinical sites and must understand that all students will rotate through the individual site. In the event you are transferring into the program, you will be placed in the program at the appropriate level.

GENERAL EDUCATION (23 hrs)
Communications (6 hrs)
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)

Humanities (3 hrs)
Elective (3)

Math/Computers/Lab Sciences (11 hrs)
BIOL 237 Human Anatomy & Physiology I (3)
BIOL 237L Human Anatomy & Physiology I Lab (1)
BIOL 238 Human Anatomy & Physiology II (3)
BIOL 238L Human Anatomy & Physiology II Lab (1)
CS 102 Computer Literacy (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)
### Program Requirements (63 hrs.)

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tr>
<td>HSCI 125</td>
<td>Medical Terminology</td>
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<td>RAD 108</td>
<td>Basic Patient Care</td>
<td>3</td>
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<tr>
<td>RAD 135L</td>
<td>Principles of Radiographic Techniques I</td>
<td>3</td>
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<tr>
<td>RAD 136L</td>
<td>Principles of Radiographic Techniques II</td>
<td>3</td>
</tr>
<tr>
<td>RAD 140L</td>
<td>Radiographic Procedures I</td>
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<td>RAD 141L</td>
<td>Radiographic Procedures II</td>
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<tr>
<td>RAD 142L</td>
<td>Radiographic Procedures III</td>
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<tr>
<td>RAD 145L</td>
<td>Clinical Experience I</td>
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<td>RAD 146L</td>
<td>Clinical Experience II</td>
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<tr>
<td>RAD 235</td>
<td>Radiographic Physics</td>
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<tr>
<td>RAD 236</td>
<td>Principles of Radiographic Techniques III</td>
<td>2</td>
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<td>RAD 240</td>
<td>Radiographic Procedures III</td>
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<tr>
<td>RAD 245L</td>
<td>Clinical Experience IV</td>
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<tr>
<td>RAD 246L</td>
<td>Clinical Experience V</td>
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<tr>
<td>RAD 250</td>
<td>Radiographic Pathology</td>
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<tr>
<td>RAD 251</td>
<td>Registry Review</td>
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</table>

**Total Credit Hours**: 87

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### Required Sequence of Courses

#### First Year

**Fall Semester**
- RAD 135L (3)
- RAD 140L (4)
- RAD 145L (5)
- *Humanities elective (3)
- Sub-total (18)

**Spring Semester**
- RAD 136L (3)
- RAD 141L (4)
- RAD 146L (5)
- *Social/Behav.elective (3)
- Sub-total (15)

#### First Summer Session

- RAD 149L (5)
- RAD 142L (3)
- Sub-total (8)

#### Second Year

**Fall Semester**
- RAD 235 (3)
- RAD 240 (3)
- RAD 245L (8)
- *HSCI 125 (2)
- *Choose one of following (3)
  - ENG 112 (3)
  - ENG 116 (3)
  - SPCH 130 (3)
  - Sub-total (17)

**Spring Semester**
- RAD 236 (2)
- RAD 246L (8)
- RAD 250 (1)
- RAD 251 (1)
- *HPER Elective (1)
- Sub-total (13)

*These courses may be taken prior to admission to the program or in any other sequence. Only RAD courses must be taken in sequence.*
COLLEGE OF
MATH, SCIENCE AND ENGINEERING

The Department of Mathematics and Science offers Bachelor of Science degrees in Biology and in Environmental Science; Associate Degree programs in Biology, Laboratory Biotechnology, Environmental Science, Natural Resources - Range Ecology Management, Pre-Forestry, Radiation Protection, Science, Pre-Engineering, Chemical Technology, Materials Science Technology, and Visual Communications; 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 colleges and universities, the Associate of Science degrees in Science and Pre-Engineering are specifically designed to represent the first two-years of a general four-year science program.

Associate of Science
BIOLOGY
26.0101

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

GENERAL EDUCATION (35 hrs)
Communications (9 hrs)
ENG 111 English Composition I (3)
SPCH 130 Public Speaking (3)
Choose one of the following courses:
   ENG 112 English Composition II (3)
   ENG 116 Technical Writing (3)

Humanities (6-9 hrs)
PHIL 220 Ethics (3)
Elective (3-6)

Mathematics (3 hrs)
MATH 150 College Algebra (3)

Laboratory Sciences (8 hrs)
BIOL 201 Introduction to Molecular and Cell Biology (3)
BIOL 201L Introduction to Molecular and Cell Biology Lab (1)
CHEM 121 General Chemistry I (3)
CHEM 121L General Chemistry I Lab (1)

Social/Behavioral Sciences (6 9 hrs)
Elective (6-9)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

PROGRAM REQUIREMENTS (35 hrs)
BIOL 202 Genetics (3)
BIOL 202L Genetics Lab (1)
BIOL 203 Ecology and Evolution (3)
BIOL 203L Ecology and Evolution Lab (1)
BIOL 204 Plant and Animal Form and Function (3)
BIOL 204L Plant and Animal Form and Function Lab (1)
BIOL 210 Microbiology (3)
BIOL 210L Microbiology Lab (1)
CHEM 122 General Chemistry II (3)
CHEM 122L General Chemistry II Lab (1)
MATH 145 Introduction to Probability and Statistics (3)
PHYS 121 Applied Physics I (3)
PHYS 121L Applied Physics I Lab (1)
Electives (choose 8 crs from the following):
  BIOL 151 Science and Society (3)
  BIOL 151L Science and Society Lab (1)
  BIOL 160 Biotechnology Seminar I (3)
  BIOL 160L Biotechnology Lab I (1)
  BIOL 260 Biotechnology Seminar II (3)
  BIOL 260L Biotechnology Lab II (1)
  BIOL 290 Undergraduate Research Experience I (3)
  BIOL 292 Undergraduate Research Experience II (3)
  CHEM 210 Integrated Organic and Biochemistry (3)
  CHEM 210L Integrated Organic and Biochemistry Lab (1)
  CHEM 221 Quantitative Analysis (3)
  CHEM 221L Quantitative Analysis Lab (1)
  ES 112 Environmental Science (3)
  ES 112L Environmental Science Problems (1)
  MATH 155 Trigonometry (3)
  MATH 162 Calculus I (4)

TOTAL CREDIT HOURS 71
This degree is designed to prepare 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 academics, government and private research, laboratories, science teaching, positions in the biomedical, biotechnology, and pharmaceutical industries, and other related fields. While many such positions are open to those holding the B.S. degree, some may only be open too those holding advanced graduate degrees.

### GENERAL EDUCATION (35 hrs)

#### Communications (9 hrs)
- ENG 111 English Composition I (3)
- SPCH 130 Public Speaking (3)

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

#### Mathematics (3 hrs)
- MATH 150 College Algebra (3)

#### Laboratory Sciences (8 hrs)
- BIOL 201 Introduction to Cell and Molecular Biology (3)
- BIOL 201L Introduction to Cell and Molecular Biology Lab (1)
- CHEM 121 General Chemistry I (3)
- CHEM 121L General Chemistry I Lab (1)

#### Social/Behavioral Sciences (6-9 hrs)
You must select survey courses from at least two different discipline areas from the following list:
- ANTH 101/L Physical Anthropology w/Lab (4)
- ANTH 102 Introduction to Social and Cultural Anthropology (3)
- ANTH 111 Language and Culture (3)
- ANTH 207 Cultures of New Mexico (3)
- GEOG111 World Geography (3)
- PSCI 110 The Political World (3)
- PSY 105 General Psychology (3)
- SOC 101 Introduction to Sociology (3)
- SOC 220 Social Problems (3)
- SOC 225 Marriage and the Family (3)

#### Humanities and Fine Arts (6-9 hrs)
You must select survey courses from at least two different discipline areas from the following list:
- ART 105 Introduction to Art (3)
- ART 107 History of Art (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 260 History of New Mexico (3)
- HUM 101 Humanities I (3)
- HUM 102 Humanities II (3)
- MUS 105 Music Appreciation (3)
- PHIL 110 Introduction to Philosophical Problems (3)
- PHIL 220 Ethics (3)
THE 120 Introduction to Theatre I (3)
THE 130 History of Theatre (3)
THE 220 Introduction to Theatre II (3)
THE 238 Teatro Chicano (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Elective (1)

PROGRAM REQUIREMENTS (81 hrs)
Biology Core Curriculum (44 hrs)
BIOL 151 Science and Society (3)
BIOL 151L Science and Society Lab (1)
BIOL 202 Genetics (3)
BIOL 202L Genetics Lab (1)
BIOL 203 Ecology and Evolution (3)
BIOL 203L Ecology and Evolution Lab (1)
BIOL 204 Plant and Animal Form and Function (3)
BIOL 204L Plant and Animal Form and Function Lab (1)

Required Seminar and Research Experience (4 hrs)
BIOL 292/392 Undergraduate Research Experience (3)
BIOL 472 Undergraduate Seminar in Biology (1)

Choose two 300-level courses from the following (8)
BIOL 351 Microbiology (3)
BIOL 351L Microbiology Lab (1)
BIOL 360 General Botany (3)
BIOL 360L General Botany Lab (1)
BIOL 371 Invertebrate Biology (3)
BIOL 371L Invertebrate Biology Lab (1)
BIOL 386 General Vertebrate Zoology (3)
BIOL 386L General Vertebrate Zoology Lab (1)

Choose four 400-level courses from the following:
BIOL 410 Bioinformatics (3)
BIOL 412 Developmental Biology (3)
BIOL 412L Developmental Biology Lab (1)
BIOL 416 Cells and Tissues (3)
BIOL 416L Cells and Tissues Lab (1)
BIOL 422 Comparative Vertebrate Anatomy (3)
BIOL 422L Comparative Vertebrate Anatomy Lab (1)
BIOL 425 Molecular Genetics (3)
BIOL 425L Molecular Genetics Lab (1)
BIOL 426 Neurobiology (3)
BIOL 426L Neurobiology Lab (1)
BIOL 431 Drugs and Their Actions (3)
BIOL 435 Comparative Animal Physiology (3)
BIOL 435L Comparative Animal Physiology Lab (1)
BIOL 451 General Ecology (3)
BIOL 451L General Ecology Lab (1)
BIOL 456 Immunology (3)
BIOL 456L Immunology Lab (1)
### Required Supportive Courses in Math, Chemistry, and Physics (37 hrs)

#### Mathematics (14 hrs)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 155 Trigonometry (3)
- MATH 162 Calculus I (4)
- MATH 163 Calculus II (4)

#### Chemistry (15 hrs, including CHEM 121/L)
- CHEM 122 General Chemistry II (3)
- CHEM 122L General Chemistry II Lab (1)
- CHEM 210 Integrated Organic and Biochemistry (3)
- CHEM 210L Integrated Organic and Biochemistry Lab (1)
- CHEM 341 Survey of Biochemistry (3)

#### Physics (8 hrs)
- PHYS 121 Applied Physics I (3)
- PHYS 121L Applied Physics I Lab (1)
- PHYS 122 Applied Physics II (3)
- PHYS 122L Applied Physics II Lab (1)

#### MINOR Concentrations
You must choose one of the following minor concentrations (16 hrs):

##### Mathematics (16)
- MATH 264 Calculus III (4)
- MATH 311 Vector Analysis (3)
- MATH 312 Linear Analysis (3)
- MATH 314 Differential Equations (3)
- MATH 316 Partial Differential Equations (3)

##### Chemistry (16)
- CHEM 301 Organic Chemistry I (3)
- CHEM 301L Organic Chemistry I Lab (1)
- CHEM 302 Organic Chemistry II (3)
- CHEM 302L Organic Chemistry II Lab (1)
- CHEM 311 Physical Chemistry (3)
- CHEM 311L Physical Chemistry Lab (1)

Electives (4 hrs): Choose four additional upper-division credits in chemistry.

##### Physics (16 hrs)
- PHYS 262 General Physics (3)
- PHYS 262L General Physics Lab (1)
- PHYS 302 Optics (3)
- PHYS 330 Introduction to Modern Physics (3)
- PHYS 331 Thermodynamics and Statistical Mechanics (3)
- PHYS 405 Electricity and Magnetism (3)

**TOTAL CREDITS** 133
Associate of Applied Science
CHEMICAL TECHNICIAN
41.0301

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

Humanities (3 hrs)
PHIL 220 Ethics (3)

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

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

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

PROGRAM REQUIREMENTS (38 hrs)
CHEM 121 General Chemistry I (3)
CHEM 121L General Chemistry I Lab (1)
CHEM 122 General Chemistry II (3)
CHEM 122L General Chemistry II Lab (1)
CHEM 210 Integrated Organic & Biochemistry (3)
CHEM 210L Integrated Organic & Biochemistry Lab (1)
CHEM 221 Quantitative Analysis (3)
CHEM 221L Quantitative Analysis Lab (1)
CHEM 260 Standard Laboratory Protocols (4)
CS 105 Introduction to Databases (3)
CS 205 Databases (3)
ECET 260 Statistical Controls (3)
ES 126 Introduction to Waste Management (3)
ES 134 OSHA Health and Safety (3)
ES 138 Environmental & Occupational Law and Regulations (3)

TOTAL CREDIT HOURS 66
This program is designed to provide general entry level engineering technician skills for employment in an engineering-related field. Although not fully transferable to four-year programs, a considerable portion of this program will transfer to engineering technology programs. If you desire to continue to a four-year institution, you should meet with the receiving institution to determine the specifics of transfer.

GENERAL EDUCATION (21 hrs)
Communications (6 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)

Humanities (3 hrs)
Elective (3)

Math/Computer/Lab Sciences (9 hrs)
CS 102 Computer Literacy (3)
MATH 150 College Algebra (3)
MATH 155 Trigonometry (3)

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

HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)
Electives (2)

PROGRAM REQUIREMENTS (41 hrs)
CHEM 110 Introduction to Chemistry (3)
CHEM 110L Introduction to Chemistry Lab (1)
DRFT 100 Introduction to Computer Aided Drafting (4)
DRFT 199 How to Get a Job (1)
DRFT 209 Computer Aided Drafting II (3)
ENGR 110 Introduction to Engineering Technology (4)
PHYS 121 Applied Physics I (3)
PHYS 121L Applied Physics I Lab (1)
PHYS 122 Applied Physics II (3)
PHYS 122L Applied Physics II Lab (1)

Electives (17 crs): Any advisor-approved courses from the following discipline: BIOL, CHEM, CS, DRFT, ECET, ENGR, GEOL, MATH, MT, PHYS, or WELD, or up to six additional electives from the Humanities and/or Social Science disciplines.

TOTAL CREDIT HOURS 64
In order to be considered for acceptance to this major, you must first have been admitted to Northern, satisfying all requirements for regular status. Second, you must meet the following departmental requirements: 1) have earned a cumulative grade point average of 2.50 for courses to be accepted into the program, which includes up to 35 credits in general education; 2) completion of 24 credits of the GECC Laboratory Science requirements; 3) completion of ES 112, ES 112L, and ES 113; and 4) submission of a personal essay and two letters of recommendation to the Environmental Science program director.

**GENERAL EDUCATION (58 hrs)**

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

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

**Social/Behavioral Sciences (6-9 hrs)***
You must select survey courses from **at least two different discipline areas** from the following list:
- **ANTH** 101/L Physical Anthropology w/Lab (4)
- **ANTH** 102 Introduction to Social and Cultural Anthropology (3)
- **ANTH** 111 Language and Culture (3)
- **ANTH** 207 Cultures of New Mexico (3)
- **GEOG** 111 World Geography (3)
- **PSCI** 110 The Political World (3)
- **PSCI** 200 American Politics (3)
- **PSY** 105 General Psychology (3)
- **SOC** 101 Introduction to Sociology (3)
- **SOC** 220 Social Problems (3)
- **SOC** 225 Marriage and the Family (3)

**Humanities and Fine Arts (6-9 hrs)***
- **PHIL** 220 Ethics (3)

You must select **two** survey courses from **at least two different discipline areas** from the following list:
- **ART** 105 Introduction to Art (3)
- **ART** 107 History of Art (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** 260 History of New Mexico (3)
- **HUM** 101 Humanities I (3)
- **HUM** 102 Humanities II (3)
- **MUS** 105 Music Appreciation (3)
- **PHIL** 110 Introduction to Philosophical Problems (3)
- **PHIL** 220 Ethics (3)
- **THE** 120 Introduction to Theatre I (3)
- **THE** 130 History of Theatre (3)
- **THE** 220 Introduction to Theatre II (3)
- **THE** 238 Teatro Chicano (3)

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* You must complete at least 15 hrs between these two areas, maintaining at least two disciplines in each area.
### Mathematics/Computer Science (10 hrs)
- **MATH 145** Introduction to Probability and Statistics (3)
- **MATH 150** College Algebra (3)
- **MATH 162** Calculus I (4)

### Laboratory Sciences (24 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BIOL 202</td>
<td>Genetics</td>
<td>3</td>
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<tr>
<td>BIOL 202L</td>
<td>Genetics Lab</td>
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</tr>
<tr>
<td>BIOL 203</td>
<td>Ecology and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 203L</td>
<td>Ecology and Evolution Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 210</td>
<td>Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 210L</td>
<td>Microbiology Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 121</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 121L</td>
<td>General Chemistry I Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

Choose **one** of the following:

- **ES 201** Environmental Physical and Chemical Processes (3)
- **ES 201L** Environmental Physical and Chemical Processes Lab (1)

**or**

- **CHEM 122** General Chemistry II (3)
- **CHEM 122L** General Chemistry II Lab (1)

**CHEM 210** Integrated Organic & Biochemistry (3)

**CHEM 210L** Integrated Organic & Biochemistry Lab (1)

### HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
- Electives (1)

### PROGRAM REQUIREMENTS (36 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 112</td>
<td>Introduction to Environmental Sciences I</td>
<td>3</td>
</tr>
<tr>
<td>ES 112L</td>
<td>Introduction to Environmental Sciences I Lab</td>
<td>1</td>
</tr>
<tr>
<td>ES 113</td>
<td>Introduction to Environmental Sciences II</td>
<td>3</td>
</tr>
<tr>
<td>ES 125</td>
<td>Principles of Physical Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>ES 203</td>
<td>Introduction to GIS/GPS and Cartography</td>
<td>2</td>
</tr>
<tr>
<td>ES 307</td>
<td>Atmospheric Science</td>
<td>3</td>
</tr>
<tr>
<td>ES 320</td>
<td>Environmental Ethics</td>
<td>3</td>
</tr>
<tr>
<td>ES 338</td>
<td>Environmental Law and Regulations</td>
<td>3</td>
</tr>
<tr>
<td>ES 350</td>
<td>Watershed Hydrology and Management</td>
<td>3</td>
</tr>
<tr>
<td>ES 401</td>
<td>Community Participation in Environmental Planning</td>
<td>3</td>
</tr>
<tr>
<td>ES 412</td>
<td>Environmental Health and Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>ES 415</td>
<td>Energy and Resource Development</td>
<td>3</td>
</tr>
<tr>
<td>ES 480</td>
<td>Senior Capstone - Field Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

You must **choose one** of the following concentrations:

#### Agriculture (34 hrs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 360</td>
<td>Botany</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 360L</td>
<td>Botany Lab</td>
<td>1</td>
</tr>
<tr>
<td>ES 225</td>
<td>Principles of Agricultural Ecology</td>
<td>3</td>
</tr>
<tr>
<td>ES 308</td>
<td>Invasive Species</td>
<td>3</td>
</tr>
<tr>
<td>ES 311</td>
<td>Plant Pathology</td>
<td>3</td>
</tr>
<tr>
<td>ES 340</td>
<td>Principles in Crop Production</td>
<td>3</td>
</tr>
<tr>
<td>ES 365</td>
<td>Principles of Sustainable Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>ES 410</td>
<td>Soil Testing and Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ES 411</td>
<td>Soil Management and Fertility</td>
<td>3</td>
</tr>
<tr>
<td>ES 416</td>
<td>Irrigation and Drainage</td>
<td>3</td>
</tr>
<tr>
<td>ES 457</td>
<td>Economics, Food, and Agriculture in Industrial Development</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives (3 hrs)** Upper-division courses as approved by department advisor
Environmental Science (34 hrs)
ES  121  Environmental Air Monitoring (3)
ES  238  Environmental Lab Instrumentation (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  400  Environmental Management (3)
ES  402  Environment, Economics, and Sustainability (3)
ES  411  Soil Testing and Interpretation (3)
Electives (3 hrs)Upper-division courses as approved by department advisor

Forestry (33 hrs)
ES  102  Overview of Forest Measurement (3)
ES/FOR 101  Introduction to Forestry (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  Soil Testing and Interpretation (3)
ES  411  Soil Management and Fertility (3)
ES  414  Wildland Fire Management (3)
Electives (3 hrs)Upper-division courses as approved by department advisor

TOTAL CREDIT HOURS  128-129
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 hrs)**

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

**Humanities (3 hrs)**
- PHIL 220 Ethics (3)

**Math/Lab Sciences (14 hrs)**
- BIOL 203 Ecology and Evolution (3)
- BIOL 203L Ecology and Evolution Lab (1)
- ES 112 Introduction to Environmental Science (3)
- ES 112L Introduction to Environmental Science Lab (1)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Electives (1)

**PROGRAM REQUIREMENTS (45 hrs)**
- BIOL 210 Microbiology (3)
- BIOL 210L Microbiology Lab (1)
- CHEM 121 General Chemistry I (3)
- CHEM 121L General Chemistry I Lab (1)
- Choose one of the following:
  - ES 201 Environmental Physical and Chemical Processes (3)
  - ES 201L Environmental Physical and Chemical Processes Lab (1)

  or

  - CHEM 122 General Chemistry II (3)
  - CHEM 122L General Chemistry II Lab (1)
  - CHEM 210 Integrated Organic & Biochemistry (3)
  - CHEM 210L Integrated Organic & Biochemistry Lab (1)
  - ES 121 Environmental Air Monitoring (3)
  - ES 125 Principles of Physical Hydrology (3)
  - ES 203 Introduction to GIS/GPS (3)
  - ES 236 Environmental Sampling and Instrumentation (3)
  - ES 238 Environmental Law and Regulations (3)
  - ES 240 Introduction to Treatment, Storage, and Disposal of Hazardous Materials (3)
  - ES 280 Introduction to Toxicology/ Risk Assessment (3)
  - RAD 234L Introduction to Radiation Science and Technology (4)
  - RAD 238L Introduction to Radiation Protection (4)

**TOTAL CREDIT HOURS** 74
Certificate
ENVIRONMENTAL MONITORING
03.0105

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). Those pursuing this specific program are exempt from Northern's minimum residency requirement.

GENERAL EDUCATION (6 hrs)
Communications (3 hrs)
ENG 108N Basic English I (3)

Math/Computers/Lab Sciences (3)
MATH 102N Basic Algebra (3)

PROGRAM REQUIREMENTS (11 hrs)
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 CREDIT HOURS 17
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.

Qualifying students in this program are eligible for paid internships at the Biosciences Division at Los Alamos National Laboratory. This internship program is supported by the National Science Foundations Research Experiences for Undergraduates (NSF-REU) program and recruits an annual cohort of 6-7 students. Students in this program may also participate in other 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 hrs)**

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

**Humanities (6 hrs)**
- PHIL 110 Introduction to Philosophical Problems (3)
- PHIL 220 Ethics (3)

**Math/Computers/Lab Sciences (6 hrs)**
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Electives (1)

**PROGRAM REQUIREMENTS (43 hrs)**
- BIOL 201 Principles of Molecular and Cell Biology (3)
- BIOL 201L Principles of Molecular and Cell Biology Lab (1)
- BIOL 202 Genetics (3)
- BIOL 202L Genetics Lab (1)
- BIOL 160 Biotechnology Seminar I (3)
- BIOL 160L Biotechnology Lab I (1)
- BIOL 210 Microbiology (3)
- BIOL 210L Microbiology Lab (1)
- BIOL 260 Biotechnology Seminar II (3)
- BIOL 260L Biotechnology Lab II (1)
- BIOL 290 Undergraduate Research Experience I (3)
- BIOL 292 Undergraduate Research Experience II (3)
- CHEM 121 General Chemistry I (3)
- CHEM 121L General Chemistry I Lab (1)
- CHEM 122 General Chemistry II (3)
- CHEM 122L General Chemistry II Lab (1)
- CHEM 210 Integrated Organic & Biochemistry (3)
- CHEM 210L Integrated Organic & Biochemistry Lab (1)
- ES 134 OSHA Health/Safety (3)
- HSCI 125 Medical Terminology (2)

**TOTAL CREDIT HOURS 65**
This program prepares you with technical training in materials science and engineering for job available in the government sector, particularly at sites such as LANL. Program courses will transfer to a four-year institution for bachelor’s degree in materials engineering; however, it may take 3 years (instead of the expected 2 years) after you complete this associate degree because it is a mix of pre-engineering, drafting, and materials engineering courses.

**GENERAL EDUCATION (36 hrs)**

*Communications (9 hrs)*

- 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)

*Humanities (6 hrs)*

- PHIL 220 Ethics (3)
- Elective (3)

*Lab Sciences (8 hrs)*

- CHEM 121 General Chemistry I (3)
- CHEM 121L General Chemistry I Lab (1)
- PHYS 215 Engineering Physics I (3)
- PHYS 215L Engineering Physics I Lab (1)

*Mathematics (4 hrs)*

- MATH 162 Calculus I (4)

*Social/Behavioral sciences (9 hrs)*

- SOC 101 Introduction to Sociology (3)
- Elective (6)

*Health, Physical Education Y Recreation (1 hr)*

- Elective (1)

**PROGRAM REQUIREMENTS (28-29 hrs)**

- CS 102 Computer Literacy (3)
- CE 233 Statics (3)
- DRFT 100 Computer Aided Drafting I (4)
- MATE 101 Materials Structure and Properties (2)
- WELD 110 Introduction to Welding (3)

**TOTAL CREDIT HOURS** 65-66
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 college or university to further pursue a degree in the field of range ecology.

**GENERAL EDUCATION (47 hrs)**

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

**Humanities (3 hrs)**
- PHIL 220 Ethics (3)

**Math/Computer/Lab Sciences (29 hrs)**
- BIOL 201 Principles of Molecular and Cell Biology (3)
- BIOL 201L Principles of Molecular and Cell Biology Lab (1)
- BIOL 202 Genetics (3)
- BIOL 202L Genetics Lab (1)
- CHEM 121 General Chemistry I (3)
- CHEM 121L General Chemistry I Lab (1)
- CS 102 Computer Literacy (3)
- ES 112 Introduction to Environmental Science I (3)
- ES 112L Introduction to Environmental Science I Lab (1)
- GEOL 101 Physical Geology (3)
- GEOL 101L Physical Geology Lab (1)
- MATH 145 Introduction to Probability and Statistics (3)
- MATH 150 College Algebra (3)

**Social/Behavioral Sciences (6 hrs)**
- Elective (6)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Electives (1)

**PROGRAM REQUIREMENTS (20 hrs.)**
- 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 CREDIT HOURS** 68
PRE-ENGINEERING

This program will prepare you for transfer to a four-year institution 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.

GENERAL EDUCATION (52 hrs)
Communications (12 hrs)
ENG 111 English Composition I (3)
ENG 112 English Composition II (3)
ENG 116 Technical Writing (3)
SPCH 130 Public Speaking (3)

Humanities (6 hrs)
Electives (6)

Mathematics (12 hrs)
MATH 162 Calculus I (4)
MATH 163 Calculus II (4)
MATH 264 Calculus III (4)

Laboratory Sciences (16 hrs)
CHEM 121 General Chemistry I (3)
CHEM 121L General Chemistry I Lab (1)
CHEM 122 General Chemistry II (3)
CHEM 122L General Chemistry II Lab (1)
PHYS 215 Engineering Physics I (3)
PHYS 215L Engineering Physics I Lab (1)
PHYS 216 Engineering Physics II (3)
PHYS 216L Engineering Physics II Lab (1)

Social/Behavioral Science (6 hrs)
Electives (6)

HEALTH, PHYSICAL EDUCATION & RECREATION (2 hrs)
Electives (2)

PROGRAM REQUIREMENTS (14-15 hrs)
You should choose technical electives to maximize transferring credits into a specific engineering major. This may be accomplished by taking courses from the math/science/engineering department at Northern or by taking courses from UNM via satellite, at one of the branch campuses, or directly from the main campus. The following choices suggest some options.

General Engineering (14.0101)
*ENGR 110 Introduction to Engineering (3)
*DRFT 102 Engineering Graphics I using CAD (4)
*DRFT 208 Computer-Aided Drafting I (3)
Any course from Math, Science, or Engineering department

Electrical Engineering (14.0102)
#ENGR-F 122L Introduction to Engineering Methods (3)
#EECE 203 Circuit Analysis I (3)
#EECE 238 Computer Logic Design (4)
CE 233 Statics (3)
Any course from Math, Science, or Engineering department

**Mechanical Engineering** (14.0103)
ENGR-F122L# Introduction to Engineering Methods (3)
CE 233 Statics (3)
ME 201L# Introduction to Mechanical Engineering (2)
PHYS 215* Engineering Physics I (3)
Any course from Math, Science, or Engineering department

* These courses are accepted for transfer between Northern and all New Mexico institutions of higher education in the area of engineering.
# These courses are university course numbers and serve only to guide an engineering student toward a four-year degree.

**TOTAL CREDIT HOURS** 68-69
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 college or university to further pursue a degree in the forestry field.

