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Home

Mission Statement

Mission Statement

MSU-Northern provides higher education to students for professional and technical careers through an institution dedicated to teaching and the pursuit of knowledge.

Approved by the Board of Regents on May 2016.

MSU-Northern's Core Themes

1. Provide liberal arts, professional and technical programs that serve a diverse student population.
2. Promote student centered and culturally enriched environment which fosters student success.
3. Partner with external entities to enhance and expand learning experiences.

Chancellor's Welcome

Welcome to Montana State University-Northern!

This catalog serves as your guide for academic programs, university services, and institutional policies. You can use it to not only plot a course that will help you achieve your educational goals, but also to familiarize yourself with the many resources we have on campus to assist you. Our friendly faculty and staff are all invested in making sure you get an Education that Works.

I hope you will also find time to get involved in the many campus clubs and organizations that Northern has to offer, and to enjoy activities and events sponsored by your student government. These experiences will allow you to make memories and build friendships that last a lifetime.

I look forward to seeing you on campus. On behalf of everyone at Northern, welcome!

Sincerely,

Greg Kegel
Chancellor
Montana State University-Northern

University Calendar

Fall Semester 2017

August 25, 2017	Residence Halls Open
August 25-26, 2017	Orientation
August 28, 2017	Classes Begin
September 4, 2017	Labor Day Holiday (No Classes; Offices Closed)
September 5, 2017	Last Day to Add Classes (for full session courses)
September 13, 2017	Last Day to Drop without a W (for full session courses)
October 30, 2017	Last Day to Drop with a W (for full session courses)
November 3, 2017	Advanced Registration for Spring 2018 Begins
November 10, 2017	Veteran's Day Holiday (No Classes, Offices Closed)
November 22, 2017	Thanksgiving Holiday (No Classes, Offices Open)
November 23-24, 2017	Thanksgiving Holiday (No Classes, Offices Closed)
December 11-15, 2017	Final Exams
December 15, 2017	Fall Semester Ends
December 15, 2017	Residence Halls Close
December 19, 2017	Final Grades Due by Noon

Spring Semester 2018

January 9, 2018	Residence Halls Open
January 9, 2018	Orientation
January 10, 2018	Classes Begin
January 15, 2018	Martin Luther King Day (No Classes, Offices Closed)
January 18, 2018	Last Day to Add Classes (for full session courses)
January 23, 2018	Last Day to Drop Classes without a W (for full session courses)
February 19, 2018	President's Day Holiday (No Classes, Offices Closed)
March 12-16, 2018	Spring Break (No Classes, Offices Open)
March 21, 2018	Last Day to Drop Classes with a W (for full session courses)
March 26, 2018	Advanced Registration for Summer 2018 and Fall 2018 Begins
March 30, 2018	University Day (No Classes, Offices Open)
April 30 - May 4, 2018	Final Exams
May 4, 2018	Spring Semester Ends
May 4, 2018	Residence Halls Close
May 5, 2018	Commencement
May 8, 2018	Spring Grades Due at Noon

Summer Semester 2018

May 7-11, 2018	Summer Break
May 14, 2018	May Session Begins
May 14, 2018	Full Session Begins
May 28, 2018	Memorial Day (No Classes- Offices Closed)
June 1, 2018	May Session Ends
June 4, 2018	First Session Begins
July 4, 2018	Fourth of July Holiday (No Classes, Offices Closed)
July 6, 2018	First Session Ends
July 9, 2018	Second Session Begins
August 10, 2018	Full Session Ends
August 10, 2018	Second Session Ends
August 14, 2018	Grades Due in Registrar's Office by noon

Degrees, Majors, Minors

Associate of Applied Science Degree (AAS)

- Agricultural Mechanics Technology
- Agricultural Technology
- Automotive Technology
- Design Drafting Technology
- Diesel Technology
- Electrical Technology
- Engineering Technology: Civil Engineering Technology
- Plumbing

Associate of Arts (AA)

- Program of Study in General Education

Associate of Science Degree in Nursing (ASN)

- Nursing

Associate of Science Degree (AS)

- Program of Study in Business

Bachelor of Applied Science (BAS)

- Bachelor of Applied Science
- Trades Management

Bachelor of Arts Degree (BA)

- Business Technology
- Community Leadership
- Graphic Design
- Liberal Studies
- Native American Studies

Bachelor of Science Degree (BS)

- Agricultural Operations Technology
- Automotive Technology
- Biology
- Business Administration
- Civil Engineering Technology
- Criminal Justice
- Diesel Technology
- Diesel Technology: Equipment Management
- Diesel Technology: Field Maintenance Option
- Health Promotion
- Nursing

Bachelor of Science in Education (BS)

- Elementary Education (K-8)
- English (5-12)
- General Science (5-12)
- Health and Physical Education (K-12)
- Industrial Technology (5-12)
- Social Science (5-12)

Certificates of Applied Science

- Diesel Technology
- Welding Technology

Master of Education Degree (MEd)

- Counselor Education

Master of Science Degree (MS)

- Education, Instruction and Learning

Minors (non-teaching)

- Accounting
- Agricultural Mechanics Technology
- Applied Agriculture
- Automotive Technology
- Biology

- Business Technology
- Community Leadership
- Computer Information Systems
- Criminal Justice
- Diesel Technology
- Health Promotion
- Marketing
- Native American Studies
- Small Business Management

Teaching Minors

- Art (K-12)
- Reading Specialist (K-12)
- Traffic Education (K-12)

* These programs are currently in Moratorium. We are not accepting new students into these programs. Students currently enrolled will be able to complete these degrees. These programs are being reviewed and may become available in the future.

** These programs are being phased out. We are not accepting new students into these programs. Students currently enrolled will be able to complete these degrees.

Graduation and General Education Requirements

Students are personally responsible for meeting all University graduation requirements and the requirements for their particular academic degree programs.

Completed and signed applications for graduation are due in the Registrar's Office at least one full semester prior to the end of the semester in which the student intends to graduate or participate in Commencement. The applications for graduation and programs sheets are available online and in the Registrar's Office.

Minimum Course Grades for Graduation

In accordance with Board of Regents Policy 301.5.3, students graduating from Montana State University-Northern must earn the following minimum grades:

1. A "D-" or better in all classes that are used to satisfy free elective credits in an associate or baccalaureate degree program;
2. A "C-" or better in all classes that are used to satisfy a general education program;
3. A "C-" or better in all classes that are used to satisfy the pre-requisites or required courses for a major, minor option or certificate.

General Education Course Placement

Course placement procedures ensure students are academically prepared for successful higher level course completion.

The following determines general education course placement:

1. Evaluation of previous higher education courses completed.
2. Students who earn the following minimum scores on tests taken during high school will be placed directly into a college-level freshman composition course without further testing.
 - a. 7 on the Writing Subscore or 20 on the Combined English/Writing section of the Optional Writing Test of the ACT; or
 - b. 7 on the Essay or 440 on the Writing Section of the SAT; or
 - c. 3.5 on the Montana University System Writing Assessment (MUSWA).
 - d. 4 on the International Baccalaureate Language A1 Exam.
 - e. In lieu of the indicators set out above, students may offer CLEP Subject Examinations in Composition if their scores on the examination meet or exceed the ACE Recommended Score for Awarding Credit of 50.
 - f. For students without writing placement examination scores, see Board of Regent Policy 301.17 for placement information.
3. Mathematics proficiency policy grants full admission to students with minimum mathematics scores of:
 - a. 22 for M 145 Math for the Liberal Arts or 23 for M 121 College Algebra on the ACT,
 - b. 520 for M 145 Math for the Liberal Arts or 540 M 121 College Algebra on the SAT, or
 - c. 3 or above on the AP Calculus AB or BC Subject Examinations.

4. Students with scores below these thresholds are placed into developmental courses. Details about placement testing are available from the Academic Advising Center in Cowan Hall Room 213.

Catalog of Record

Students may elect to follow the catalog in effect when they began their freshman year at MSU-Northern, or any subsequent catalog within the seven-year catalog limitation if there has not been a break of more than one academic term (Fall and Spring) in a year.

Students transferring from one institution to another in the Montana University System (MUS) or from any of Montana's two-year institutions to a unit of the MUS may elect to graduate under the program of study in effect at the new institution at the time they first enrolled at the sending institution if:

1. They have maintained continuous, full-time enrollment in good standing.
2. They meet the admissions requirements for the program or major at the new institution; and
3. The required courses are still available.

The catalog of record for these students shall not be more than four years old.

Obsolete Course Content

In evaluating coursework from postsecondary institutions, Montana State University-Northern will:

1. Guarantee that any postsecondary course work taken within five (5) years of being admitted or re-admitted to the campus will be included in the transfer analysis of specific required classes in a major, minor, option or certificate.
2. Guarantee that any postsecondary course work taken within fifteen (15) years of being admitted or re-admitted to the campus will be included in the transfer analysis of general education core and elective course work.

Course work that falls outside these guarantee periods may be included in the evaluation, at the discretion of the University. This is a discretionary decision and cannot be challenged by students.

Departmental Distinction

Students maintaining a 3.50 GPA and selected by the appropriate faculty may be eligible to graduate with departmental distinction. This distinction will be noted on the commencement program.

Graduation Academic Latin Honors

Graduation academic Latin honors levels are based on all higher education work completed at the time the program was printed. This does not include work completed at the end of the Spring Semester of commencement. If work completed after the commencement program was printed changed any honors levels, every effort will be made to provide the proper cords.

Latin Honors	Minimum GPA
Cum Laude	3.50
Magna Cum Laude	3.75
Summa Cum Laude	4.00

Honor Cords

Montana State University-Northern recognizes associate and baccalaureate students with excellent grades by awarding traditional Latin academic honors at graduation. Honored graduates wear honors cords and their names are noted in the commencement program. Cord colors are as follows:

Cum Laude	Maroon
Magna Cum Laude	Silver
Summa Cum Laude	Gold

The College of Technical Sciences Departmental Certificates

Students completing departmental certificate programs will receive a Certificate of Completion from the academic college but will not receive a diploma or participate in commencement ceremonies. The certificate does not appear on their academic transcript.

Related Instruction

All certificates of applied science and associate of applied science degrees must include instruction in program related areas of communications, computation (math), and human relations. This instruction may be included as separate coursework, or embedded in courses that are part of the degree. Courses containing embedded related education coursework must be identified and related education subjects clearly identified as part of course syllabi.

Associate of Arts, Associate of Science, and Associate of Applied Science Degree Programs

All associate and associate of applied science degrees require the following, plus course requirements under specific programs:

1. At least fifteen (15) of the total credits must be taken at Montana State University-Northern for an associate or associate of applied science degree.
2. An associate of science/arts degree is normally limited to sixty (60) credits and requires a minimum 2.00 cumulative grade point average.
3. An associate of applied science degree has a minimum of sixty (60) credits and a maximum of seventy-two (72) credits and requires a minimum cumulative grade point average of 2.00.
4. No more than 6 credits total of independent study courses (designated X92) may be applied towards an associate or associate of applied science degree.

Bachelor of Applied Science Degree

The bachelor of applied science (B.A.S.) degree is designed for students who have already earned an associate of applied science (AAS) degree from a regionally accredited institution, and would like to use that degree as a first step toward earning a baccalaureate degree. Using the A.A.S. degree as a base, the B.A.S. degree at Montana State University-Northern includes additional general education core coursework, a program of study in some selected area, and a minimum number of credits at the 300 – 400 level. The program of study typically builds on courses and the specialized study completed for the A.A.S. degree.

The specific requirements for a bachelor of applied science (B.A.S.) degree at MSU-Northern are as follows:

1. An associate of applied science (A.A.S.) degree from a regionally accredited institution; that degree must have at least 60 semester credits.
2. At least 60 semester credits beyond the A.A.S. degree.
3. Thirty of those credits described in 2 above from Montana State University-Northern.
4. Successful completion of the general education core for a baccalaureate degree at MSU-Northern. The general education core for a bachelor of applied science degree is the same as a general education core for all baccalaureate programs at MSU-Northern. Credits earned as part of the A.A.S. degree may be used to satisfy this requirement, but only if they would be accepted as appropriate coursework for any other baccalaureate general education core at MSU-Northern. **PLEASE NOTE:** Although Board of Regents Policy 301.10 almost certainly would not apply to the coursework completed by a student for an A.A.S. degree, students should ask about the Montana University System General Education Transfer Policy to determine its applicability to their work on a B.A.S. degree at Montana State University-Northern.
5. At least 30 credits in some program of study; the specific credits to satisfy this requirement will be approved by a faculty member in the program of study.
6. At least 39 of the credits at the 300 or 400 level; those upper division credits can be part of the program of study, the general education core coursework, or any elective credits that the student chooses to take.
7. A cumulative grade point average of 2.00 and a grade point average of 2.25 in the program of study.
8. No more than 9 credits of independent study courses (designated X92).

Bachelor Degree Programs

All bachelor degrees require the following, plus course requirements under specific programs:

1. The general education core requirements must be completed.
2. At least thirty (30) of the total credits must be taken at Montana State University-Northern.
3. Some programs may include additional requirements for graduation. If so, they will be noted in the recommended sequence for any individual program.
4. A bachelor of arts/science degree has 120 credits with a cumulative GPA of 2.00 and a GPA in both the major and the minor of at least 2.25. Some programs may include additional credit requirements. Some programs may also have minimum grade requirements for graduation. **PLEASE NOTE:** Students graduating under the 1997-1999 catalog and subsequent catalog need 120 credits to earn a bachelor's degree, unless their degree specifies more credits. Students graduating under a catalog prior to 1997-1999 will need a minimum of 128 credits to earn a bachelor's degree, unless the degree specifies more credits.
5. Students are required to have thirty-nine (39) upper division level credits (300 – 400 level courses) for graduation.
6. No more than 9 credits total of independent study courses (X92) may apply toward a bachelor's degree.

Minors

A minor is a supporting or complementary field taken along with a major for a baccalaureate degree. Teaching majors require teaching minors and non-teaching majors require non-teaching minors.