### GENERAL EDUCATION (44 hrs)

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

**Humanities (3 hrs)**
- **PHIL 220** Ethics (3)

### Math/Computer/Lab Sciences (29 hrs)

- **BIOL 201** Principles of Molecular and Cell Biology (3)
- **BIOL 201L** Principles of Molecular and Cell Biology Lab (1)
- **BIOL 202** Genetics (3)
- **BIOL 202L** Genetics Lab (1)
- **CHEM 121** General Chemistry I (3)
- **CHEM 121L** General Chemistry I Lab (1)
- **ES 112** Introduction to Environmental Science I (3)
- **ES 112L** Introduction to Introduction to Environmental Science I Lab (1)
- **GEOL 101** Physical Geology (3)
- **GEOL 101L** Physical Geology Lab (1)
- **CS 102** Computer Literacy (3)
- **MATH 145** Introduction to Probability and Statistics (3)
- **MATH 150** College Algebra (3)

### Social/Behavioral Sciences (3)

- Elective (3)

### HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)

- Electives (1)

### PROGRAM REQUIREMENTS (26 hrs)

- **ES/FOR 101** Introduction to Forestry (3)
- **ES 102** Overview of Forest Measurement (3)
- **ES 123** 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 CREDIT HOURS 68
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 (43 hrs)
Communications (6 hrs)
ENG 111 English Composition I (3)
ENG 116 Technical Writing (3)

Humanities (3 hrs)
Elective (3)

Math/Computer/Lab Sciences (32 hrs)
BIOL 201 Principles of Molecular and Cell Biology (3)
BIOL 201L Principles of Molecular and Cell Biology Lab (1)
BIOL 202 Genetics (3)
BIOL 202L Genetics Lab (1)
CHEM 121 General Chemistry I (3)
CHEM 121L General Chemistry I Lab (1)
CHEM 122 General Chemistry II (3)
CHEM 122L General Chemistry II Lab (1)
CS 102 Computer Literacy (3)
MATH 130 Intermediate Algebra (3)
MATH 145 Introduction to Probability and Statistics (3)
MATH 150 College Algebra (3)
PHYS 121 Applied Physics I (3)
PHYS 121L Applied Physics I Lab (1)

Social/Behavioral Sciences (3)
Elective (3)

HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
Electives (1)

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

TOTAL CREDITS 64
If you wish to transfer to a four-year college or university and earn a degree in one of the many fields of science, you should follow 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 hrs)

#### Communications (9 hrs)
- ENG 111 English Composition I (3)
- SPCH 130 Public Speaking (3)

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

#### Humanities (9 hrs)
- PHIL 220 Ethics (3)
- Elective (6)

#### Mathematics (10 hrs)
- MATH 150 College Algebra (3)
- MATH 155 Trigonometry (3)
- MATH 162 Calculus I (4)

#### Laboratory Sciences (8 hrs)
Choose **one** of the following three *two-semester sequences* (with lab)

- **Biology**
  - BIOL 201 Principles of Molecular and Cell Biology (3)
  - BIOL 201L Principles of Molecular and Cell Biology Lab (1)
  - BIOL 202 Genetics (3)
  - BIOL 202L Genetics Lab (1)

- **Chemistry**
  - CHEM 121 General Chemistry I (3)
  - CHEM 121L General Chemistry I Lab (1)
  - CHEM 122 General Chemistry II (3)
  - CHEM 122L General Chemistry II Lab (1)

- **Physics**
  - PHYS 215 Engineering Physics I (3)
  - PHYS 215L Engineering Physics I Lab (1)
  - PHYS 216 Engineering Physics II (3)
  - PHYS 216L Engineering Physics II Lab (1)

#### Social/Behavioral Sciences (6 hrs)
- Elective (6)

### HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)
- Electives (1)

### PROGRAM REQUIREMENTS (29 hrs)
- CS 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 CREDIT HOURS** 72
This program is designed to prepare you for the general area of electronic imaging and publication, animation and digital production for film, with the option of transferring to a four-year institution and a professional degree.

**GENERAL EDUCATION (18- hrs)**

**Communications (6 hrs)**
- ENG 111 English Composition I (3)
- Elective (3)

**Humanities (3 hrs)**
- VC 280 Visual Communication History (3)

**Math/Computers/Lab Sciences (6 hrs)**
- MATH 130 or higher level math course (3)
- Elective (3)

**Social/Behavioral Science (3 hrs)**
- Elective (3)

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Elective (1)

**PROGRAM REQUIREMENTS (46 hrs)**
- VC 110 Fundamentals of Visualization (3)
- VC 111 2-D Computer Visualization (4)
- VC 120 3-D Visualization (3)
- VC 121 3-D Computer Visualization (4)
- VC 135 Electronic Publications I (4)
- VC 140 Digital Imaging I (4)
- VC 155 Computer Animation I (4)
- VC 160 Digital Production for Film I (4)
- VC/CT 175 Internet Publication I (4)

Choose **three** from the following eight courses:
- VC 165 Visual Communications I (4)
- VC 265 Visual Communications II (4)
- VC 235 Electronic Publication II (4)
- VC 240 Digital Imaging II (4)
- VC 255 Computer Animation II (4)
- VC 260 Digital Production for Film II (4)
- VC 275 Internet Publication II (4)
- VC 290 Multimedia (4)

**TOTAL CREDIT HOURS**  65
When you successfully complete this program you will be prepared for the general area of computer aided drafting, visual communication, and computer aided manufacturing.

**GENERAL EDUCATION (18 hrs)**

**Communications (6 hrs)**
- ENG 111 English Composition I (3)
- Elective (3)

**Humanities (3 hrs)**
- Approved Elective (3)

**Math/Computer/Lab Sciences (6 hrs)**
- CS 102 Computer Literacy (3)
- MATH 130 or higher level math course (3)

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

**HEALTH, PHYSICAL EDUCATION & RECREATION (1 hr)**
- Elective (1)

**PROGRAM REQUIREMENTS (45 hrs)**
- DRFT 199 How to Get a Job (1)
- DRFT 100 Computer Aided Drafting I (4)
- DRFT 209 Computer Aided Drafting II (3)
- DRFT 215 Computer Aided Machining I (3)
- VC 110 Fundamentals of Visualization (3)
- VC 111 2-D Computer Visualization (4)
- VC 120 3-D Visualization (3)
- VC 121 3-D Computer Visualization (4)
- VC 155 Computer Animation I (4)

**Electives (16 hrs)** from DRFT or VC.

**TOTAL CREDIT HOURS** 64
COURSE DESCRIPTIONS

NOTE:
1. Freshman courses are numbered 100-199; sophomore courses are numbered 200-299; junior courses are labeled 300-399; senior courses are numbered 400-499.
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 pre-requisite 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 shop/activity. 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.

ADOBE CONSTRUCTION (ADOB)

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 WORLD-WIDE 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 will be 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. Class 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. Class are conducted on- and off-campus. (4, 2T+2S)

105 INTERIOR FINISH PRACTICES You will deal with traditional and modern finishes found in the buildings of the Southwest: mud plaster by hand and trowel, cement and gypsum plasters, exposed adobe bricks, carved adobe, wood trim at doors and windows, baseboards, wainscot, tile work, decorative stone, tin ceilings, nichos, carved columns, corbels, lintels, sheet rock hanging and finishing, and painting and staining. Class are conducted on- and off-campus. (4, 2T+2S)

106 EXTERIOR FINISH PRACTICES You will deal with traditional and modern finishes found on buildings of the Southwest: mud stabilized mud, cement plasters, elastomeric plasters, insulation, vapor barriers, moisture protection, lath systems, exterior sheathing, patios, porches, vigas, posts, corbels, exposed lintels, wood trim at doors and windows, brick, stone, paint, and tile decoration. Class are conducted on- and off-campus. (4, 2T+2S)

107 PASSIVE SOLAR HEATING You will learn the 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 REMODEL THEORY AND PRACTICES You will learn stabilization, restoration, renovation, modernization, remodeling, and additions to existing adobe structures; surveying, estimating cost, historic building requirements, and safety considerations. Classes will be conducted both on-and-off-campus. (Spring) (2, 2T+0S)

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 world-wide techniques. Classes will be conducted on-and-off-campus. (2, 1T+1S)

201 ADVANCED TOPICS IN ADOBE CONSTRUCTION This course is designed for you if you have completed the core adobe curriculum or who 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-require: 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)

ANTHROPOLOGY (ANTH)

101 PHYSICAL ANTHROPOLOGY You will cover the principles of human biology applicable to paleoanthropology and organic evolution of primates. Prerequisite: ENG 109N. Co-require: ANTH 101L. (3, 3T+0S)

101L PHYSICAL ANTHROPOLOGY LAB You will apply and demonstrate the principles of primate and human evolution. Co-require: 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. Pre-require: ENG 109N. (Fall only) (3, 3T+0S)

110 INDIAN CULTURE OF THE SOUTHWEST You will study the culture 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. Pre-require: ENG 109N. (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. (3, 3T+0S)

207 CULTURES OF NEW MEXICO You will study the contemporary cultural and ethnic groups of New Mexico, including Native American, Hispanic, Anglo, and others. (3, 3T+0S)

210 SOUTHWESTERN FOLKLORE You will survey the expressive culture systems such as art, music, architecture, religion; space/time orientation of the predominant Southwestern cultures. (3, 3T+0S)

ART (ART)

100 INTRODUCTION TO BASIC WOODCARVING You will learn the basic techniques of woodcarving and safety through carving one small project. (1, .5T+.5S)

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. (2, 1T+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 I You will study the development of Western art from pre-historic times to the Renaissance through slides, videos, lectures, readings, discussions, and analysis. Pre-require: ENG 109N. (3, 3T+0S)

110 DRAWING I You will study the basic materials and mechanisms 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. Prerequisite: ART 110. (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)

125 INTRODUCTION TO GRAPHIC DESIGN You will study the elements of graphic design with an emphasis on presentation and advertising concepts and techniques. Class assignments will be “hands-on” work. (3, 1T+2S)

129 BASIC TINSMITHING You will learn the elementary techniques of designing, cutting, punching, and embossing tin in the northern New Mexico style. (1, .5T+.5S)

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)

150 BASIC JEWELRY AND METAL WORKING You will study jewelry and metalworking as they are practiced in 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)

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 pueblito sash weaving, including the construction of hand looms, warping, and weaving of a simple design. (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, .5T+.5S)

158 BULTO MAKING You will study the basic techniques for carving and painting bultos in the northern New Mexico style. (2, 1T+1S)

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)

190 TRADITIONAL SILVER SMITHING You will study the basic techniques of silver smithing, including cutting and joining silver, forging, gemstone setting, tufa casting, and sand casting. (3, 1T+2S)

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. Pre-requisite: 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)

210 ART MARKETING STRATEGIES You will develop a business idea; profile, assess and define competition; identify potential markets; develop operational costs; and address pricing of work. You will also develop promotional materials, and write and present a marketing plan. (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)

230 ART BUSINESS PLANNING You will study the strategies required for pursuing and managing a career in the arts. (3, 3T+0S)
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 110. (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. Prerequisites: ART 110. (3, 1T+2S)

235 WATERCOLOR You will study transparent and opaque watercolor media, with emphasis on creative expression and techniques involving varied subject matter. Prerequisites: ART 110. (3, 1T+2S)

237 SCULPTURE You will study sculpture materials; basic consideration of form; technical and compositional exercises in clay, plaster, wood, and stone. Prerequisite: ART 160. (3, 1T+2S)

239 LIFE DRAWING You will draw the human figure from a life model, with emphasis on anatomy, gesture, and movement. Pre-requisite: 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 110 and ART 120. (3, 1T+2S)

242 LIFE MODELING You will learn to construct an armature, model from life, make a piece mold, and cast a plaster copy of the clay original. (3, 1T+2S)

243 PRINTMAKING II In a continuation of ART 233, you will study more complex techniques for relief and intaglio, through projects including woodcut, etching/aquatint, chin-colle, and printing with color. You will continue your study of the history of printmaking and presentation of prints. Pre-requisite: 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)

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. Pre-requisite: 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)

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 outdoor firing. Pre-requisite: ART 180. (3, 1T+2S)

290 STUDIO PLANNING This course is designed to assist you in identifying and organizing costs for a personal craft studio. (3, 3T+0S)

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. Pre-requisite: ART 270, or permission of the instructor. (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. Pre-requisite: ART 295, or permission of instructor. (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 295, or permission of instructor. (3, 2T+1S)

414 HUMANITY AND CREATIVITY Petroglyphs on a rock wall, a Bach Sonata, Hip Hop, Our Lady of Guadalupe retablo, Gone With the Wind, a Laura Gilpin photograph, the Egyptian Pyramids, Sherman Alexis poetry, a beautiful carved tool, a Navajo weaving, a Michelangelo statue, a Georgia O’Keeffe painting are contributions of art to humanity. Since the beginning of time, humans have been creating art and enriching civilization. In this course you will explore human creativity through the arts and challenge yourself to explore creativity and the effect it has on our lives. [Cross-listed as HUM 414 and HSS 414] Pre-requisite: ENG 112. (4,4T+0S)

421 HISTORY, LITERATURE, ART, AND PHILOSOPHY Who are you? Who are we? How did we become what and who we are? What role did we play in shaping the world and ourselves? Different cultures and different interpretations of who we are and what we value and how we represent them. How does
the study of the “Humanities” guide us in these explorations? Using the ‘tools’ of the humanities including expression, beliefs and traditions, you will be challenged to reflect deeply on these questions, which you will discuss through the integrated readings in history, literature, arts and philosophy. [Cross-listed as HIST 421, HUM 421, and PHIL 421] Pre-requisite: ENG 112. (4, 4T+OS).

ASTRONOMY (ASTR)

110 INTRODUCTION TO ASTRONOMY (ASTR 1113) 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 (ASTR 1111) 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)

110 INTRODUCTION TO AUTO BODY REPAIR You will be introduced to a work program consisting of on-the-job training, in which you will be exposed to introductory aspects of auto body repair, including tools, safety, work habits, metal work, framework, and refinishing. Prerequisite: MATH 100N and ENG 108N. (4, 3T+1S)

111 METAL WORK I In this course, you will learn metal work in the auto body field. Emphasis is placed on the different types of mild and high strength steel sheet metals used in automobile construction; the physical changes that sheet metal undergoes when damaged; classifications of the different types of sheet metal damage; various techniques for straightening sheet metal damage; introduction to the different types of plastic body fillers and their usage; associated hand tools, power tool applications, and personal safety. Prerequisites: ENG 108N and MATH 100N; Co-requisite: ABR 110. (4, 3T+1S)

112 REFINISHING I You will learn the basic skills and knowledge associated with refinishing 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. Prerequisite: ENG 108N and MATH 100N; 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. Prerequisite: ENG 108N and MATH 100N; 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. Prerequisite: ENG 108N and MATH 100N; Co-requisite: ABR 110. (5, 2T+3S)

115 ESTIMATION - AUTO BODY REPAIR You will learn the methods and procedures involved in shop estimating of collision damage. You will visually inspect and record physical damage, and prepare and record preliminary information associated with collision damaged vehicles. You will discuss business practices, with emphasis placed on personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. Prerequisite: ENG 108N and MATH 100N; Co-requisite: ABR 110. (4, 0T+4S)

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. Pre-requisite: ABR 110 and 111. (4, 1T+3S)

211 METAL WORK II In this continuation of ABR 111, you will learn about the preparation of non-structural analysis and damage repair. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, power equipment; and outer body panel repairs. Prerequisite: ABR 111. (4, 1T+3S)

212 REFINISHING II You will continue to develop skills in the application of modern automotive paint systems. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, power equipment; surface preparation, uses and properties of refinishing material; spray gun and related equipment operation; paint measuring and mixing; color matching, and base/clear applications. Prerequisite: ABR 112. (5, 2T+3S)

213 METAL WORK III You will continue to expand your skills in metal work, concentrating on outer body panel repairs,
replacements, and adjustments. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. Prerequisite: ABR 211. (4, 1T+3S)

214 REFINISHING III You will refine your painting skills to include complete refinishing jobs in various types of paint systems, refinishing defects, causes, and cures. Emphasis is placed on demonstrating compliance with personal and environmental safety practices associated with clothing, eye protection, handling of hazardous materials, hand tools, and power equipment. Prerequisite: ABR 211. (5, 2T+3S)

215 SOFTWARE APPLICATIONS You will learn the use of software associated with estimating overall costs for auto body repair jobs. Prerequisite: ENG 108N and MATH 100N. (3, 0T+3S)

AUTOMOTIVE TECHNOLOGY (ATEC)
To enroll in any of these courses, you must have first successfully completed MATH 100N or a higher level math course, or scored above MATH 100N on the Course Placement test, or have permission of the instructor.

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. (1, 1T+0S)

101 BASIC SERVICE FUNDAMENTALS 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. (4, 2T+2S)

102L ENGINE REPAIR You will study internal combustion theory, engine overhaul procedures and precision tool measuring; includes practice of essential engine testing skills and identification of needed repairs, along with removal and replacement of engines. Pre-requisite: ATEC 101L or instructor permission. (5, 2T+3S)

104L 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. Co-requisite: ATEC 101L. (5, 3T+2S)

105L 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 COATS tire machine, COATS computer balancer, Hunter computer alignment machine, and hydraulic suspension equipment. Co-requisite: ATEC 101L. (4, 2T+2S)

106L MANUAL SUSPENSION You will study the fundamentals of design and operation of front and rear drive manual transmissions, differentials and drive line components; activities include disassembly, measurement, inspection, and reassembly of various transmissions in the car on the bench. Pre-requisite: ATEC 101L or instructor permission. (Fall) (4, 2T+2S)

113L SPECIAL TOPICS You will explore changes in automotive industry and different forms of vehicle fuels. Allows for charges toward GPA emission testing and required training to allow for design specific courses as needed by businesses, state and local government toward employee training. Permission of instructor. (Var., 2T+1-4S)

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)

125 YOU AND YOUR CAR You will study an overview of maintenance and general repair of the complete automobile. (2, 0T+2S)

130 CDL PERMIT PREPARATION Federal regulations require that you obtain a learner’s permit to operate a class A or B (and certain class C) vehicles before applying for a CDL license. In order to obtain a driver’s permit, you must pass the two examinations given by the State MVD, which include general knowledge and air brake tests. To achieve that, you will study the facts, terminology, and regulations needed to pass the learner’s permit testing through reviews and practice testing to acquaint you with the testing procedure. (3, 3T+0-S)

139 A/C RECOVERY/RECYCLE You will study the proper automotive A/C Recovery and Recycling of refrigerants and Federal EPA requirements. You will be required to test and pass the ASE Recovery/ Recycling certification test. Pre-requisite: 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. Pre-requisites: 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. Pre-requisites: ENG 108N, MATH 100N, and RE 103. Recommended co-requisite: ELEC 190. Cross-listed as RE 146. (4, 2T+2S)

203A AUTOMOTIVE ELECTRICAL AND ELECTRONICS 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. Pre-requisite: ATEC 101L or permission of instructor. (5, 2.5T+2.5S)

203B AUTOMOTIVE ELECTRICAL AND ELECTRONICS You will continue your study of automotive electrical and electronic systems. Pre-requisite: ATEC 203A. (5, 2.5T+2.5S)

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. Pre-requisite: ATEC 101L. (5, 3T+2S)

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. Pre-requisite: ATEC 101L. (5, 3T+2S)

210A ENGINE PERFORMANCE You will study basic fuel and ignition systems along with early emission systems through structured labs permitting in-depth analysis of how these systems affect drivability. You will study fuel, ignition, and emission devices in early generation computer systems; diagnostic skills and repair methods including throttle body fuel injection, electronic feedback carburetors, and distributor ignition. Pre-requisite: ATEC 101L; Co-requisite: ATEC 109L and 207. (5, 2.5T+2.5S)

210B ENGINE PERFORMANCE You will continue your study of automotive engine performance. Pre-requisite: ATEC 101L; Co-requisites: ATEC 109L and 207. (5, 2.5T+2.5S)

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. Pre-requisite: Permission of instructor. (1-4, 0T+1-4S)

BARBERING (BARB)

Pre-requisite for any Barbering course is completion of ENG 108N, or adequate score on the Course Placement Evaluation instrument.

110 BARBERING I You will study the history and principles of hygiene, bacteriology, sanitation and sterilization. Emphasis is on implements and nomenclature of the profession. (5, 5T+0S)

110L BARBERING I LAB You will practice the fundamentals and basic haircutting techniques, including practice in linen use, draping, shampooing, and use of implements. (9, 0T+9S)

120 BARBERING II You will study the chemistry, anatomic and physiological disorders of skin, hair, and scalp, along with an overview of shop management, and the rules and regulations of the Board. (5, 5T+0S)

120L BARBERING II LAB You will practice haircutting, shaving, massage, facial, scalp, and hair treatments and hair styling. (9, 0T+9S)

280L BARBERING PRACTICE You will practice haircutting, shaving, massaging, and chemical treatments. You will also review and prepare for the state licensing exam. You will enroll for one credit hour for each 30 clock hours needed. (Variable, 0T+1-9S)

290 BARBERING INSTRUCTOR THEORY I You will gain an understanding of and skills in developing lesson plans, professional conduct, teaching methods, testing measurements, clinic supervision, and classroom management. Pre-requisite: you must be a barber licensed in New Mexico. (5, 5T+0S)

290L BARBERING INSTRUCTOR INTERNSHIP I You will practice preparing lesson plans, developing your teaching methodology, using teaching aids, developing tests, and doing records keeping. Pre-requisite: you must be a barber licensed in New Mexico. (9, 0T+9S)

291 BARBERING INSTRUCTOR THEORY II You will gain an understanding in the development of lesson plans, in-depth notes, preparation of all teaching materials for supervised teaching experience; test development, lecture preparation, demonstration, and audio-visual presentations. (5, 5T+0S)
291L  BARBERING INSTRUCTOR INTERNSHIP II You will practice teaching, theory and laboratory, under the direction of a licensed instructor. (9, 0T+9S)

**BILINGUAL EDUCATION (BLED)**

305 SPANISH LITERACY FOR BILINGUAL EDUCATION You will study the practical implementation of Spanish literacy skills, including reading, writing, listening, and speaking. Your instructor will teach the course in Spanish and monitor your Spanish language proficiency throughout the course. (3, 3T+0S)

330L  MODELS & STRATEGIES FOR TEACHING IN BILINGUAL EDUCATION You will focus on assessing the needs of students in bilingual classrooms, developing curriculum and materials, and effective teaching methods in the dual language or multilingual classroom. You will also examine the theoretical foundations and recent research findings that align classroom practice. (3, 2T+1L)

438 CONCEPTS OF LINGUISTICS IN EDUCATION You will review basic concepts of linguistics and subsystems of language. You will examine and discuss a review of the research on language acquisition, and you will analyze the different kinds of language processing that are involved in comprehension and expression in first (L1) and second (L2) languages. Pre-requisite: BLED 305. (3, 3T+0S)

450L INTEGRATING BI-LITERACY AND BILINGUAL CONTENT STRATEGY INSTRUCTION You will be provided authentic application of the content-based instruction for bilingual education and ESL. You will demonstrate theoretical and practical applications of ESL for academic instruction. You will discuss and demonstrate the principles of differentiating instruction in the bilingual education and/or ESL classroom. The course content will be taught in both English and Spanish, and you will be required to participate in a field-based practicum in a bilingual and/or ESL classroom. Pre-requisites: ED 331, BLED 305, BLED 330, BLED 438, and department permission. (3, 2T+1L)

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

110L  CURRENT TOPICS IN BIOLOGY LAB Co-requisite: BIOL 110. (3, 3T+0S)

136 HUMAN ANATOMY & PHYSIOLOGY I FOR HEALTH SCIENCES You will study basic human anatomy and physiology for students in the health science programs. This course covers important biological concepts (including biological chemistry, cells, and tissues) and the integumentary, skeletal, muscular, and nervous systems. Prerequisite: ENG 109N. Co-requisite: BIOL 136L. (3, 3T+0L)

136L  HUMAN ANATOMY & PHYSIOLOGY I LAB FOR HEALTH SCIENCES In this lab experience for BIOL 236, you will cover basic biological concepts, cells, tissues, and the integumentary, skeletal, and nervous systems. Co-requisite: BIOL 136. (1, 0T+1L)

137 HUMAN ANATOMY & PHYSIOLOGY II FOR HEALTH SCIENCES In this continuation of BIOL 136, you will study the endocrine, cardiovascular, respiratory, digestive, excretory, reproductive systems, and human genetics. Prerequisites: BIOL 136 and 136L. Co-requisite: BIOL 137. (1, 1T+1L)

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. 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, involving discussions on 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. Co-requisite: BIOL 160L. Prerequisite: Prerequisites: BIOL 110 and BIOL 110L or higher-level BIOL. (Fall) (3, 3T+0L)

160L  BIOTECHNOLOGY LAB I (2, 0T+2L) In this laboratory experience, you will study techniques focusing on proper protocols in record keeping, genomic and plasmid DNA isolation, determining DNA concentration by UV spectrosopy, cloning and subcloning, preparation of growth curves, measuring bacterial growth by viable counts and spectrosopy, restriction mapping, enzyme assays, regulation of gene expression, cloning vectors, DNA sequencing, preparation of DNA probes, and hybridization. (Fall) Co-requisite: BIOL 160. Prerequisites: BIOL 110 and BIOL 1110L or higher-level BIOL. (Fall) (1, 0T+3L)
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. Pre-requisite: CHEM 121/L; co-requisite: BIOL 201L. [Fall only]. (3, 3T+0L)

201L PRINCIPLES OF MOLECULAR AND CELL BIOLOGY LAB You will experiment with techniques and methods in molecular and cell biology to support concepts in lecture. Co-requisite: BIOL 201. (1, 0T+1L)

202 PRINCIPLES OF GENETICS You will be exposed to an overview of Mendelian genetics: physical and chemical structure of the hereditary molecules and the role of chromosomes; mitosis, meiosis, and the molecular basis of inheritance; DNA metabolism to include replication, repair, and recombination; genes to proteins; genetic models (viruses and bacteria), eukaryotic genomes, genetic basis of development, and an overview of genomes. Pre-requisite: BIOL 201 and 201L; Co-requisite: BIOL 202L. [Spring only] (3, 3T+0S)

202L PRINCIPLES OF GENETICS LAB You will experiment in genetics with a focus on bacterial, yeast, plant, and drosophilia 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. Pre-requisite: BIOL 202 and MATH 130; co-requisite: BIOL 203L. (3, 3T+0L)

203L ECOLOGY AND EVOLUTION LAB You will learn practical applications of the tools and methods used by ecologists and evolutionary biologists to address research questions; an introduction to statistical and sampling techniques used to collect and analyze data on fossils, plants, and animals. Co-requisite: BIOL 203. (1, 0T+1L)

204 PLANT AND ANIMAL FORM AND FUNCTION You will study plant structure and growth, transport in plants, plant nutrition, plant reproduction and development, control systems in plants, introduction to animal systems, animal nutrition, circulation of gas exchange, immune systems, control of the internal environment, chemical signals in animals, reproduction, development, nervous systems, and sensory and motor mechanisms. Pre-requisites: BIOL 203/L and CHEM 122/L. Co-requisite: BIOL 204/L. (3, 3T+0L)

204L PLANT AND ANIMAL FORM AND FUNCTION You will engage in laboratory experiences supportive of BIOL 204, for which this course is a co-requisite.