Minor Requirements

1. They must consist of eighteen to thirty (18 to 30) semester hours of credit.
2. At least one-third of the credits must be at the upper division level.
3. At least ten (10) of the total credits must be taken at Montana State University-Northern.
4. Students must have at least a 2.25 GPA in their minor.

Commencement without Graduation Policy

University policy allows students who have six (6) or fewer credits remaining toward requirements for graduation at the end of the Spring Semester, or who can demonstrate that they will complete graduation requirements by the end of the Summer Semester, to participate in the commencement ceremony provided that they submit graduation clearance papers by the deadline.

Articulated Coursework

MSU-Northern develops articulation agreements with other post secondary institutions. For current information on these agreements, please see the Registrar's Office website.

General Education Requirements

General education core forms a significant part of every degree program. The general education core develops areas of appreciation not necessarily provided for in the specialized areas of the major, and provides a sense of the interrelationship between the various disciplines. Above all, the general education core makes available to students the tools and awareness necessary for lifelong learning and for active, literate participation in today's technological society. Students must meet the program requirements as specified for either a baccalaureate, associate, or associate of applied science degree.

The Registrar determines the acceptability of transfer credits toward general education requirements at the University.

General Education Substitutions or Waivers

Only the Admissions and Standards Committee can substitute or waive a general education requirement. Therefore, any request to substitute or waive a general education requirement must be submitted on a petition form to the Admissions and Standards Committee for approval.

The Lower Division general education requirements defined on **pages 11-15** are waived for students who already have an associate of art, associate of science, or bachelor's degree from Montana State University-Northern or another Montana institution's Board of Regent approved general education core.

To qualify for the waiver, students must meet the following conditions:

1. Their previous degree must be from a regionally accredited institution.
2. The previous degree must be an associate of art, an associate of science, a bachelor of art, a bachelor of science, or a bachelor of applied science degree.
3. If the degree is a prior MSU-Northern associate of art or associate of science degree, the degree must have been earned in accordance with the Fall 2005 catalog or later.
4. The degree must not be an associate of applied science or associate degree nursing.

General Education programs at institutions whose general education core is not Montana Board of Regents approved will be evaluated on a course by course basis.

PLEASE NOTE: Students who transfer between units of the Montana University System may be governed by the general education transfer policy adopted by the Montana Board of Regents. That policy is set out on page 15 of this catalog. When reviewing that policy, students should pay particular attention to the IMPORTANT LIMITATION language.

This waiver does not constitute a waiver of any other graduation requirements.

MSU-Northern General Education Core

The general education core allows you (the student) to reaffirm your common experiences, to redefine your common goals, and to provide a foundation for confronting your common problems. The courses selected for inclusion in the general education core emphasize communication and techniques of creative inquiry that are used in all disciplines.

Montana State University-Northern defines seven (7) categories within the general education core. The categories and the outcomes for each category are defined below.

Category I – Communication

You (the student), upon successful completion of course(s) within this category, should be able to:

1. Write clear, accurate sentences and paragraphs in standard American English
2. Write extended papers which effectively develop and support theses, tell stories, describe events, and/or express feelings, insights and personal values
3. Demonstrate the ability to communicate effectively in written form through the forms of writing most common in the student's chosen career area
4. Identify and incorporate research materials into informative and analytical writing
5. Demonstrate the ability to select, develop and deliver an effective oral presentation to a target audience for specific purposes
6. Demonstrate an awareness of the oral communication process, including critical listening skills

Category II - Mathematics

You (the student), upon successful completion of course(s) within this category, should be able to:

1. Solve problems through mathematical reasoning using calculators and computers
2. Describe or demonstrate how mathematical models or statistical designs are used to obtain knowledge in several disciplines
3. Perform mathematical applications beyond intermediate algebra
4. Demonstrate understanding of the discipline of mathematics through multiple means of oral, written and visual assessment

Category III - Natural Sciences

You (the student), upon successful completion of course(s) within this category, should be able to:

1. Demonstrate basic competence in the principles and theories used in the natural sciences.
2. Define, describe, and apply the scientific method.
3. Convey ideas using language and presentation skills specific to the natural sciences.
4. Use critical thinking to synthesize information, evaluate assumptions and claims, and draw evidence based conclusions.

Category IV - Social Sciences/History

You (the student), upon successful completion of course(s) within this category, should be able to:

1. Describe processes of continuity and change which have shaped events up to the present
2. Identify and describe the characteristics of major era in world history or international relations, or a distinct social movement, thereby providing a framework for comprehending aspects of human experience
3. Explain how human experiences give rise to movements, institutions, traditions, and ideas which have a subsequent influence
4. Analyze factors leading to the dominance, suppression, or acceptance of selected racial, gender, ethnic, class and religious groups
5. Analyze of the extent to which individuals, institutions, and/or traditions are able to influence events, making reference to illuminating examples
6. Use factual and interpretive information to analyze and draw conclusions on historical or political hypotheses in selected areas of the social sciences

Category V - Cultural Diversity

You (the student), upon successful completion of course(s) within this category, should be able to:

1. Compare and contrast cultural worldviews.
2. Analyze social issues, social structures and/or behavior of cultures and subcultures
3. Examine how generalizations, stereotyping and prejudice develop, and how they impact culture
4. Identify dimensions of culture
5. Recognize and/or demonstrate an appreciation of different cultures through language and communication

Category VI- Humanities Appreciation/Creative Arts

You (the student), upon successful completion of course(s) within this category, should be able to:

Humanities Appreciation sub-category

1. Discuss great works of literature, drama or visual art
2. Compare the beliefs of different cultures reflected by literature or music or art or philosophy
3. Make informed judgments concerning the aesthetic, entertainment, and intellectual value of a work in a area of fine art

4. Recognize the expression of cultural values in works of literature, music, theatre, and visual art, and the ways the arts shape culture.

Creative Arts sub-category

1. Demonstrate skills in practice of a fine art, such as visual art, performing art, or literary art
2. Describe the basic elements and practices of a fine art
3. Demonstrate an appreciation for the creative process as it is expressed in a master work of a fine art

Category VII - Technology

You (the student), upon successful completion of course(s) within this category, should be able to:

1. Explain the impact of technology on society and conversely, how society impacts technology in a historical, present and future sense
2. List technology's role in problem solving and communication
3. Describe the ethical, legal and social concerns stemming from advances in technology
4. Demonstrate an ability to use technology within a discipline
5. Demonstrate an introductory level of technology literacy

* **Students planning to transfer to another institution before completing Northern's General Education Core would be well advised to take courses from the MUS Transferable Core found on page 15 of this catalog.**

General Education Transfer Policy

The Montana University System is committed to facilitating the ease of undergraduate student transfer to its campuses. Therefore, all campuses in the Montana University System will recognize the integrity of general education programs offered by units of the Montana University System and the three publicly supported community colleges in Montana, the seven tribal colleges and regionally accredited independent colleges in the State of Montana.

Block Transfer Policy

Undergraduate students who have completed an approved general education program of between 30 and 45 lower division credit hours at one of the institutions noted above and who transfer to another of those institutions will be deemed to have met the lower division general education requirements of the campus to which the students have transferred. The student may be required to take additional coursework at the upper division level that is part of an approved general education program at the new campus.

The Montana University System Core

Students that have completed less than 20 general education credits will be required to complete the approved general education program at the campus to which they transfer. All general education transfer credits that are part of the MUS Core will be reviewed for possible application in the approved general education program at the campus.

Students who have completed 20 or more MUS core credits, but do not satisfy the block transfer policy described in the preceding section may choose to complete either the MUS core or the approved general education program at the campus to which they transfer. The student should make that decision in consultation with a faculty advisor.

The Montana Transferable Core Curriculum represents an agreement among community, tribal, and publicly funded colleges and universities in the State of Montana. It assures the transfer of up to 30 semester credits for those students enrolled in courses prescribed within each of eight discipline areas at a participating host institution. The eight discipline areas are:

Communications	6 semester credits maximum
Cultural Diversity	3 semester credits maximum
Humanities Appreciation/Creative Arts	6 semester credits maximum
Mathematics	3 semester credits maximum
Natural Sciences (with labs)	6 semester credits maximum
Social Sciences/History	6 semester credits maximum
Total Semester Credits Maximum	30

Satisfactory completion of the courses listed in the *Transferable Core Curriculum* will permit the student to receive credit equivalent to the lower-division degree requirements of the receiving college or university. When transferred as a core of 30 semester credits, nearly half of the receiving institution's general education core requirements may be satisfied.

Please Note This Important Limitation

Depending upon the major program into which the student transfers, additional lower division requirements may still be necessary for the transfer student to complete as part of the published programmatic prerequisites. This limitation means that, even though a transfer student may satisfy the

basic requirements of the Montana University System general education transfer policy, his/her specific program of study may require additional and specialized courses in one or some of the six (6) disciplines listed above. To earn the degree, transfer students will have to complete those specialized courses.

The following Montana State University-Northern courses will satisfy the Montana University System Statewide Core Curriculum. Consequently, in selecting general education coursework for transfer, a student may wish to use the following guide:

The Montana University System Core Course List from Montana State University-Northern

In order to satisfy the MUS core, students must successfully complete at least one course that includes significant content related to the cultural heritage of American Indians. These courses are designated with an asterisk (*) following the title. "OL" after the course number indicates that the course is offered On-Line. Courses which carry a college-level pre-requisite and/or require permission of the instructor have a (#) after the course title.

Natural Science - 6 Credits

(Students must successfully complete at least one lab course.)

Code	Title	Credits
BIOB 160	Principles of Living Systems	4
BIOB 161	Principles Living Systems Lab	1
BIOB 101	Discover Biology	4
BIOB 102	Discover Biology Laboratory	0
BIOB 290	Undergraduate Research	3
BIOH 104	Basic Human Biology	4
BIOH 201	Human Anat Phys I	4
BIOH 202	Human Anat & Phys I Lab	0
BIOH 211	Human Anatomy & Physiology II	4
BIOH 212	Human Anatomy & Physiology II Lab	0
BIOM 250	Microbiology for Hlth Sciences	3
BIOM 251	Microbiology Hlth Sciences Lab	1
BIOO 220	General Botany	3
BIOO 221	Gen Botany Lab	2
CHMY 121	Intro to General Chemistry	3
CHMY 122	Intro to Gen Chem Lab	1
CHMY 123	Intro to Organic & Biochem	3
CHMY 124	Intro to Organic & Biochem Lab	1
CHMY 141	College Chemistry I	3
CHMY 142	College Chemistry Lab I	2
CHMY 143	College Chemistry II	3
CHMY 144	College Chemistry Lab II	2
ENSC 245	Soils	4
GEO 101	Intro to Physical Geology	4
GEO 102	Intro to Physical Geology Lab	0
GEO 206	Dinosaur Paleobiology	4
GEO 211	Earth History and Evolution	4
GEO 212	Earth History & Evolution Lab	0
GEO 314	Intro to Paleontology	3
GPHY 111	Intro to Physical Geography	4
PHSX 105	Fund of Physical Science	3
PHSX 106	Fund of Physical Science Lab	0
PHSX 205	College Physics I	3
PHSX 206	College Physics I Laboratory	1
PHSX 207	College Physics II	3

PHSX 208	College Physics II Laboratory	1
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Humanities Appreciation/Creative Arts – 6 Credits

Creative Arts

Code	Title	Credits
ARTZ 231	Ceramics I	3
ARTZ 105	Visual Language - Drawing	3
ARTZ 106	Visual Language - 2-D Fndtns	3
ARTZ 284	Photo I-Techs and Processes	3
MUSI 103	Fundamentals of Musical Creatn	3
MUSI 105	Orchestra Ensemble	1
THTR 101	Introduction to Theatre	3
THTR 105	Theatre Workshop I	3
THTR 120	Introduction to Acting I	3
THTR 208	Studies in Drama	3

Humanities Appreciation

Code	Title	Credits
ARTH 160	Global Visual Culture	3
ARTH 330	Art Hist of Western Civ I	3
ARTH 340	Art History of Western Civ II	3
LSH 201	Intro to Humanities The Art of	3
LIT 110	Intro to Lit	3
LIT 210	American Lit I	3
LIT 211	American Lit II	3
LIT 223	British Lit I	3
LIT 224	British Lit II	3
LIT 230	World Lit Survey	3
LIT 382	Lit for Children/Adolescents	3
LIT 309	Popular Genres	3
MUSI 201	Introduction to Music History	3
NRSG 305	Nursing/Health Care Ethics	3
PHIL 200	Introduction to Philosophy	3
PHIL 210	Ethics	3

Cultural Diversity - 3 credits

Code	Title	Credits
NASX 105	Intro Native Amer Studies *	3
NASX 304	Native American Beliefs/Philos *	3
NASX 310	Native Cultures of North Amer *	3
NASX 235	Oral/Written Trads Native Amer *	3
NASX 340	Native American Literature	3
NASX 376	Fed Indian Law & Policy *	3
NASX 120	Native American Language I *	3
SOCI 315	Race, Gndr, & Ethnic Relations	3
COMX 212	Intro to Intercultural Comm	3
SPNS 101	Elementary Spanish I	4
NRSG 361	Global Nursing/Healthcare	3

Social Sciences/History - 6 credits

Code	Title	Credits
CMLD 101	Intro to Community Leadership	3

ECNS 201	Principles of Microeconomics	3
ECNS 202	Principles of Macroeconomics	3
ECNS 372	Economic History of the US	3
HSTA 101	American History I	3
HSTA 102	American History II	3
HSTR 101	Western Civilization I	3
HSTR 102	Western Civilization II	3
HSTA 255	Montana History	3
PSCI 210	Intro to American Government	3
PSCI 250	Intro to Political Theory	3
PSCI 471	American Constitutional Law	3
PSYX 100	Intro to Psychology	3
PSYX 150	Drugs and Society	3
PSYX 230	Developmental Psychology	3
SOCI 101	Introduction to Sociology	3
SOCI 241	Intro to Social Psychology	3
SOSC 201	Introduction to Social Science	3

Mathematics - 3 credits

Code	Title	Credits
M 105	Contemporary Mathematics	4
M 112	Trigonometry & Complex Numbers	2
M 145	Math for the Liberal Arts	4
M 121	College Algebra	4
M 130	Math for Elementary Teachers I	3
M 131	Math for Elementary Teacher II	3
M 151	Precalculus	4
M 162	Applied Calculus	3
M 171	Calculus I	5
M 172	Calculus II	5
STAT 216	Introduction to Statistics	3
STAT 217	Interm Statistical Concepts	4

Communication - 6 credits

(Students must successfully complete coursework in written and oral communications.)

Code	Title	Credits
COMX 111	Intro to Public Speaking	3
COMX 115	Intro to Interpersonal Communc	3
WRIT 101	College Writing I	3
WRIT 350	Technical Editing	3

Technology - 3 credits

Code	Title	Credits
AOT 301	Global Positioning Systems	3
CAPP 120	Introduction to Computers	3
CAPP 151	MS Office	3
EDU 370	Integrating Tech in Education	3
IT 100	Introduction to Technology	3
NRSG 320	Nursing/Healthcare Informatics	3

Time-To-Degree Assurance Policy

The course requirements for each degree program offered by Montana State University-Northern are set out in this catalog.

The University makes reasonable efforts to accommodate the reasonable scheduling needs of its students. However, it is unlikely that the University will be able to schedule classes for the personal convenience of students, and it is under no obligation to do so. Students who wish to graduate within the two- and four-year time frames contemplated by this assurance are expected to devise a written plan of study with their advisor. This written plan of study must be on file in the advisor's and the Registrar's Office.

Both the student and the University must meet certain obligations in order to assure completion of degree programs within the specified time frame. The student must meet the prerequisites for all required courses and register for these courses within the prescribed time frame. If the student is unable to register for a prescribed course within the prescribed time frame due to failure of the University to schedule the course at the specified time, or due to a scheduling conflict between required courses at the specified time, it is the student's responsibility to bring this problem to the attention of the Registrar or Dean of the academic college which administers the student's major. It is the University's responsibility in these cases to create an accommodation that enables the student to meet the specified requirement at the specified time.

Any deviation of the student from the course requirements or sequences specified for his/her initially declared course of study will nullify the University's responsibility to ensure the student's graduation within the two- or four-year time frame. Failure of the student to notify the University of a course-scheduling problem prior to the beginning of the course deprives the University of the opportunity to accommodate the student, and nullifies the University's responsibility under this assurance.

Montana State University-Northern extends this time-to-degree assurance to transfer students within the Montana University System as follows: Students who are admitted to another unit of the system with the ultimate objective of transferring to Montana State University-Northern and receiving a degree from this unit may be jointly admitted to Northern when starting at the other unit.

In addition, certain two-year associate degree programs within the Montana University System are fully articulated with corresponding four-year baccalaureate degree programs at Northern. Jointly admitted students who are in such programs at two-year degree-granting institutions will receive information and faculty advising from Northern concurrent with their enrollment at the originating institutions. Jointly admitted students who follow the program specified by the articulation agreement for their Northern program will receive a full two years of credit toward their graduation program at Northern. When they begin their study at Northern, they can take advantage of the time-to-degree assurances set out above for students who begin their study at Northern, and they have the same responsibilities. Further information about joint admissions agreements is available from the Office of Admissions.

General Education Core

Montana State University – Northern General Education Core

All students seeking an associate of arts, associate of science, or bachelor's degree at Montana State University-Northern are required to fulfill course work within each of the seven General Education categories as listed below:

Associate of Arts (A.A.)
 Associate of Science (A.S.)
 Bachelor of Arts (B.A.)
 Bachelor of Science (B.S.)

Discipline Area	Minimum Required
CAT I: Communication	6 credits
CAT II: Mathematics	3 credits
CAT III: Natural Science (with lab)	6 credits
CAT IV: Social Science/History	6 credits
CAT V: Cultural Diversity	3 credits
CAT VI: Humanities Appreciation/Creative Arts	6 credits
CAT VII: Technology	3 credits
Total General Education Core Credits	33 credits

The following courses will satisfy the various categories of general education. If general education core classes are required in a program area, they can be counted towards fulfilling the general education core as well as the program requirement. (However, the number of the credits for the course only counts once toward the total credits of the degree). Students who transfer course work to MSU-Northern will have general education courses counted in the same category as the transferring institution, even if the course is not offered at MSU-Northern. **NOTE:** Different departments and academic units specify particular courses within a category to meet degree requirements. Students are urged to consult their academic advisor and the course requirements for their degree prior to selecting courses in General Education.

Category I (CAT I)	Communication (6 credits) General Education Code: C1	WRIT 101 AND COMX 111 OR COMX 115 OR WRIT 350
Category II (CAT II)	Mathematics General Education Code: C2	M 121, M 145, M 162, M 171, STAT 216, STAT 217
Category III (CAT III) Students must take one science course that includes a lab. See course description to verify this requirement.	Natural Sciences (6 credits) General Education Code: C3 and C3L	BIOB 101, BIOB 160, BIOE 110, BIOH 104, BIOH 201, BIOM 250, BIOC 220, CHMY 121, CHMY 141, ENSC 245, GEO 101, GEO 314, GPHY 111, PHSX 105, PHSX 205, TSXCI 304
Category IV (CAT IV)	Social Sciences/History (6 credits) General Education Code: C4 and C5	CMSV 101, ECNS 201, ECNS 202, HSTA 101, HSTA 102, HSTR 101, HSTR 102, HSTA 255, PSCI 210, PSYX 100, SOCI 101, SOSC 201
Category V (CAT V)	Cultural Diversity (3 credits) General Education Code: C6	BGEN 360, NASL 120, NASX 105, NASX 304, NASX 232, NASX 310, NASX 235, NASX 340, NASL 331, NASX 450, NRSX 331, SPCH 245, SPNS 101
Category VI (CAT VI) It is recommended that baccalaureate candidates complete at least one course in each sub category, for a total of 6 credits.	Humanities Appreciation/Creative Arts (6 credits) General Education Code: C7 and C8	ARTH 160, ARTH 330, ARTH 340 LSH 201, LIT 110, LIT 210, LIT 211, LIT 223, LIT 224, LIT 230, LIT 309, LIT 327, LIT 363, LIT 382, MUSI 201, PHIL 200, PHIL 210 ARTZ 105, ARTZ 106, ARTZ 231, ARTZ 284, ARTZ 363, CRWR 340, MUSI 103, THTR 105
Category VII (CAT VII)	Technology (3 credits) General Education Code: C9	AOT 301, CAPP 120, CAPP 151, EDU 370, IT 100

Overview of Programs and Special Program Requirements

PROGRAMS IN ARTS AND SCIENCES

Bachelor of Arts Degrees

Community Leadership
Graphic Design
Liberal Studies

Native American Studies

Bachelor of Science Degrees

Biology

Associate of Applied Science Degrees

Graphic Design

Associate of Arts Degree

Program of Study in General Education

Minors

Biology
Community Leadership
Native American Studies

Office: Cowan Hall Room 105A

The programs of Arts and Sciences prepare students to think, read, and write critically and to understand language and literature, philosophy, music, art, drama, English, economics, geography, history, math, Native American studies, political science, the sciences, and sociology. The liberal arts curricula present the historical and creative foundation of cultural heritage.

Advising Information

Students are encouraged to meet with their assigned advisors at the beginning of each semester to confirm their plan of study and make any necessary adjustments. Meeting with an advisor before registering for classes each semester allows students to plan schedules that will meet their needs and assist them in completing requirements in an efficient manner.

Programs in Nursing

Nursing

Office: Cowan Hall Room 309

MSU-Northern offers rigorous Nursing Programs that promote collaborative clinical learning, critical thinking, and personal growth in a career that is dynamic, diverse, and offers the opportunity to work in a variety of different capacities and places. Achieving the Associate of Science Degree in Nursing (ASN) prepares you to establish the seamless pathway into the Bachelor of Science Degree in Nursing (RN-BSN Completion Program). MSU-Northern enhances the registered nurses opportunity to complete an advanced degree in nursing while working as a healthcare professional.

The ASN qualifies the graduate to take the National Council Licensure Examination (NCLEX-RN). The ASN program prepares the nursing graduates for the advanced beginner entry-level as a RN in a variety of health care organizations.

The RN-BSN Completion Program provides a seamless pathway for graduates of the ASN program and for licensed registered nurses to continue their education in the nursing profession. The RN-BSN Completion program builds on previous nursing education and is directed toward an expanded educational base in the areas of nursing leadership and management, community health, and advanced clinical practice. The RN-BSN Completion program is offered through MSU-Northern's distance learning program. This program allows the student to maintain employment and residency in their geographical area while completing the required BSN courses. The RN-BSN Completion graduate is prepared as a generalist to practice in varied settings and has the foundation for graduate education.

Instruction for Nursing courses can be delivered in multiple forms; Face-to-Face, Online (only), Hybrid (combination of Face-to-Face and Online), and Distant Technologies. ASN courses are predominantly Face-to-Face and RN-BSN Completion courses are primarily Online with the two credit clinical in the student's geographical area.

Montana State University-Northern Department of Nursing Associate of Science Degree in Nursing program (ASN) is fully approved by: Montana State Board of Nursing (MT BON) 301 South Park, P.O. Box 200513, Helena, MT 59620. Phone: 1-406-841-2340 www.nurse.mt.gov (<http://www.nurse.mt.gov>) The RN-BSN Completion Program follows the Rules and Statutes of the Montana State Board of Nursing.

Montana State University-Northern Department of Nursing Associate of Science Degree in Nursing (ASN) and Bachelor of Science Degree in Nursing (RN-BSN Completion) are accredited by:

Accreditation Commission for Education in Nursing (ACEN)

3343 Peachtree Road NE, Suite 850

Atlanta, Georgia 30326

Phone 404-975-5000

www.acenursing.org (<http://www.acenursing.org>)

Advising Information

Pre-Nursing students receive advisement from the advising center, located in Cowan Hall 213. ASN Nursing students are assigned nursing faculty advisors upon admission to the program. For information regarding the RN-BSN Completion Program, call the MSU-Northern Department of Nursing at 406-265-4196 for the application/advisement packet.

Academic advising follows the University's rules as stated in the *MSU-Northern Course Catalog*. The nursing student is required to meet with the assigned advisor each semester to discuss grades, academic plans, or course changes, etc. These meetings can take place face-to-face, by telephone, or by email according to the student's and advisor's schedules and location. The student or the advisor has the right to initiate a change in the advising assignment. Students are encouraged to confer with advisors as needed. During the summer, faculty who are teaching, the Nursing Program Chair, and the Department of Nursing Director are available for advising.

The prerequisite semester of the ASN program is offered in both Havre and Lewistown. Upon admission to the nursing program, students will participate in clinical experiences at various sites in various communities.

All students in the MSU-Northern ASN program are required to take standardized proficiency examinations during the program. These examinations provide the student, faculty, and program with information concerning student comprehension, application of nursing content and academic growth.

Nursing students are required to pay fees for these examinations. These fees will be paid during the semester of the examination and are not refundable.

Further information and program requirements may be obtained by calling the Department of Nursing office at 406-265-4196 or the University toll-free number, 1-800-662-6132 or by visiting the Department of Nursing webpage at <http://www.msun.edu/academics/nursing>

To be considered for Fall 2017 admission into the Associate of Science Degree in Nursing (ASN) Program the following requirements must be met:

1. Be admitted to Montana State University-Northern (a separate application to the University is required)
2. Submit official transcripts from any college and/or university that you have attended or currently attending; Send transcripts to MSU-Northern, P.O. Box 7751, Havre, Montana 59501. Transcripts will be evaluated to determine credit allotment and articulation. No required course, including basic skills courses, will be waived simply on the basis that the applicant has a prior college degree.
3. GPA Admission requirements: a cumulative GPA of 2.50 or higher
4. Have at least a 2.85 extracted GPA with the following required pre-nursing courses: College Algebra, Anatomy & Physiology I, College Writing I, and General Chemistry w/lab. A grade of "C" or higher is required. A grade of C- in any course is not acceptable; the course must be retaken. These courses may be taken at MSU-Northern or at other accredited institutions. An advisor from the Department of Nursing will evaluate the transcripts from other institutions and will recommend the credit, if any, to be transferred.
5. Complete a Kaplan Entrance Exam with a minimum score of 65%. The Kaplan Entrance Exam can be taken a second time if there are any more testing days available.
6. Copy of government issued photo identification document (driver's license, passport, etc.)
7. Obtain an application and information packet from the Department of Nursing Office to apply for ASN admission. Applications are accepted May 1 through June 15.
8. Students who desire to transfer into the Associate Degree Program from another school of nursing may apply by submitting a petition to the Director of Nursing. Placement in the program is determined on an individual basis through transcript and/or course evaluations. Applicants may be asked to take a standardized or teacher-constructed test, and demonstrate specific skills in the University nursing laboratory or in a clinical setting. Once placement is determined, admission is granted on a space-available basis.
9. Applicants not admitted into the Nursing Program by their expected date of admission must reapply for future consideration.