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, or the equivalent at high school or college within past two years. Co-requisite: BIOL 210L. (3, 3T+0L)

210L MICROBIOLOGY LAB Co-requisite: BIOL 210. (1, 0T+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, or the equivalent at high school or college within past two years. Co-requisite: BIOL 237L. (3, 3T+0L)

237L HUMAN ANATOMY AND PHYSIOLOGY I LAB Co-requisite: BIOL 237L. (3, 3T+0L)

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 237/237L or permission of instructor. 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 Continuation of Biotechnology Seminar I. You will discuss current issues in DNA technology and biotechnology applications; explores career options in the biomedical research area. (Spring) Co-requisite: BIOL 260L. Prerequisite: BIOL 160 and 160L. (Spring) (3, 3T+0L)

260L BIOTECHNOLOGY LAB II You will develop techniques for PCR, DNA sequencing and analysis, gene expression in: lambda phage 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. Preerequisite: BIOL 290. (3, 3T+0L)

351 MICROBIOLOGY You will study anatomy, physiology, and ecology of microorganisms and the principles of bacterial techniques, host-parasites relationships, and infection and immunity. Pre-requisite: BIOL 204/L; Co-requisite: BIOL 351L. (3, 3T+0L)

360L GENERAL BOTANY You will study plant anatomy, physiology, classification, evolution, and ecology as it deals with both higher and lower plants. Pre-requisite: BIOL 204/L. (3, 3T+0L)

361L MICROBIOLOGY LAB You will engage in laboratory experiences supportive of BIOL 351, for which this course is a co-requisite. (1, 0T+1L)

360 GENERAL BOTANY LAB You will engage in laboratory experiences supportive of BIOL 360, for which this course is a co-requisite. (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. Pre-requisite: BIOL 204/L; Co-requisite: 371L. (3, 3T+0S)

371L INVERTEBRATE BIOLOGY LAB You will engage in laboratory experiences supportive of BIOL 371, for which this course is a co-requisite. (1, 0T+1L)

386 GENERAL VERTEBRATE BIOLOGY You will study the ecology, behavior, sociology, adaptations, and evolution of the vertebrates. Co-requisite: BIOL 386L. (3, 3T+0S)

386L GENERAL VERTEBRATE BIOLOGY LAB You will be engaged in lab experiences dealing with the ecology, behavior, sociology, adaptations, and evolution of the vertebrates. Co-requisite: BIOL 386. (1, 0T+1L)

392 UNDERGRADUATE RESEARCH EXPERIENCE III This is a practical faculty-directed research experience for undergraduate biology students. During the regular semester you will perform 8-10 hours per week 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)

410 BIOINFORMATICS You will use computers to search biological databases to hunt for genes, discover protein structures, and determine phylogenetic trees from molecular evolution. Pre-requisite: BIOL 202/L. (Fall) (3, 3T+0L)

412 DEVELOPMENTAL BIOLOGY You will study comparative biology of animal development, with emphasis on regulatory mechanisms. Pre-requisite: BIOL 204/L; Co-requisite: BIOL 412L. (3, 3T+0L)

412L DEVELOPMENTAL BIOLOGY LAB You will engage in laboratory experiences supportive of BIOL 412, for which this course is a co-requisite. (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. Pre-requisite: BIOL 201/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. Co-requisite: BIOL 422L (3, 3T+0L)

422L COMPARATIVE VERTEBRATE ANATOMY LAB You will engage in laboratory experiences supportive of BIOL 422, for which this course is a co-requisite. (1, 0T+1L)

425 MOLECULAR GENETICS You will study the molecular biology of the gene. Pre-requisite: BIOL 204/L; Co-requisite: BIOL 425. (3, 3T+0L)

425L MOLECULAR GENETICS LAB You will engage in laboratory experiences supportive of BIOL 425, for which this course is a co-requisite. (1, 0T+1L)

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. Pre-requisites: BIOL 201/L and 204/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 neuroimaging studies. You will also study neural function using computer-based methods.
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, analgessics, and drugs that affect the central nervous system. Pre-requisites: BIOL 201/L and CHEM 210/L. (3, 3T+0L)

435 COMPARATIVE ANIMAL PHYSIOLOGY You will study the function of organ systems in animals, with emphasis on neuromuscular, cardiovascular, gastrointestinal, and renal physiology. Pre-requisite: BIOL 371/L; Co-requisite: BIOL 435L. (3, 3T+0L)

435L COMPARATIVE ANIMAL PHYSIOLOGY LAB You will engage in laboratory experiences supportive of BIOL 435, for which this course is a co-requisite. (1, 0T+1L)

451 GENERAL ECOLOGY You will cover a comprehensive survey of the ecology of individuals, populations, communities, and ecosystems. Pre-requisite: BIOL 204/L. (3, 3T+0L)

451L GENERAL ECOLOGY LAB You will engage in laboratory experiences supportive of BIOL 451, for which this course is a co-requisite. (1, 0T+1L)

456 IMMUNOLOGY You will study experientially immunoglobulin structure, antigen-antibody reactions, immunity, and hypersensitivity. Pre-requisite: BIOL 204/L. Recommended as pre-requisite: CHEM 301/L and 302/L. Co-requisite: BIOL 456L. (3, 3T+0L)

456L IMMUNOLOGY LAB You will engage in laboratory experiences supportive of BIOL 456, for which this course is a co-requisite. (1, 0T+1L)

BUSINESS ADMINISTRATION (BA)

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. Microsoft Excel will be the specific software to which you will be exposed. (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. Microsoft PowerPoint will be the specific software to which you will be exposed. (1, 1T+0S)

117 BUSINESS MATH Fundamental operations including fractions, decimals, percentages, interest computation, present value, amortization, and accounting math within the context of business-oriented word problems. Prerequisite: MATH 100N, (3, 3T+0S)

124 BUSINESS FOR MASSAGE PROFESSIONALS Addresses the business needs of wellness professionals with an emphasis on start-up, marketing, and financial management of a massage therapy practice. You will become familiar with general business terminology. A personal finance unit will be included. (2, 2T+0S)

200 BUSINESS COMPUTER APPLICATIONS You will study the owner/manager approach to the use of microcomputers: systems design, software, business applications, and the Windows environment. (3, 3T+0S)

205 BUSINESS STATISTICS Introduces you to the 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. (3, 3T+0S)

210 PRINCIPLES OF FINANCE Introduces you to the current 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 131. (3, 3T+0S)

220 INTRODUCTION TO BUSINESS Provides an integrated overview of American business and its operations. You will pay special attention to current business, marketing, finance, accounting, and the legal environment of business, and you will complete a small-business plan. Co-requisite: ENG 109N. (3, 3T+0S)

225 EXCEL Illustrates the features of Microsoft Excel, a spreadsheet program that allows you to organize data, complete calculations, make decisions, graph (chart) data, and develop professional-looking reports. Prerequisite: CS 102. (3, 3T+0S)

226 POWER POINT Microsoft PowerPoint is a complete presentation graphics software program that allows you to produce a professional-looking presentation. PowerPoint teaches you to make informal presentations in a small conference room using overhead transparencies, to make electronic presentations using a projection device attached to a personal computer, and to make a formal presentation to a large audience using 35mm slides. Prerequisite: CS 102. (3, 3T+0S)

227 ADVANCED EXCEL You will gain a working knowledge of the advanced applications of Microsoft Excel, including topics in advanced formatting, interpreting, and integrating data. This course is required for Microsoft User Certification Specialist (MOS). Pre-requisite: BA 225. (Spring only) (3, 3T+0S)

230 INTERMEDIATE ACCOUNTING I You will continue your study of accounting within a conceptual framework determined by generally accepted accounting principles, financial accounting functions and theory, and recognition and measurement of assets. Pre-requisites: BA 131, ENG 111. and BA 205. (3, 3T+0S)

231 INTERMEDIATE ACCOUNTING II In this course, you will address financial accounting, with an emphasis on external
reporting to the investing public in accordance with generally accepted accounting principles. Pre-requisite: BA 304. (3, 3T+0S)

232 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 131. (3, 3T+0S)

233 ACCOUNTING PRINCIPLES I This is an introductory course in accounting for both accounting majors and non-majors. It introduces you to the aspects of accounting theory and practice, with the fundamental purpose of providing information for decision making. Provides extensive coverage in preparing, analyzing, and interpreting financial statements. The goal is for you to become an intelligent user of financial as well as non-financial information. (3, 3T+0S)

234 ACCOUNTING PRINCIPLES II This course offers both accounting and non-accounting majors an introduction to managerial accounting. Your 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 130. (3, 3T+0S)

235 GOVERNMENTAL ACCOUNTING Accounting processes unique to the non-profit governmental organization, with emphasis on the uses of data in evaluation of past performance and planning future activities for projects. Prerequisite: BA 131. (3, 3T+0S)

236 COMPUTERIZED ACCOUNTING You will use prepared integrated business software, QuickBooks, on microcomputers for the computerization of accounting principles topics. Prerequisites: BA 130. (3, 3T+0S)

240 PRINCIPLES OF MANAGEMENT An overview of management principles as these apply to the public, private, and tribal sectors. You will pay special attention to techniques of managerial decision making, the planning process, motivation, leadership, and communication skills. Prerequisite: ENG 108N. (3, 3T+0S)

242 BUSINESS INFORMATION SYSTEMS You will be introduced to business systems and the information technology that supports them, including systems theory, organizational structure and culture, and the role of information systems in a business environment. (3, 3T+0S)

245 COST ACCOUNTING You will study product-cost determination and cost-control elements as applied to basic job order processes and standard cost systems, using relevant accounting data to improve decision making. Pre-requisite: BA 305(3, 3T+0S)

250 BUSINESS COMMUNICATIONS You will develop skills in business writing with an emphasis on the preparation of letters and reports, and on presenting information in a logical, forceful, and acceptable form. Pre-requisite: ENG 111. (3, 3T+0S)

251 PRINCIPLES OF MARKETING This course covers the marketing process from the inception to conclusion of goods and services, including market, product distribution, promotion, and pricing strategies; devotes special attention to analysis of market and consumer behavior. Prerequisite: BA 120. (3, 3T+0S)

258 INDIAN GAMING, ENTREPRENEURSHIP, SOVEREIGNTY, AND CASINOS You will survey games played by Pueblo Indians from earliest times to the present and how the establishment of casinos fits within these traditions. You will study the recent history of gaming from Bingo operations and the tribal court battles to the passage of the federal Indian Gaming Regulatory Act (1988). You will also explore and debate the importance of political and economic issues to Pueblo gaming. Pre-requisite: ENG 111. Cross-listed as PIS 258. (3, 3T+0S)

266 BUSINESS LAW Introduces you to general legal principles, including the creation of laws, contracts, sales, business, insurance, and other related matters. Prerequisites: ENG 109N. (3, 3T+0S)

300 BUSINESS LAW Introduces you to general legal principles, including the creation of laws, contracts, sales, business, insurance, and other related matters. Prerequisites: ENG 109N. (3, 3T+0S)

304 INTERMEDIATE ACCOUNTING I You will continue your study of accounting within a conceptual framework determined by generally accepted accounting principles, financial accounting functions and theory, and recognition and measurement of assets. Pre-requisites: BA 131, ENG 111 and BA 205(3, 3T+0S)

305 INTERMEDIATE ACCOUNTING II In this course, you will address financial accounting, with an emphasis on external reporting to the investing public in accordance with generally accepted accounting principles. Pre-requisite: BA 304. (3, 3T+0S)

310 PRINCIPLES OF FINANCE Introduces you to the current 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 131. (3, 3T+0S)

313 ORGANIZATIONAL BEHAVIOR You will study the application of 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. Pre-requisite: BA 202. (3, 3T+0S)

315 ORGANIZATIONAL THEORY AND DESIGN You will examine organizational behavior on the “macro” level using case analysis topics covering organizational effectiveness, dimensions of organizational structure, determinants of structure, applications, and contemporary issues. (3, 3T+0S)
324 FEDERAL TAX ACCOUNTING I You will study federal income tax concepts and their effects on individuals, focusing on the history and background of taxes, gross income, exclusions, allowable deductions, and the basis for gain and loss on the disposition of property. Pre-requisite: BA 130, ENG 111, and BA 205. (3, 3T+0S)

330 PRINCIPLES OF PROJECT MANAGEMENT You will address the complex and unique issues related to effectively managing projects through emphasis on nine knowledge areas specified by the Project Management Institute (PMI). Pre-requisite: BA 313. (3, 3T+0S)

331 SPREADSHEET MODELING AND DECISION MAKING You will study management science and operations research used to model and aid business decisions. You will become familiar with linear programming, project management, inventory, and forecasting. Pre-requisite: BA 330. (3, 3T+0S)

332 MANAGEMENT PROCESSES AND FUNCTIONS You will study the management of planning resources, management information systems in operations, and applications in various organizations. Pre-requisite: BA 331. (3, 3T+0S)

333 PROJECT PLANNING AND EXECUTION You will learn to integrate baseline development, scheduling, bottom-up estimating, and systems, with emphasis on Earned Value Management and performance measurement. Pre-requisite: BA 332. (3, 3T+0S)

344 COST ACCOUNTING You will study product-cost determination and cost-control elements as applied to basic job order processes and standard cost systems, using relevant accounting data to improve decision making. Pre-requisite: BA 305. (3, 3T+0S)

350 ENTREPRENEURSHIP You will examine methods of small business management and business formation, with an emphasis on the traditional business functions in a small setting. (3, 3T+0S)

352 ACCOUNTING INFORMATION SYSTEMS You will analyze current practices and technologies used to design, install, operate, and manage an integrated automated accounting system. In addition, you will examine application controls, information security requirements, and integration with other business information systems. Pre-requisite: BA 305. (3, 3T+0S)

353 OPERATIONS MANAGEMENT You will explore the fundamental concepts of operations including productivity, quality control, and total quality management. Pre-requisite: BA 205. (3, 3T+0S)

354 E-COMMERCE Techniques, problems, and solutions in eCommerce. You will cover marketing plan considerations, online catalogs, payment methods, security, outsourcing options, and the technologies behind eCommerce web sites. (Cross listed as BA/CT 140). (3, 3T+0S)

360 HUMAN RESOURCES MANAGEMENT Provides you with the 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)

405 ACCOUNTING FOR NON-PROFIT ORGANIZATIONS You will do an in-depth study of accounting and financial reporting for the federal government, state and local governments, and not-for-profit organizations using the financial statement-oriented approach. Pre-requisite: BA 305. (3, 3T+0S)

411 MANAGERIAL ACCOUNTING You will examine advanced topics in management accounting as they relate to management information needs for planning, control, and decision making. You will study the interpretation of standard cost variances, the application of quantitative techniques, the evaluation of divisional performance, activity-based costing, and the behavioral impact of accounting systems. Pre-requisite: BA 344. (3, 3T+0S)

424 FEDERAL TAX ACCOUNTING II You will address the special tax issues of corporations, partnerships, s-corporations, gift taxes, estates, and trusts. You will use computer applications to research, solve, and analyze tax problems. Pre-requisite: BA 324. (3, 3T+0S)

429 ADVANCED ACCOUNTING You will conduct an advanced study of corporate financial analysis and planning including capital budgeting, cost of funds, and capital structure and valuation. Pre-requisite: BA 424. (3, 3T+0S)

432 STRATEGIC MANAGEMENT You will study the basic concepts, frameworks, and methodologies useful to managers in crafting and executing business strategy, including quality management. Pre-requisite: BA 202, ENG 111, and BA 205. (3, 3T+0S)

434 PROJECT EXECUTION AND CLOSEOUT You will conduct an in-depth examination and application of the change and control process which focuses on proper closure processes necessary for all projects. Pre-requisite: BA 333. (3, 3T+0S)

435 PROCUREMENT CONTRACTING AND SUPPLY CHAIN MANAGEMENT You will do problem solving in addressing elements of commercial law and procurement practices, and the implications for project management. Pre-requisite: BA 434. (3, 3T+0S)

436 ADVANCED PROJECT MANAGEMENT You will explore the latest theoretical, practical, and strategic developments in the management of modern projects, discussing management styles, management strategies, systems engineering, and various functional areas in project management usually not covered in a basic course. Pre-requisite: BA 434. (3, 3T+0S)
153 Framing Carpentry with Wood / Steel Studs

Covers the basics of standard stud frame building construction with emphasis on walls. Wood frame construction is emphasized; steel frame construction gets secondary attention. Safety, tools, measuring and cutting materials begin the course. You will learn the various parts of a wall framing system, their proper size, and how to fasten them together. Classes will be conducted on- and off-campus. (4, 2T+2S)

154 Finish Carpentry

Covers the techniques, materials, and tools used in finish carpentry. Emphasis is on interior finish woodwork, such as the trim around windows and doors, and at junctures between floors and walls. Also covers traditional and historical methods and materials found in the Southwest. Includes new materials and emerging techniques which are replacing wood. Classes will be conducted on- and off-campus. (4, 2T+2S)

155 Specialized Carpentry

Covers the techniques, materials, and tools used in specialized carpentry. Includes stair building; deck and rail building; cabinetry installation; and the construction of light shafts, skylights, dormers, and site-built trusses; foundations of wood and concrete foundation formwork. (6, 6T+0S)

156 Internship

You will have an opportunity to expand your learning environment in your field of specialization within a job-related environment. Pre-requisite: You must petition to enroll in this course. (6, 6T+0S).

Carpentry (CARP)

152 Project Management Capstone

You will study the computer applications that support project management, from baseline development to end-user reporting. Pre-requisite: BA 434. (3, 3T+0S)

154 Finishing Carpentry

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. (3, 3T+0S)

155 Specialized Carpentry

Covers the techniques, materials, and tools used in specialized carpentry. Includes stair building; deck and rail building; cabinetry installation; and the construction of light shafts, skylights, dormers, and site-built trusses; foundations of wood and concrete foundation formwork. (4, 2T+2S)

156 Internship

You will have an opportunity to expand your learning environment in your field of specialization within a job-related environment. Pre-requisite: You must petition to enroll in this course. (6, 6T+0S).

157 Carpentry Apprentice Level 1A

This course is for Carpentry Apprentices in the National Construction Trades Center for Education and Research (NCCER) Program. The four-year program leads to Journeyman Certification by NCCER, where credentials reside in the National Registry. Instruction and testing is by NCCER certified instructors. The course covers basic safety, an introduction to construction math, an introduction to hand and power tools, an introduction to blueprints, basic rigging, and wood building materials. Pre-requisite: acceptance into the NCCER program. (6, 6T+0S)

158 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. Pre-requisite: CARP 171 (6, 6T+0S)

159 Carpentry Apprentice Level 1C

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. Pre-requisite: CARP 172, or NCCER admission at this level. (6, 6T+0S)

159 Carpentry Apprentice Level 1D

This course covers concrete forms, reinforcing concrete, handling and placing of concrete, and manufactured forms. This is the fourth in the NCCER program. Pre-requisite: CARP 173.

160 Carpentry Apprentice Level 2A

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. Pre-requisite: CARP 174 or NCCER admission at this level. (6, 6T+0S)

161 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. Pre-requisite: CARP 173.

162 Carpentry Apprentice Level 2C

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. Pre-requisite: CARP 174 or NCCER admission at this level. (6, 6T+0S)

163 Carpentry Apprentice Level 2D

This course covers concrete forms, reinforcing concrete, handling and placing of concrete, and manufactured forms. This is the fourth in the NCCER program. Pre-requisite: CARP 173.

164 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. Pre-requisite: CARP 174 or NCCER admission at this level. (6, 6T+0S)

165 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. Pre-requisite is CARP 175. (6, 6T+0S)

166 Carpentry Apprentice Level 4A

Covers lite layout two, angular measurement, advanced roof systems, and...
advanced floor placement. Pre-requisite is CARP 176, or NCCER admission at this level. This course is the seventh course in the NCCER program. (6, 6T+0S)

179 CARPENTRY APPRENTICE LEVEL 4B This course covers advanced wall systems, advanced stair systems, introduction to light equipment, introductory skill for the crew leader, welding and metal buildings are elective modules. Pre-requisite is CARP 177. This is the eighth, and last, 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; 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. 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. Co-requisite: CHEM 122L. (3, 3T+0L)

122L GENERAL CHEMISTRY II LAB Co-requisite: CHEM 122. (1, 0T+1L)

210 INTEGRATED ORGANIC & BIOCHEMISTRY Introductory, non-laboratory 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. Pre-requisite: CHEM 110/L or CHEM 121/L; Co-requisite: CHEM 210L. (3, 3T+0L)

210L INTEGRATED ORGANIC & BIOCHEMISTRY LAB A Co-requisite of CHEM 210, 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. (1, 0T+1L)

221 QUANTITATIVE AND 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. Pre-requisites: CHEM 121/L and 122/L, or permission of instructor. (3, 3T+0L)

301 ORGANIC CHEMISTRY I You will study the chemistry of the compounds of carbon. Pre-requisite: CHEM 122/L; Co-requisite: CHEM 301L. (3, 3T+0L)

301L ORGANIC CHEMISTRY I LAB You will engage in laboratory experiences supportive of CHEM 301, for which this course is a co-requisite. (1, 0T+1L)

302 ORGANIC CHEMISTRY II In this continuation of CHEM 301, you will continue your study of carbon compounds. Pre-requisite: CHEM 301/L. (3, 3T+0L)

302L ORGANIC CHEMISTRY II LAB You will engage in laboratory experiences supportive of CHEM 302, for which this course is a co-requisite. (1, 0T+1L)

311 PHYSICAL CHEMISTRY You will study the quantitative principles of chemistry, gases, thermodynamics, quantum systems, equilibrium, kinetics, and spectroscopy. Pre-requisites: 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, for which this course is a co-requisite. (1, 0T+1L)

341 SURVEY OF BIOCHEMISTRY You will study the biochemistry of metabolic pathways, pH regulation, membranes and receptors, hormonal regulation, bioenergetics, nucleic acids, proteins, and enzymes. Pre-requisite: CHEM 210/L. (Spring) (3, 3T+0L)
215

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. Pre-requisite: CHEM 311/L; Co-requisite: CHEM 421L.

421L BIOCHEMISTRY LAB You will engage in laboratory experiences supportive of CHEM 421, for which this course is a co-requisite. (1, 0T+1L)

CIVIL ENGINEERING (CE)

233 STATICS Statics of particles and rigid bodies in two and three dimensions using vector algebra as an analytical tool. Includes centroids, loads, trusses, frames, and friction. Prerequisite: MATH 162. (3, 3T+0S)

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)

COMPUTER SCIENCE (CS)

Unless otherwise noted, these courses are offered each term.

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)

103 INTRODUCTION TO COMPUTER APPLICATIONS I An introduction to software programs commonly used for personal or professional use. May be repeated for credit. (1, 1T+0S)

104 INTRODUCTION TO COMPUTER APPLICATIONS II An introduction to software programs commonly used for personal or professional use. May be repeated for credit. (1, 1T+0S)

105 INTRODUCTION TO DATABASES Through an introduction to database software, you will study basic database table, query, form, and report creation and management. Pre-requisite: CS 102 or IT 101. (3, 3T+0S)

106 INTRODUCTION TO THE INTERNET Fundamentals of the Internet, including the use of browsers for searches, menus, setting up preferences, bookmarks, and downloading files from the World Wide Web network. Introduction to how to prepare a home-page and linking to other existing web-pages. Also includes an introduction to e-mail. (1, 1T+0S)

132 INTRODUCTION TO PROGRAMMING You will use a modern high-level programming language to learn the basic concepts and practices of procedural and object-oriented programming. This course is suitable for non-CS majors or those seeking an introduction to CS. Prerequisite: MATH 102N and CS 102 (3, 2T+1S)

142 COMPUTER SCIENCE I Through program analysis and design using a high-level programming language, you will study the fundamentals of program design, basic programming techniques, and concepts of object-oriented programming. Prerequisites: CS 132 or IT 110, and MATH 130. (3, 2T+1S)

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

170 MATHEMATICS FOR COMPUTER SCIENCE You will study discrete mathematics: the logic of predicates, compound and quantified statements, application to digital logic circuits and computer arithmetic, programming logic, elementary number theory, and methods of proof, mathematical induction, algorithms, and combinatorial reasoning. Pre-requisite: MATH 130. [Spring] (3, 3T+0S)

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

210 DATABASE DESIGN AND PROGRAMMING Database theory, design, and programming using Structured Query Language (SQL). Covers database definition and normalization, programming using the industry standard SQL, and server operational considerations. Pre-requisite: CS 105 and 132. [Fall] (3, 2T+1S)

220 ADVANCED JAVA A graphical approach to object-oriented programming, continuing the exploration of classes, methods, encapsulation, and inheritance introduced in CS 142. Also covers event-driven programming. Pre-requisite: CS 142 and MATH 130. [Offered as needed] (3, 2T+1S)

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. Pre-requisites: CS 142 and CS 170. [Fall] (3, 2T+1S)

280 GUI/WINDOWS PROGRAMMING Introduction to event-driven programming and graphical user interfaces (GUI) on a windows platform. The class is taught using TCL/TK or an object-oriented approach using a development environment, such as Visual Studio with VisualBasic. Pre-requisite: 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. Pre-requisite: Three 200-level CS/CT courses, one of which may be taken concurrently. (Cross-listed as CT 295) (3, 3T+0S)

**COMPUTER TECHNOLOGY (CT)**

Unless otherwise noted, these courses are offered each term.

**115 INTRODUCTION TO WEB TECHNOLOGY** An overview of the basic WWW technology and disciplines, including Internet services and the programming and technical skills required to implement them. The core material will be supplemented with current topics, trends, and issues. Pre-requisites: CS 102, ENG 109N, and MATH 102N. [Fall] (2, 2T+0S)

**135 WEB PAGE ANIMATION** Animation for web pages using Macromedia’s Flash or other industry standard software. Pre-requisites: CS 132 and MATH 130. [Fall] (2, 1T+1S)

**140 eCOMMERCE** Techniques, problems, and solutions in eCommerce. Covers topics such as marketing plan considerations, online catalogs, payment methods, security, outcomes options, and the technologies behind e-commerce web sites. (Cross-listed as BA 140) [Spring] (3, 3T+0S)

**150 WEB PROGRAMMING** You will create a web site with (X)HTML, followed by client-side scripting with JavaScript, and be introduced to server-side programming. Pre-requisites: ENGR 109N and MATH 102N, CS 102 and CT 115, or permission of instructor. (2, 1T+1S)

**175 INTERNET PUBLICATIONS I** Introduction to the production of web page design and publication on the Internet. (Cross-listed as VC 175.) [Spring] (4, 3T+1S)

**200 ADVANCED WEB PAGE TECHNIQUES** Advanced techniques in page development, including dynamic HTML, XML, and cascading style sheets. Pre-requisite: CT/VC 175. [Spring] (3, 2T+1S)

**205 DATABASE WEB APPLICATIONS** Theory and practice of building web application solutions using HTML, HTTP, database servers, web servers, and server-side scripting. You will use open source and/or proprietary software to complete a final project with a database back-end and a web site front-end. Pre-requisites: CS 105 and CT 150. [Fall] (3, 2T+1S)

**225 NOVELL SYSTEMS** Introduction to local area networks using Novell Netware, covering installation and configuration of a Netware server and clients (workstations). Pre-requisite: CT 120. [Offered as needed] (3, 2T+1S)

**230 NETWORK SECURITY** You will be introduced to network security, including security practices and software tools. Some of the topics you will cover include secure software design and installation, malware including viruses and worms, and intrusion prevention. Pre-requisites: CT 120 or CT 125, and CS 150. [Spring] (3, 2T+1L)

**280 NETWORKING TEAM PROJECT** As part of a team, you will design, implement, and test a complete network that includes a variety of workstation OSes, Web, mail, and DNS servers; other services as needed, according to a client’s specifications. Because you will exercise both technical and social skills, this course will prepare you for internship or employment. Pre-requisites: Must be taken in graduating semester. All other CS, CT, or IT course requirements must have been completed with grades of C or better, although you may be enrolled in some CS, CT, or IT courses during that semester. (3, 1T+2S)

**290 WEB TEAM PROJECT** Working with a client identified by the instructor, you will work as part of a team to design, build, and deliver a web-based project. Because both technical and social skills will be exercised, this course will prepare you for internship or employment. Pre-requisite: Three 200-level CS/CT courses, one of which may be taken concurrently. [Spring] (3, 3T+0S)

**295 COMPUTER TECHNOLOGY PROJECT** Individual project using tools and skills developed in previous courses. You will define your own project and its goals. Pre-requisite: Three 200-level CS/CT courses, one of which may be taken concurrently. (Cross-listed as CS 295) (3, 3T+0S)

**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)

**152 LABOR LAWS AND SAFETY** Laws dealing with: Labor Standards, Fair Labor Standards, Worker’s Compensation, Child Labor, Employment Security, and subcontractor status. Safety issues: Federal OSHA regulations, hazardous material handling, disposal of hazardous materials, New Mexico and federal reporting requirements. (2, 2T+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, 1096, and others. You will receive ample practice in filling out forms and using tables, formulas, and software to calculate tax liabilities. Covers the differences in proprietorship, partnership, and corporate requirements and reports; records keeping and bookkeeping requirements. (3, 3T+0S)
155 CONSTRUCTION MATH & BLUEPRINT READING  Lumber and materials dimensions; scaling from plans; materials take-off; estimating costs; interpreting construction drawings, specifications, and blueprints; floor plans, elevations, sections, symbols, and notations. (3, 3T+0S)

156 UNIFORM BUILDING CODE  As most of New Mexico is governed by the Uniform Building Code (UBC), special emphasis is given to regulations concerning dwellings. Commercial buildings will also be covered. Introduces the use of CodeCheck software. (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. Pre-requisites: 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. Pre-requisites: MATH 100N, ENG 108N, and CS 102, or permission of instructor. (3, 3T+0S)

COSMETOLOGY (COSM)

Pre-requisite for any Cosmetology course is completion of ENG 108N with a grade of C or better, or adequate score on the Course Placement Evaluation instrument.