***** Please note: the Fall 2018 admission into the Associate of Science Degree in Nursing (ASN) requirements are in the process of review for revision during Fall 2017. *****

Upon admission, current documentation is required to be on file in the Department of Nursing office:

10. Health Insurance Card
11. A physical examination verifying: *Nursing Students Functional Expectations* as specified in the Nursing Student Handbook
12. A copy of a current CPR certification (Health Care Provider or Professional version)
13. A TB skin test, Tuberculosis Policy: All nursing students are screened annually, for tuberculosis. Initially a two-step tuberculin skin test (TST) will be used to provide a baseline. Thereafter, nursing students will fill out the MSU-Northern annual TB questionnaire. Each nursing student is responsible for providing evidence of screening for TB. Documentation includes: TB screening form (date and test result cited as positive or negative). If symptomatic, the nursing student is required to submit documentation of medical evaluation of the nursing student's health status related to TB. Nursing students with a positive skin test are required to provide written clearance from their health care provider in order to provide patient/client care. Additional requirements may be expected based upon current Centers of Disease Control (CDC).
14. MMR immunization, MMR Policy: Have immunizations that are current for, or have documented proof of, immunity to measles, mumps, and rubella (MMR). Adults born before 1957 are generally considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 2 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine or laboratory evidence of immunity to each of the three diseases. Documentation of provider-diagnosed disease is not considered acceptable evidence of Immunity for Measles, Mumps or Rubella, (Recommended Adult Immunization Schedule United States 2015, CDC.gov).
15. Current Tetanus, Diphtheria, and Pertussis (Tdap) vaccination according to the Center for Disease Control guidelines.
16. Documentation of the Hepatitis B vaccination B series, including titer, or have a valid waiver on file.
17. Federal fingerprint/background check. Fingerprints can be obtained from the Sheriff's Office and background checks are obtained through the State of Montana Department of Justice. The cost of the background check will be the student's responsibility and the price varies in each country.

18. Professional liability insurance which is provided by MSU-Northern through student program fees.
19. Health standards are to be met as required by the participating clinical facilities. Additional laboratory/diagnostic test results or verification of required health standards/status may be required by these facilities. The Department of Nursing faculty will require documentation that the standards/status are met.
20. HIPPA Policy: All Nursing Students are legally accountable under the Health Information Privacy and Accountability Act (HIPPA) of 1996 to ensure the confidentiality of patient health information.

Students are expected to participate in clinical experiences in hospitals, nursing homes, and other community agencies at varied time schedules.

Students who are employed must arrange with employers to allow for flexibility in meeting their academic and clinical schedules. The clinical schedule may involve day, evenings, and weekend assignments. Participation in the clinical area is dependent upon space availability. Those students having the highest academic achievement will be selected first, if the space is limited. Students must provide their own transportation to and from the classroom and the clinical areas.

Faculty members have an obligation to the client to ensure that nursing students who care for them are competent to do so. In the interest of safeguarding the client's welfare, students must meet the criteria detailed in the Nursing Student Handbook. To be allowed to participate in clinical assignments the student must:

21. Demonstrate good health status and practices and be free from any condition that could jeopardize client safety and comfort.
22. Demonstrate emotional stability
23. Demonstrate sensitivity to client safety and comfort
24. Practice within legal standards and demonstrate regard for professional ethics
25. Comply with agency requirements pertinent to student participation
26. Carry out client care assignments with the required knowledge and skill as determined in classroom theory and laboratory demonstrations.

Students Note: You cannot participate in clinical experience if you fail to keep current proof of requirements. Failure in clinical experience also results in failure in the nursing course(s).

General Requirements for Progression through the ASN Program

The MSU-Northern Department of Nursing is required to follow the Montana University System's ASN model curriculum adopted in 2016.

27. All courses required for the nursing program major are required to earn a grade of "C" or higher.
28. Nursing students are required to maintain a 80% average on tests and quizzes in each nursing course in order to pass.
29. To progress in the program, the nursing student is required to successfully pass both the didactic and clinical portions of a course. If either is not passed, the entire course must be repeated.
30. Standardized testing is required throughout the ASN program. The nursing student is required to meet the criteria established within each course.
31. The nursing student is required to maintain an overall GPA of 2.25 or higher on a 4.0 scale.

Clinical Rotations

Nursing Students may be required to travel to other locations for several days to complete the state mandated clinical hours. Nursing students need to make their own arrangements for transportation to health care agencies for clinical and are expected to do so at their own expense for travel, food, and lodging.

Additional information regarding student policies and guidelines are found in the Nursing Student Handbook.

Program Fee

All students admitted into the ASN program pay a \$500 program fee per semester.

RN-BSN Completion Program

To be considered for admission into the Bachelor of Science in Nursing Degree program (RN-BSN Completion):

32. Be admitted to Montana State University-Northern (a separate application to the University is required)

33. Submit official transcripts from any college and/or university that you have attended or are currently attending; transcripts will be evaluated to determine credit allotment and articulation per university policy. No required course, including basis skills courses, will be waived simply on the basis that the applicant has a prior college degree.
34. GPA admission requirements: a cumulative GPA of 2.50 is required to be admitted into the RN-BSN Completion Nursing Program.
35. Submit a copy of government issued photo identification document (driver's license, passport, etc.)
36. Submit a copy of current licensure as a Registered Nurse (for U.S. state where the practicum is to be done) or proof of registration and scheduled date for the NCLEX exam
37. Submit a copy of current CPR certification (Health Care Provider or Professional version)
38. Submit a signed and completed Degree Plan of Study
39. Applications are accepted year around.

***** Please note: the Fall 2018 admission into the Bachelor of Science Degree in Nursing (RN-BSN Completion) requirements are in the process of review for revision during Fall 2017. *****

Upon Admission, current documentation is required to be on file in the Department of Nursing Office:

40. Personal Health Insurance Card
41. A physical examination verifying: *Nursing Students Functional Expectations* as specified in the Nursing Student Handbook
42. A TB skin test, Tuberculosis Policy: All nursing students are screened annually, for tuberculosis. Initially a two-step tuberculin skin test (TST) will be used to provide a baseline. Thereafter, nursing students will fill out the MSU-Northern annual TB questionnaire. Each nursing student is responsible for providing evidence of screening for TB. Documentation includes: TB screening form (date and test result cited as positive or negative). If symptomatic, the nursing student is required to submit documentation of medical evaluation of the nursing student's health status related to TB. Nursing students with a positive skin test are required to provide written clearance from their health care provider in order to provide patient/client care. Additional requirements may be expected based upon current Centers of Disease Control (CDC).
43. MMR immunization, MMR Policy: Have immunizations that are current for, or have documented proof of, immunity to measles, mumps, and rubella (MMR). Adults born before 1957 are generally considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 2 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine or laboratory evidence of immunity to each of the three diseases. Documentation of provider-diagnosed disease is not considered acceptable evidence of Immunity for Measles, Mumps or Rubella, (Recommended Adult Immunization Schedule United States 2015, CDC.gov).
44. Current Tetanus, Diphtheria, and Pertussis (TDAP) vaccination according to the Center for Disease Control guidelines.
45. Documentation of the Hepatitis B vaccination B series, including titer, or have a valid waiver on file.
46. Federal fingerprint/background check. Fingerprints can be obtained from the Sheriff's Office and background checks are obtained through the State of Montana Department of Justice. The cost of the background check will be the student's responsibility and the price varies in each country.
47. Submit proof of current personal professional liability insurance
48. Health standards are to be met as required by the participating clinical facilities. Additional laboratory/diagnostic test results or verification of required health standards/status may be required by these facilities. The Department of Nursing faculty will require documentation that the standards/status are met.
49. HIPPA Policy: All Nursing Students are legally accountable under the Health Information Privacy and Accountability Act (HIPPA) of 1996 to ensure the confidentiality of patient health information.

Students are expected to participate in clinical experiences in hospitals, nursing homes, and other community agencies at varied time schedules. Students who are employed must arrange with employers to allow for flexibility in meeting their academic and clinical schedules. The clinical schedule may involve day, evenings, and weekend assignments.

General Requirements for Progression thru the RN-BSN Completion Program

The MSU-Northern Department of Nursing is required to follow the Montana University System's RN-BSN model curriculum adopted in 2016.

1. A grade of "C" or higher must be earned in all courses required for the nursing program major.
2. Maintain a GPA of at least 2.5, or higher, while enrolled in the RN-BSN Completion Program

3. Students accumulating two grades of "W" or two grades below "C" in any course(s) required for the Nursing Major will be dropped from the program and may not be readmitted for 3 years.
4. To progress in the program, the nursing student is required to successfully pass both the didactic and clinical portions of a course. If either is not passed, the entire course must be repeated.
5. RN-BSN Completion students are required to complete the program within five (5) consecutive years of beginning the program as described with your approved Degree Plan. RN-BSN Completion students may petition the faculty if an extension is needed due to extenuating circumstances.

Clinical Rotations for the RN-BSN Completion Program

Nursing students may be required to travel to other locations within their geographical area to complete the required clinical hours. Nursing Students are required to make their own arrangements for transportation to health care agencies for clinical and are expected to do so at their own expense for travel, food, and lodging.

ASN and RN-BSN Completion Program Graduation

Graduation is dependent upon the Nursing Student meeting the professional standards and criteria of safe and effective nursing care as prescribed by the curriculum.

Students who are going to graduate need to follow all university policies and procedures relating to graduation as published in *MSU-Northern Course Catalog*. The current *MSU-Northern Course Catalog*: <https://www.msun.edu/registrar/catalogs.aspx>

6. Application for graduation forms must be completed and submitted to the registrar's office in Havre during the fall semester for spring graduation and spring semester for fall graduation.
7. Gowns and announcements need to be ordered through the bookstore during the fall semester prior to graduation.
8. All students who have received financial aid during their college experience must have an exit interview with the Financial Aide Officer.

Programs in Education

Office: Cowan Hall Room CH105A

Montana State University-Northern's education programs are accredited by the Montana Board of Public Education.

Advising Information

Students are encouraged to meet with their advisor at the beginning of each semester to confirm their plan of study and make any necessary adjustments. Due to course scheduling changes, staff assignments, and other conflicts, it may not be possible to follow the suggested plans exactly. Meeting with an advisor before registering for classes each semester will allow students to plan a schedule that will meet their needs and assist them in completing requirements in an efficient manner.

Program Outcomes and Objectives

The Elementary Education Program believes it has responsibilities to candidates and to their future students. Additionally, the department believes it has a responsibility to collaborate with the communities within which it works, to continue to grow as a program, and to model professional involvement and identity.

The Program Objectives Are

1. To prepare and graduate skilled, knowledgeable, self-aware and self-reflective teachers who are prepared academically to gain licensure.
2. To collaborate with the communities, its agencies and schools to provide learning opportunities for candidates.
3. To continually evaluate the program curriculum, practices, and requirements to promote the highest quality education.
4. To model professional identity through involvement in professional organizations, and educational leadership.

Teacher Recommendation for Licensure

Teacher Education graduates who complete an approved program of study, meet the minimum score of the required Praxis II test, and meet high academic standards (cumulative GPA of 2.5) are eligible to apply for an educator's license. Candidates must make application for licensure through Montana State University-Northern's Teacher Certification Office to the Office of Public Instruction. Because of current review of licensure by the Office of Public Instruction, eligibility requirements from the college may change. All applications for licensure will be reviewed on the basis of the rules under which the license is issued.

Candidates completing Montana State University-Northern's Elementary Teacher Education Program will be recommended for a Standard Class II Educator License which qualifies holders to teach kindergarten through grade eight (K-8). Candidates completing one of Montana State University-

Northern's Secondary Teacher Education Programs will be recommended for a Standard Class II Secondary Educator License, which qualifies holders to teach their subject area in grades 5-12 or K-12, depending on the program completed.

In addition to their general professional education requirements, secondary education majors will complete an academic major with no minor or a combination of a regular major with a minor. Individuals obtaining a Montana Class II Educator License will be licensed in their major and minor areas. Candidates who complete majors with no minor (40-60 credits) will be licensed to teach subjects within the area encompassed by that discipline. Candidates who complete a regular major (30-39 credits) and a minor (20-29 credits) will be licensed to teach in the two areas. Areas of Concentration, an option that is available in some programs, do not lead to licensure or endorsement in that area of concentration.

Elementary Education

The University-wide General Education Requirements and Teacher Education Program pre-requisites provide Elementary Education majors with 50 hours of broadly-based subject matter background. In addition, Elementary Education majors must select either one K-12 licensure minor with a minimum of 20 credits, or two non-licensure areas of concentration with a minimum of 14 credits each. K-12 licensure minors are available in Art and Reading. Although all elementary majors will receive the same license and grade level endorsement, it is recommended that candidates planning to teach in the upper grade levels include the addition of minors in their program. This is especially desirable for teaching in grades sixth, seven and eight. Candidates desiring added licensure should consider a K-12 minor. Praxis II content knowledge test is required.

Secondary Education

Accreditation standards of Montana middle and secondary schools identify the particular endorsements, and in many instances, the number of credit hours of subject matter candidates must possess. Candidates should consult with the Dean of Education, Arts and Sciences, and Nursing if there are questions regarding the middle and/or high school courses which their major or minor will permit them to teach.

the secondary majors (General Science and Broadfield Social Science) lead to a 5-12 license. The Health and Physical Education major and the minors (Art, Reading and Traffic Education) lead to a K-12 license. A K-12 license makes possible a teaching assignment in a specific subject in all grades from kindergarten through grade 12. Candidates seeking this type of licensure must plan course work and filed experiences at both elementary and the secondary grade levels.

Graduates of all Montana State University-Northern Teacher Education Programs will be eligible for a recommendation for a Standard Class II Educator License. However, prospective teachers who plan to teach selected high school career and technical education subjects in technical schools, community colleges, junior colleges, or other programs where state licensure is a requirement for federal or state reimbursement programs must also complete specific career and technical education course work and meet appropriate on-the-job work experience requirements. The evaluation of an individual's on-the-job work experience is completed by personnel in the Montana Office of Public Instruction. Candidates seeking to teach in a reimbursed career and technical education program should check with their advisors early in their program. Appropriate Praxis II content knowledge test is required.

Admission to Teacher Education

Upon declaring an education major, candidates will be classified as pre-education majors. All candidates are assigned an education advisor. With the assistance of advisors, all candidates should plan a program of study and work toward Level One Admission to Teacher Education.

All teacher education candidates seeking admission to the undergraduate education program for initial educator license are required to apply to the Department of Education for Admission to Teacher Education.

Level One: Admission to Teacher Education and meeting the minimum score requirements of the CORE Academic Skills for Educators Tests in reading, writing, and mathematics is required of all candidates prior to their enrolling in any professional education core courses at the 300 level or above. After admission to Level One, they will be referred to as candidates and be classified as education majors.