110 COSMETOLOGY I  Theoretical training in hygiene, physiology, anatomy, bacteriology, sterilization, sanitation, chemistry, rules and regulations of the State Board of Cosmetology. Co-requisite: COSM 110L. (5, 5T+0S)

110L COSMETOLOGY I LAB  Practical applications on mannequins covering all areas of cosmetology, with the exception of manicuring, pedicuring and sculptured nails; introduction to and practice in salon management techniques. Co-requisite: COSM 110. (9, 0T+9S)

120 COSMETOLOGY II  Continuation of theoretical training including state laws, hair coloring, thermal applications, hair relaxing, hair pressing, cutting and blow dry styling. Prerequisite: COSM 110; Co-requisite: COSM 120L. (5, 5T+S0)

120L COSMETOLOGY II LAB  Practical applications on patrons: haircutting, hair styling, chemical treatments and thermal applications. Co-requisite: COSM 120. (9, 0T+9S)

160L MANICURING/PEDICURING  Theoretical and clinical training in all aspects of acrylic nails, manicuring, and pedicuring in preparation for you to take the state licensing examination. (Fall and Spring only) (12, 3T+9S)

210 COSMETOLOGY III  Continuation of theoretical training including state laws, hair coloring, thermal applications, hair relaxing, hair pressing, cutting and blow dry styling. Prerequisite: COSM 120; Co-requisite: COSM 210L. (5, 5T+S0)

210L COSMETOLOGY III LAB  Practical applications on patrons: haircutting, hair styling, chemical treatments and thermal applications. Co-requisite: COSM 210. (9, 0T+9S)

270L ESTHETICIAN  Provides the theoretical and clinical training in all aspects of skin care in preparation for you to take the state licensing examination. (Fall and Spring only) (14, 5T+9S)

280L COSMETOLOGY PRACTICE  Practical application training in hair coloring, chemical treatments, haircutting, thermal applications, facials, makeup, pedicures, and state laws. You will enroll in this course in order to finish your 1,600 clock-hour program or any other program, or for cross-over or refresher training. You will enroll in one credit hour for each 30 clock hours of training needed. (Variable, 1-9, 0T+1-9S)

290 COSMETOLOGY INSTRUCTOR THEORY I  You will gain an understanding of and skills in developing lesson plans, professional conduct, teaching methods, testing measurements, clinic supervision, and classroom management. Pre-requisite: must be a cosmetologist licensed in New Mexico. (5, 5T+0S)

290L COSMETOLOGY INSTRUCTOR INTERNSHIP I  You will practice how to prepare lesson plans, develop your teaching methodology, use teaching aids, develop tests and do records keeping. Pre-requisite: must be a cosmetologist licensed in New Mexico. (9, 0T+9S)

291 COSMETOLOGY INSTRUCTOR THEORY II  You will gain an understanding in the development of lesson plans, in-depth notes, preparation of all teaching materials for supervised teaching experience; test development, lecture preparation, demonstration, and audio-visual presentations. (5, 5T+0S)
291L COSMETOLOGY INSTRUCTOR INTERNSHIP II
You will practice teaching, theory and laboratory, under the direction of a licensed instructor. (9, 0T+9S)

CRIMINAL JUSTICE (CJ)
Note: Each course in this department bears a Pre- requisite of ENG 109N.

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 Introduces you to 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 Covers 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. Prerequisite: ENG 109N. (3, 3T+0S)

211 INTRODUCTION TO LAW ENFORCEMENT Covers the social and 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. Pre-requisite: ENG 109N. (3, 3T+0S)

228 FORENSIC INVESTIGATIONS Covers 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 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. Prerequisite: CJ 201 or its equivalent. (3, 3T+0S)

233 JUVENILE JUSTICE PROCEDURES Overview of 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)

DANCE (DANC)
Any DANC activity course may be used to satisfy graduation requirements for Health, Physical Education, and Recreation. Each studio courses in this department may be repeated without penalty, each time counting for credit and toward your cumulative grade point average; however, no course may be counted more than once toward graduation requirements.

126 MODERN DANCE Fundamentals of movement and its application to aesthetic communication. (2, 1T+1S)

149 BALLET I Fundamental work in vocabulary, techniques, and styles of ballet for the adult beginner. (2, 1T+1S)

150 HI-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)

211 CHOREOGRAPHY Selection of dance materials and sound accompaniment for solo and group composition. Co-requisite: DANC 212. (3, 1T+2S)

212 DANCE IMPROVISATION You will discover the authentic self in movement; developing skills in group interaction, including the first steps in the use of structure and form in dance composition. Prerequisite: DANC 126; Co-requisite: DANC 211. (2, 1T+1S)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Credit Units</th>
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</thead>
<tbody>
<tr>
<td>219</td>
<td>KINESIOLOGY</td>
<td>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. Pre-requisite: DANC 212.</td>
<td>(3, 1T+2S)</td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>FLAMENCO RHYTHMIC FUNDAMENTALS</td>
<td>You will be introduced to rhythms and meters common in flamenco dance. Includes dancing, percussion playing, singing, and recognition of audio rhythms.</td>
<td>(2, 1T+1S)</td>
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<tr>
<td>240</td>
<td>DANCE APPRECIATION</td>
<td>You will study forms of dance technique and performance while also exploring dancing rituals within different cultures.</td>
<td>(3, 3+0S)</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>HIP-HOP AND JAZZ II</td>
<td>In this continuation of DANC 150, you will be exposed to more advanced dance movements and choreography for group performances.</td>
<td>Pre-requisite: DANC 150.</td>
<td>(2, 1T+1S)</td>
</tr>
<tr>
<td>269</td>
<td>FLAMENCO DANCE II</td>
<td>Continues DANC 169, adding the development of techniques and styles at the intermediate level.</td>
<td>Prerequisite: DANC 169.</td>
<td>(2, 1T+1S)</td>
</tr>
<tr>
<td>292</td>
<td>REPERTORY</td>
<td>Professional training in the learning and performing of a new or staged choreography.</td>
<td>Co-requisite: DANC 169.</td>
<td>(1, 0T+1S)</td>
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**DRAFTING (DRFT)**

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<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
<th>Prerequisites</th>
<th>Credit Units</th>
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</thead>
<tbody>
<tr>
<td>100</td>
<td>COMPUTER AIDED DRAFTING I</td>
<td>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.</td>
<td>(4, 3T+1S)</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>RESIDENTIAL CAD I</td>
<td>Introduction to residential computer-aided drafting, emphasizing the preparation of residential working drawings using AutoCAD.</td>
<td>Pre-requisites: DRFT 100; Co-requisites: MATH 100N and ENG 108N.</td>
<td>(4, 1T+3S)</td>
</tr>
<tr>
<td>102</td>
<td>MECHANICAL ENGINEERING CAD I</td>
<td>Introduction to engineering graphics using AutoCAD. Includes 2 and 3 view orthographic projection, geometric construction and dimensioning.</td>
<td>Pre-requisites: DRFT 100; Co-requisites: MATH 100N and ENG 108N.</td>
<td>(4, 1T+3S)</td>
</tr>
<tr>
<td>103</td>
<td>SURVEYING AND CAD MAPPING I</td>
<td>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.</td>
<td>Pre-requisites: DRFT 100; Co-requisite: MATH 102N and ENG 108N.</td>
<td>(4, 1T+3S)</td>
</tr>
<tr>
<td>107</td>
<td>GLOBAL POSITIONING SYSTEM</td>
<td>GPS basics, including use of receivers, data collection, and differential correction.</td>
<td>Pre-requisite: Familiarity with mapping.</td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>108</td>
<td>AUTOCAD BASICS I</td>
<td>Basics of computer aided drafting using AutoCAD software.</td>
<td></td>
<td>(1, 1+0S)</td>
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<tr>
<td>109</td>
<td>ARCVIEW GIS BASICS I</td>
<td>Basics of map production using ArcView GIS software. Pre-requisite: must be computer literate.</td>
<td></td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>110</td>
<td>GIS/GPS</td>
<td>Introduction to geographical information systems (GIS) using ArcView and the Global Positioning System (GPS) using hand-held GPS receivers. Prerequisites: CS 102 or equivalent experience.</td>
<td>(3, 2T+1S)</td>
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<tr>
<td>111</td>
<td>COMMERCIAL BUILDING CAD</td>
<td>Introduction to commercial building computer-aided drafting, emphasizing the preparation of working drawings using AutoCAD and Architectural Desktop.</td>
<td>Pre-requisites: DRFT 101, and MATH 100N and ENG 108N.</td>
<td>(4, 1T+3S)</td>
</tr>
<tr>
<td>112</td>
<td>MECHANICAL ENGINEERING CAD II</td>
<td>Continues DRFT 102 using AutoCAD or Pro-Engineering, including sectional, auxiliary, and isometric/3D views, and advanced dimensioning.</td>
<td>Pre-requisites: DRFT 102, MATH 100N, and ENG 108N.</td>
<td>(4, 1T+3S)</td>
</tr>
<tr>
<td>113</td>
<td>SURVEYING AND CAD MAPPING II</td>
<td>Continues DRFT 103 using more advanced surveying and CAD mapping. Pre-requisite: DRFT 103 and MATH 102N.</td>
<td></td>
<td>(4, 1T+3S)</td>
</tr>
<tr>
<td>118</td>
<td>AUTOCAD BASICS II</td>
<td>A continuation of DRFT 108 AutoCAD Basics I.</td>
<td></td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>119</td>
<td>ARCVIEW GIS BASICS II</td>
<td>Continuation of DRFT 109, ArcVIEW GIS Basics I, focusing on more advanced GIS map production. Pre-requisite: DRFT 109 or permission of instructor.</td>
<td></td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>122</td>
<td>GEOMETRIC DIMENSIONING AND TOLERANCING</td>
<td>Principles and practices of geometric dimensioning and tolerancing. Pre-requisite: DRFT 102, or permission of instructor.</td>
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<td>(3, 3T+0S)</td>
</tr>
<tr>
<td>123</td>
<td>SURVEYING BASICS</td>
<td>Basics of surveying theory and collection of field data using levels, transits and theodolites. Pre-requisite: MATH 102N or permission of the instructor.</td>
<td></td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>126</td>
<td>AUTODESK LAND DESKTOP BASICS I</td>
<td>You will study the basics of computer-aided drafting using AutoCAD software.</td>
<td></td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>132</td>
<td>PRINTED CIRCUIT BOARD DESIGN</td>
<td>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. Co-requisite: ECET 100/L.</td>
<td>(4, 2T+2S)</td>
<td></td>
</tr>
</tbody>
</table>
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. Pre-requisites: DRFT 101 and MATH 100N and ENG 109N. (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. Pre-requisites: 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. Pre-requisite: 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. Pre-requisites: DRFT 100. (3, 2T+1S)

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. Pre-requisite: ENG 108N and MATH 100N, or permission of instructor. (3, 2T+1S)

216 COMPUTER-AIDED MACHINING II  Advanced CAM using the MasterCAM software, including multi-tool programming and 3D toolpaths. Pre-requisite: DRFT/MT 215. (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. Pre-requisites: DRFT 209 or MT 130, or permission of instructor. (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 be responsible for finding employment and you will be evaluated jointly by program faculty and employer on a CR/NC basis. Pre-requisite: permission of instructor. (2-5)

EARLY CHILDHOOD EDUCATION (ECE)

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)

220 HOW TO GET A JOB  You will develop resumes, portfolios, job search strategies, and interviewing techniques. Pre-requisite: ENG 109N. (1, 1T+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. (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. (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. Pre-requisites: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: ED 201; Co-requisite: ED 326. (Spring) (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. Pre-requisite: ED 201 and MATH 130, and a 4-cr science course w/lab. (Fall) (3, 3T+0S)

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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: ED 201 and ENG 112; Co-requisite: ED 411.. (3, 3T+0S)

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. Pre-requisite: ED 201 and MATH 130. (3, 3T+0S)

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. Pre-requisite: ED 201, MATH 130, and a 4-cr science course s/lab. (3, 3T+0S)

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. Pre-requisite: ED 201 and ENG 112. (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. Pre-requisite: ED 201 and ENG 112. (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. Pre-requisite: permission only. You must have already passed the New Mexico Content Knowledge Assessment of Elementary Education examination; 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. Pre-requisite: 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. Pre-requisite: ED 201 and ENG 112, and/or Department permission. (3,3T+0S).

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. (3,3T+0S)

410 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. (3,3T+0S)

450 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. (3,3T+0S)

460 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 literacy approach (3,3T+0S)

462 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. (3,3T+0S)

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. (3,3T+0S)

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. (2,2T+0S)

495 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. Pre-requisite: ED 401 (3,3T+0S)

496 SUPERVISED FIELD EXPERIENCE This course provides an interaction with other students in the 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. (1,1T+0S)

496L SUPERVISED FIELD EXPERIENCE LAB Provides a field experience in an appropriate 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. (2,0T+2S)

ELECTRICITY (ELEC)

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, overcurrent 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)

ELECTRONICS/ COMPUTER ENGINEERING TECHNOLOGY (ECET)

With the exception of ECET 100 and 100L, you must have tested into ENG 111 and MATH 130 before enrolling in one of these courses.

100 INTRODUCTION TO ELECTRONICS Serves as a foundation for several degree programs in technology, and also provides you with the specific knowledge and hands-on skills required by industry for entry-level employment in electronics. It covers DC and AC circuits, semiconductor circuits, and linear and digital circuits. You will develop competencies such as the use of test equipment, the basics of troubleshooting, and basic circuit operation. Prerequisites: MATH 102N and ENG 109N. Co-requisite: ECET 100L. (3, 3T+0S)

100L INTRODUCTION TO ELECTRONICS LAB Provides you with laboratory experience which applies the theoretical material covered in ECET 100. You will become competent in the use of test equipment, the basics of troubleshooting, and basic circuit operation. Co-requisite: ECET 100. (1, 0T+1S)

106 ELECTRONICS MATH APPLICATIONS Using scientific calculators and personal computers when appropriate, you will use a variety of mathematical methods and techniques to solve problems encountered in DC and AC circuit analysis: exponential and scientific notation, basic trigonometric functions, fractional expressions, simultaneous linear expressions, exponential and logarithmic functions, and phasor notation. Prerequisite: ECET 100 and 100L. (Spring only) (3, 3T+0S)

110 ELECTRONICS I An in-depth study of basic semiconductor electronics in which you will understand, develop, analyze, and troubleshoot circuits containing rectifier and special diodes, bipolar transistors and field-effect transistors, and op-amps. Prerequisites: ECET 1100 and 100L. Co-requisite: ECET 106 and ECET 110L. (Spring only) (3, 3T+0S)

110L ELECTRONICS I LAB Practical applications of ECET 110: focuses on the design, construction, analysis, and troubleshooting of circuits, and on the production of both written and oral reports. Co-requisite: ECET 110. (Spring only) (2, 0T+2S)

111 AC CIRCUIT ANALYSIS In-depth analysis of the relationship between voltage, current, and power in AC circuits. Topics will include circuit network theorems, mesh and node analysis, magnetism and electromagnetism, phasors and complex numbers, and pulse response. The reactive circuits studied include resonance circuits and filters. Prerequisites: ECET 100 and 100L. Co-requisites: ECET 111L and ECET 106 (or MATH 150). [Spring] (3, 3T+0S)

111L AC CIRCUIT ANALYSIS LAB First hand experience of the ideas presented in ECET 111, using power supplies, ammeters, analog and digital voltmeters, oscilloscopes, and other appropriate instruments to measure and verify the electrical relationships in AC circuits. Troubleshooting skills will be integrated as needed. You will produce written and oral reports for lab activities. Co-requisite: ECET 111. (Spring only) (1, 0T+1S)

115 DIGITAL FUNDAMENTALS In-depth analysis of the theory and application of digital devices used in electronic equipment and computers through analysis of logic gates, number codes, Boolean algebra, combinational logic, logic functions, flip-flops and multi-vibrators, counters, shift registers, and memories. Prerequisites: MATH 102N and ENG 109N. Co-requisites: ECET 100, 100L, MATH 130, and ECET 115L. (Fall) (3, 3T+0S)

115L DIGITAL FUNDAMENTALS LAB Practical application of digital circuit fundamentals and focuses on the design, construction, analysis, and troubleshooting of digital circuits, and on the production of both written and oral reports. Co-requisite: ECET 115. [Fall] (2, 0T+2S)

120 INTRODUCTION TO ADVANCED TECHNOLOGY You will learn the basics of materials science, vacuum systems, helium leak detection, microscopy, physical vapor and sputter deposition, furnace technology, photolithography, etching, clean room, and micro-electromechanical systems (MEMS). Pre-requisites. ENG 109N and MATH 102N. [Fall] (3, 2T+1L)

125 INTRODUCTION TO ROBOTICS You will study the basics of robotics including mechanical construction, simple electronics, sensors and motor control circuits. Gain experience in
microcomputer programming of robots in several programming languages and platforms. Pre-requisite: MATH 102N and ENG 109N. (2, 1T+1S)

130 MICROCOMPUTER SYSTEMS I You will learn to configure, modify, maintain, and troubleshoot personal computers. Emphasizes microcomputer operation including applications software, operating systems, diagnostics, hardware modification, and upgrades. You will be able to set-up, upgrade, and install personal computers in a variety of settings. The course prepares you for professional computer certification, such as the A+ Certification Exam. Prerequisites: MATH 102N and ENG 109N. Co-requisite: ECET 130L. (3, 3T+0S)

130L MICROCOMPUTER SYSTEMS I LAB Practical applications designed to demonstrate firsthand the principles covered in ECET 130, including, as time allows, digital electronics, troubleshooting, repair, and board configuration. Co-requisite: ECET 130. (1, 0T+1S)

140 ELECTRIC VEHICLE CONVERSION: NUTS & BOLTS You will learn through hands-on experience 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. [Spring] (2, 1T+1S)

150 ELECTROMECHANICAL DEVICES You will study the theory and applications of transducers, electromechanical devices, and electronic control circuits. You will conduct, analyze, and troubleshoot related circuits using basic sensors, operational amplifiers, and digital logic circuits to control AC and DC motors, stepper motors, and servomechanisms. Prerequisite: ECET 110 and 110L, ECET 111 and 111L. Co-requisite: ECET 150L. (Spring only) (3, 3T+0S)

150L ELECTROMECHANICAL DEVICES LAB Practical applications of topics studied in ECET 150. You will design, construct, analyze, and troubleshoot related circuits, and produce both written and oral reports. You will gain skills in the assembly, operation, and troubleshooting of small-scale electromechanical systems. Co-requisite: ECET 150. (Spring) (2, 0T+2S)

160 ALTERNATIVE POWER SYSTEMS You will learn the basics of alternative power production from solar and wind energy. A hands-on approach will give you experience with actual solar photovoltaic panels, tracker, wind generator, charge controllers, battery storage, and grid tie systems. Pre-requisites: ENG 109N and MATH 130; Co-requisites: ECET 100 and 100L. (2, 1T+1S)

165 VACUUM, RF POWER, AND PNEUMATICS You will study vacuum technologies, vacuum systems, RF energy and its application in the manufacturing industries, as well as pneumatics principles and applications. Topics include gas laws, vacuum theory, operation and applications of vacuum pumps, gauges and valves, vacuum system leak detection, plasma physics, RF applications and safety, RF generators, transmission lines, and RF interference. Prerequisites: ECET 111 and 111L. Co-requisite: ECET 165L. [Fall] (3, 3T+0S)

165L VACUUM, RF POWER, AND PNEUMATICS LAB Application of vacuum, RF power, and pneumatics principles to manufacturing systems. Co-requisite: ECET 165 [Fall] (1, 0T+1S)

210 ELECTRONICS SYSTEMS Involves a comprehensive study of amplifier circuits (BJT and FET), specialized transistor circuits (UJT, SCR, and PUT), and advanced op-amp circuits and their use in electronic systems. You will apply your comprehensive knowledge to be able to understand, analyze, and troubleshoot an electronics system in communications, robotics, or process control. Prerequisite: ECET 150 and 150L. Co-requisite: ECET 210L (Spring only) (3, 3T+0S)

210L ELECTRONIC SYSTEMS LAB Practical applications of electronic systems. You will design, construct, analyze, and troubleshoot related circuits, and produce both written and oral reports. You will obtain skills in the assembly, operation, and troubleshooting of an electronics system. Co-requisite: ECET 210 (Spring only) (2, 0T+2S)

213 DIGITAL SYSTEMS I You will focus on small digital systems, digital-to-analog and analog-to-digital conversion and communications; introductions to the microprocessor, microcomputer, and their programming and interfacing. Prerequisites: ECET 110/L and ECET 115/L; Co-requisite: ECET 213L [Fall] (3, 3T+0S)

213L DIGITAL SYSTEMS I LAB Practical applications using digital systems; emphasizes digital electronics troubleshooting, repairing, and prototyping. Co-requisite: ECET 213. (Fall only) (2, 0T+2S)

215 DIGITAL SYSTEMS II Interfacing of microprocessor-based systems to external devices and systems, with emphasis on interrupt-driven I/O, process control, and data communications. Prerequisites: ECET 213 and ECET 213L; Co-requisite: ECET 215L. (Spring only) (3, 3T+0S)

215L DIGITAL SYSTEMS II LAB Practical application of digital systems, with emphasis on digital electronics troubleshooting, repairing, and prototyping. Co-requisite: ECET 215. (Spring only) (2, 0T+2S)

230 MICROCOMPUTER SYSTEMS II Configuring, modifying, maintaining, and troubleshooting personal computers and computer networks. Emphasizes microcomputer operation advanced operating systems and advanced diagnostics; network installation and administration, system applications, and data communications basics. The course sequence of ECET 130 and 230 prepares you for professional computer certification such as the A+ Certification Exam. Prerequisite: ECET 130 and 130L; Co-requisite: ECET 230L. (3, 3T+0S)
230L MICROCOMPUTER SYSTEMS II LAB Firsthand laboratory exercises designed to demonstrate the principles covered in ECET 230, including digital electronics, troubleshooting, repair, board-configuration, and network cabling. (1, 0T+1S)

250 ELECTROMECHANICAL SYSTEMS Basic principles of control systems. Provides an overview of robotics systems, merges electronic and pneumatics theory with mechanical applications, and teaches the operation of programmable logic controllers. Prerequisite: ECET 150/L. Co-requisite: ECET 250L. (Spring) (2, 0T+2S)

250L ELECTROMECHANICAL SYSTEMS You will design and troubleshoot a variety of robotics and electromechanical systems. Co-requisite: ECET 250. (Spring) (2, 0T+2S)

260 STATISTICAL CONTROLS You will study the meaning of ‘quality’ and methods for maintaining and improving quality in a manufacturing operation. Emphasizes sampling techniques, basic statistics, variability, control charts, Pareto charts, probability plots, capability analysis, and design of experiments. You will learn to interpret data and make recommendations for improving the quality of a product or process. Meaningful and detailed interpretation of charts and graphs is stressed, and you will use software to analyze and present data graphically. You will be expected to solve problems individually as well as in groups. Prerequisite: MATH 130. (Fall only) (3, 3T+0S)

295 ELECTRONICS TECHNOLOGY PROJECT You will work on your own to complete an individual project using tools and skills developed in previous ECET courses. You will define your goal in consultation with an instructor. Pre-requisite: two 2xx-level ECET courses. (3, 3T+0S)

299 COOPERATIVE WORK EXPERIENCE You will be responsible for finding an approvable co-op job before the end of the third week of classes or be withdrawn from ECET 299. Forty-eight (48) work hours are required to earn one semester hour of credit. You may earn up to five credit hours. You will be evaluated jointly by program faculty and your employer on a CR/NC basis. Prerequisite: Permission of program advisor. (2-5)

ENGINEERING (ENGR)

106N BASIC READING AND WRITING Studies grammar, simple sentence structure, and reading improvement skills; develops abilities in critical thinking. Pre-requisite: adequate score on Course Placement Evaluation; Co-requisites: 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. Pre-requisites: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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)

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 Involves a survey of the history and development of literature written for children through study and analysis of selected readings from fiction and poetry. Projects will reflect students' majors. (Offered sporadically) Prerequisites: 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 112. (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 112. (3, 3T+0S)

292 WOMEN'S LITERATURE A study of literature written by and focusing on women, including novels, short stories, poetry, etc. 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 112. (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: ENG 112. (3, 3T+0S)

296 FILM AS LITERATURE Focuses on viewing films and examining them in light of literary techniques as well as film techniques. Prerequisite: ENG 112. (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)

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 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)

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) (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 113. (Spring only) (1, 0T+1L)

113 INTRODUCTION TO ENVIRONMENTAL SCIENCE II In this continuation of ES 112, you will apply ecologic principles to human societies with a focus on population, growth, natural resource depletion, pollution, and global environmental
issues to more thoroughly comprehend how human interaction affects and threatens the environment. Pre-requisite: ES 112;. (3, 3T+0L)

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. (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 and surface and ground water. You will experience hands-on work with LANL staff and technicians. Pre-requisite: MATH 102N and ES 100. (3, 1T+2S)

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. Pre-requisites: ES 112/L and ES 113. (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. (3, 3T+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. Pre-requisites: BIOL 201/L and CHEM 121/L. (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). Pre-requisite: CS 102, or permission of instructor. (2, 2T+0L)

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, erodion 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. Cross-listed as ES 410. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203/L. (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. Cross-listed as ES 410L. (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. Cross-listed as ES 317. Pre-requisites: ES 112/L and BIOL 203. (3, 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. Pre-requisites: ES 112/L and BIOL 203 (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, sol vapor
extraction, and air sampling systems, and pilot tests. Cross-listed as ES 366. Co-requisite: OSHA 40-hour Hazardous Waste Operations and Emergency Response training as part of this class. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203/L. (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. Cross-listed as ES 338. Pre-requisites: ES 112/L and BIOL 203. (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. You will experience hands-on work with LANL staff and technicians. Pre-requisites: MATH 102N and ES 100. (3, 1T+2S)

### 251 AIR POLLUTION 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. Cross-listed as ES 338. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: MATH 102N 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)

### 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. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: 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. Pre-requisites: ES 112/L, ES 203, and BIOL 203. (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. Cross-listed as ES 217. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: 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. Pre-requisites: PHIL 220 and BIOL 202. (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. Pre-requisites: ES 112/L and BIOL 203. (3, 3T+0L)

333 RADIATION BIOLOGY Survey of radiobiology: effects of differing types of radiation on matter, different radiations and their properties; detailed modes of action of radiation on biochemical and biophysical systems with emphasis on the large macromolecules of living tissue; nature of radiation damage to long-chain nucleic acid molecules; potential problems from indiscriminate use of radiation therapy and diagnostic x-rays, and nuclear facility accidents; effects of low-level radiation exposure. Cross-listed as RAD 233. Prerequisite: permission of instructor. (Spring only) (3, 3T+0L)

336 ENVIRONMENTAL SAMPLING AND INSTRUMENTATION You will study the fundamental standards of environmental monitoring, such as the application and use of site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as obtaining a representative sample; sample containment; design, installation site assessment, monitoring wells, permeability testing, soil vapor extraction and air sparging pilot installations. You will employ principles such as: obtaining a representative sample; sample containment; design, installation, testing and monitoring of wells; design, establish, and collect data from permeability testing, groundwater contour maps, sol vapor extraction, and air sampling systems, and pilot tests. Cross-listed as ES 236. Co-requisite: OSHA 40-hour Hazardous Waste Operations and Emergency Response training as part of this class. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203/L. (3, 3T+0L)

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. Cross-listed as ES 238. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203. (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. Cross-listed as ES 250. Pre-requisites: ES 112/L, 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. Pre-requisites: ES 112/L and BIOL 203. (3, 3T+0S)

399 FIELD PROBLEM Topic developed between student and advisor. Var. 1-6. (1-6T+0L)

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. Pre-requisites: ES 112/L and BIOL 203. (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. Pre-requisites: ES 112/L, ES 220, BIOL 203, and SPCH 130. (3, 3T+0L)

402 ENVIRONMENT, ECONOMICS, AND SUSTAINABILITY You will be involved in critical thinking regarding societal environmental consciousness and technological impact. You will evaluate the fundamentals of economics: scarcity, choice, and opportunity cost. Pre-requisites: ES 112/L, ES 220, and BIOL 203. (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. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203. (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. Cross-listed as ES 210. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203/L; Co-requisite: ES 410L. (3, 3T+0L)


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. Pre-requisite: ES 410. (3, 3T+0L)

412 ENVIRONMENTAL HEALTH AND TOXICOLOGY You will study the relationship between human health and environmental toxicants from an interdisciplinary perspective. You will become familiar with a broad range of concepts, including the nature of hazards, epidemiological study design, exposure assessment, toxicology microbiology, risk assessment, risk perception, and risk management. You will learn to draw the links among human health and sustainability, urbanization, energy production, and relevant ethical issues. Pre-requisites: 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. Pre-requisites: ES 112/L, ES 201/L, and BIOL 203/L (3, 3T+0L)

415 ENERGY AND RESOURCE DEVELOPMENT In this course, 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. Pre-requisites: 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. Pre-requisites. 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 field-work, 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+0L).