All General Education Core courses and program prerequisites have to be completed with a "C" or better before application to Level One Teacher Education

Criteria for Level One Admission to Teacher Education

1. Completion of Level One application
2. Completion of 51 semester credits of course work, including general education core, with a minimum cumulative grade point average of 3.0 or better
3. Completion of all general education and pre-requisite courses with a minimum grade of "C" or better
4. Completion of the CORE Academic Skills for Educators tests of, Mathematics, Reading and Writing

The Montana State University-Northern Teacher Education Candidates may meet the CORE Academic Skills for Educators testing requirements in Reading, Mathematics, and Writing by submitting a score at or above the minimum set score of 156 in Reading, 162 in Writing, and 150 in Mathematics.

Admission to Level One of the Teacher Education program is granted by the Teacher Education Admission and Retention Committee after a thorough evaluation of the candidate's application. The application packet is available in the Education Office and online at http://www.msun.edu/academics/coeasn/index_files/forms.htm.

Applicants will be notified according to the following classifications

1. Approved for Level One admission
2. Granted provisional admission (one semester only)
3. Disapproved

Candidates who are granted provisional admission will be monitored for progress. Any Candidate who does not meet the provisions specified for provisional status will be dropped from the Teacher Education program. Candidates who are not approved or who are suspended from the program may appeal the decision. The first step in the appeals process is to notify the Dean of the College of Education, Arts and Sciences, and Nursing in writing. The complete appeals process is outlined in the Montana State University-Northern Student Handbook. It is the responsibility of candidates to familiarize themselves with the policy. Additional copies of the handbook are available from the Education Department. Other department information is available at http://www.msun.edu/academics/coeasn/index_#les/education.htm.

Candidates' progress in the program is closely monitored by the department faculty. All candidates' performances are reviewed each semester by a faculty committee. Decisions for suspension and retention are forwarded to the Dean.

In addition, the following applies:

- No required professional education major, minor, or area of concentration courses may be taken on a pass-fail basis (except EDU 495).
- Candidates not admitted to the program, candidates who do not have the required prerequisites, or are suspended from the program who are registered for EDU courses above the 300 level may be administratively withdrawn from the course(s).
- Grades below C are not accepted in general education courses, prerequisite courses, professional education courses, or in courses included in the major, minor, or areas of concentrations.
- Coursework #ve (5) years or older will be evaluated on a case-by-case basis for matriculation into the program.

Student Teacher Practicum

Candidates seeking to be recommended for an educator license through the Teacher Education Program at Montana State University-Northern must successfully complete a teaching practicum in their senior year. Candidates must apply and have acquired Final Admission to Level Two of the Teacher Education Program prior to enrolling in EDU 495 Student Teaching: K-8, EDU 495 Student Teaching: 5-12, or EDU 495 Student Teaching: K-12. In addition, candidates must have completed all professional education courses. The teaching practicum is a full time responsibility; therefore, the candidate will not be allowed to enroll in additional courses during this time. Student teaching candidates must apply by mid-term of the semester before they plan to student teach. Dates are posted for each semester's application deadline. A student teaching fee is assessed to all candidates enrolled in EDU 495 courses.

Teacher Education Prerequisites

Credits identified as Teacher Education Program prerequisites should be completed during the freshman and sophomore years and prior to making application for Level One Admission to Teacher Education and enrollment in specific upper division teacher education courses.

Praxis II Required for Licensure

Candidates seeking an initial educator license in the State of Montana must successfully complete the Praxis II requirement. All Praxis II scores must meet the requirement of the State of Montana.

Professional Education

Professional education courses are designed to prepare candidates to apply their academic training to their interactions with students, parents, colleagues, and administrators in the K-12 schools, and may be taken after receiving Admission to Teacher Education. This portion of the degree requirement is designed to help candidates plan and prepare instructional experiences, develop insight into how children learn and grow, and provide actual experience with the manner in which K-12 schools are organized and operated.

The **Elementary Education Core** requirements consist of the following:

Code	Title	Credits
EDU 370	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice *	3
EDU 397MA	Methods: K-8 Mathematics *	2
EDU 397SC	Methods: K-8 Science *	2
EDU 397SS	Methods: K-8 Social Studies *	2

EDUC 334	Method Tchng Intgrtd Lang Arts *	3
EDU 335	Fund & Corr Strtg Elem Rdg Prg *	3
EDU 311	C, D & E in Global Ed	3
EDU 397HE	Methods: K-8 Health Enhancemen	2
EDU 383	Assessment in Education *	3
EDU 340	Classroom Management *	3
EDU 315	Integrat IEFA Across the Curr	2
EDU 337	Reading Materials Elem Child	2
EDU 452	Advanced Practicum *	3
HTH 110	Personal Health and Wellness	3
PSYX 230	Developmental Psychology	3
EDU 495EL or EDU 495ES	Student Teaching K-8 * Student Teaching K-12	12
TOTAL		68

* **Upon Admission to Teacher Education, prescribed courses must be taken in sequence (blocks).**

The **Secondary Education Core** requirements consist of the following:

Code	Title	Credits
EDU 370	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495ES or EDU 495SE	Student Teaching K-12 Student Teaching 5-12	12
EDU 452	Advanced Practicum	3
HTH 110	Personal Health and Wellness	3
PSYX 230	Developmental Psychology	3
TOTAL		42

CTE 350 Prin of Indust Tech Education, CTE 360 Analysis and Prep Lab Mgmt, and CTE 370 Methods Tchng Indust Tech Edu are suggested for Industrial Technology majors who plan on being able to verify appropriate work experience through the Of#ce of Public Instruction and who want to qualify for vocational approval to teach in a state or federally reimbursed program.

Programs in Technical Sciences

Bachelor of Science Degrees

Agricultural Operations Technology
 Automotive Technology
 Business Administration
 Civil Engineering Technology
 Computer Information Systems
 Diesel Technology
 Diesel Technology: Equipment Management Option
 Diesel Technology: Field Maintenance Option
 Industrial Technology (5-12)

Bachelor of Applied Science Degree

Bachelor of Applied Science

Associate of Science Degree

With a program of study in Business

Certificate of Applied Sciences

Automotive Technology
Diesel Technology
Welding Technology

Associate of Applied Science Degree

Agricultural Mechanics Technology
Agricultural Technology
Automotive Technology
Automotive Technology Fast Track
Civil Engineering Technology
Design Drafting Technology
Diesel Technology
Plumbing Technology

Minor

Accounting
Agricultural Mechanics Technology
Applied Agriculture
Automotive Technology
Business Technology
Computer Information Systems
Diesel Technology: Field Maintenance Option
Marketing
Small Business Management

Office: Brockmann Center Room 210

The curricula offered by the College of Technical Sciences combines significant hands-on experience with foundations in liberal arts for a comprehensive learning experience.

Advising Information

Candidates are encouraged to meet with advisors at the beginning of each semester to confirm plans of study and make any necessary adjustments. Meeting with advisors before registering for classes each semester prepares you to plan a schedule that meets your needs and assists you in completing requirements in an efficient manner.

Programs in Graduate Study

Master of Education in Counselor Education

Master of Science in Education, Instruction and Learning

Office: Cowan Hall Room 218C

The Graduate Studies "Policy and Procedure Manual" is subject to change. Please check with your advisor regarding the most current policy.

The graduate programs provide advanced academic preparation for individual graduate students, taking into consideration the student's experience, interests, and previous education. The programs provide studies that focus on recognition and definition of problems, theory and practice, assessment and evaluation, interpretation, and application.

Students who hold Class 2 licensure, have three years teaching experience, and have successfully completed the Master degree may be recommended for a Class 1 Teaching License. Students who complete the Master of Education, Counselor Education, but lack teacher licensure may be eligible for the Class 6 Specialist License upon program completion, passing Praxis II scores, and faculty recommendations. It is the responsibility of all students to submit a request for their institutional recommendation at the completion of their program of study to the Graduate Office.

Classification of Graduate Students

Students must be admitted (matriculated) to their specific program at or before 25 percent of program course requirements (9 credit hours for the (Instruction and Learning program) and 15 credit hours for the Counselor Education program) are completed. Until specific program admission is received, all students not matriculated for specific degrees are classified as graduate, non-degree students.

Admission Policy and Requirements

At Montana State University-Northern, any student who has earned a baccalaureate degree from a regionally accredited college or university has the opportunity to pursue graduate study. However, admission decisions for specific graduate programs are made for each applicant individually, and applicants may or may not be judged acceptable to the specific graduate program, regardless of the institution from which credentials are submitted.

In addition to the admission requirements given in this section, each applicant shall review the admission requirements for specific graduate programs available upon request from the Office of Graduate Studies. It is the responsibility of applicants to ensure that all appropriate application materials are submitted to the University and to the graduate program of their choice.

To be eligible to register for graduate course work, all applicants must be admitted to the University. The applicant must:

- Complete the MSUN *Application for Admission to Graduate Programs* form prior to registration for the first term of course work numbered at the 500 level;
- Applicants must specify on the application for admission either graduate Non-degree seeking or graduate Degree-seeking status;
- Submit official transcripts of all undergraduate and all previous graduate course work to the Admissions Office;
- Forward a non-refundable \$50.00 admission fee; and
- For students born after December 31, 1956, submit proof of MMR immunization that was administered after December 31, 1967. The immunization dates must also be after the student's first birthday. Montana State law requires documentation that proves two immunizations against measles were given at least 30 days apart, and proof of rubella immunization. Any immunizations administered after June 11, 1993 must be an MMR. A physician, health agency or school official must sign the record.

Graduate Non-Degree Status

Non-degree seeking graduate students are those who have previously earned baccalaureate degrees and:

- Do not wish to pursue a graduate program leading to an advanced degree at the University; and
- Do not meet graduate degree admission requirements for full or provisional admission OR have not completed matriculation requirements.

Application of credits toward a graduate degree is not applied to any degree until the applicant has been accepted to the specific program.

Graduate Degree Program Admission Status

Admission status to a specific graduate program is described below. The admission date for full or provisional determines the program's graduation requirements unless University regulations and policies affecting the graduate programs are changed.

Full Admission to Graduate Program (Matriculated)

- Applicant has met all University and specific program admission requirements.
- The program admission date determines the specified program and graduation requirements for that catalog unless University regulations affecting the program are changed.

Provisional Admission Status to a Graduate Program

Provisional admission may be granted to an applicant who:

- Has not satisfied the program's minimum requirements for full admission;
- Lacks certain basic undergraduate courses required in the major field, which must be satisfied before full admission.

The candidate must meet the identified provisions before Full admission to the specific program.

- Provisions, as stated in the admission's letter from the Office of Graduate Studies, must be removed within the specified period time or provisional status will be rescinded and the student will be moved to non-degree seeking, non-matriculated status.
- The admission date determines the specific program and graduation requirements as outlined in the catalog.

Denied Admissions to A Graduate Program

Applicants who are denied Full or Provisional admission may reapply to the program. Upon an admission's denial, the applicant will be classified as a non-degree seeking, non-matriculated graduate student.

Appeal Procedures

Exceptions and deviations from graduate admissions and other academic policies may be requested through petition forms and procedures available in the Office of Graduate Studies. Petitions and requested waivers are reviewed in a timely manner by the program faculty and the Graduate Council. Students are notified by mail of the disposition of the appeal. In some cases, the appeal or petition may be forwarded to the University's Admissions and Standards Committee. Students have due process rights to appeal any decisions about admission or other academic policies to the Provost's Office.

Graduate Student Responsibilities

Montana State University-Northern bestows substantial freedom on graduate students to monitor their own program requirements. University regulations, programs, curricula, and fee schedules are subject to change without notice, and graduate students in degree programs are responsible for meeting requirements and procedural standards. Failure to be informed does not excuse a student from responsibility or from any sanction, penalty or difficulty which may be encountered.

Advising

Upon admission to a specific program, the Office of Graduate Studies will assign the student a major advisor who will assist in planning a degree program to meet the individual's program objectives. Students must confer with their major advisor prior to registering for classes.

The student's major advisor must recommend approval of all transfer course work or substitutions for courses requested by the graduate student. Official transcripts and course syllabi must accompany all requests for coursework not taken at the University.

Transfer Credits

25 percent of the required credit hours to complete the degree may be fulfilled by eligible graduate-level transfer courses. Courses accepted for transfer credit must have been earned at the graduate level from an accredited institution and carry a letter grade of "B" or better. Courses which carry grades such as "P" or "S" are unacceptable for transfer credit. All transfer courses must be approved by the program faculty at the time of matriculation and recency requirements. Courses older than 7 years may not be transferred if out of a graduate degree earned by the applicant.

Policies Governing Use of Special Topics or Independent Study Courses

A syllabus must be approved by the student's major advisor for each independent study course or special topics course to be applied to a graduate program.

Independent study courses are not intended to take the place of, or to cover the same material as courses regularly offered in the graduate program. They are to be employed for investigations into subject matter in greater depth than offered in regular courses or into material not offered in regular courses. A maximum of six (6) credits of special topics or independent study course work may be applied to the graduate degree.

In exceptional situations, when an independent study course or special topics course can be or is intended to substitute for a regular course in the catalog, the independent study or special topics course will be exempt from this policy and it will fulfill the program requirement for the identified course in the graduate program.

Credit Earned Before Matriculation (Undergraduate)

Up to 10 semester-hours of graduate level course credits earned by Montana State University-Northern students, or the credits completed in the first full-time semester prior to degree matriculation, may be applied toward a graduate degree.

Non-Matriculated

Students are considered "non-matriculated" when they have not been accepted into a specific graduate program by the first day of the semester in which they are registered.

Non-matriculated applicants who apply for and are denied admission to a specific program may continue in non-degree status. All coursework taken as a non-matriculated graduate student will not fulfill graduate program degree requirements if the candidate is denied admission to the specific program.

Twenty-five percent of graduate credits earned as a non-matriculated student may apply toward the specific graduate program's degree requirements upon full or provisional admission to the program.

Credit Load

A student may carry up to 12 credits of graduate coursework in any semester. A full-time course load for graduate students is nine credit hours. For the purposes of calculating a full-time load for a student taking a combination of graduate and undergraduate courses, full session courses, half session course, short-term workshops and interim sessions, a prorated calculation using twelve credits for full load will be utilized.

Standards of Scholarship

The University expects its graduate students to maintain high standards of scholarship. Graduate students must maintain a minimum 3.00 grade point average.

- A maximum of three (3) credits of C level work may be applied to the master's degree program. (See specific programs for course limitations.)
- A student who fails to maintain a 3.00 grade point average will be placed on probation at the end of the term the grade point average falls below 3.00. If by the end of the following term the graduate student has not raised his or her grade point average to 3.00 or above, the student will be dismissed from the graduate program and from further study at the University.
- Students receiving a grade of "C", "D", or "F" may repeat the course one time; the original grade shall remain on the transcript and be computed in the cumulative GPA. (See specific programs for limitations.)
- Candidates who receive an "incomplete" for a class must complete the course requirements by the end of the following semester or they will receive an "F".
- Practicum and internship courses require grades of B or better. Any grade below a B demands review of the candidate's performance before the respective course can be re-taken.

A student who fails to meet the program standards may be placed on probation, suspended from graduate study, or dismissed from the University. Decisions on such matters will be made by the Graduate Council in consultation with the appropriate advisor and program faculty. A student who is suspended from a graduate program or dismissed from the University may, through the petition procedure, request a review of the case by the Provost.

Admission to the University

Students must apply to the University:

1. Complete application to the University as a graduate student.
2. Provide proof of immunizations.
3. Submit official transcripts indicating an earned bachelor's degree for an accredited institution.

Admission to Graduate Studies

Admission as a degree or certificate/endorsement seeking graduate student is granted when the student has satisfied the requirements listed below.

1. **Graduate Record Examination (GRE) or Miller Analogy Test (MAT) (Only degree seeking students)**
 - a. Students seeking a master's degree must complete the General Test of the GRE or the MAT. Admission's criteria is weighted—points are assigned by "range" of scores. Check with the Graduate Office for specific cut-off scores.
2. **Scholarship**
 - a. At the time of application, the student must demonstrate adequate proficiency in oral and written communication and have a cumulative undergraduate grade point average (GPA) of 3.00 or above; all graduate coursework taken at Montana State University-Northern or other institutions must be earned at a B or better to be applied toward the master's degree.
3. **Removal of Deficiencies**
 - a. Any deficiencies in the student's undergraduate program (identified at the time of admission to graduate studies) must be removed before making application for Admission to Candidacy for a master's degree. Other program specific deficiencies must be removed before full Admissions to Candidacy in a program.
4. **Admission to Program of Study**
 - a. Upon admission as a degree-seeking (or endorsement seeking) student, a program advisor is assigned. The Graduate Office will provide the admission materials for the specific program. Contact the Graduate Studies Office for other admission requirements specific to the program, and program plans for each program.
 - b. As part of the application for matriculation, each student is responsible for adhering to the program of study for the specific degree and following the sequence of courses toward completion of the program each semester. The program of study for each program meets all graduation requirements and will be kept in the Graduate Studies Office. Subsequent deviations or substitutions to coursework or program requirements must be approved by the program faculty.
 - c. Students must be continuously enrolled in the degree program or apply for and receive approval to interrupt enrollment for each semester the student plans on not attending.
 - d. Students must be actively enrolled in the semester they expect to graduate or complete exit requirements.

Comprehensive Exit Examinations/Requirements

Students shall complete program specific exit requirements which are conducted during the last semester of enrollment or the semester immediately following course work completion. Exit requirements consist of extensive review of competencies in professional practice, knowledge and understanding

and may include both written and oral components. Candidates shall notify their advisor and Graduate Studies Office of their intention to complete exit requirements and to review their application for graduation the semester prior to planned completion.

The student's major advisor generally serves as the chairperson of the Comprehensive Exit Examination/Requirements Committee. This committee administers the comprehensive examination for each degree candidate and shall assign pass or fail for the comprehensive evaluation based on its determination of the candidate's competence.

Application for Graduation

A candidate for the master's degree must file an application for graduation with the Registrar's Office at least one semester prior to the semester in which the work for the degree is anticipated to be completed. In addition, the student's advisor must indicate approval for graduation to Graduate Studies. For Counselor Education, students must apply for graduation prior to first internship semester.

Requirements for Graduation

- Application for graduation has been timely submitted to the Office of Graduate Studies.
- All courses required in the specific program must have been satisfactorily completed.
- The candidate for graduation must have a "B" (3.00) cumulative grade point average in the program; no more than three hours of "C" work will be accepted toward completion of the degree. See program of study for program specific requirements.
- The candidate for graduation must have satisfactorily completed the exit requirements.
- All credits applied to the master's degree must be earned within seven years prior to the awarding of the degree.
- A minimum residency of 75 percent of required credits in the degree program is required. A maximum of 25 percent of the credits may be transferred from other accredited institutions provide they meet all criteria and have received approval from the candidate for graduation's major advisor.

Conferring of Degrees

Although the completion of a degree is posted on the student's transcript at the end of the semester in which it was earned, diplomas are conferred only at the conclusion of Spring Semester with commencement exercises held on campus. While attendance at the exercises is not mandatory, students are urged to participate.

Time Limits for Graduation

All course work presented for graduation must be earned within seven years from date of Full or Provisional admission to a graduate program. This policy covers course work completed at the University or transferred from another institution prior to receiving admission to the program.

Master of Education, Counselor Education

The Counselor Education Program prepares graduate candidates to be effective counselors in a dynamic profession and society. The Program provides a strong academic program which provides candidates the needed knowledge base and counseling skills necessary to work with a diversity of clients. Through identification with the counseling profession, its Code of Ethics, and its organizations, the student will develop a strong counselor identity. Additionally, the profession believes that graduate candidates must be open to self-reflection and self-challenge to gain and use the personal dispositions necessary to work in a multicultural society.

The Counselor Education Program supports the mission of Montana State University Northern to provide quality undergraduate and graduate programs. These programs are designed to meet the needs of rural, underserved, and culturally diverse populations. The department supports alternative and blended delivery of the program (residential, off-campus, and online) to reach stakeholders and strengthen collaborative community partnerships for school, community, and other counseling related professions. The Counselor Education faculty maintain the highest degree of preparation and employ best pedagogic strategies and clinical practices.

Program Mission Statement

The Counselor Education Program prepares counselors who have developed sound practical skills through experiential learning; who have acquired a comprehensive theoretical knowledge base; who hold a strong counselor identity; and who possess the personal dispositions necessary to work in various professional settings with diverse clientele.

Program Outcomes

The Counselor Education Program believes it has responsibilities to current graduate candidates and to their future clients. Additionally, the department believes it has a responsibility to collaborate with the communities within which it works, to continue to grow as a program, and to model professional involvement and identity.

The Program Objectives

1. The program will prepare and graduate skilled, knowledgeable, self-aware and self-reflective counselors who are prepared academically to seek licensure.

2. The program will support faculty to collaborate with the community, its agencies and schools, to aid in learning opportunities for graduate students.
3. The program will continually evaluate the curriculum, practices, and requirements to promote the highest quality education.
4. The program will support faculty to model professional identity through involvement in professional organizations, attaining leadership positions.

Graduate Candidate Competencies

1. The graduate candidate implements sound practical therapeutic and relational skills that reflect current practice.
2. The graduate candidate possesses a comprehensive theoretical knowledge base that can be integrated and transferred to effective counseling relationships and techniques.
3. The graduate candidate expresses a strong counselor identity through involvement and participation in professional organizations, advocacy, trainings, workshops, seminars, or other continuing education opportunities.
4. The graduate candidate demonstrates a self-aware and self-reflective stance that allows for growth and the personal dispositions necessary to work in the counseling field.

Master of Science in Education, Instruction and Learning

The Masters of Science in Education degree, Instruction and Learning is offered in an on-line with residency cohort format. The program is designed to support the improvement of instruction and learning in a variety of professional learning environments (schools, private industry, government agencies, non-profits, etc.). All courses are on-line with four weekend residencies built into the schedule and a start to finish time of two years (six semesters including summers). Individuals and groups interested in starting a cohort group designed for their needs should contact the Graduate Studies Office at 1.800.662.6132, extension 3738. Further information regarding the delivery of the program will be made available upon inquiry. New cohorts commence the fall semester of each year, with full probationary admission facilitated.

The Instruction and Learning Program supports the mission of Montana State University Northern to provide quality undergraduate and graduate programs. The Instruction and Learning Program prepares graduate candidates to be effective reflective practitioners in an educational environment. The Program provides a strong academic program which provides candidates the needed knowledge, skills and dispositions necessary to work with a diversity of learners. Additionally, the profession believes that graduate candidates must be open to self-reflection and self-challenge to gain and use the personal dispositions necessary to work in a multicultural society. These programs are designed to meet the needs of rural, underserved, and culturally diverse populations. The department supports alternative and blended delivery of the program (online with residency) to reach stakeholders and strengthen instruction and learning in a wide range of professional learning environments (k-12, business and industry, governmental and non-governmental agencies) The Instruction and Learning faculty maintain a high degree of professionalism and are continually engaging in professional experiences to improve the learning of our graduate students.

Program Mission Statement

The Instruction and Learning Program mission is firmly grounded in a vision of and commitment to learning environments in which all learners have access to educational opportunities, choices, and experiences that enable them to achieve at the peak of their potential. The professional education programs are designed for delivery through innovative and efficacious systems that provide professional development and excellent educational experiences to diverse populations in a geographically and economically challenged region. To this end, we provide a variety of rich, intentional, and meaningful experiences designed to support candidates' development of appropriate dispositions, knowledge, skills, traits and habits for their fields. Through this educational experience, graduate candidates prepare to impact students' lives and learning and to take leadership roles in classrooms, schools, and beyond.

Program Responsibilities

The Instruction and Learning Program believes it has responsibilities to current graduate candidates and to their future clients. Additionally, the faculty believes it has a responsibility to collaborate with the communities within which it works, to continue to grow as a program, and to model professional involvement and identity.

The Program Outcomes

1. The program will prepare and graduate candidates capable of identifying and analyzing contemporary issues in education and examine their effect on instructional practice in culturally responsive learning environment.
2. The program will prepare and graduate candidates capable of conducting classroom action research using quantitative and qualitative methods in your classroom, school district and community to improve instruction and learning.
3. The program can document the effects of instruction of students using assessment and evaluation methodologies that accurately reflect student performance.
4. The program will prepare and graduate candidates that demonstrate critical thinking, creative thinking, reflective thinking and self-regulation in a professional decision-making capacity using learning theories in instructional practice.
5. The program will prepare and graduate candidates that demonstrate and promote the integration of technology to enhance curricular and instructional design, implementation and evaluation.

Graduate Candidate Competencies

1. The graduate candidate applies and implements sound practical changes in their professional practice based upon theoretical and applied research which demonstrates improved instruction and learning.
2. The graduate candidate possesses a comprehensive theoretical knowledge base that can be integrated and transferred to effective instructional environments and student relationships.
3. The graduate candidate expresses a strong continuous learner identity through involvement and participation in professional organizations, advocacy, trainings, workshops, seminars, or other continuing education opportunities which improves instruction and learning for all.
4. The graduate candidate demonstrates a self-aware and self-reflective stance that allows for growth and the personal dispositions necessary to work in the professional education environment.

Programs

Use the Navigation bar to the right to select a program you are interested in. Northern has a wide variety of degrees to choose from.

Agriculture

Our agriculture programs are unique to the state of Montana. Our coursework encompasses areas such as plant and animal science, range, animal and crop production, and commodity marketing, while integrating technology in areas such as computers, Global Position Systems and Geographic Information Systems. Students also have the option of including mechanics or business classes to better suit their career goals. These areas prepare student to work with the complex agriculture machinery, equipment and processes that use advanced technologies.

Bachelor of Science Agricultural Operations Technology – Minor Required

Learning outcomes: AOT Program graduates will demonstrate knowledge in agricultural production, technology and management.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
ANSC 100	Introduction to Animal Science	3
AGSC 102	Agricultural Plant Science	3
AGBE 105	Ag Marketing	3
AGBE 125	Intro to Farm Management	3
AG 150	Intro to Ag Computing	3
ENSC 245	Soils (Meets CAT III Requirement)	3
AGSC 218	Crop Production	4
AGSC 230	Agricultural Pest Management	4
ANSC 202	Livestock Feeding & Nutrition	4
ANSC 262	Range Livstck Prod	3
NRSM 260	Rangeland Management	4
AGBE 353	Co-op Business Prin & Practice	2
AOT 301	Global Positioning Systems (CAT VII)	3
AGBE 305	Ag Commodity Marketing	3
AGSC 310	Soil & Water Management	2
AOT 315	Geographic Information Systems	3
AGTE 410	Agriculture Technology Mgt	4
AGBE 499	Capstone	3
AGSC 498	Cooperative Education	3
IT 100	Introduction to Technology (Meets CAT VII Requirement)	3
Minor Lower Division		12
Minor Upper Division		15
Total minimum credits required for degree/minor		120

Associate of Applied Science

Agricultural Mechanics Technology

Learning outcomes: The successful completion of assigned e-training on NAPAAutoTech.com (<http://NAPAAutoTech.com>) and DATO HVAC.