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 (CFSFP) for the National Environmental Health Association (NEHA) Exam. (1, 1T+0S)
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)

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)

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)

ENVIRONMENTAL TECHNICIAN  This is a preparation course for the Registered Environmental Technician (RET) for the National Environmental Health Association (NEHA). (1, 1T+0S)

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)

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)

SAFE FOOD HANDLING  Through the use of the National Restaurant Association Education Foundation (NRAEF) ServSafe® Coursework, you will be provided with up-to-date, comprehensive food safety training preparatory to certification. (1, 1T+0S)

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)

INTRODUCTION TO WEAVING  An introduction to design work using basic shuttle techniques; an introduction to warping the loom and understanding how the loom works. You will be required to complete a minimum of one weaving. (Var. 1-3) (1, .5T+.5S) or (2, 1T+1S) or (3, 1T+2S)

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)

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)

KNITTING PART 1  You will study the basics of knitting. Graded CR/NC. (1, .5T+.5S)

KNITTING PART 2  You will learn how to write, modify, and finish patterns while mastering knitting techniques and advanced patterns. Pre-requisite: FA 102. (1, .5T+.5S)

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)

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)

SPINNING I PART 2  You will learn how to spin on drop spindles and three different types of spinning wheels. Pre-requisite: FA 103A. Graded on a CR/NC basis. (1, .5T+.5S)

SPINNING I PART 3  You will polish your proficiency in spinning for specific projects using single and plied yarns. Pre-requisite: FA 103B. Graded on a CR/NC basis. (1, .5T+.5S)

WARP PAINTING PART 1  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)

WARP PAINTING PART 2  Using the painted warp created in FA 106A, you will weave a scarf on a four-harness loom. Pre-requisite: FA 106A. Graded on a CR/NC basis. (1, .5T+.5S)

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)

COLOR THEORY FOR TEXTILES  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)

DESIGN FOR TEXTILES  You will explore the principles of design and its application to textiles. This is the second 1/2 of FA 107. Pre-requisite: 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. Pre-requisite: FA 101, or permission of instructor. (4, 1T+3S)

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, braziliwood, 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. Pre-requisite: FA 113A. (1, .5T + .5S)

113C NATURAL DYES: COLOR COMBINATIONS You will build on your knowledge of natural dyes to combine dye-stuffs 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. Pre-requisite: 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 piecwork. 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: FA 202A. (1, .5T+.5S)

208 MARKETING OF WOVEN GOODS You will create a marketing plan for selling to the occasional retail customer or for running a full-time retail or wholesale business with employees; emphasis on pricing, consignment, and mail order. Pre-requisite: MATH 100N with a grade of “C” or better. (2, 2T+0S)
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 work on individual special projects, with minimal assistance, with permission of the instructor. Pre-requisite: FA 101 and 101L. (3, 0T+3S)

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 1 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. Pre-requisite: 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. Pre-requisite: FA 227B. (1, .5T+.5S)

228L SPECIAL PROJECTS You will work on individual special projects, with minimal assistance, with permission of the instructor. Pre-requisite: 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. Pre-requisite: 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 objectivesprearranged 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. Pre-requisite: 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)

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)

GEODETIC (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 geomorphic, 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)

101 CONDITIONING EXERCISES Various exercises designed to promote endurance, strength, flexibility, and general physical fitness. (1, 0T+1S)

102 AEROBICS I Exercise and movements for general physical fitness. (1, 0T+1S)

103 TENNIS Instruction and participation in the basic skills, rules, and equipment of the game of tennis. Both singles and doubles games will be taught. (1, 0T+1S)

104 STEP AEROBICS I Exercise and movements for developing strength, endurance, and flexibility, with a combination of general physical fitness. (1, 0T+1S)

105 BASKETBALL Instruction and participation in the game of basketball, including rules, skills, shots, and strategies. (1, 0T+1S)

106 GOLF Focuses on the development of knowledge and skill competencies necessary to play golf; emphasis is placed on skill progressions, practice opportunities, and error diagnosis and correction. (1, 0T+1S)

107 WALKING/RUNNING FOR FITNESS Designed for all levels, including walkers, joggers, race walkers, and competitive marathon runners. (1, 0T+1S)

110 SWIMMING A course for those who can swim, not for those who want to learn the basics. It involves supervises lap swimming, including some instruction in swimming for fitness. (1, 0T+1S)

111 WATER AEROBICS Exercises and movements in waist-high water, and usually performed to music, to promote general fitness and health. This course is self-paced and non-competitive, and the ability to swim is not required but preferred. (1, 0T+1S)

112 WEIGHT TRAINING Skill training for developing strength and endurance with free weights and machines, emphasizing knowledge of equipment, lifting safety, and theories of training. (1, 0T+1S)

113 RACQUETBALL I Through actual play, you will learn the basic skills, rules, and strategies of racquetball. (1, 0T+1S)

114 BEGINNING VOLLEYBALL Teaches you the basic skills and rules of volleyball, emphasizing learning basic bump, set, and spike which are the fundamentals of volleyball skills. (1, 0T+1S)

115 SOFTBALL Instructs you in the basic skills, strategies, and rules of softball. (1, 0T+1S)

116 AIKIDO I Basic philosophy, history, and movements of the martial art AIKIDO. (1, 0T+1S)

117 INTRODUCTION TO KUNDALINI YOGA Introduces you to Kundalini Yoga techniques and postures, emphasizing meditation and breathing. (1, 0T+1S)

118 COUNTRY WESTERN DANCE Introduces you to Country and Western two-step and line dance. (1, 0T+1S)

119 HATHA YOGA An integrative approach to Hatha Yoga, exploring philosophy, physical and energetic systems, asanas, pranayama, and yoga therapy. (1, 0T+1S)

120 DOWNHILL SKIING Designed for all levels of downhill skiing. (1, 0T+1S)

121 CROSS-COUNTRY SKIING Designed for all levels of cross-country skiing. (1, 0T+1S)

122 BOWLING Introduction to and practice in the basic skills of bowling. (1, 0T+1S)

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)

127 TAI CHI CHUAN I Includes an introduction to the basic principles and background of Tai Chi, the practice of Qigong exercises, and the study of the Yang style long form. Graded on a Credit/No Credit basis. (1,0T+1S)

128 TAI CHI CHUAN II Continuation of the study of the Yang style long form began in HPER 127; further develops an understanding and practice of the basic principles of Tai Chi and Qigong. Graded on a Credit/No Credit basis. (1,0T+1S)

129 PILATES You will learn the basic concepts and skills in the Pilates method of non-impact mat conditioning designed to increase core strength and stabilization, muscle tone, balance, coordination, and flexibility which develop whole body awareness and control, and which can be modified to various fitness levels. (1, 0T+1S)

130 INTERMEDIATE SWIMMING Designed for individuals with a swimming 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)

132 LIFE-GUARDING TODAY You will learn to recognize hazardous situations and prevent injury, with an emphasis on supervising swimmers, minimizing dangers, preparation of facility records and reports. You will learn rescue skills with a concentration on preventive life-guarding. When you successfully complete this course, you will acquire certification in Life-guarding Training, which includes Professional CPR. Prerequisite: You must know all strokes (free style, breaststroke, sidestroke, and back-crawl) and be able to swim 500 yards of each stroke. (2, .5T+1.5S)

134 WOMEN’S SELF DEFENSE You will learn to use your strength against a perpetrator’s weaknesses to end physical threat by using your mind and body as defensive measures against an attacker. (1, 0T+1S)

135 LEADERSHIP SKILLS IN MOVEMENT EDUCATION FOR ELEMENTARY SCHOOL STUDENTS With a group setting, you will plan and participate in physical movement activities with elementary school students in their local schools, thus integrating leadership skills, physical and movement education, and service learning. (1, 0T+1S)

202 AEROBICS II Continuation of Aerobics I, with emphasis on greater endurance. Prerequisites: HPER 102 and permission of instructor. (1, 0T+1S)

204 STEP AEROBICS II You will learn exercise and movements for developing strength, endurance, and flexibility, with a combination of general physical fitness. (1, 0T+1S)

213 RACQUETBALL II In this continuation of HPER 113, you will put more emphasis on more advanced skills and strategies. (1, 0T+1S)

216 AIKIDO II Continuation of Aikido I, with emphasis on greater skills. Prerequisite: HPER 116 or permission of instructor. (2, 0T+2S)

223 INTERMEDIATE VOLLEYBALL Volleyball competition and play. Focus will be on using skills to learn and develop strategies for competitive play. (1, 0T+1S)

225 POWER CONDITIONING II This is an advanced cardiovascular conditioning course, utilizing weight training, aerobics, and exercise equipment. Prerequisite: HPER 125. (1,0T+1S)

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 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)

105 NURSE AIDE You will acquire the knowledge and skills essential for delivery of safe and effective care in acute care, long term, and home health settings. Specific skills will be demonstrated in the classroom setting with practice and return demonstration in the simulated lab. Application of skills will take place in a clinical setting under the direct supervision of a Registered Nurse. Completion of the course meets the training requirements set forth by the Department of Health and Human Services for Nurse Aid and Home Health Aide and prepares you to take the New Mexico Certification Exam for Nurse Aide. Pre-requisite: ENG 108N and PD 108N and PD 108L; Co-requisite: HSCI 102 and 105L. (4, 4T+0L)

105L NURSE AIDE LAB Practical application of skills in simulated lab and clinical settings for HSCI 105. Graded on a CR/NC basis. Co-requisite: HSCI 105. (1, 0T+1L)

109 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. Pre-requisite: 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)

113 AZTEC-MEXICAN HEALING You will be introduced to the Aztec-Mexican system of healing to maintain individual health and balance with the universe. May be repeated for credit. (1, 1T+0S)

114 KINESIOLOGY FOR MASSAGE THERAPISTS Introduces you to methods of evaluation and bodywork that use a specialized type of muscle testing and various forms of massage and bodywork for corrective procedures. Prerequisites: HSCI 110 or BIOL 237 and 237L, and BIOL 238 and 238L. (2, 2T+0L)

120 AYURVEDA AND ENERGY HEALING I You will experimentally study how to use Ayurvedic Polarity Therapy for self-care and healing. You will be integrating Ayurvedic healing practices and principles, including marma therapy, from the ancient East Indian science of life, with the modern energy work of Polarity Therapy. You will learn to use these simple techniques to improve energy and digestion, deepen relaxation, and speed healing. Graded CR/NC. (1, 1T+0S)

122 AYURVEDA AND ENERGY HEALING II In a continuation of HSCI 120, you will learn how to integrate your previous learning of Ayurvedic healing practices and principles including marma therapy, with the modern energy work of Polarity Therapy, learning specific techniques on how to work with food and digestion. Pre-requisite: HSCI 120. Graded CR/NC. (1, 1T+0S)

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)

150 PERSONAL GROWTH AND SELF-HEALING Personal development of one’s mental, emotional, and physical state. Introduces and discusses therapeutic interventions such as nutrition, stress management, problem solving, exercise, and life-style analysis. Pre- or Co-requisite: ENG 109N. (3, 3T+0S)

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)

160 EMERGENCY MEDICAL TECHNICIAN - BASIC (EMT-B) A U.S. D.O.T. EMT-B course designed for individuals who have an interest in working in the pre-hospital setting. Trains ambulance and rescue personnel to recognize and stabilize patients with life-threatening emergencies at the scene and to transport using specialized items of equipment. When you complete this course you will be eligible to take the state licensing exam which is required to become an EMT in New Mexico. Co-requisite: HSCI 160L; Prerequisite: HSCI 102, or current American Heart Association CPR certification. You must be at least 18 years of age to register for the state board exam; however, high school students are eligible for concurrent enrollment with permission from the department. In general, those 17 years of age may take the course and apply for licensure; however, such applicants must meet special criteria (check with Northern’s Health Science department). In order to register to take the state board exam to become a licensed EMT-B, you must earn 80% or better in this course and also pass HSCI 160L. Pre-requisite: permission of instructor or department chair. (5, 5T+0L)

160L EMERGENCY MEDICAL TECHNICIAN - COMBO REFRESHER Provides you with an update in new protocols, skills, and medical information to already-licensed first responders, EMT-B’s & EMT-I’s. Required every two years to maintain state or national certification. Prerequisite: Certification as First Responder. (1.5, 1.5T+0L)
162L 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 Assn. BLS CPR certification or HSCI 102. (2, 1T+1L)

163 EMT - INTERMEDIATE This course, in combination with EMT-Intermediate Lab and Practicum, consists of 200 hours of instruction (lecture, lab, and practicum), covering the EMT-B review and intermediate curriculum, which consists of assessment of trauma and medical patients, airway management, shock, respiratory emergencies, fluids and electrolytes, adult and pediatric IV therapy, intraosseous therapy, inhalation therapy, obstetrical emergencies, pediatric emergencies, IV and subcutaneous medication administration, cardiovascular emergencies, toxicological emergencies, diabetes management, and medico-legal issues. You must earn 80% or better in HSCI 163, receive “credit” for both HSCI 163L and 164L to be eligible to register to take the state board exam to become an EMT-Intermediate. Prerequisites: EMT-Basic licensure with current CPR card. Co-requisites: 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-requisites: 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 AHA 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)

190 DOSAGE CALCULATIONS Practical approach to dosage calculation and preparation of drugs and solutions. Includes information related to systems of measurements and conversion. Provides useful information for any health care professional responsible for medication administration. Prerequisite: MATH 100N. (2, 2T+0L)

200 FIVE ELEMENT ACCUPRESSURE You will explore the ancient Taoist Five Element theory translated through the 12 organ meridian energies through study of the 55 acupoints and organ meridian energies. You will gain insight into the balancing or the energy of the body, mind, and spirit and will develop assessment skills for each of the 12 organ systems.

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, intra-operative 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 Pre-requirement of ENG 109N.

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)

200 HISTORY OF WORLD RELIGIONS  You will explore the history of major religions of the world: where they came from and how they evolved into their present forms; examines the similarities and differences between them. [Cross-listed as HUM 200] (3, 3T+0S)

220 SOUTHWESTERN WOMEN'S HISTORY  You will explore the 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)

310 INDIGENOUS PERSPECTIVES OF NEW MEXICO HISTORY AND CULTURE  Who and what is New Mexico? Inhabited for thousands of years, New Mexico and its peoples have a complex and wondrous history. From the earliest native inhabitants a steady stream of peoples and cultures, from the Anasazi, Pueblo, Spanish, and the United Stated to the National Laboratories, have shaped New Mexico and its environs. The student will thoughtfully engage in who and what is New Mexico, its arts, politics, economics, history, history, and, and society through various readings. [Cross-listed as HUM 310] Pre-requisites: ENG 112. (4, 4T+0S)

421 HISTORY, LITERATURE, ART, AND PHILOSOPHY  Who are you? Who are we? How did we become what and who we are? What role did we play in shaping the world and ourselves? Different cultures and different interpretations of who we are and what we value and how we represent them. How does the study of the “Humanities” guide us in these explorations? Using the ‘tools’ of the humanities including expression, beliefs and traditions, you will be challenged to reflect deeply on these questions, which will be discussed through the integrated readings in history, literature, arts, and philosophy. [Cross-listed as HUM 421, HSS 421, and PHIL 421] Pre-requisite: ENG 112. (4, 4T+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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite:
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.). Pre-requisite: 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.). Pre-requisite: 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. Pre-requisite: ENG 109N. (3, 3T+0S)

**200 HISTORY OF WORLD RELIGIONS** You will explore the history of major religions of the world: where they came from and how they evolved into their present forms; examines the similarities and differences between them. [Cross-listed as HIST 200] (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)

**202 LEADERSHIP DEVELOPMENT** This course is taught by instructors certified by Phi Theta Kappa, the International Honor Society for Two-Year Colleges, which own the course. The course is designed to provide emerging and existing leaders the opportunity to explore the concept of leadership and to develop and improve their leadership skills. You will integrate readings from the humanities, experiential exercises, films, and contemporary reading on leadership to gain a basic understanding of the concept of leadership theory while developing a personal philosophy of leadership and an awareness of the moral and ethical responsibilities of leadership. Pre-requisite: ENG 109N. (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. Pre-requisite: 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. Pre-requisite: ENG 111. Cross-listed as PIS 281. (3, 3T+0S)

**310 INDIGENOUS PERSPECTIVES OF NEW MEXICO HISTORY AND CULTURE** Who and what is New Mexico? Inhabited for thousands of years, New Mexico and its peoples have a complex and wondrous history. From the earliest native inhabitants a steady stream of peoples and cultures, from the Anasazi, Pueblo, Spanish, and the United Stated to the National Laboratories, have shaped New Mexico and its environs. The student will thoughtfully engage in who and what is New Mexico, its arts, politics, economics, history, and, and society through various readings. [Cross-listed as HIST 310 and HSS 310] Pre-requisites: ENG 112. (4, 4T+OS).

**311 WHY SOCIAL SCIENCES MATTER** Who are we? How are we connected? Humans have been asking these questions throughout history, but the social sciences offer a more contemporary approach to these ideas. Our culture can define our humanness, and power and politics may influence our beliefs and define our social structures. We are separate but bound together by different groupings including but not limited to culture, family, religion and government. Human behavior may be seen on an individual basis, but must be understood in the context of many structures. You, the student, will reflect and contemplate these ideas through the integrated readings in anthropology, political science, sociology and psychology. [Cross-listed as HSS 311, PSY 311, and SOC 311] Pre-requisite: ENG 112. (4, 4T+OS).

**414 HUMANITY AND CREATIVITY** Petroglyphs on a rock wall, a Bach Sonata, Hip Hop, Our Lady of Guadalupe retablo, Gone With the Wind, a Laura Gilpin photograph, the Egyptian Pyramids, Sherman Alexis poetry, a beautiful carved tool, a Navajo weaving, a Michelangelo statue, a Georgia O’Keefe painting are contributions of art to humanity. Since the beginning of time humans have been creating art and enriching civilization. This course will explore human creativity through the arts and challenge students to explore creativity and the effect it has on our lives. [Cross-listed as ART 414 and HSS 414] Pre-requisite: ENG 112. (4,4T+OS)

**421 HISTORY, LITERATURE, ART AND PHILOSOPHY** Who are you? Who are we? How did we become what and who
we are? What role did we play in shaping the world and ourselves? Different cultures and different interpretations of who we are and what we value and how we represent them. How does the study of the “Humanities” guide us in these explorations? Using the ‘tools’ of the humanities including expression, beliefs and traditions, you will be challenged to reflect deeply on these questions, which will be discussed through the integrated readings in history, literature, arts and philosophy. [Cross-listed as HIST 421, HSS 421, and PHIL 421] Pre-requisite: ENG 112. (4, 4T+0S).

422 SENIOR SEMINAR: THESIS AND DEFENSE Are you thinking critically? Are you thinking about problems that resist easy solutions and problems that call for combining your intellect and personal resources? Are you developing thoughtful ideas and pursuing creative alternatives? Contemplating and reflecting about these questions, which will be discussed through the integrated readings in history, literature, arts and philosophy. [Cross-listed as HUM 422] Pre-requisites: HUM 222, 310, 311, 320, 414, and 421. (3, 3T+0S)

HUMANITIES AND SOCIAL SCIENCES (HSS)

222 TEACHING IN DIVERSE COMMUNITIES In today’s world, teaching only those students who share a teacher’s or a community’s background is neither desirable nor likely to happen. Diversity in an educational setting requires teachers to develop a framework for understanding how issues of culture, class and language impact the educational institution and relevant socio-cultural and to practice socioeconomic pedagogy that affirms and legitimizes the diversity of students. Our hope is to prepare “transformative teachers” by not only critically examining self and education, but implementing classroom practices that promote equity and justice and rigorous academic achievement for all students. (3, 3T+0S)

310 INDIGENOUS PERSPECTIVES OF NEW MEXICO HISTORY AND CULTURE Who and what is New Mexico? Inhabited for thousands of years, New Mexico and its peoples have a complex and wondrous history. From the earliest native inhabitants a steady stream of peoples and cultures, from the Anasazi, Pueblo, Spanish, and the United Stated to the National Laboratories, have shaped New Mexico and its environs. The student will thoughtfully engage in who and what is New Mexico, its arts, politics, economics, history, and, and society through various readings. [Cross-listed as HIST 310 and HUM 310] Pre-requisites: ENG 112. (4, 4T+0S).

311 WHY SOCIAL SCIENCES MATTER Who are we? How are we connected? Humans have been asking these questions throughout history, but the social sciences offer a more contemporary approach to these ideas. Our culture can define our humanness, and power and politics may influence our beliefs and define our social structures. We are separate but bound together by different groupings including but not limited to culture, family, religion and government. Human behavior may be seen on an individual basis, but must been understood in the context of many structures. You, the student, will reflect and contemplate these ideas through the integrated readings in anthropology, political science, sociology and psychology. [Cross-listed as HUM 311, PSY 311, and SOC 311] Pre-requisite: ENG 112. (4, 4T+0S).

421 HISTORY, LITERATURE, ART, AND PHILOSOPHY Who are you? Who are we? How did we become what and who we are? What role did we play in shaping the world and ourselves? Different cultures and different interpretations of who we are and what we value and how we represent them. How does the study of the “Humanities” guide us in these explorations? Using the ‘tools’ of the humanities including expression, beliefs and traditions, you will be challenged to reflect deeply on these questions, which will be discussed through the integrated readings in history, literature, arts and philosophy. [Cross-listed as ART 421, HIST 421, HUM 421, and PHIL 421] Pre-requisite: ENG 112. (4, 4T+0S)
INFORMATION TECHNOLOGY (IT)

101 INFORMATION TECHNOLOGY FUNDAMENTALS You will study the fundamentals of computer systems and the role of information processing in today’s business environments. You will focus on information systems, systems development and applications development tools, operating systems and programming, database management, networking and telecommunications, and the Internet. Pre-requisites: CS 102, ENG 109N, and MATH 102N. (3, 3T+0S)

110 BASIC INFORMATION TECHNOLOGY SKILLS You will build on basic computer literacy to become familiar with the concepts, tools, and skills necessary for success in Information Technology labs through a practical hands-on approach with a strong emphasis on problem-solving skills. Pre-requisites: CS 132, ENG 109N, and MATH 102N. (2, 1T+1S)

130 NETWORKING FUNDAMENTALS You will study the basic components of IT systems, including LANs, WANs, Ethernet standards, wireless principles, switches and routers, TCP/IP protocols, utilities, and services. You will install network hardware and operating systems to build a network that demonstrates the principles of the course. Pre-requisite: CS 132; Co-requisite: IT 150. (3, 2T+1S)

150 UNIX OS AND SCRIPTING You will study the UNIX operating system using GNU/Linux, including operating systems basics and the operating system installation and configuration on a workstation. You will also study scripting languages and their uses, including shell scripts and Perl. Pre-requisite: IT 110; Co-requisite: IT 130. (4, 3T+1S)

160 COMPUTER ARCHITECTURE AND OPERATING SYSTEMS You will study the concepts, organization, and implementations needed for effective system design. You will do an in-depth study of the requirements and implementations of modern microcomputer operating systems, analyzing system performance by using current hardware and software. Pre-requisites: ECET 130/L and IT 150. (4, 3T+1S)

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. Pre-requisites: CS 132, ENG 111, IT 101, and MATH 145. (4, 2T+2S)

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. Pre-requisites: IT 150, 160, and 210, and MATH 160. (4, 2T+2S)

250 WEB SYSTEMS You will study web technologies and systems including hypertext, self-descriptive test, scripting, content management systems, social software, digital media, and the design process. Pre-requisites: IT 110, 130, and 210. (3, 2T+1S)

330 NETWORKING 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. Pre-requisites: ENG 116, IT 150 and 220. (3, 2T+1S)

341 DISTRIBUTED SYSTEMS You will study the characteristics of a system or systems of computers interconnected by a network and run by special software to allow transparent sharing of computer resources and data. You will learn to contrast advantages and disadvantages of the use of stand-alone systems, including main-frame computing and distributed computing. Pre-requisite: IT 330. (3, 2T+1S)

342 WIRELESS AND MOBILE COMPUTING You will gain an understanding of the principles and concepts of radio and optical communication as these apply to wireless data networking for local area networks and peripherals. You will examine the modulation techniques, measurement standards, nomenclature, equipment, and theory behind transmissions in this portion of the electromagnetic spectrum. Pre-requisites: IT330 & 350 (3, 2T+1S)

343 CLUSTER COMPUTING You will study computer clusters using multiple PCs to perform a single task, to writing code to maximize parallel processing, and to build a simple cluster using Open-source clustering software. Pre-requisite: IT 330. (3, 2T+1S)

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. Pre-requisite: CS 210. (3, 2T+1S)

370 HUMAN COMPUTER INTERACTION You will explore the manner in which humans interact with their environment and the role that computers have played, are playing, and will play in that interaction, using this knowledge to assess software and hardware designs and configurations to make them more effective. Pre-requisites: ENG 300 and 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. Pre-requisites: IT 250, 330, and 350. (3, 2T+1S)
In an introduction to homeopathy, you will explore the history of how homeopathy became a standard method of healing. You will study acute and chronic remedies as well as the use of homeopathy as a first-aid tool. (3, 3T+0L)

103 MEDITATION IS MEDICINE In this integrated course which combines spiritual development, meditation, and wellness, you will study the physiological aspects of meditation, its effects on health conditions, academic/professional achievement, and interpersonal relationships through field trips to Buddhist, Sikh, and Vedanta meditation centers, temples, and monasteries. These learning approaches will be of personal use to you as a student and also as a future health practitioner. (3, 3T+0L)

104 INTRODUCTION TO THE HUMAN BODY: IT'S STRUCTURE AND SYSTEMS As a non-science major, you will survey the basic structure and systems of the human body. Graded CR/NC. (1, 1T+0L)

115 INTRODUCTION TO TRADITIONAL CHINESE MEDICINE You will study the basic theories which underlie Chinese medicine as a means of understanding the etiology of energetic imbalance, including the Eight Principles and Five Elements theory. You will learn basic meridian pathways, concepts of Qi, Yin and Yang, and the Six Eternal Pathogens and the Seven Emotions. You will also begin to study the Ayurvedic Chakra System and its relevance to Chinese medicine. (3, 3T+0L)

116 BASICS OF ESSENTIAL OILS You will explore Egyptian, German, French, and English traditional knowledge combined with modern concepts of chemistry and physics concerning the influences of essential oils on Body, Mind, and Spirit. You will also explore how oils are made, how they work, and what constitutes good quality oils. (3, 3T+0L)

117 RAINDROP TECHNIQUE You will study this extraordinary technique which uses Essential Oils as a non-invasive tool for assisting the body in restoring balance for body/mind/emotion/spirit. (1, 1T+0L)

118 INTRODUCTION TO INTEGRATIVE HEALING You will begin an introduction to Western medicine, Native American healing traditions, traditional Chinese medicine, Ayurvedic medicine, and other healthcare belief systems. (3, 3T+0L)

120 AYURVEDA AND ENERGY HEALING I You will experientially study how to use Ayurvedic Polarity Therapy for self-care and healing. You will be integrating Ayurvedic healing practices and principles, including marma therapy, from the ancient East Indian science of life, with the modern energy work of Polarity Therapy. You will learn to use these simple techniques to improve energy and digestion, deepen relaxation, and speed healing. Graded CR/NC. (1, 1T+0L)

121 AYURVEDA: THE SCIENCE OF LIVING You will gain an overview of Ayurveda, the oldest continuously practiced medical system in the world. Ayurveda is Sanskrit for “life” (Ayu) and “knowledge” (Veda). It is not limited to the physical aspects of health alone; it also has a very clear understanding of the mind and soul. The uniqueness of Ayurveda is in its treatment by individual types: Vata, Pitta, and Kapha. Studying about Ayurveda is
about learning to live a life in accordance to your type and achieving a balanced and healthy lifestyle that brings happiness in both mind and body. (3, 3T+0L)

**122 AYURVEDA AND ENERGY HEALING II** In a continuation of HSCI 120, you will learn how to integrate your previous learning of Ayurvedic healing practices and principles including marma therapy, with the modern energy work of Polarity Therapy, learning specific techniques on how to work with food and digestion. Pre-requisite: IHS 120. Graded CR/NC. (1, 1T+0L)

**123 INTRODUCTION TO ACUPRESSURE** You will begin the study of the ancient healing art of Japanese acupressure, a potent form of energy work — energy medicine without needles! (1, 1T+0L)

**201 ACCUPRESSURE FACIAL** 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)

**205 EVALUATION RESEARCH ON EFFICACY OF COMPLEMENTARY AND ALTERNATIVE MEDICINE** You will be introduced to the research, monitoring, and governmental function of the National Center for Complementary and Alternative Medicine (NCCAM) branch of the National Institute of Health (NIH) — the federal government’s lead agency for scientific research on complementary and alternative medicine (CAM). You will explore complementary and alternative healing practices in the context of rigorous science, and you will be introduced to evidence-based research studies, critical approaches to scientific and medical research, bias and data manipulation. Graded CR/NC. (1, 1T+0L)

**206 INTEGRATIVE HEALTH EDUCATOR AND COACH** As coaching techniques are useful for healthcare professionals, healers, or anyone learning to support others on a healing journey, you will study the basic coaching skills and educational strategies that help guide and support the whole individual (mind, body, and spirit) in its healing processes. Graded CR/NC. (1, 1T+0L)

**207 ETHICAL, LEGAL, AND REGULATORY ISSUES IN HOLISTIC HEALTH PRACTICE** You will examine conflicting ethical perspectives between systems of care (e.g., allopathic versus holistic), appropriate conduct of patient care and research to assure the effectiveness and safety of different forms of care and therapies. You will also study the history of health claims by opposing systems of care, laws and regulatory assurances for the appropriate training of providers. Graded CR/NC. (1, 1T+0L)

**208 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+0L)

**209 INTEGRATING ALLOPATHIC AND HOLISTIC SYSTEMS OF CARE** Because nearly 1,400 (one in four) U.S. hospitals now offer alternative and complementary therapies, such as acupuncture, homeopathy, and massage therapy to their patients, in this seminar you will examine the many ways in which adjunctive therapies are being used with conventional allopathic medical care. You will pay special attention to the treatment of medical challenges, including substance abuse, mental health disorders, and cancer. Graded on a CR/NC basis. (1, 1T+0L)

**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. (3,3T+0L)

**225 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 of herbs are discussed addressing nine body systems. Co-requisite: IHS 257. (2, 2T+0L)

**255 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)

**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)

**301 FUNDAMENTALS OF BIOSTATISTICS AND EPIDEMIOLOGY** In this course dealing with the scientific study of epidemics and diseases, and the factors which influence the occurrences and control of those diseases, you will learn basic epidemiological concepts, such as randomized trials and observational studies. You will be introduced to statistical concepts, including basic probability, significance levels, confidence intervals, nonparametric techniques, and the interpretation of continuous and categorical data for analyzing clinical health data and publications. Pre-requisites: MATH 150 and ENG 116, or permission. (3, 3T+0L)