Code	Title	Credits
Required General Education Courses		
WRIT 108	Elementary Technical Writing ¹	3
Select one of the following: ²		3
M 111	Technical Mathematics	
M 121	College Algebra	
M 145	Math for the Liberal Arts	
COMX 111 or COMX 115	Intro to Public Speaking ³ Intro to Interpersonal Communc	3
Required Courses		
AGTE 230	Intro to Ag Machines & Equip	2
AGTE 120	Forage Implements	3
AGTE 130	Intro to Agricultural Tractors	3
AGTE 225	Intro to Grain Harvstng Equip	3
AGTE 210	Tlg, Plntg, Spray Implements	3
ATDI 134	Electrical/Electronic Sys I	6
ATDI 264	Electrical/Electronic Sys II	6
ATDI 265	Heating and Air Conditioning	4
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
DST 204	Intro to Hydraulics Pneumatics	2
DST 214	Intro to Hydr Pneumatics Lab	2
DST 216	Heavy Duty Power Trains	4
DST 264	Diesel Engine Diagnosis Repair	3
DST 274	Diag Diesel Engine Repair Lab	3
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
WLDG 260	Repair & Maintenance Welding	3
Total minimum required credits for degree		71

¹ Meets Communications Requirement

² Meets Computation Requirement

³ Meets Human Relations Requirement

Agricultural Technology

Learning outcomes: Ag Tech (AAS) graduated will verify basic knowledge in agriculture sciences, agriculture business and agriculture technology

Code	Title	Credits
Required General Education Courses		
WRIT 108	Elementary Technical Writing ¹	3
Select one of the following: ²		3
M 111	Technical Mathematics	
M 121	College Algebra	
M 145	Math for the Liberal Arts	
COMX 111 or COMX 115	Intro to Public Speaking ³ Intro to Interpersonal Communc	3
Required Courses		
ANSC 100	Introduction to Animal Science	3

AGSC 102	Agricultural Plant Science	3
AGBE 105	Ag Marketing	3
AGBE 125	Intro to Farm Management	3
AG 150	Intro to Ag Computing	3
ENSC 245	Soils (CAT III)	4
AGSC 218	Crop Production	4
AGSC 230	Agricultural Pest Management	4
ANSC 202	Livestock Feeding & Nutrition	4
ANSC 262	Range Livstck Prod	3
NRSM 260	Rangeland Management	4
IT 100	Introduction to Technology	3
Advisor Approved Electives		12
Total minimum required credits for degree		62
1	Meets Communications Requirement	
2	Meets Computation Requirement	
3	Meets Human Relations Requirement	

Minors

Agricultural Mechanics Technology

Code	Title	Credits
Required Courses		
AGTE 230	Intro to Ag Machines & Equip	2
AOT 301	Global Positioning Systems	3
AGTE 410	Agriculture Technology Mgt	4
TSCI 304	Fuels and Lubricants	3
Selective Credits		
Select two (2) of the following courses		8
ATDI 134	Electrical/Electronic Sys I	
DST 204	Intro to Hydraulics Pneumatics	
WLDG 110	Welding Theory I	
Selective Credits		
Select three (3) of the following courses		9
AGTE 120	Forage Implements	
AGTE 130	Intro to Agricultural Tractors	
AGTE 225	Intro to Grain Harvstng Equip	
AGTE 210	Tlg, Plntg, Spray Implements	
Total minimum credits required for minor		29

Applied Agriculture

Code	Title	Credits
Required Courses		
ANSC 100	Introduction to Animal Science	3
AGSC 102	Agricultural Plant Science	3
AG 150	Intro to Ag Computing	3
AGBE 499	Capstone	3
Select a minimum of eight (8) credits from the following		8
ENSC 245	Soils (CAT III)	
AGSC 218	Crop Production	
ANSC 202	Livestock Feeding & Nutrition	
NRSM 260	Rangeland Management	
Select a minimum of six (6) upper division level credits from the following		6

AGSC 498	Cooperative Education	
AGBE 353	Co-op Business Prin & Practice	
AOT 301	Global Positioning Systems (CAT VII)	
AGBE 305	Ag Commodity Marketing	
AGSC 310	Soil & Water Management	
AOT 315	Geographic Information Systems	
AGTE 410	Agriculture Technology Mgt	
Total minimum credits required for minor		26

Associate of Arts

This is a degree designed for students who expect to complete a bachelor's degree at MSU-Northern but are undecided on a major, or who wish to complete their general education requirements at MSU-Northern before transferring to another institution to complete the remaining requirements for a bachelor's degree. Completion of the associate of arts degree at Northern satisfies all bachelor degree general education requirements throughout the Montana University system.

The associate of arts degree requires that students complete MSU-Northern's General Education Core. * Students enrolled in the associate of arts degree who plan to transfer to a bachelor's degree program should contact the office of the Dean of Education, Arts and Sciences, and Nursing early in their first semester for assistance in choosing electives from the Transferable Core and electives to support their future plans for study.

Code	Title	Credits
General Education Core (p. 19)		33
Advisor Approved Electives		27
Total minimum credits required for degree		60

* Students should not confuse the MSU-Northern General Education Core with the Montana University System Transferable Core (p. 13). Please see the Dean or your advisor for more information.

Automotive Technology

Our program in Automotive Technology are certified by NATEF (National Automotive Technicians Education Foundation) and offer comprehensive coursework in the fundamentals of all mechanical, fuel , and electronic systems found on modern vehicles including gasoline, diesels, and hybrids. emphasis is placed on hands-on learning in the laboratory and through cooperative education experiences, giving the opportunity to earn money, university credit, and on-the-job training as part of your education.

Bachelor of Science Automotive Technology

Learning outcomes: The successful completion of assigned e-training on NAPAAutoTech.com (<http://NAPAAutoTech.com>) and DATO HVAC.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
ATDI 134	Electrical/Electronic Sys I	6
ATDI 257	Automatics	4
ATDI 262	Automatics Remove and Repair	1
ATDI 264	Electrical/Electronic Sys II	6
ATDI 265	Heating and Air Conditioning	4
ATDI 383	Alt Auto Power Systems	4
ATDI 384	AT/DI Elctrcl/Elctrn Sys III	4
ATDI 400	Shop Procedures	3
AST 106	Auto Manual Drive Train/Axles	5
AST 114	Automotive Brakes	5
AST 220	Auto Steering and Suspension	5
AST 160	Automotive Engine Repair	5
AST 164	Intro to Engine Performance	6
AST 266	Engine Performance	6
AST 408	Current Trends Mobility Tech	2

AST 450	Advanced Engine Performance	4
AST 457	Advanced Power Trains	4
AST 495	Automotive Practicum	3
AST 498	Cooperative Education	3
Electives or Minor		7
Total minimum credits required for degree		120

NOTE: Students must take a total of 11 credits of upper division coursework from the electives or general education core.

Associate of Applied Science Automotive Technology

Learning outcomes: The successful completion of assigned ASE testing available on NAPAAutoTech.com (<http://NAPAAutoTech.com>)

Code	Title	Credits
Required General Education Courses		
WRIT 108	Elementary Technical Writing ¹	3
Select one of the following: ²		3
M 111	Technical Mathematics	
M 121	College Algebra	
M 145	Math for the Liberal Arts	
COMX 111 or COMX 115	Intro to Public Speaking ³ Intro to Interpersonal Communc	3
Required Courses		
ATDI 134	Electrical/Electronic Sys I	6
ATDI 257	Automatics	4
ATDI 262	Automatics Remove and Repair	1
ATDI 264	Electrical/Electronic Sys II	6
ATDI 265	Heating and Air Conditioning	4
AST 106	Auto Manual Drive Train/Axles	5
AST 114	Automotive Brakes	5
AST 220	Auto Steering and Suspension	5
AST 160	Automotive Engine Repair	5
AST 164	Intro to Engine Performance	6
AST 266	Engine Performance	6
AST 298	Automotive Internship	3
Advisor Approved Elective		3
Total minimum credits required for degree		68

¹ Meets Communications Requirement

² Meets Computation Requirement

³ Meets Human Relations Requirement

TOYOTA T-TEN PROGRAM Students enrolled in the T-Ten Program will complete the requirements listed above for the associate of applied science degree. In addition, sixteen weeks or 640 hours of cooperative education experience in a Toyota dealership is required. Further information is available upon request—please see your advisor.

Fast Track Automotive Technology

Code	Title	Credits
Required Courses		
ATDI 134	Electrical/Electronic Sys I ²	6
ATDI 257	Automatics	4
ATDI 262	Automatics Remove and Repair	1
ATDI 264	Electrical/Electronic Sys II ¹	6
ATDI 265	Heating and Air Conditioning	4

AST 106	Auto Manual Drive Train/Axles	5
AST 114	Automotive Brakes	5
AST 220	Auto Steering and Suspension	5
AST 160	Automotive Engine Repair	5
AST 164	Intro to Engine Performance	6
AST 266	Engine Performance	6
AST 298	Automotive Internship	9
Total minimum credits required for degree		62
¹	Meets Communications Requirement	
²	Meets Computation Requirement	
³	Meets Human Relations Requirement	

Minor

Automotive Technology

Code	Title	Credits
Required Courses		
ATDI 134	Electrical/Electronic Sys I	6
ATDI 264	Electrical/Electronic Sys II	6
ATDI 383	Alt Auto Power Systems	4
ATDI 384	AT/DI Elctrcl/Elctrn Sys III	4
ATDI 400	Shop Procedures	3
AST 164	Intro to Engine Performance	6
Total minimum credits required for minor		29

Biology

Our Biology program offers students a strong foundation in basic biological principles coupled with a varied emphasis in chemistry and molecular biology. This background is designed to provide you with a comprehensive undergraduate experience that will prepare you to enter graduate school or professional areas of the health sciences, wildlife biology, and more.

Bachelor of Science Biology (No Minor Required)

Learning outcomes: Students will describe the structure and function of cellular components. Students will describe, discuss and give examples of macro and micro evolution. Students will recognize and explain interrelationships and dependencies between abiotic and biotic components of ecosystems. Students will apply the scientific method when testing hypotheses, designing and conducting experiments. The student will design and conduct an undergraduate research project under the guidance of the course faculty. Students will prepare a library research paper, using only peer-reviewed journal articles, which compares and contrasts two or more taxa. The student will prepare and present an electronic oral presentation of their undergraduate research project. The student will demonstrate appropriate gel electrophoresis and sample loading techniques. The student will demonstrate appropriate field population sampling. The student will demonstrate appropriate aseptic technique using bacteria.

Code	Title	Credits
General Education Core (p. 19)		33
Common Science Core		
BIOB 160	Principles of Living Systems	4
BIOB 161	Principles Living Systems Lab	1
BIOB 420	Evolution	4
BIOE 370	General Ecology	4
BIOE 371	General Ecology Lab	0
BIOO 220	General Botany	3
BIOO 221	Gen Botany Lab	2
BIOO 380	Zoology	3
BIOO 381	Zoology Lab	2
CHMY 141	College Chemistry I	5
CHMY 142	College Chemistry Lab I	0

CHMY 143	College Chemistry II	5
CHMY 144	College Chemistry Lab II	0
PHSX 205	College Physics I	3
PHSX 206	College Physics I Laboratory	1
PHSX 207	College Physics II	3
PHSX 208	College Physics II Laboratory	1
Required Program Courses		
BIOB 485	Molecular Biology and Genetics	4
BIOB 486	Molecular Biology Genetics Lab	0
CHMY 321	Organic Chemistry I	3
CHMY 322	Organic Chemistry Lab I	2
NSCI 450	Undergraduate Research I	3
COMX 111	Intro to Public Speaking (Meets CAT I Requirement)	3
STAT 216	Introduction to Statistics (Meets CAT II Requirement)	3
Select twelve (12) credits from the following:		12
BIOB 450	Molecular Biology Techniques	
BIOB 451	Molecular Biology Technqus Lab	
BIOE 410	Field Biology Methods	
BIOE 411	Field Biology Methods Lab	
BIOE 428	Freshwater Ecology	
BIOE 429	Freshwater Ecology Lab	
BIOH 201	Human Anat Phys I	
BIOH 211	Human Anat Phys II	
BIOM 250 & BIOM 251	Microbiology for Hlth Sciences and Microbiology Hlth Sciences Lab	
BIOM 251	Microbiology Hlth Sciences Lab	
BIOM 400	Medical Microbiology	
BIOM 401	Medical Microbiology Lab	
BIOO 320	General Botany	
BIOO 321	General Botany Laboratory	
BIOO 462	Entomology	
BIOO 463	Entomology Lab	
BIOO 470	Ornithology	
BIOO 471	Ornithology Lab	
GEO 314	Intro to Paleontology	
NSCI 451	Undergraduate Research II	
Advisor Approved Electives or Minor		18
Total minimum credits required for degree		120

Minor Biology

Code	Title	Credits
Required Courses (BIOB, BIOE, BIOM, BIOO, and NSCI are CAT III)		
BIOB 160	Principles of Living Systems	4
BIOB 161	Principles Living Systems Lab	1
BIOE 428	Freshwater Ecology	4
BIOE 429	Freshwater Ecology Lab	0
BIOM 250	Microbiology for Hlth Sciences	3
BIOM 251	Microbiology Hlth Sciences Lab	1
BIOO 220	General Botany	3
BIOO 221	Gen Botany Lab	2
BIOO 320	General Botany	4

BIOO 321	General Botany Laboratory	0
BIOO 380	Zoology	3
BIOO 381	Zoology Lab	2
NSCI 301	Essence of Science	3
Total minimum credits required for minor		30

Business

Our Business Administration program provides you with a solid foundation in professional business management theories and practices with the flexibility to pursue your individual interest. The major provides broad coverage of the technical, interpersonal, conceptual, and analytical skills necessary to specialize in a particular area of interest such as entrepreneurship/small business, marketing, accounting or general business. A degree in Business Administration can lead to many different careers.

Bachelor of Science Business Administration – Minor Required

Learning Outcome:

Students produce written documents that will:

1. be grammatically correct and
2. incorporate logical, complete, and articulate thoughts. Students demonstrate presentation and oral communication skills with utilization of technology.