**302 BEHAVIORAL AND PSYCHOLOGICAL FOUNDATIONS OF HEALTH** You will study the psychological and behavioral foundations of health, health belief models, holistic
paradigms of the mind-body interaction as related to physical health through such topics as: the role of stress on mental and physical health, psychosomatic disorders, behavioral medicine, and the psychology of illness and wellness. Pre-requisites: PSY 105. Cross-listed as PSY 302. (3, 3T+0L)

303 PRINCIPLES OF COMMUNITY HEALTH EDUCATION You will study the concepts of health education being a process of informing people how to achieve and maintain good health, of motivating them to do so, and of promoting environmental and lifestyle changes to facilitate their objective through a focus on holistic health practices that can be applied in educational, clinical, and community settings. Pre-requisite: IHS 101. (3, 3T+0L)

304 MARKETING AND MANAGEMENT FOR HOLISTIC HEALTH CARE You will engage in a practical overview in those basic business skills needed to manage a holistic health care practice, including the principles of financial management and budgeting; ICD9 coding and submitting health insurance claims; and strategies for marketing and advertising. Pre-requisites: ENG 111 and MATH 100N or BA 117. (3, 3T+0L)

305 HISTORICAL DEVELOPMENT OF HEALTH CARE PARADIGMS You will study a variety of health care paradigms: the history of allopathic (conventional) medicine, its triumph over homeopathic medicine, and recent developments in the rise of integrative, complementary, and alternative health care. Pre-requisite: ENG 111. (2, 2T+0L)

306 PATIENT PRACTITIONER COMMUNICATION You will study the theories of therapeutic relationships and communication styles and explore the meaning of illness in its social and cultural context, including the role of effective and empathic communication in fostering patient satisfaction, adherence to recommended treatment, and positive health outcomes for persons experiencing acute, chronic, and terminal illness. Pre-requisite: ENG 111 and IHS 302. (3, 3T+0L)

307 HEALTH CARE TRADITIONS OF THE SOUTHWEST In this course, your study will focus on two traditional forms of health care in northern New Mexico and the Southwest: the Indigenous Peoples and the Hispanic culture — Curandersismo. You will also study oral traditions, roles of plant medicines, and the ceremonies of both cultures. Guest speakers will bring their experiences to you. Pre-requisite: ENG 111. (2, 2T+0L)

322 ENVIRONMENTAL AND ECOLOGICAL DETERMINANTS OF HEALTH You will study ecological systems response and recovery mechanisms from natural or anthropogenic stressors. Pre-requisites: ENG 111, BIOL 238/L, and CHEM 210/L. (3, 3T+0L)

401 EVALUATION RESEARCH; APPLICATION TO CAM You will build on skills learned in Biostatistics and Epidemiology to examine evidence-based criteria for evaluating the effectiveness, risks, and benefits of integrative therapies and complementary alternative medicine (CAM) for the treatment of selected conditions. Pre-requisite: IHS 301. (2, 2T+0L)

402 BIO-MECHANICAL APPROACHES TO HEALTH CARE You will study the fundamentals of musculoskeletal mechanisms. Pre-requisites: BIOL 238/L. (2, 2T+0L)

403 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. Pre-requisites: IHS 255 and 257; Co-requisite: IHS 406. (2, 2T+0L)

404 SUMMER 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 summer. You will focus on identifying, harvesting, and making medicines in the field. Pre-requisites: IHS 255 AND 257. (1, 0T+1L)

405 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. Pre-requisites: IHS 255 AND 257; Co-requisite: IHS 403 and IHS 408. (1, 0T+1L)

406 SPRING HERBAL FIELDWORK In this field-oriented class, you will explore the riparian and low altitude habitats of the four corners region, as available in the spring. You will focus on identifying, harvesting, and making medicines in the field. Pre-requisites: IHS 255 and 257. (1, 0T+1L)

407 TRADITIONAL REMEDIOS OF NORTHERN NEW MEXICO II In this continuation of IHS 403, you will explore Traditional Remedies, 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. Pre-requisite: IHS 403; Co-requisite: IHS 404. (Fall) (2, 2T+0L)

408 BOTANICAL MATERIA MEDICA You will explore in-depth botanical materia medica (the properties and actions of herbs) via a body systems approach, based on many different herbal traditions. Upon completion of this course, you will be able to formulate specific remedies useful for a wide range of conditions. Pre-requisites: BIOL 360/L, IHS 255 and 257. (3, 3T+0L)

409 HERBAL PHARMACY II You will explore in-depth methods and uses of herbal preparations, including tinctures, oils, salves, syrups, poultices, and fluid extracts through the use of various lab procedures and techniques. You will work with herbal measurements, math, formulations, and study that Latin common
to the botanical field. Pre-requisites: IHS 255 and 257; Co-requisites: IHS 403 and 408. (1, 0T+1L)

412 HERBAL PRACTICUM You will focus on the practical application of herbal business and marketability by bringing together all the components of the herbal tract of the IHS program through community-oriented internships with regional herbalists and visit to a variety of herbal businesses and health food stores. Pre-requisite: Permission of Instructor. (1, 0T+1L)

420 ACUPRESSURE: THE EXTRAORDINARY VESSELS You will study in-depth the Extraordinary Vessels which correspond to physiological and energetic homeostasis — the innate wisdom of our bodies to come into balance. Pre-requisites: BIOL 238/L and IHS 115. (2, 1T+1L)

421 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, 1T+1L)

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 studying the personality of an individual. Pre-requisite: IHS 421. (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. Pre-requisite: IHS 422. (2, 1T+1L)

424 ASSESSMENT: PULSE AND TONGUE You will learn two important skills used for centuries in oriental medicine to assess a person’s health by palpating the radial artery at the wrist and by looking at the tongue body and its coat. Pre-requisite: IHS 421. (1, 1T+0L)

425 ENERGETIC BLOCKS TO HEALING You will study in-depth the energetic blocks which may prevent healing or a person’s lack of response to treatment, regardless of the therapeutic intervention. Pre-requisite: IHS 421. (2, 1T+1L)

426 MYOFASCIAL ARMORING You will study myofascial armoring in the body and its relationship to the Ayurvedic Chakras and the Five Elements. Pre-requisite: IHS 115. (2, 2T+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. (1, 1T+0L)

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. Pre-requisite: Permission of Instructor. (1, 0T+1L)

429 SELECT DISORDER II A continuation of IHS 427. (1, 1T+0L)

430 CHEMISTRY OF ESSENTIAL OILS You will study in-depth hydrocarbons and terpenoids found in essential oils, including contraindications, synergistic chemistry, evaluation of therapeutic actions, laboratory study of chromatographic readings, and the actions of essential oils on biological agents. Pre-requisites: CHEM 122/L, CHEM 210/L, and IHS 116. (2, 1T+1L)

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. Pre-requisites: BIOL 238/L, IHS 101 and 116. (2, 1T+1L)

432 ENHANCING CREATIVITY WITH ESSENTIAL OILS You will explore experientially the use of essential oils for enhancing writing, art, dance, pottery, or textiles. This exploration will lead you to understanding the workings of the limbic system of the brain, magnifying the infusion of energy into an art piece and techniques to enhance the creative process. Pre-requisite: IHS 116. (2, 1T+1L)

433 ESSENTIAL OILS FOR OPTIMAL FITNESS You will focus on the use of essential oils for optimal fitness. Pre-requisites: BIOL 238/L and IHS 116. (2, 1T+1L)

434 ESSENTIAL OILS FOR RELIEVING ADDICATIONS You will study the use of essential oils in relieving addictions. Pre-requisite: BIOL 238/L and IHS 116. (1, 1T+0L)

435 GENDER SPECIFIC ESSENTIAL OILS You will study specific essential oils that assist in maintaining health and harmony of body, mind, emotion, and spirit for issues specifically affecting the reproductive systems of men and women. (2, 2T+0L)

436 SPIRITUALITY AND ESSENTIAL OILS You will study the use of essential oils for spiritual health. Pre-requisite: IHS 116. (2, 2T+0L)

437 ESSENTIAL OILS FOR HEALTH CARE PROFESSIONALS As a practicing professional who would like to incorporate the use of essential oils in your current practice, you will study the legalities of application for specific professions. Pre-requisites: IHS 116, 401, and 430. (2, 1T+1L)

438 PRACTICAL APPLICATION OF ESSENTIAL OILS You fill focus in this capstone course on specific case studies and choose specific essential oils and lifestyle changes to help return
the body to harmony. Pre-requisite: Completion of all other Essential Oil courses and permission of instructor. (2, 2T+0L)

440 MEDICAL HOLISM IN HEALTH CARE AND APPLICATIONS TO HEALTH CARE You will review holism in general, the history of medical holism, and various other types of holism. (2, 2T+0L)

441 PERSONAL JOURNEYING You will conduct an experiential exploration of the mind-spirit-body system for personal growth, relaxation, and healing using techniques from various worldwide cultures and active imagination. (2, 2T+0L)

442 COMPARATIVE NUTRITION You will develop knowledge of nutrition and lifestyle factors relative to other countries, cultures, and sub-cultures within the U.S. You will then analyze this information and compare it to the standard American diet and lifestyle for the purpose of identifying strengths and weaknesses in your own personal diet and lifestyle choices, while learning to make informed diet and lifestyle decisions based on current literature and research. Pre-requisites: PSY 105 and IHS 101. (2, 2T+0L)

443 COMPREHENSIVE REVIEW OF YOGA AND YOGIC PHILOSOPHY You will explore in-depth the meaning of yoga, its origins and history, and the practical and esoteric applications of yoga. (2, 2T+0L)

444 PUEBLO HEALTH CONCEPTS AND PRACTICES You will build upon IHS 307 by examining the cultural health care practices of Native Americans. This course will be offered in a seminar format, with guest presentations given by Native American tribal and spiritual leaders, healers and others who work with Native American populations in promoting wellness and community-related services. [Cross-listed with PIS 444] (2, 2T+0L)

490 CAPSTONE THESIS This will be a reflection of your culminating academic experience, written in either a traditional thesis format of 20 pages or more, or as an article for publication. The topic of your writing should reflect and integrate your particular interest, regional focus, and thematic track covering personal internship or research experience, integrating skill sets you have learned throughout your degree experience. Co-requisite: IHS 401. (3, 3T+0L)

LAW ENFORCEMENT (LE)

Note: The following courses appear only as a reference to course listing on Northern transcripts. We do not 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 skills in effective communication, professional writing and effective investigative 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 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)

237 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)

238 POLICE PROFICIENCY II I 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)

239 POLICE PROFICIENCY III I 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 Pre-requisite: LE 238. (3, 3T+0S)

LIBRARY TECHNOLOGY (LT)

Note: Unless otherwise noted, each course in this department bears 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, 209, and ENG 270. (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. Preerequisite: ENG 111. (1, 1T+0S)

MACHINING TECHNOLOGY (MT)

110 BASIC MACHINING OPERATIONS I Introduction to machine tool safety and operational theory. Prerequisite: acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)

120 BASIC MACHINING OPERATIONS II Continuation of MT 110’s introduction to machine tool operational theory. Prerequisite: acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)

130 BASIC PRINT READING Introduction to reading and interpreting prints used by machinists. Prerequisite: acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)

140 BASIC MATH FOR MACHINISTS Introduction to the mathematics used by machinists, including basic arithmetic, algebra, geometry, and trigonometry. Prerequisite: acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)

155 MATERIALS SELECTION Overview and selection of materials used in machining processes. Prerequisite: acceptance into the Machinist Apprenticeship Program. (1, 1T+0S)

190A MACHINIST APPRENTICESHIP TRAINING This course provides the first semester of 600 hours of required training for the Machinist Apprenticeship program. You must be accepted into the MAP before you can enroll. (12, 0T+12L)

191B MACHINIST APPRENTICESHIP TRAINING This course provides the second semester of 600 hours of required training for the Machinist Apprenticeship program. You must be accepted into the MAP before you can enroll. (12, 0T+12L)

210 ADVANCED MATH FOR MACHINISTS Advanced mathematics used by machinists, including geometry and trigonometry. Prerequisite: acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)

220 ADVANCED MACHINING OPERATIONS I Advanced machine tool safety and operational theory. Prerequisite: acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)

230 ADVANCED PRINT READING AND MEASUREMENT Advanced print reading and interpretation, an introduction to geometric dimensioning and tolerancing, and basic measurement/inspection of parts. Prerequisite: acceptance into the Machinist Apprenticeship Program. (3, 3T+0S)

235 ADVANCED GEOMETRIC DIMENSIONING AND TOLERANCING Advanced geometric dimensioning and tolerancing for 3rd year Machinist Apprentices. Prerequisite: MT 230. (1, 1T+0S)

240 ADVANCED MACHINING OPERATIONS II Continuation of MT 220’s advanced machine tool safety and operational theory. Prerequisite: acceptance into the Machinist Apprenticeship Program. (1, 1T+0S)

260 3RD YEAR MACHINING I Advanced machining operations for 3rd year Machinist Apprenticeship Program. Pre-requisite: acceptance into the Machinist Apprenticeship Program. (4, 4T+0S)

280 3RD YEAR MACHINING II Continuation of MT 260, machining operations for 3rd year Machinist Apprenticeship Program. Pre-requisite: MT 260 and acceptance into the Machinist Apprenticeship Program. (2, 2T+0S)
**290D MACHINIST APPRENTICESHIP TRAINING** This course provides the first semester of 600 hours of required training for the second year of the Machinist Apprenticeship program. You must be accepted into the MAP before you can enroll. (12, 0T+12L)

**291E MACHINIST APPRENTICESHIP TRAINING** This course provides the second semester of 600 hours of required training for the second year of the Machinist Apprenticeship program. You must be accepted into the MAP before you can enroll. (12, 0T+12L)

**MASSAGE THERAPY (MAS)**

*Only those formally admitted to the Massage Therapy Program may enroll in MAS courses.*

**100L INTRODUCTION TO PROFESSIONAL MASSAGE**
Provides an overview of massage therapy as a career; presents theory of massage and hands-on experience, including the basics of Swedish massage; teaches techniques for stress management, relaxation, and wellness. Your abilities and aptitude will be evaluated to assist you in deciding whether a career in massage therapy is appropriate. This course will apply as an elective toward the credit needed for the massage certification program. (3, 2T+1L)

**101L MASSAGE THERAPY I**
Provides a basic understanding and application of Swedish massage strokes, plus joint movements. You will discuss the benefits, common pathology, and contraindications inherent in massage therapy. You will work on each other in a safe supportive professional environment, learning to give a therapeutic, stress-reducing professional massage treatment. You will address issues of personal growth and awareness, and you will explore many of the healing mechanisms of the body which are accessible to the massage therapist. Pre-requisites: ENG 109N and MATH 100N; Co-requisite: 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. Pre-requisite: MAS 101L; Co-requisites: 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. Pre-requisite: 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 Licensed Massage Therapy instructor. Co-requisites: MAS 101L and HSCI 110 or BIOL 237/L. (Spring 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)

**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. Pre- or Co-requisite: MAS 101L. (Spring only) (2, 2T+0S)

**115 CRANIAL 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. Theory, review, and questions will be followed by a demonstration and treatment practice. Pre-or Co-requisite: MAS 101L or Department permission. (Spring only) (1, 1T+0S)

**116 CRANIAL 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. You goal will be bring more balance to all of the nervous system. You will gain a solid foundation to incorporate Cranial Sacral modalities into your treatments. Pre-requisite: MAS 115. Graded CR/NC. (2, 2T+0S)

**117 INTRO TO THAI MASSAGE**
You will study traditional Thai massage as an experience of rhythmical movement in which you will lead the receiver through a flow of passive yoga stretches, deep muscle pressure, and joint mobilization. Through studying massage, yoga, meditation, and the practice of compassion in action, your study will emphasize meditative awareness, breathing, and the use of body weight and posture. Pre-requisite: MAS student or Licensed Massage Therapist, and HSCI 110. Graded CR/NC. (1, 1T+0S)

**118 DEVELOP YOUR TRADECRAFT**
As you are about to enter a professional career as a Massage Therapist in a variety of settings, such as a spa, health club, or in medical or private practice, in this course you will learn to fine-tune your skills, build confidence as a professional, refine treatment presentation and flow, and create a high quality experience for the client and pro-
### COURSES

#### 100N  FUNDAMENTALS OF MATHEMATICS
- Introduction to the mathematical method and its use in practical applications, with a focus on developing concepts of symbolic notation, operational hierarchy, positive integers, prime factorization, decimal representation, and metric geometry. Stresses using mathematical concepts as tools in problem solving. Pre-requisite: Adequate score on Course Placement Evaluation. (6, 6T+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, linear equations, graphs, factoring, quadratic equations, polynomials, inequalities and sets. Pre-requisite: MATH 100N, or adequate score on Course Placement Evaluation. (3, 3T+0S)

#### 130  INTERMEDIATE ALGEBRA
- Elementary functions with emphasis on graphical representations of linear functions, quadratic functions, exponential and logarithmic functions, inverse functions, polynomial functions, systems of equations, inequalities, and complex numbers. Pre-requisite: MATH 102N. (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. Pre-requisite: 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. Pre-requisite: MATH 130. (3, 3T+0S)

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#### MATERIALS SCIENCE (MATE)

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<thead>
<tr>
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<tbody>
<tr>
<td>101</td>
<td>MATERIALS SCIENCE AND PROPERTIES</td>
<td>Descriptive introduction to the properties and structures of materials. Pre-requisites: MATH 102N and ENG 109N.</td>
<td>(2, 2T+0S)</td>
</tr>
<tr>
<td>290</td>
<td>INTRODUCTION TO MATERIALS SCIENCE</td>
<td>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. Pre-requisite: CHEM 121 and 121L.</td>
<td>(Spring only)</td>
</tr>
<tr>
<td>300</td>
<td>CORROSION SCIENCE AND ENGINEERING</td>
<td>This course is aimed at students with some chemistry, materials, or engineering background who have a desire to pursue a career in applied chemistry or materials. You will study the mechanisms and forms of corrosion, corrosion rate measurement tools and techniques, failure analysis, and material selection, and will also design for corrosion prevention and minimization. You will develop an understanding of materials science and engineering, specifically the fundamental concepts of electromechanical science and engineering as they apply to corrosion processes. Pre-requisites: MATE 290 and CHEM 121, or permission of instructor; Co-requisite: MATE 300L.</td>
<td>(3, 3T+0L)</td>
</tr>
<tr>
<td>300L</td>
<td>CORROSION SCIENCE AND ENGINEERING LAB</td>
<td>You will be engaged in lab experiences which supplement MATE 300. Co-requisite: MATE 300.</td>
<td>(1, 0T+1L)</td>
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#### MASSAGE THERAPY

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<td>190</td>
<td>MASSAGE THERAPY EXAM REVIEW</td>
<td>You will review pertinent subjects and curriculum (anatomy &amp; physiology, pathology, kinesiology, therapeutic massage assessment and application, professional standards, ethics, business and legal practice) needed to be able to take and pass the National Certification Examination (NCETM) for Therapeutic Massage and Bodywork by taking several tests similar in style and content to the NCETM. Permission of Department.</td>
<td>(Summer only)</td>
</tr>
<tr>
<td>200</td>
<td>TRIGGER POINT THERAPY</td>
<td>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. Pre-requisite: Be a current Massage Therapy student or be a Licensed Massage Therapist.</td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>215</td>
<td>CRANIAL SACRAL TECHNIQUES III</td>
<td>In a hands-on clinic open to the public, you will practice the Cranial Sacral techniques learned in HSCI 115 and 116. Pre-requisite: HSCI 116.</td>
<td>(1, 1T+0S)</td>
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<tr>
<td>210</td>
<td>TRADITIONAL THAI MASSAGE I</td>
<td>You will study the Traditional Thai Massage form. Pre-requisite: HSCI 110 and be a Licensed Massage Therapist.</td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>211</td>
<td>TRADITIONAL THAI MASSAGE II</td>
<td>A continuation of the Traditional Thai Massage form. Pre-requisite: HSCI 119.</td>
<td>(2, 2T+0S)</td>
</tr>
<tr>
<td>212</td>
<td>HAWAIIAN LOMI-LOMI MASSAGE</td>
<td>You will learn how to give a massage with the long rhythmic movements of your hands and forearms associated with this unique healing technique derived from the ancient Polynesians. Lomi-Lomi facilitates healing of the physical, mental, and spiritual levels. Pre-requisite: Be a Licensed Massage Therapist.</td>
<td>(1.5, 0T+1.5L)</td>
</tr>
<tr>
<td>213</td>
<td>LOMI-LOMI MASSAGE</td>
<td>You will learn how to give a massage with the long rhythmic movements of your hands and forearms associated with this unique healing technique derived from the ancient Polynesians. Lomi-Lomi facilitates healing of the physical, mental, and spiritual levels. Pre-requisite: Be a Licensed Massage Therapist.</td>
<td>(1, 1T+0S)</td>
</tr>
<tr>
<td>300L</td>
<td>CORROSION SCIENCE AND ENGINEERING LAB</td>
<td>You will be engaged in lab experiences which supplement MATE 300. Co-requisite: MATE 300.</td>
<td>(1, 0T+1L)</td>
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#### SCIENCE & ENGINEERING

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<td>Descriptive introduction to the properties and structures of materials.</td>
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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. Pre-requisite: MATH 150. (3, 3T+0S)

160 COLLEGE ALGEBRA AND TRIGONOMETRY  You will study the essential concepts of algebra, trigonometry, and the study of functions needed for further study in mathematics and applications to aeronautics, agriculture, astronomy, biology, business, chemistry, etc. Pre-requisite: MATH 130. (4, 4T+0S)

162 CALCULUS I  Cartesian plane and functions, limits and continuity, differentiation, the derivative as the slope of curve, rules and applications of differentiation, increasing and decreasing functions, the indefinite and definite integral. Pre-requisite: MATH 150 and MATH 155 or MATH 160. (4, 4T+0S)

163 CALCULUS II  The indefinite integral, the fundamental theorem of calculus; applications of the definite integral; volumes of solids; revolution, logarithmic, and exponential functions, techniques of integration, conic and sections polar coordinates. Pre-requisite: MATH 155 MATH 162. (3, 3T+0S)

210 MATH FOR ELEMENTARY TEACHERS  This course will prepare you as a prospective elementary school teacher with problem solving techniques related to topics taught at the K-8 level. You will strengthen your understanding of mathematical topics through the study of problem solving, number theory, set theory, geometry, practical measurement, and the use of technology. Pre-requisite: MATH 102N. (3, 3T+0S)

264 CALCULUS III  Parametric equations and vectors in the plane and in three-dimensional space, functions of several variables, extreme values 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. Pre-requisite: MATH 163. (4, 4T+0S)

290 UNDERGRADUATE RESEARCH EXPERIENCE IN MATHEMATICS  This is a computer-based experience in mathematical research, supported by laboratory work. You will learn computational modeling, experimental design, library and Internet information searches and research methodology, while interacting with peers and faculty. You will prepare a technical report or poster on your activities. Research questions focus on nonlinear dynamics, differential equations, and mathematical physics. Pre-requisite: Minimum grade average of 3.50 in MATH 130 and MATH 150, or permission of instructor. May be repeated for credit. (3,3T+0S)

311 VECTOR ANALYSIS  You will study vector algebra, lines, planes, curves, tangent lines, vector-valued functions, arc length, line integrals, directional derivatives, gradient, divergence, curl, Gauss’s and Stoke’s theorems and geometric interpretations. Pre-requisite: MATH 264. (3, 3T+0S)

312 LINEAR ANALYSIS  You will study the systems of linear equations, matrices, linear transformations, eigenvalues and eigenvectors, determinants, and computational methods. Pre-requisite: MATH 163. (3, 3T+0S)

314 DIFFERENTIAL EQUATIONS  You will study the theory of ordinary differential equations: elementary equations, numerical methods, phase plane analysis and Laplace transforms. Pre-requisite: MATH 163, with 264 recommended. (3, 3T+0S)

316 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. Pre-requisites: MATH 264. (3, 3T+0S)

MECHANICAL ENGINEERING (ME)

234 DYNAMICS  Principles of dynamics. Kinematics and kinetics of particles, systems of particles, and rigid bodies. Prerequisite: CE 233. (3, 3T+0S)

MUSIC (MUS)

Each studio courses in this department may be repeated without penalty, each time counting for credit and toward your cumulative grade point average; 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 learn the basic techniques of classical guitar, rudiments of music, and the history of classical guitar. (2, 1T+1S)
109 APPLIED MUSIC: FOLK 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. Maybe be repeated once for credit. Prerequisite: MUS 102 and one year experience playing an instrument. (Var, 0T+1-3S)

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; 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 114. (2, 1T+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)

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. Pre-requisite: MUS 108. (2, 1T+1S)

211 APPLIED MUSIC: GUITAR II  Continuation of MUS 111. Instruction in guitar from intermediate to advanced level. (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. Pre-requisite: 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)

218 MUSIC HISTORY & LITERATURE II  Continuation of MUS 103, from the Viennese Classic period of 1750 to modern music of the present. Prerequisite: MUS 103 and ENG 109N. (3, 3T+0S)

219 APPLIED MUSIC: FOLK 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. Pre-requisite: MUS 111. (2, 1T+1S)

220 APPLIED MUSIC: MUSICA FOLKLORICA VOCAL AND INSTRUMENTAL ENSEMBLE  Studies song literature and performance of traditional and modern Hispanic folk songs. Membership is open and you will be selected by audition by the instructor. Includes performance for special occasions on and off campus. (2, .5T+1.5S)

221 APPLIED MUSIC: PIANO II  Continuation of MUS 110. Instruction from intermediate to advanced level. (2, 1T+1S)

222 DANCE ACCOMPANIMENT II  Rhythmic patterns and styles for Flamenco 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. (2, 1T+1S)

225 MUSICA FOLKLORICA LA NUEVA CANCION  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 102; Co-requisite: 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 121, MUS 223 and 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. Pre-requisite: ENG 109N. (3, 2T+1S)

NURSING (NURS)

102 STRATEGIES FOR NURSING SUCCESS Provides you with useful strategies that will increase your potential for success in college and after college in the workplace. Covers nursing opportunities, self-awareness, time management, and skills for enhanced learning and retention. (1, 1T+0L)

105 PHARMACOLOGY Introduces you to the concepts necessary for safe basic medication administration, with an emphasis on major drug groups, prototypes, therapeutic use, adverse effects, side effects, toxicity, nursing implications, and client education. Prerequisites: BIOL 237 and 237L, BIOL 238 and 238L, and HSCI 190; Co-requisites: BIOL 210 and 210L. (4, 4T+0L)

113 NURSING FUNDAMENTALS Introduces you to the concepts basic to the professional nursing role, with an emphasis on the care of adults in the application of the nursing process. You will learn to integrate holistic knowledge, holism, caring, communication, and teaching into the planning, implementation, and evaluation of effective nursing skills. Prerequisites: BIOL 237 and 237L, BIOL 238 and 238L; Co-requisites: NURS 105, BIOL 210 and 210L, and HSCI 204. (4, 4T+0L)

113L NURSING FUNDAMENTALS CLINICAL Combines simulated lab and clinical experience with hands-on practice of concepts from NURS 113. Co-requisite: NURS 113. (2, 0T+2L)

115 MEDICAL-SURGICAL NURSING I Presents theoretical and practical aspects in the nursing care of adults with common, basic medical/surgical disorders, with an emphasis on assessment, goal setting, and intervention for selected nursing diagnoses. Integrates concepts of aging, nutritional therapy, and pharmacology. Prerequisites: NURS 113 and 113L, BIOL 210 and 210L; Co-requisites: NURS 115L, PSY 290, and CS 102. (4, 4T+0L)

115L MEDICAL-SURGICAL NURSING I CLINICAL Combines simulated lab and clinical experience with hands-on practice of concepts from NURS 115. Co-requisite: NURS 115. (2, 0T+2L)

116 INTRODUCTION TO MATERNAL-CHILD NURSING Introduces you to the nursing care of mothers, infants, and children, using the nursing process with an emphasis on client needs related to normal physiological and developmental processes and common health problems. Integrates concepts of aging, nutritional therapy, and pharmacology. Prerequisites: NURS 105, NURS 113 and 113L, and HSCI 204 with grades of ?C? or better; Co-requisites: NURS 116L and PSY 290. (2, 2T+0L)
116L INTRODUCTION TO MATERNAL-CHILD NURSING CLINICAL Combines simulated lab and clinical experiences with hands-on practice of concepts from NURS 116; Co-requisite: NURS 116. (1, 0T+1L)

119 ROLE TRANSITION — PRACTICAL NURSE Provides you with information specific to the discipline of nursing appropriate to the practical nurse, including the role of the PN related to the nursing process, management of patient care, and legal responsibility and accountability. Prerequisites: NURS 105, NURS 113 and 113L, BIOL 210 and 210L, and HSCI 204; Co-requisites: NURS 115 and 115L, 116 and 116L, PSY 290, and CS 102. (2, 2T+0L)

200 ROLE TRANSITION — REGISTERED NURSE You will explore the role of the RN in comparison to that of the PN. Provides a framework for a successful transition to the RN role. Topics include holism, nursing process, health assessment, patient education, and the process of adjustment to change. Prerequisites: Completion of course requirements for LPN/LVN program or current licensure as LPN/LVN. (Fall only) (2, 2T+0L)

214 PSYCHIATRIC/MENTAL HEALTH NURSING Introduces you to the basic concepts for nursing care of clients with psychiatric/mental health needs. You will learn to use the nursing process in caring for clients across the life span. Integrates concepts of nutritional therapy and pharmacology. Prerequisites: All Level-I courses; Co-requisite: NURS 214L. (2, 2T+0L)

214L PSYCHIATRIC/MENTAL HEALTH NURSING CLINICAL Uses a variety of clinical settings in the application of concepts from NURS 214. Co-requisite: NURS 214. (1, 0T+1L)

215 MEDICAL-SURGICAL NURSING II Presents theoretical and practical aspects in the nursing care of adults with common, complex medical/surgical disorders. Emphasis is on assessment, goal setting, and intervention for selected nursing diagnoses. Integrates concepts of aging, nutritional theory, and pharmacology. Prerequisites: All Level-I courses; Co-requisite: NURS 215L. (4, 4T+0L)

215L MEDICAL-SURGICAL NURSING II CLINICAL Combines a simulated lab and clinical experiences in the application of concepts from NURS 215. Co-requisite: NURS 215. (2, 0T+2L)

216 MATERNAL-CHILD NURSING II Emphasis is on the care of women across the life span, children from birth to age eighteen, and childbearing and child rearing families with complex health care problems. Integrates concepts of growth and development, nutritional theory, and pharmacology. Prerequisites: All Level-I courses; Co-requisite: NURS 216L. (4, 4T+0L)

216L MATERNAL-CHILD NURSING II CLINICAL Combines a simulated lab and clinical experiences in the application of concepts from NURS 216. Co-requisite: NURS 216. (2, 0T+2L)

228 INTEGRATED NURSING Introduces you to the roles and activities of the professional nurse, including concepts of nursing leadership and management. Emphasizes use of critical thinking skills in integrating complex concepts in the care of groups of clients. Prerequisite: NURS 215 and 215L, and NURS 216 and 216L; Co-requisites: NURS 228L. (Spring only) (4, 4T+0L)

228L INTEGRATED NURSING CLINICAL Provides clinical experiences in a variety of settings with emphasis on application of concepts from NURS 228. Co-requisite: NURS 228. (2, 0T+2L)

343 PATHOPHYSIOLOGY I In this course, which is organized by body systems, you will discuss alterations in human physiological function. NURS 343 and 344 cover different body systems and do not need to be taken in sequence. Prerequisite, BIOL 237 and 237L, BIOL 238 and 238L. (3, 3T+0L)

344 PATHOPHYSIOLOGY II In this course, which is organized by body systems, you will discuss alterations in human physiological function. NURS 343 and 344 cover different body systems and do not need to be taken in sequence. Prerequisite, BIOL 237 and 237L, BIOL 238 and 238L. (3, 3T+0L)

OFFICE ADMINISTRATION (OA)

100 WINDOWS An overview of computer hardware and software, with an in-depth study of a graphical user interface by using Microsoft Windows. (3, 3T+0S)

101 BUSINESS EDITING SKILLS You will learn proofreading techniques, reviewing spelling, punctuation, grammar, and word processing formats on various types of business documents and worksheets. (Spring only) (3, 3T+0S)

103 INTRODUCTION TO KEYBOARDING Introduction to basic keyboarding skills on the letters of the alphabet, numbers, and symbols. Emphasizes speed and accuracy. This course is for students with NO previous instruction in keyboarding. (1, 1T+0S)

104 PRINCIPLES OF KEYBOARDING Recommended for students with no previous instruction in typing. Instruction includes alphabetic and numeric keyboard fingering. You will receive practice in speed building exercises, getting acquainted with computer special function keys, and basic business formats for personal typing. (3, 3T+0S)

113 NOTEHAND Introduces an abbreviated writing system based primarily on longhand and secondarily on phonetics. (3, 3T+0S)

115 FILES MANAGEMENT Introduces the principles, procedures, and new technology of records management. Covers alphabetic, subject, numeric, geographic, and computer storage methods. (3, 3T+0S)
117 TIME MANAGEMENT You will learn information management applications which provide tools to send and receive e-mail, organize schedules and maintain contact lists, to-do lists, and notes. (Spring only) (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)

132 MEDICAL TRANSCRIPTION You will correctly identify terminology, spell and define terms, and prepare appropriate forms and reports through simulation of a medical office environment using audio cassettes. Prerequisite: OA 103. (3, 3T+0S)

134 LEGAL TRANSCRIPTION Introduces legal terminology through spelling and defining terms, and preparing appropriate letters, memos, and forms through the simulation of a legal office environment using audio cassettes. Prerequisite: OA 103. (3, 3T+0S)

135 INTRODUCTION TO ACCOUNTING Studies basic accounting principles and conceptual framework. Places heavy emphasis on the accounting model. (3, 3T+0S)

139 INTRODUCTION TO MS WORD A brief overview of the word processing application package, Microsoft Word. You will learn to create basic documents, such as letters and memos. You will be provided with basic knowledge as well as hands-on experience to allow you to become computer literate in Word. (1, 1T+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. Microsoft Publisher will be the specific software to which you will be exposed. (1, 1T+0S)

155 INTRODUCTION TO MS ACCESS Introduction to the electronic database specifically, how to use, design, and edit databases for use in a variety of personal and business applications. Microsoft Access will be the specific software to which you will be exposed. (1, 1T+0S)

204 ADVANCED KEYBOARDING Focuses on developing speed and accuracy through the use of skill-building software. Emphasis is placed on the touch typing of numerals in relation to the preparation of business documents. Prerequisite: OA 104, or keyboarding speed of correct words a minute. (3, 3T+0S)

220 OFFICE PROCEDURES Reinforces knowledge and skills necessary to perform office tasks effectively through such activities as business communications, transmittal services, administrative support services, employment and placement procedures, career promotion, and supervision. Prerequisites: OA 108, OA 130, OA 215, and approved word processing software with grades of “C” or better. (3, 3T+0S)

249 MICROSOFT WORD Covers the commands of Microsoft Word by using step-by-step applications; provides a working knowledge of the basic and intermediate capabilities of Microsoft Word on an IBM compatible. Prerequisite: OA 103 with a grade of “C” or better, or 25 correct words a minute. (3, 3T+0S)

250 BUSINESS COMMUNICATIONS You will develop skills in business writing with an emphasis on the preparation of letters and reports, and on presenting information in a logical, forceful, and acceptable form. Pre-requisites: OA 103 and 116. (3, 3T+0S)

251 ADVANCED WORD You will gain a working knowledge of the advanced applications of Microsoft Word, including merging documents, adding special features, adding visual elements, formatting with macros and styles, sharing data, and creating specialized tables. This course is required for Microsoft User Certification Specialist (MOS). Pre-requisite: OA 249. (3, 3T+0S)

260 ADOBE PAGEMAKER Introduces desktop publishing concepts using step-by-step applications to create flyers, newsletters, reports, brochures, resumes, and other publications using page-layout software. Prerequisites: OA 103, or 25 correct words a minute. (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. Prerequisites: OA 100 and OA 103, or 25 correct words a minute. (3, 3T+0S)

265 ACCESS A Windows database course teaching basic through intermediate features: creating and editing databases by using step-by-step activities; formatting fields and entering calculated fields, as well as creating forms and using queries to extract information. Prerequisite: OA 103, or 25 correct words a minute. (3, 3T+0S)

267 ADVANCED ACCESS You will gain a working knowledge of the advanced applications of Microsoft Access, including advanced tables, forms, queries, and reports; automating, securing, and integrating databases. This course is required for Microsoft User Certification Specialist (MOS). Pre-requisite: OA 265. (3, 3T+0S)

PERSONAL DEVELOPMENT (PD)
All Personal Development courses are graded on a “credit/no credit” basis, with the exception of PD 120.

101N BASIC READING Designed to teach reading, speaking, and spelling from the beginning. Class content enables you to have a functional knowledge of necessary skills that are reliable and useful for reading. Emphasis is placed on increased reading, writing, and real-life situations. Supplementary materials include workbooks and computer programs. (6, 6T+0S)
105 READING AND STUDY SKILLS Introduces strategies and techniques necessary for developing college study skills. Includes methods and practice in increasing reading speed and comprehension; techniques for improving skills in listening, taking reading and lecture notes; studying for objective and essay examinations; developing vocabulary and basic sentence skills, and mastering spelling; and using the library and Student Success Center. (3, 3T+0S)

108N BASIC COMPUTATIONAL SKILLS Focus on mathematics for those who have serious deficiencies in basic skills, for those students with unique needs, and for students who may have some degree of anxiety about learning math. Presents math in a simple, logical, and applied way. Co-requisite: PD 108L. (3, 3T+0L)

108L BASIC COMPUTATIONAL SKILLS LAB Reinforcement of skills learned in PD 108N, with hands-on learning and application. Emphasis is on multi-sensory methods through computer and manipulatives. Co-requisite: PD 108N, (1, 0T+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. (3, 1-3T+0S)

PHILOSOPHY (PHIL)

Note: each course in this department bears a Pre-requisite of ENG 109N.

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)

421 HISTORY, LITERATURE, ART AND PHILOSOPHY Who are you? Who are we? How did we become what and who we are? What role did we play in shaping the world and ourselves? Different cultures and different interpretations of who we are and what we value and how we represent them. How does the study of the “Humanities” guide us in these explorations? Using the ‘tools’ of the humanities including expression, beliefs and traditions, you will be challenged to reflect deeply on these questions, which will be discussed through the integrated readings in history, literature, arts and philosophy. [Cross-listed as ART 421, HIST 421, HUM 421, and HSS 421] Pre-requisite: ENG 112. (4, 4T+OS).

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. Prerequisite: PHYS 161/L; Prerequisite: MATH 162 Co-requisite: PHYS 216L. (3, 3T+0L)

216L ENGINEERING PHYSICS II LAB Co-requisite: PHYS 216. (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). Pre-requisite: Grade average of at least 3.50 in MATH 130 and MATH 150, or permission of instructor. (3, 3T+0L)

262 GENERAL PHYSICS You will study optics and modern physics. Pre-requisites: 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)
INTRODUCTION TO MODERN PHYSICS  You will study special relativity, quantum effects, quantum mechanics, atomic and subatomic physics, and the instruments of modern physics. Pre-requisite: PHYS 262/L; Co-requisite: PHYS 330L. (3, 3T+0L)

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)

OPTICS You will study geometrical optics, wave theory of light, Fresnel and Fraunhofer diffraction, polarization, absorption, dispersion, and scattering. Pre-requisite: PHYS 262/L. (3, 3T+0L)

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. Pre-requisite: MATH 311 and 314. (3, 3T+0L)

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. Pre-requisite: MATH 311 and 312. (3,3T+0L)

PLUMBING (PLB)

PLUMBING I Theoretical training in job safety; plumbing tools and materials; joining of pipe, sizing, and installing drain, waste vent piping; sizing and installing water supply piping; system testing. (3, 3T+0S)

PLUMBING LAB I Practical application in using tools; installing pipe for drain, waste, and vent systems; installing pipe for water supply systems; system testing. (5, 0T+5S)

PLUMBING CODE I Application and interpretation of the Uniform Plumbing Code relating to definition, materials, general regulations, drainage and venting systems, joint and connections, and plumbing fixtures. (2, 2T+0S)

BLUEPRINT READING Interpreting and drawing orthographic and isometric drawings involving a variety of floor plans requiring different pipe layouts. (2, 2T+0S)

PLUMBING SYSTEMS II Expands on process of installing sanitary drainage and vent piping, sizing water supply piping, plumbing fixtures and appliances, fuel gas sizing, and piping and system testing. (3, 3T+0S)

PLUMBING SYSTEMS II LAB Practical application of PLB 140. (5, 0T+5S)

PLUMBING CODE II Application and interpretation of the Uniform Plumbing Code relating to water distribution, building sewers, fuel gas piping, and water heaters and vents. (2, 2T+0S)

BLUEPRINT READING AND DRAWING Interpretation of residential and commercial blueprints involving different layouts used in the rough-in of sanitary drainage and vent piping, water distribution, and fuel gas piping. (2, 2T+0S)

PLUMBING PRACTICUM You will gain hands-on experience as a plumber’s assistant. Pre-requisite: PLB 140. (Summer only) (4, 0T+4S)

POLITICAL SCIENCE (PSCI)

Note: each course in this department bears a Pre-requisite of ENG 109N.

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)

CONTEMPORARY POLITICAL ISSUES You will study political issues confronting the individual in modern society at local, national, and international levels. (3, 3T+0S)

AMERICAN POLITICS Survey of American politics, theory of democracy, political institutions, the electorate, American governmental branches and their bureaucracies. (3, 3T+0S)

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)

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)

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)

ISSUES OF DEATH AND DYING You will study the issues of death and dying from both a personal and social perspective, including the stages of dying and grief, developmental understanding of death, the impact of death and grief on family systems; legal and ethical issues regarding death and dying. (3, 3T+0S)

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. Pre-requisite: ENG 109N. (2, 2T+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. Pre-requisite: PSY 215 with a grade of “C” or better. (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. Pre-requisite: ENG 109N. (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)

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 8 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. 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. (3, 3T+0S)

256 GRIEF THEORY AND PROCESS Theories of grief counseling and the grief process; identification of both normal and unhealthy grief reaction, discussion of referral procedures and basic grief interventions. (3, 3T+0S)

260 FAMILY SYSTEMS THEORY AND COUNSELING APPLICATIONS 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 focus on therapeutic interventions for children, including play therapy and filial therapy; therapeutic interventions with adolescents, experiential treatments, family involvement, and in-patient and out-patient counseling. (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. Pre-requisite: PSY 229. (3, 3T+0S)

270 SOCIAL PSYCHOLOGY You will explore factors that affect individual behavior in group situations; individual behavior with the family, at work, and in extreme situations such as
combat; prejudice, sexuality, aggression, conformity, altruism, instinct, attitude formation and change; review major contributions to the field as well as current research. (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)

277 PSYCHOLOGY OF GENDER AND SEXUALITY You will explore issues in the behavior of men and women, including theoretical perspectives, stereotyping, gender differences, development, sexuality, and social and cultural problems. (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: 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: 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 (Offered in 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 Description of the more salient aspects of the behavior and development of children and adolescents; emphasis on pertinent psychological research and practical applications to life situations. Prerequisite: PSY 105. (3, 3T+0S)

302 BEHAVIORAL AND PSYCHOLOGICAL FOUNDATIONS OF HEALTH You will study the psychological and behavioral foundations of health, health belief models, holistic paradigms of the mind-body interaction as related to physical health through such topics as: the role of stress on mental and physical health, psychosomatic disorders, behavioral medicine, and the psychology of illness and wellness. Pre-requisites: PSY 105. Cross-listed as IHS 302. (2, 2T+0S)

311 WHY SOCIAL SCIENCES MATTER Who are we? How are we connected? Humans have been asking these questions throughout history, but the social sciences offer a more contemporary approach to these ideas. Our culture can define our humanness, and power and politics may influence our beliefs and define our social structures. We are separate but bound together by different groupings including but not limited to culture, family, religion and government. Human behavior may be seen on an individual basis, but must be understood in the context of many structures. You, the student, will reflect and contemplate these ideas through the integrated readings in anthropology, political science, sociology and psychology. [Cross-listed as HUM 311, HSS 311, and SOC 311] Pre-requisite: ENG 112. (4, 4T+0S).

PUEBLO INDIAN STUDIES (PIS)

200 INTRODUCTION TO PUEBLO INDIAN STUDIES You will survey academic approaches, such as history, linguistics, and anthropology, to the study of Pueblo Indians and their neighbors. Pre-requisite: ENG 109N. (3, 3T+0S)

220 PUEBLO ARTS, CRAFTS, AND CULTURE You will be introduced to this course through stories which accompany hands-on learning in various arts and crafts as told in the Pueblos for daily life and the transmission of cultural practices and knowledge. The course is taught by social scientists, along with artists in beadwork, fabric work, wood carving, storytelling, and more. (3, 3T+0S)

240 RESEARCH TOPICS IN PUEBLO INDIAN STUDIES You will engage in directed one-on-one research topics related to Pueblo Indian Studies. May be repeated to a maximum of 6 crs. Pre-requisite: permission of instructor. (1-6, 1-6T+0S)

242 PUEBLO INDIAN WOMEN’S LIVES You will survey anthropological, sociological, historical, life history, arts and crafts, and other writing by and about Pueblo Indian women. Topics may vary from term to term. (Fall) Pre-requisite: ENG 109N. (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. Pre-requisite: ENG 111. Cross-listed as HUM 246. (3, 3T+0S)

250 INTERNSHIP IN TRIBAL LEADERSHIP, COMMUNICATION, AND TECHNOLOGY I You will do a Field Service Learning and Internship with the Pueblo in which you have membership Pre-requisite: ENG 111 and permission of instructor. Graded CR/NC. (3, 0T+3L)

251 INTERNSHIP IN TRIBAL LEADERSHIP, COMMUNICATION, AND TECHNOLOGY II This is a continuation of PIS 250. You will do a field service learning and internship. Permission of instructor. Graded CR/NC. Pre-requisite: ENG 111. (3, 0T+3L)

252 PUEBLO INDIAN HISTORY You will study academic approaches to historical studies of Pueblo Indians in New Mexico and Arizona from pre-Columbian times to the present using archival sources, ethnohistorical resources, and federal records. Pre-requisite: ENG 109N. Co-requisite: PIS 200. (3, 3T+0S)

256 PUEBLO TRIBAL GOVERNMENTS You will study the forms of government practices used by Pueblo Peoples at the time of contact with Europeans to the present. Pre-requisite: ENG 109N. Co-requisite: PIS 200. (3, 3T+0S)

258 INDIAN GAMING, ENTREPRENEURSHIP, SOVEREIGNTY, AND CASINOS You will survey games played by Pueblo Indians from earliest times to the present and how the establishment of casinos fits within these traditions. You will study the recent history of gaming from Bingo operations and the tribal court battles to the passage of the federal Indian Gaming Regulatory Act (1988). You will also explore and debate the importance of political and economic issues to Pueblo gaming. Pre-requisite: ENG 111. Cross-listed as BA 258. (3, 3T+0S)

265 NATIVE AMERICAN LITERATURE I Involves a survey of Native American writing from the time of the European invasion to the present with an emphasis on contemporary authors. Pre-requisite: 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. Pre-requisite: ENG 111. Cross-listed as PIS 266. (3, 3T+0S)

270 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. Pre-requisite: ENG 111; Pre- or co-requisite: PIS 200. (3, 3T+0S)

272 PUEBLO HEALTH CONCEPTS AND PRACTICES You will examine Pueblo health care beliefs, values, and practices in modern life. Pre-requisite: ENG 111; Pre- or co-requisite: PIS 200. (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. Pre-requisite: ENG 111. Cross-listed as HUM 281. (3, 3T+0S)

283 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. (3, 3T+0S)

284 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. Pre-requisite: ENG 109N. (Fall) (3, 3T+0S)

RADIATION PROTECTION (RAD)

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 macro molecules of living tissue; nature of radiation damage to long-chain nucleic acid molecules; potential problems from indiscriminate use of radiation therapy and diagnostic x-rays, and nuclear facility accidents; effects of low-level radiation exposure. Cross-listed as ES 333. Prerequisite: permission of instructor. (Spring only) (3, 3T+0L)

234L INTRODUCTION TO RADIOSCIENCE AND TECHNOLOGY Production, properties, interactions, dosimetry, detection and instrumentation of radiations from radioisotopes, radiation producing equipment, and nuclear reactors; phenomenon of radioactive materials from the viewpoint of nuclear stability, decay processes, and interaction with matter; devices and instrumentation for detection of radiation sources; applications of radiation and radioisotope techniques; radiation safety. Pre-requisite: 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
emphasizes 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. (Spring 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)

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 on 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 radiologically 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)

READING IMPROVEMENT (RDG)

108N READING IMPROVEMENT Introduces you to reading required for vocational programs and the workplace. Comprehension and critical thinking are stressed. Prerequisite: ENG 106N or adequate score on Course Placement Evaluation. (3,3T+0S)

109N READING AND CRITICAL THINKING Introduces you 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)

108 BASIC PATIENT CARE Provides skills in safety, body mechanics, patient assessment, infection control, medication administration, pharmacology, and life-threatening emergencies. (Fall only) (3, 3T+0L)

135L PRINCIPLES OF RADIOGRAPHIC TECHNIQUES I Lecture and laboratory course: principles of x-ray production, interaction of x-ray with matter, concepts of radiologic science and quality imaging techniques. (Fall only) (3, 2T+1L)

136L PRINCIPLES OF RADIOGRAPHIC TECHNIQUES II In this continuation of RAD 135L, you will learn about quality assurance (i.e., regarding the properties of radiographic film, film holders, intensifying screens, film processing, and film artifacts. You will also receive training on the mechanics of film processing, silver recovery, and the darkroom environment. Prerequisite: RAD 135L. (Spring only) (3, 2T+1L)

140L RADIOGRAPHIC PROCEDURES I You will examine the skeletal and systems anatomy of the chest, abdomen, and upper and lower extremities. Along with nomenclature, you will practice positioning related to each specific area. Co-requisite: RAD 145L. (Fall only) (4, 2T+2L)

141L RADIOGRAPHIC PROCEDURES II Radiographic anatomy and positioning continue as you study of the pelvis and upper femora, vertebral column, skull, sinuses, mastoids, and facial bones. Prerequisite: RAD 140L. (Spring only) (4, 2T+2L)

142 RADIOLOGIC PROCEDURES III Classification of reaction signs and symptoms of contrast media; types of contrast media and related studies. You will also study the anatomy and positioning of the more common contrast procedures. Pre-requisite: RAD 141L. (Summer only) (3, 2T+1L)

145L CLINICAL EXPERIENCE I During the first half of the semester, you will be restricted to the laboratory environment in which you will learn radiation safety and protection along with basic equipment-operational skills (energized and darkroom), and basic film quality. During the second half of the semester, you will move from the lab to the clinical setting to apply your new knowledge and skills under the direct supervision of a clinical instructor. Co-requisite: RAD 140L. (Fall only) (5, 0T+5L)

146L CLINICAL EXPERIENCE II As you clinical experience continues, you will begin to perform master competencies under the direct supervision of the clinical coordinator. Once you have performed master competencies, you may continue those procedures under indirect supervision, learning and accepting increased responsibility. Co-requisite: RAD 141L. (Spring only) (5, 0T+5L)

149L CLINICAL EXPERIENCE III You will continue to work on master competencies while beginning contrast studies. Prerequisite: RAD 146L. (Summer only) (5, 0T+5L)
235 RADIOLOGICAL PHYSICS You will study electricity and electromagnetic properties and circuitry as those pertain to radiographic equipment. You will study dynamic imaging (Fluoroscopy), image intensification, and safety related to these procedures. Prerequisites: RAD 136L, or permission of instructor. (Fall only) (3, 3T+0L)

236 PRINCIPLES OF RADIOGRAPHIC TECHNIQUES IV You will 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. You will also study digital technology as it applied to the clinical experience. Prerequisite: permission of instructor. (Spring only) (2, 2T+0L)

240 RADIOGRAPHIC PROCEDURES IV You will begin examining advance modalities and imaging systems. You will continue with contrast procedures related to the operating room and other specialty areas. Modalities will include Mammography, Bone Densiometry, CT, MRI, Nuclear Medicine, Ultrasound, Angiography, Radiation Therapy, and opportunities that may present themselves as technology is offered. Prerequisite: RAD 141L, or permission of instructor; Co-requisite: RAD 245L. (Fall only) (3, 3T+0L)

245L CLINICAL EXPERIENCE IV You will continue performing master competencies, working toward more indirect supervision while also performing intermediate rotations in trauma, O.R., and other specialty area. Prerequisite: RAD 240, or permission of instructor; Co-requisite: RAD 240. (Fall only) (8, 0T+8L)

246L CLINICAL EXPERIENCE In your final clinical rotation, you will complete the master competencies required for graduation, while also continuing advanced rotations and learning administration and quality control. Pre-requisite: RAD 245L, or permission of instructor. (Spring only) (8, 0T+8L)

250 RADIOGRAPHY PATHOLOGY During this course you will work at enhancing your communication abilities in the area of writing. You will research pathology from studies you will see in the clinical setting pertaining to the weekly area of study. Prerequisite: permission of instructor. (Spring only) (1, 1T+0L)

251 REGISTRY REVIEW Complete medical radiography review to prepare for the American Registry of Radiologic Technologist exam. You will also complete terminal competencies at this time. Pre-requisite: permission of instructor. (Spring only) (1, 1T+0L)

103 RENEWABLE ENERGY INTRODUCTION AND OVERVIEW In this course, you will view the past, present, and future fields of renewable energy used: to heat, light, and cool buildings; to produce domestic hot water; to power, heat, and cool industrial processes; to provide transportation; and to 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. Pre-requisite: 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. Pre-requisites: ENG 108N and MATH 100N. (3, 3T+0S)

108 ACTIVE SOLAR HEATING Given that solar energy can supply heat for buildings, domestic hot water, and industrial processes and given that 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)

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. Pre-requisite: 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. Pre-requisite: 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 gained 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. Pre-requisite: RE 103. (2, 2T+0s)

144 BIO-DIESEL 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-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. Pre-requisites: 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 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. Pre-requisites: ENG 108N, MATH 100N, and RE 103. Recommended co-requisite: ELEC 190. Cross-listed as ATEC 146. (4, 2T+2S)

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. Pre-requisites: ENG 108N, MATH 100N, RE 103, and ECET 160. Recommended co-requisite: ELEC 190. (4, 2T+2S)

208 PHOTOVOLTAIC SYSTEMS DESIGN AND INSTALLATION In this course, you will cover the rapidly developing technology dealing with electrical energy production from the sun. You will study the contrasts between AC versus DC, and grid-tied versus stand-alone systems. You will discuss collectors, batteries, control systems, disconnects, over-current protection and distribution to structures, with an emphasis on the installation and maintenance of systems and safety concerns. Classes will take place on- and off-campus. Pre-requisites: ENG 108N, MATH 100N, RE 103, and ECET 160. Recommended co-requisite: ELEC 190. (4, 2T+2S)

263 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)

120 INTRODUCTION TO SMET PROBLEM SOLVING You will study the use of popular software for spreadsheets or scientific calculators to solve typical science, mathematics, engineering, or technology problems. Pre-requisites: ENG 109N and MATH 102N or adequate Course Placement scores. (2, 2T+0S)

SEMICONDUCTOR MANUFACTURING (SMT)

100 SEMICONDUCTOR MANUFACTURING TECHNOLOGY I Study of the processes used in semiconductor manufacturing. Includes semiconductor materials, wafer preparation, contamination control, oxidation, diffusion, etch, ion implant, lithography, and thin films. Prerequisite: CHEM 121 and ECET 150. Co-requisite: SMT 100L. (2, 2T+0S)

100L SEMICONDUCTOR MANUFACTURING TECHNOLOGY I LAB You will gain practical experience by using semiconductor materials, wafer preparation, contamination control, oxidation, diffusion, etch, ion implant, lithography, and thin films. Co-requisite: SMT 100. (1, 0T+1S)

200 SEMICONDUCTOR MANUFACTURING TECHNOLOGY II Continues study of processes used in semiconductor manufacturing. Includes materials, wafer preparation, contamination control, oxidation, diffusion (including RTD), etch, ion implant, lithography, and thin films. Prerequisite: SMT 100. Co-requisite: SMT 200L. (2, 2T+0S)

200L SEMICONDUCTOR MANUFACTURING TECHNOLOGY II LAB Continues use of processes and equipment used in semiconductor manufacturing. Manufacturing processes include materials, wafer preparation, contamination control, oxidation, diffusion, etch, ion implant, lithography, and thin films. Co-requisite: SMT 200. (1, 0T+1S)
SOCIOLOGY (SOC)
Note: Each course in this department bears a pre-requisite of ENG 109N, or adequate score on the Course Placement Evaluation.

101 INTRODUCTION TO SOCIOLOGY Introduces you to the principles, concepts, methods, 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. (3, 3T+0S)

211 SMALL GROUP COMMUNICATIONS STUDIES You will learn the theory and skills involved in small group processes through participation, including attention to group types, characteristics, dynamics, conflicts, norms, leadership, problem solving, and decision making. (3, 3T+0S)

213 DEVIANT BEHAVIOR Analysis of deviation from societal norms including history, theory, and research on individual and group norm violations and societal responses to the violations. (3, 3T+0S)

216 ETHNIC/INTERCULTURAL RELATIONS You will study the patterns of race, ethnicity, minority, class, and gender interactions from individual, group, and institutional perspectives with a focus on the dynamics of ethnocentrism, prejudice, and discrimination. (3, 3T+0S)

220 SOCIAL PROBLEMS You will examine various social problems, proposed solutions, and probably repercussions of those solutions; racism and prejudice, crime, sex roles, social stratification, ecology, drug abuse, and alcoholism. (3, 3T+0S)

225 MARRIAGE AND THE FAMILY You will study the history, current state and future of courtship, marriage, family, parenthood, divorce, remarriage, and sex roles. (3, 3T+0S)

250 PSYCHOSOCIAL GERONTOLOGY You will examine the aging process and the aging person from social and psychological perspectives, including inter-generational interaction, age grading, family responsibilities, social attitudes and perspectives of the aged person; examines social institutions designed to support the aging person from the standpoint of their service to the aging persons and their families. (3, 3T+0S)

311 WHY SOCIAL SCIENCES MATTER Who are we? How are we connected? Humans have been asking these questions throughout history, but the social sciences offer a more contemporary approach to these ideas. Our culture can define our humanness, and power and politics may influence our beliefs and define our social structures. We are separate but bound together by different groupings including but not limited to culture, family, religion and government. Human behavior may be seen on an individual basis, but must have been understood in the context of many structures. You, the student, will reflect and contemplate these ideas through the integrated readings in anthropology, political science, sociology and psychology. [Cross-listed as HUM 311, HSS 311, and PSY 311] Pre-requisite: ENG 112. (4, 4T+OS).

SPANISH (SPAN)

100 CONVERSATIONAL SPANISH Limited grammar, vocabulary and pronunciation skills will be developed. May be repeated for credit. (1-3, 1-3T+0S)

101 SPANISH I Introductory course for those who are not native Spanish speakers and who have had little or no previous exposure to Spanish. (3, 3T+0S)

102 SPANISH II Continuation of SPAN 101. Prerequisite: SPAN 101. (4, 4T+OS)

105 SPANISH IMMERSION I Designed to prepare teachers to pass the Four-Skills Spanish Exam. The main goal is to bring you to the level of proficiency necessary to speak, write, read, and comprehend in Spanish. Prerequisites: SPAN 101 and 102. (3, 3T+0S)

111 SPANISH FOR NATIVE SPEAKERS I Introductory course for native speakers of Spanish: standard Spanish, grammar, vocabulary, and cultural readings. Intensive conversational practice in a situation structured for participation: includes dialogue, role-playing, games, and presentations. (3, 3T+0S)

112 SPANISH FOR NATIVE SPEAKERS II A continuation of SPAN 111. Prerequisite: SPAN 111. (3, 3T+0S)

201 INTERMEDIATE SPANISH I Vocabulary building, oral and written expression; thorough review of grammar and usage. Prerequisite: SPAN 101 and SPAN 102. (3, 3T+0S)

202 INTERMEDIATE SPANISH II A continuation of SPAN 201. Prerequisite: SPAN 201. (3, 3T+0S)

205 SPANISH IMMERSION II This course is designed to reinforce your listening, speaking, reading, and writing skills in Spanish. You will concentrate on practicing the rule for accents, grammar, orthography, reading for meaning and interpretation,
conversation, and articulation in Spanish. Prerequisite: SPAN 105. (3, 3T+0S)

221 CREATIVE WRITING IN SPANISH You will study Spanish and bilingual creative literary expression, including poetry, fiction, and drama. Prerequisite: SPAN 102, or permission of instructor. (3, 3T+0S)

230 SPANISH FOR HEALTH PROFESSIONS This is an introductory course for health professionals and persons interested in health care who must communicate with Spanish-speaking patients: basic concepts of grammar; develops vocabulary and communicative competencies appropriate to a health care setting. (3, 3T+0S)

260 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)

261 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)

270 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)

271 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)

280 INTRODUCTION TO HISPANIC LITERATURE Introduces you to the novel, poetry, short fiction, and drama of Spain and Latin America, with emphasis on interpretation rather than literary history; lectures, discussion, and composition in Spanish. Prerequisite: reading and writing proficiency in Spanish. (3, 3T+0S)

285 SPANISH FOR WRITTEN COMMUNICATIONS 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 that 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)

288 LINGUISTICS AND PHONETICS FOR THE BILINGUAL TEACHER 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)

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)

295 CIVILIZATION AND CULTURE Presents the Spanish, Latin American, and southwestern U.S. Spanish experience of yesterday and today through the social, historical, political, and literary aspects that this experience encompasses. Prerequisite: reading and writing proficiency in Spanish. (3, 3T+0S)

SPANISH-COLONIAL FURNITURE MAKING

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. (3, 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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. Pre-requisite: 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 a basis for procedural safeguards relating to educational services and state and federal mandates for students with disabilities. Based on principles of brain-based learning and diversity and multiculturalism, the course provides defensible choices in your apprenticeship and professional practice. (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). (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. (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. This course is also a requirement for those pursuing the BA in Elementary Education. Pre-requisite: ED 201 and ENG 112. (Spring) (3, 3T+0S).

485 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. (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. (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. (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)

Each studio courses in this department may be repeated without penalty, each time counting for credit and toward your cumulative grade point average; however, no course may be counted more than once toward graduation requirements.

120 INTRODUCTION TO THEATRE I This course provides an overview of the Theatre Arts from its prehistoric origins through Western and non-Western cultures to the present, and an introduction to the practical applications of theatre. You will explore the physical realities of creating theatre as a living art form, including lighting, set design, costuming, and stage make-up. THE 150 is a suggested co-requisite. (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. Pre-requisite: 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. THE 150 is a suggested co-requisite. (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. Co-requisite: THE 150. (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. THE 150 is a suggested co-requisite. (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. Pre-requisite: THE 120 and 126. (3, 1T+2S)

220 INTRODUCTION TO THEATRE II Continuation of background and working knowledge of theatre, acting, dramatic techniques, and production costuming. Pre-requisite: THE 120; Co-requisite: THE 150. (3, 3T+0S)

224 PLAYWRITING You will study character development, scene structure and narrative theory in the process of developing a stage and/or screen script; includes reading of published scripts. Pre-requisite: 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]. Pre-requisite: ENG 109N. (3, 3T+0S)

226 DIRECTING AND PLAY PRODUCTION You will learn the fundamental techniques and theories of stage direction. Prerequisite: THE 120 and 122 (2, 1T+1S)

228 PERFORMANCE POETRY You will study reading, writing, and performing poetry, with an emphasis on the personal and political aspects of poetry from the 1960s to the present, including the Poetry Slam movement. (3, 2T+1S)

238 TEATRO CHICANO You will read and discuss contemporary Chicano/o playwrights, with encouragement to explore self-identity through cultural identity. You will develop a definition of Chicanismo and Chicano aesthetic, and write personal pieces expressing cultural heritage and identity. Pre-requisite: ENG 109N. (3, 3T+0S)

250 STAGE MANAGEMENT You will focus on professional stage manager duties, including responsibilities for actors, calling cues during production, all technical production, and compiling the Production Book. Prerequisite: THE 120; Co-requisite: THE 150. (2, 1T+1S)

282 ACTING III: SCENE STUDY You will continue your study of acting developed in THE 122 and 218 through an in-depth study of characters in two- or three-character scenes. The class will culminate in a performance. Pre-requisites: THE 122 and 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. Co-requisite: 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. Pre-requisite: THE 196. (3, 2T+1S)
VISUAL COMMUNICATION (VC)

100 INTRODUCTION TO VIDEO PRODUCTION You will study the composition, lighting techniques and various script styles. You will work in production teams in the field and studio to produce a video project in consultation with the instructor. This class does not satisfy the pre-requisite for enrollment in VC 160; enrollment is restricted to concurrent students at Espanola Valley High School; may be repeated twice for credit. (Fall and Spring) (3, 1T+2S)

110 FUNDAMENTALS OF VISUALIZATION This is a basic course in which you will explore classical two-dimensional visual elements using methodologies drawn in part from the Bauhaus tradition. Co-requisite: VC 111. (Fall) (3, 3T+0S)

111 2-D COMPUTER VISUALIZATION You will use basic computer functions in exploring classical two-dimensional visual elements, texture, and pattern. Co-requisite: VC 110. (Fall) (4, 3T+1S)

120 3-D VISUALIZATION This is a basic course in which you will explore classical three-dimensional visual elements using methodologies drawn in part from the Bauhaus tradition. Co-requisite: VC 121. (Spring) (3, 3T+0S)

121 3-D COMPUTER VISUALIZATION You will use basic computer functions in exploring three-dimensional visual elements and geometric primitives. Co-requisite: VC 120. (Spring) (4, 3T+1S)

135 ELECTRONIC PUBLICATIONS I Introduces you to the fundamentals of digital page layout and electronic publication. (4, 3T+1S)

140 DIGITAL IMAGING I In this course you will become familiar with Photoshop, digital camera, scanner and printer. (4, 3T+1S)

155 COMPUTER ANIMATION I During the first half-semester of this course you will spend gaining a working knowledge of 3ds max. During the second half you will study storyboarding and executing an animated sketch. (4, 3T+1S)

160 DIGITAL PRODUCTION FOR FILM I You will develop literacy in Digital Video Production techniques for broadcast and film, with an objective of your understanding production methods by examining film history and storyboarding, as well as audio, lighting, camera, and editing techniques for digital transfer to film (4, 3T+1S)

165 VISUAL COMMUNICATIONS I You will work in digital video production and post-production involving live footage, animation, text, and sound, with an emphasis on articulation and economy of expression. Classes consist of weekly seminars in which you will work independently on your projects. Pre-requisite: VC 160. (4, 3T+1S)

175 INTERNET PUBLICATION I Introduces you to the production of web page design and publication on the Internet. (Cross-listed as CT 175.) (4, 3T+1S)

235 ELECTRONIC PUBLICATIONS II You will cover the design, lay-out, and execution of a multi-page digital publication. Pre-requisite: VC 135. (4, 3T+1S)

240 DIGITAL IMAGING II You will cover the preparation of images for general output and web publication using Illustrator, Photoshop, and Image Ready software. Pre-requisite: VC 140. (4, 3T+1S)

255 COMPUTER ANIMATION II You will cover the development and execution of an animation clip that will be edited into a class project. Prerequisite: VC 155. (4, 3T+1S)

260 DIGITAL PRODUCTION FOR FILM II You will cover the production and editing of a PSA (Public Service Announcement) for a non-profit or small business organization of your choice. Building on foundations acquired in VC 160, you’ll learn advanced editing, paint and compositing techniques, incorporating these into your final project. Pre-requisite: VC 160 (4, 3T+1S)

265 VISUAL COMMUNICATION II You will develop and execute cooperative projects which may be promotional, narrative, or scientific visualization. You will produce a portfolio project in the form of a digital tape, CD, or DVD. Pre-requisite: VC 165. (4, 3T+1S)

275 INTERNET PUBLICATION II You will study advanced production of web page design and publication on the Internet. Pre-requisite: VC 175. (4, 3T+1S)

280 VISUAL COMMUNICATION HISTORY You will study the historical perspective of visual communication from the evolution of tool-use and language to digital technology. (3, 3T+0S)

290 MULTIMEDIA Introduces you to multimedia, utilizing electronic imaging, animation, and digital editing. Prerequisites: VC 140 and VC 155. (4, 3T+1S)

WELDING (WELD)

110 INTRODUCTION TO WELDING Shop and personal safety, different welding processes, different metals, and basis of metal identification and analysis. (3, 3T+0S)

111L FUNDAMENTALS OF OXYACETYLENE WELDING Lighting, adjusting, and turning off oxyacetylene cutting outfit, safety precautions, tools and equipment; ninety-degree cuts, level cuts, and cutting holes in mild steel. (3, 0T+3S)

112L FUNDAMENTALS OF ARC WELDING Three types of arc welders, straight and reverse polarity, selection of correct electrode, starting, stopping, and restarting of bead; construction of pad in flat position and of square groove butt weld. (3, 0T+3S)
120L OXYACETYLENE WELDING  Cutting, fusion, and braze; selection of welding tips, and demonstration of ability to carry a puddle; distinction between braze and fusion, and application of flux. (3, 0T+3S)

121L ARC WELDING  Different types of arc welders, polarity, beads, and E-6010 and E-7018 electrodes; construction of test plates in all positions. (3, 0T+3S)

122L INERT GAS WELDING  GTAW process; identification of applications, advantages of the process, and identification of major parts of equipment; fuller metals and metallurgical properties of base metals; setting up equipment and production of welds on the popular metals in the flat through vertical positions on the common joints. (3, 0T+3S)

130 HANDS-ON WELDING  The principles and practice of welding basics, usually offered periodically on a short-term basis. (2, 1T+1S)

210 WELDING BLUEPRINT READING  Identification of information contained in a blueprint: the view, size, and dimensions, drawing or pictorial view and three-view sketches of a specified rectangular block. (3, 3T+0S)

211L PRACTICAL ARC LAB  Practical use of ARC equipment; projects assigned according to the skill of the welder. (3, 0T+3S)

212L PRACTICAL OXYACETYLENE LAB  Practical use of oxyacetylene equipment; projects assigned according to the skill of the welder. (3, 0T+3S)

213L PRACTICAL INERT GAS LAB  Practical use of inert gas equipment; projects assigned according to the skill of the welder. (3, 0T+3S)

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. Pre-requisite: permission of instructor. (2-5)

WILDLAND FIRE SCIENCE (WFS)

100 FOREST MANAGEMENT TRAINING  Focuses on basic ecological concepts covered in a classroom setting, including the role of natural disturbances, succession, and fire ecology. Students will learn orienteering skills using a map, compass, global position, and study tree and plant identification, forest growth measurements, and measuring slope and aspect. You will also learn how to assess watershed health, sample streams, and evaluate water quality criteria, such as turbidity and invertebrate counts. You will cover basic concepts related to geology and soil in the field experience. (1, .5T+.5S)

102 FOREST WORKERS SAFETY CERTIFICATION  Through this course, you and your employer will qualify to receive reduced workers’ compensation insurance premiums. You will study power saw mechanics, basic power saw operation, bucking and felling safety, fire-line construction safety, and Hazmat and OSHA requirements. (1, .5T+.5S)

110 WILDLAND FIRE TECHNICIAN I  Provides an orientation to the philosophy and history of wildland fire history and the loss of life and property by fire, municipal fire defenses, organization and function of federal, state, and private fire protection agencies. You will be introduced to fire fighting tactics and strategies, incident command systems (ICS), and initial fire ground resources. (Applies to CFSTS certification for Fire Officer.) (2, 2T+0S)

112 WILDLAND FIRE FIGHTER TRAINING  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. Also includes introducing primary environmental factors that affect the start and spread of wildfire, and the recognition of potentially hazardous situations. (3, 2T+1S)

118 INTERAGENCY INCIDENT BUSINESS  Targeted for entry-level logistics and financial/administration positions, helicopter managers, and single resource positions in the incident command system. This course meets the general training needs of all positions for which an understanding of interagency incident management is required. Topic include employee responsibilities and conduct, personnel timekeeping, pay and commissary, correct reporting procedures for traumatic injury occupational disease, procurement and equipment recording, property management, interagency agreements, and claims/accident investigation. Pre-requisite: WFS 110. (1, 1T+0S)

125 BASIC AIR OPERATIONS  Surveys the uses of aircraft in fire suppression, and instructs trainees on how to conduct themselves in and around aircraft; covers management policy, regulations, and procedures that govern aviation operations in fire suppression; familiarizes trainees with tactical and logistical uses of aircraft in fire suppression as well as describes the specifications for helicopter landing areas. Pre-requisite: WFS 110. (1, 1T+0S)

127 ADVANCED FIRE FIGHTING TRAINING I (S131)  You will learn to use fire line reference tools to facilitate the communication and decision-making processes, describe to incorporate and maintain open lines of communication with appropriate personnel, demonstrate your ability to apply the SOP’s found in the Incident Response Guide, and demonstrate your ability to apply information found in the Fire-line Handbook. Pre-requisite: WFS 110 and 112. (1, 1T+0S)
128 ADVANCED FIRE FIGHTING TRAINING II (L280) Through this introductory leadership course which uses both classroom and field exercises, you will undertake a self-assessment to step into a leadership role. You will study leadership values and principles, transition challenges for leaders, situational leadership, team building, and ethical decision making. This course involves 2-4 hours of pre-course work. Pre-requisites: WFS 110, 112, and 127. (1, 1T+0S)

201 WILDLAND FIRE TECHNICIAN II Provides training for initial attach incident commanders and company officers confronting wildfire which presents a threat to life and property. Includes size-up, assessment, public relations, and follow-up. Pre-requisite: WFS 110 and WFS 112. (3, 3T+0S+)

215 INTERAGENCY (IA) HELICOPTER TRAINING Provides the basic knowledge and skills required by those who will be working with crews on contract helicopters for initial attack capacity. This is a combined classroom/field course designed to provide you proficiency in all areas of the tactical and logistical use of helicopters to achieve efficiency and standardization. Includes safety, personal protective equipment, capabilities and limitations, load calculations, helicopter makes and models, landing areas, fueling, contract administration, cargo transport, helibase and helispot organizations and operations. Also, covers missions and organizations, introducing you to subsequent specialized training options. Pre-requisite: WFS 110. (3, 3T+0S)

235 IGNITION OPERATION You will be trained in the functional role and responsibilities connected with firing operations. You will cover planning, ignition procedures, ignition techniques, and equipment applicable to wildland and prescribed fire, and you will also address the role of the ignition specialist or firing boss as the organization manages escalation from a non-complex to a complex fire situation. Pre-requisites: WFS 110 and WFS 112. (2, 2T+0S)

237 CREW BOSS A classroom skill course designed to produce your proficiency in the performance of all duties associated with the single resource crew boss, from initial dispatch through return to home unit. Includes preparation and mobilization, assignment preparation, tactics and safety, off-line duties, and demobilization/post-incident activities. Designed for training throughout the United States, and includes examples from all geographic areas. Pre-requisites: WFS 110 and WFS 112. (2, 2T+0S)

239 ENGINE BOSS (S231) This is a skills course designed to produce proficiency in the performance of the duties associated with engine boss, single resource (ENGB). Upon completion of this course, you will be able to perform the tasks of an Engine Boss in meeting the tactical decisions required to safely manage an engine and personnel on an incident. You will study engine and crew responsibilities and limitations, information sources, fire size-up considerations, tactics, and wild land/urban interface. Pre-requisite: Must have Crew Boss and FFT1 certifications. (1, 1t+0S)

241 DOZER BOSS (S232) This is a skills course to meet the training needs of a Dozer Boss on an incident as outlined in the Position Task Book and PMS 310-I. Primary considerations are tactical use and safety precautions required to establish and maintain an effective dozer operation. Upon completion of this course, you 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 dozers and operators to perform an assignment, and identify the actions required of the dozer boss to safely and effectively complete an assignment. A field exercise is part of this course. Pre-requisite: Must hold FFT1 certification. (2, 2T+0S)

280 WATER/HYDRAULICS (S211) You will gain practical knowledge and application skills in water/hydraulics. You will select the equipment required to maintain flow of water as required by the incident, install pump, hose lays, and holding tanks to provide water during all phases of the incident, and perform required field maintenance on a portable pump. Pre-requisites: WFS 110 and 112. (2, 1T+1S)

281 CHAIN SAW (S212) You will train on the use of chain saw use. You will be able to list, define, and apply chain and safety standards as required by OSHA and NECG agency manuals, hangbooks, and directives, maintenance and function of PPE, identify basic chain saw parts, trouble shooting and safety features. You will receive a demonstration of chain saw use in felling, limbing, and bucking. Pre-requisite: WFS 110 and 112. (3, 2T+1S)
SPECIAL COURSES

TOPICS (TP)

147, 247 Beginning (147) and advanced level (247) 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)

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)

Initial approval and assignment of an instructor who will supervise the course must be obtained from the department chairperson who will provide an approved outline of the course content to the Provost for approval and submission to the Registrar. All approvals must be documented and on file at the Registrar’s office prior to registration for the course.

* For this purpose, an outstanding student is one who has been working toward a specific declared major and who has completed at least fifty percent of that program’s requirements and, over that amount of course work, has attained a minimum 3.5 cumulative GPA.
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Mike Costello, MATE ....................................................... Off-Campus Instruction
Theresa Lopez, BSN ....................................................... Nursing

FULL-TIME FACULTY
Albert Amador, PhD ....................................................... Mathematics
Ray Ackermann, BA ....................................................... Auto Body Repair
Barbara Baca, MBA ....................................................... Business and Office Administration
David Barton, PhD ....................................................... Language & Letters
Pamela Bentley, MA ....................................................... English, Literature
Barbara Benzaquen, MSN ....................................................... Nursing
Rose Cavalcante, PhD ....................................................... Education
Kayce Chithambaram, PhD ....................................................... Chemistry
Thomas Click, BS ....................................................... Computer Science
K. Timothy Crone, MA ....................................................... Anthropology and Sociology
Betty Espinoza, Cert./Lic. ....................................................... Barbering/Cosmetology
Christina Esquivel, MA ....................................................... Education
Lori Franklin, PhD ....................................................... Language & Letters
Leonel Gallegos, MBA ....................................................... Business Administration
Eric Gidney, AAS ....................................................... Radiographic Science
Lori Gonzales, MA ....................................................... English
Richard Gonzales, Cert. ....................................................... Spanish Colonial Furniture Making
Richard Harlan, Phd ....................................................... Biology
Cappie Hausman, BSN ....................................................... Nursing
Ajit Hira, PhD ....................................................... Mathematics and Engineering
Frank Jaramillo, MA ....................................................... HS Equivalency Program
Sat Kirpal Khalsa, PhD ....................................................... Biology
Siri Guru Nam Kaur Khalsa, BSN ....................................................... Nursing
Pamela Lapcevic, BA ....................................................... Developmental Studies
Karen Martinez, Cert. ....................................................... Fiber Arts
Larry Martinez, MA ....................................................... HS Equivalency Program
Lynda Martinez, MA ....................................................... HS Equivalency Program
Lisa Molina, PhD ....................................................... BS in Integrative Health Studies
Ulrich Niemeyer, BA ....................................................... Visual Communications
Emily Romero, PhD ....................................................... Education
Elizabeth Sanchez, MA ....................................................... Office Administration
Mellis Schmidt, Phd ....................................................... Psychology
Gilbert Serna, BA ....................................................... Automotive Technology
Karen Simpson, MBA ....................................................... Business Administration
Daniel Tafaya, Cert. ....................................................... Spanish Colonial Furniture Making
Ernest Larry Tafaya, Cert. ....................................................... Electrical Technology
Jeffrey Toomey, BS ....................................................... Computer-Aided Drafting
Elaine Valdez, AAS/Lic. ....................................................... Barbering/Cosmetology
Quentin Wilson, BS ....................................................... Adobe/Southwest Construction

Faculty Emeritus
Cora Abyeta, Lic. Cosmetologist
### PART-TIME FACULTY

This list represents those part-time faculty who have taught consistently over an extended period of time.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Department</th>
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<tbody>
<tr>
<td>Maxine Abeyta, MA</td>
<td>Education</td>
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<tr>
<td>Benjamin Aguilar, BS</td>
<td>Criminal Justice</td>
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<td>Claudia Aprea, PhD</td>
<td>Mathematics</td>
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<tr>
<td>Luz Aragon, MS</td>
<td>Education</td>
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<td>Antoinette Archuleta, MA</td>
<td>Office Administration</td>
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<td>Sharon Argenbright, MSN</td>
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<td>Richard Altenacio, MA</td>
<td>HPER/Drafting</td>
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<td>Akeen Ayanmiy, AA</td>
<td>Music</td>
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<td>Christina Baca, MA</td>
<td>Education</td>
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<td>Kenneth Baltz, AAS</td>
<td>Health Sciences</td>
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<td>Viviana Balzaretti Maggi, MS</td>
<td>Biology</td>
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<td>Julia Banaszek, BSN</td>
<td>Nursing</td>
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FULL-TIME STAFF

Josephine Aguilar ............................. Assistant to the President
Johanna Aguino ............................... Child Care Teacher Assistant
Raymond Archibeque ........................... Educational Advisor
Roseremarie Archibeque ........................... LRC Coordinator
Erlinda Atencio ...................................... Director of Purchasing
Priscilla Baldonado .............................. Cook I
Gary Boulty .............................................. SBDC Advisor
Adam Chacon ................................................. Purchasing Clerk
M. Cristina Chacon ................................. Child Care Teacher Asst.
Anna Marie Cordova .............................. Department Secretary
Ignacio Coronado ...................................... Carpenter
Piedad Crouch ............................................. Administrative Secretary, SOL
Jan Dawson ................................................... Assistant Registrar
Lisa Duran ........................................... Department Secretary, Humanities
Miriam Foranda ...................................... Educational Advisor
Alfredo Gallegos ...................................... Educational Advisor
Rosalie Gallegos ..................................... Acad. Coordinator for CAMP
Mike Gallegos .............................................. Custodian
Lorraine Garcia ................................. Business Office Technician
Mary Garcia .................................................. Cashier
Glenn Gomez ........................................ Adult Basic Education Coordinator
Pablo Gonzales ................................. AA Program Coord. Teacher Educ
Brad Griffith .................................................. Electrician
Alice Gurule .................................................. Custodian
Nerio Gurule .................................................. Security
Julia Honaberger ....................................... Department Secretary
Sue Ellen Jacobs ......................................... Co-Director of NPI
Diahann Jacquez ................................. Accounting Technician
Jynella Jaramillo ................................. Developmental Studies Technician
Page Konrad ................................................. Educational Advisor
Carmen Lobato ..................................... Department Secretary, HEP
Brandy Lopez ............................................. Department Secretary, Business
Tamara Lopez ................................................... RETA Coordinator
Betty Lujan ................................................ Data Processing Coordinator
Dorain Maestas ....................................... Cook Supervisor
Ivan Maestas ................................................... MIS Technician
Theresa Maestas .................................. Accounting Technician
Anna Maez ................................................. Bookstore Clerk
Bernie Manzanares ................................. Custodian
Connie Manzanares ..................................... Asst. Director of Financial Aid
Herman Manzanares ................................ Grounds Keeper
Brenda Martinez ................................... Career Services Specialist
Delmeria Martinez .................................... Library Aide
Donald Martinez ........................................... Student Activities Coordinator
Elia Martinez ................................................ Comptroller
Jennifer Martinez .................................. Accounting Technician
Jolly Martinez ................................................. Custodian
Johnny Martinez ........................................... Security
Joseph U. Martinez .................................. Custodian
Kenneth Martinez ........................................ Custodian
Leroy Martinez ................................................. Custodian
Karen Martinez ................................................. Custodian
Mildred Martinez .................................. Accounting Technician
Renee Martinez ........................................ Admin. Assistant to Registrar
Stephanie McReynolds ........................... Educational Advisor
Viviane Medina ........................................ Financial Aid Officer
Pam Montrose ............................. Advisor/GED Examiner/Veterans Benefits
Tessie Naranjo ............................................. Co-Coordinator of NPI
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Mary Ocana .................................................. Custodian
Catherine Pacheco .................................. Lab Instructional Assistant
Jacob Pacheco ......................................... Educational Advisor
Tina Marie Pacheco ......................... Secretary, Education Dept.
Jeanette Padilla ................................. Financial Aid Officer
Amanda Padilla ............... Child Development Teacher Assistant
Lisa Przyllas ......................................... MIS Technician
Paula Reid .............................. Coordinator of Student Advisement
Lydia Rivera ......................................... Financial Technician
June Rock ....................................... Switchboard Operator
Filomeno Rodriguez .............. Maintenance Worker
Alfonso Romero ................................. Custodian
Andy Romero ..................................... Physical Plant Supervisor
Cecilia Romero ................................. Administrative Secretary
Cindy Romero ..................................... Custodian
Ernesto Romero ......................... Grounds Keeper I
Anna Roybal ...................................... Department Secretary
Jeannie Roybal ................................. Bookstore Manager
Dolores Martinez Salazar .... Records Technician
Rita Sandoval ..................................... Administrative Secretary
Richard Sedillo ................................ Coordinator Recreation and Student Activities
Nancy Sharp ................................. Director of Development
Gilberto Siquieros ................................ Carpenter
Arnold Suazo .................................... Carpenter
Danny Suazo .................................... Educational Advisor
Charles Tafoya .................................. Educational Advisor
Shannon Tafoya ................................... Department Secretary, Massage
Jose Torres ....................................... Security
Amelia Trujillo .................................. Custodian
Debra Trujillo ................................. Data Processing Coordinator
Ernest Trujillo ................................. Plumber
Felix Trujillo ..................................... Custodian
Tessie Trujillo-Lopez .................. Payroll Manager
Mary Ann Valdez .......................... Administrative Secretary
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The following information is designed to assist both students and faculty access the records they need from our Website

**Students!**
You can obtain your
- schedule,
- invoice,
- grades,
- transcripts,
- and more

**Faculty!**
You can
- enter your grades electronically
- see your course rosters,
- class counts,
- student information,
- and more

www.nnmc.edu

**Instructions** (also on each page in Banner)
When you are in Northern’s homepage,
1. Click Banner Access
2. Click “Enter Secure Area”
3. Create your account beginning with this page. FOLLOW INSTRUCTIONS CAREFULLY
   1. In User ID, enter your student ID number with the 4 zeros
   2. In PIN, enter your birthday (mmddyy). This is temporary.
   3. Click Login
   4. On “Login Verification Change PIN” page,
   5. Re-enter old PIN (your birthday)
   6. New PIN (enter 6 numbers that are NOT your birthday)
   7. On the next page, create a security question and answer
   8. Click on the menu item of your choice and continue.

Remember both your ID and PIN numbers!

**Printing out your course schedule and invoice:**

**For your schedule**
1. In the Main Menu, select **Student & Financial Aid**
2. Click **Registration**
3. Click **Student Detail Schedule**
4. Select the term of the course schedule you want
5. Click **Submit**
6. Print using the printer icon at the top

**For your invoice**
1. In the Main Menu, select **Student & Financial Aid**
2. Click **Student Records**
3. Click **Account Summary by Term**
4. Print using the printer icon at the top

*Explore the other student records this website provides!*

**Notes about using Banner:**
Only students who are currently enrolled at Northern can access their records online.
For security reasons, if you attempt to go into Banner a few times incorrectly, you will get an authorization failure message. You will need to visit Admissions and Records to reset your account.