For example, they will:

1. conduct themselves professionally,
2. speak clearly,
3. maintain eye contact with their audience, and
4. convey the main ideas.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
ACTG 201	Principles of Fin Acct	3
ACTG 202	Principles of Mang Acct	3
BGEN 112	Creative Problem Solving	3
BGEN 110	Applied Business Leadership	3
BGEN 253	Business Statistics & Research	3
or STAT 216	Introduction to Statistics	
BGEN 235	Business Law	3
BMGT 335	Management & Organization	3
BMGT 329	Human Resource Management	3
BMKT 325	Principles of Marketing	3
BMKT 341	Advanced Marketing Application	3
BFIN 322	Business Finance	3
BGEN 360	International Business	3
BMGT 322	Operations Management	3
BGEN 468	Contemp Issues in Bus Ethics	3
BUS 406		3
BGEN 494	Seminar	3
ECNS 201	Principles of Microeconomics (Meets CAT IV Requirement)	3
or ECNS 202	Principles of Macroeconomics	
Advisor Approved Electives		9
Minor		30
Total minimum credits required for degree/minor		120

Bachelor of Applied Science in Trades Management

*** A student entering this program will have completed an Associate of Applied Science (AAS) degree in plumbing, electrical, construction trades, carpentry, construction technology, culinary arts, electronics technology, energy technology, industrial machine technology, machine tool technology, metals technology, sheet metal technology, surveying, sustainable energy technology, or welding technology from any member of the Montana University System or from those Montana tribal colleges, with which MSU-Northern have articulated with. A maximum of 60 of those credits (including 9 required general education credits) will apply to this degree***

Learning Outcome:

general education
Core 33

Code	Title	Credits
ACTG 410	Cost/Mgmt Acct I	3
BMGT 329	Human Resource Management	3
BMGT 335	Management & Organization	3
BMKT 325	Principles of Marketing	3
BMGT 422	Project Management	3
BFIN 322	Business Finance	3
BUS 348	Business Communications	3
BGEN 468	Contemp Issues in Bus Ethics	3
BMIS 311	Management Information Systems	3
BMGT 322	Operations Management	3
CET 498	Cooperative Education	3

Bachelor of Applied Science in Business Technology

*** Students entering this program will have completed an Associate of Applied Science (AAS) in Business, Business Administration, Business Management or Business Technology from the MUS system, or from those Montana tribal colleges, with which MSU-Northern have articulated with. A maximum of 60 credits (includes 9 credits of required general education course work) of those credit will apply to this degree.***

Core Category	Credits	Course Prefix and Number
Gen Ed Core	33	

Code	Title	Credits
BMGT 335	Management & Organization	3
BMGT 329	Human Resource Management	3
BMKT 325	Principles of Marketing	3
BUS 348	Business Communications	3
BGEN 468	Contemp Issues in Bus Ethics	3
BMIS 311	Management Information Systems	3
BMGT 322	Operations Management	3
BFIN 322	Business Finance	3
BMGT 245	Customer Service Management	3
CAPP 158	MS Access	3
CAPP 266	Advanced MS Excel Applications	3
BMGT 498	Cooperative Education	3

Associate of Science Program of Study in Business

Learning Outcome: Students recognize basic concepts and theories related to business ethics and social responsibilities.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
ACTG 201	Principles of Fin Acct	3
ACTG 202	Principles of Mang Acct	3

BGEN 105	Introduction to Business	3
BGEN 112	Creative Problem Solving	3
BGEN 110	Applied Business Leadership	3
BFIN 205	Personal Finance (equiv 305)	3
or CAPP 266	Advanced MS Excel Applications	
BGEN 253	Business Statistics & Research	3
BGEN 235	Business Law	3
CAPP 151	MS Office (Meets CAT VII Requirement)	3
ECNS 201	Principles of Microeconomics (Meets CAT IV Requirement)	3
Elective		3
Total minimum credits required for degree		60

Minors

Accounting

Code	Title	Credits
Required Courses		
ACTG 201	Principles of Fin Acct	3
ACTG 202	Principles of Mang Acct	3
ACTG 205	Computerized Accounting *	3
ACTG 301	Intermediate Accounting I *	3
ACTG 302	Intermediate Accounting II *	3
ACTG 401	Principles of Fed Tax - Ind	3
ACTG 410	Cost/Mgmt Acct I **	3
ACTG 411	Auditing 1 **	3
BGEN 235	Business Law	3
BFIN 322	Business Finance	3
Total minimum credits required for minor		30

* Offered alternate even years

** Offered alternate odd years

Suggested Selective General Education Courses:

Code	Title	Credits
Category IV Social Sciences: ECNS 201	Principles of Microeconomics (CAT IV)	3
Category IV Social Sciences: ECNS 202	Principles of Macroeconomics (CAT IV)	3

Business Technology

Code	Title	Credits
Required Courses		
ACTG 201	Principles of Fin Acct	3
ACTG 202	Principles of Mang Acct	3
BGEN 105	Introduction to Business	3
BGEN 112	Creative Problem Solving	3
BGEN 110	Applied Business Leadership	3
BGEN 235	Business Law	3
BMGT 335	Management & Organization	3
BMKT 325	Principles of Marketing	3
BUS 348	Business Communications	3
ECNS 201	Principles of Microeconomics	3
Total minimum credits required for degree		30

Marketing

Code	Title	Credits
Required Courses		
BGEN 112	Creative Problem Solving	3
BMKT 325	Principles of Marketing	3
BMKT 337	Consumer Behavior	3
BUS 348	Business Communications	3
BUS 345	Marketing Trends	3
BMKT 341	Advanced Marketing Application	3
BMKT 436	Sales and Sales Management	3
BMKT 338	Advertising and Promotion	3
BMGT 245	Customer Service Management	3
GDSN 231	Graphic Design Applications	3
Total minimum credits required for minor		30

Small Business Management

Code	Title	Credits
Required Courses		
ACTG 201	Principles of Fin Acct	3
ACTG 202	Principles of Mang Acct	3
BGEN 235	Business Law	3
BMGT 335	Management & Organization	3
BMGT 329	Human Resource Management	3
BMKT 325	Principles of Marketing	3
BMKT 338	Advertising and Promotion	3
BMGT 461	Small Business Management	3
BMGT 448	Entrepreneurship	3
BMGT 245	Customer Service Management	3
Total minimum credits required for minor		30

Carpentry

Community Leadership

If being involved in your community and helping people to realize their potential motivates you, a Bachelor degree in Community Leadership may be the right program of study for you. This board-based program allows you to focus on the area of non-profit service. Many Community Leadership courses emphasize applied learning through practical experience allowing students to emerge from this program with solid professional ties with non-profit organizations, governmental services, and/or tribal agencies. In addition, our Community Leadership program provides you with a combination of social science basics, communication theory, and non-profit business concepts to be an effective community leadership professional.

Bachelor of Arts Community Leadership - Minor Required

Learning Outcomes: Students will prepare a funding plan for a nonprofit or governmental organization. Students will research, analyze and propose a strategic development plan for a non-profit program. Students will conduct a simple program evaluation.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
BUS 215	Mngrl Plng Not-For-Profit Entr	3
BUS 455	Managing Not-For-Profit Org	3
CMLD 101	Intro to Community Leadership (CAT IV)	3
CMLD 260	Fndtns of Non Profit Service	3
CMLD 301	Concepts in Comm Leadership	3
PSCI 411	Nonprofit Grant Writing	3

COMX 412	Communication and Conflict	3
CMLD 355	Assmnt & Dsgn Comm Programs	3
CMLD 360	Eval of Comm-Based Programs	3
CMLD 401	Seminar in Comm Leadership	3
CMSV 498	Cooperative Education	1-12
PSYX 100	Intro to Psychology	3
SOCI 101	Introduction to Sociology (CAT IV)	3
COMX 210	Communication in Small Groups	3
COMX 320	Prin of Organizational Comm	3
WRIT 338	Public Relations Writing	3
Select one of the following:		9
Selectives in Social Science with CJ, CMSV, ECNS, PSCI, PSYX, SOCI, SPCH pre#xes		
Selectives in Business with ACTG, BUS, SBM pre#xes		
Electives		0-9
Minor		21-30
Total minimum credits required for degree/minor		120

Minor

Community Leadership

Learning Outcome: Students identify a community need, prepare a simple assessment to determine appropriate action, and then apply knowledge and skills gained in planning, problem-solving and community development to demonstrate foundational skills in addressing a community need. Activities may be carried out as a service-learning project, as feasible, or as a simulation of a community action project.

Code	Title	Credits
Required Courses		
CMLD 101	Intro to Community Leadership (CAT IV)	3
CMLD 260	Fndtns of Non Profit Service	3
SOCI 101	Introduction to Sociology (CAT IV)	3
Select one of the following:		3
CMLD 301	Concepts in Comm Leadership	
PSCI 411	Nonprofit Grant Writing	
COMX 412	Communication and Conflict	
CMLD 355	Assmnt & Dsgn Comm Programs	
CMLD 360	Eval of Comm-Based Programs	
Select nine Science selective credits from the following (one course must be an upper division level course):		
CMLD 401	Seminar in Comm Leadership	
CMSV 498	Cooperative Education	
ECNS 201	Principles of Microeconomics	
ECNS 202	Principles of Macroeconomics	
NASX 376	Fed Indian Law & Policy	
PSCI 210	Intro to American Government	
PSCI 260	Intro to State and Local Govt	
PSYX 100	Intro to Psychology	
PSYX 230	Developmental Psychology	
PSYX 385	Psychology of Personality	
SOCI 211	Introduction to Criminology	
SOCI 241	Intro to Social Psychology	
SOCI 315	Race, Gndr, & Ethnic Relations	
COMX 210	Communication in Small Groups	
COMX 320	Prin of Organizational Comm	
COMX 400	Communication Theory	
COMX 491	Special Topics	

Total minimum credits required for minor

24

Computer Information Systems

Criminal Justice

Whether you're currently a professional looking to expand your opportunities through education or interested in starting a career in criminal justice, this program is designed to work for you. You will learn how the criminal justice system works; from crime prevention and enforcement, to the legal system, corrections, and more.

Bachelor of Science Criminal Justice - Minor Required

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
CJUS 220	Intro to Corrections	3
CJUS 121	Intro to Criminal Justice	3
CJUS 230	Police Org and Behavior	3
CJUS 325	American Criminal Law	3
CJUS 330	Admin of Juv Justice	3
CJUS 335	Victimology	3
CJUS 427	Deviance & Social Control	3
CJS 498		6
COMX 412	Communication and Conflict	3
PSCI 210	Intro to American Government	3
PSCI 260	Intro to State and Local Govt	3
PSYX 340	Abnormal Psychology	3
SOCI 311	Criminology	3
SOCI 433	Addictive Behavior	3
Advisor Selectives		11-21
Minor		21-31
Total minimum credits required for degree/minor		120

Minor Criminal Justice

Code	Title	Credits
Required Courses		
CJUS 201	Introduction to Criminal Justi	3
CJUS 230	Police Org and Behavior	3
Select one of the following:		3
CJUS 220	Intro to Corrections	3
CJUS 335	Victimology	3
CJUS 330	Admin of Juv Justice	3
PSCI 210	Intro to American Government	3
CJUS 498	Cooperative Education	
PSCI 260	Intro to State and Local Govt	3
PSYX 340	Abnormal Psychology	3
SOCI 433	Addictive Behavior	3
Total minimum credits required for minor		24

**The Criminal Justice degree accepts life experience credits earned through Northern's LEAP program. Students with successful professional experience in law enforcement and corrections, in particular, are encouraged to consider preparing a LEAP portfolio.

Please note: approval does not indicate support for new faculty or additional resources.

Diesel Technology

Our Diesel Technology programs offer a unique, hands-on technology education recognized by industry leaders as on the nation's leading diesel programs. Our curriculum is relevant to students' lives and careers, valuable in terms of content and competencies and connected to the needs of industry. It strives to provide an environment that fosters excellence in learning and one that nurtures discovery of knowledge for advancement, academic excellence in the classroom, and personal growth through collaboration and teamwork.

Bachelor of Science Diesel Technology

Learning Outcomes: The successful completion of assigned e-training on NAPAAutoTech.com (<http://NAPAAutoTech.com>) and DATO HVAC. Successful completion and submission of electronic work-orders. Successful completion of Co-op objectives and electronic submission of required paperwork.

Required Courses

Code	Title	Credits
General Education Core (p. 19) ¹		33
Required Courses		
ATDI 134	Electrical/Electronic Sys I	6
ATDI 257	Automatics	4
ATDI 264	Electrical/Electronic Sys II	6
ATDI 265	Heating and Air Conditioning	4
ATDI 384	AT/DI Elctrcl/Elctrn Sys III	4
ATDI 400	Shop Procedures	3
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
DST 204	Intro to Hydraulics Pneumatics	2
DST 214	Intro to Hydr Pneumatics Lab	2
DST 216	Heavy Duty Power Trains	4
DST 219	Heavy Duty Chassis	4
DST 264	Diesel Engine Diagnosis Repair	3
DST 274	Diag Diesel Engine Repair Lab	3
DST 273	Diesel Shop Practices	4
DST 314	Hydraulics and Pneumatics II	4
DST 420	Diesel Shop Management	2
DST 434	Current Model Year Technology	3
DST 440	Advanced Fuel Systems	4
DST 450	Diag Pwr Shifts and HD Atmtics	4
DST 498	Cooperative Education	3
MCH 200	Machining	3
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
WLDG 260	Repair & Maintenance Welding	3
Total minimum credits required for degree		120

¹ Please Note: In addition to WRIT 350 and TSCI 304, four (4) credits of the General Education Core must be at the upper division level.

Associate of Applied Science Diesel Technology

Code	Title	Credits
WRIT 108	Elementary Technical Writing ¹	3
Select one of the following: ²		3
M 111	Technical Mathematics	
M 121	College Algebra	
M 145	Math for the Liberal Arts	

COMX 111	Intro to Public Speaking ³	3
or COMX 115	Intro to Interpersonal Communc	

Required Courses

ATDI 134	Electrical/Electronic Sys I	6
ATDI 257	Automatics	4
ATDI 264	Electrical/Electronic Sys II	6
ATDI 265	Heating and Air Conditioning	4
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
DST 204	Intro to Hydraulics Pneumatics	2
DST 214	Intro to Hydr Pneumatics Lab	2
DST 216	Heavy Duty Power Trains	4
DST 219	Heavy Duty Chassis	4
DST 264	Diesel Engine Diagnosis Repair	3
DST 274	Diag Diesel Engine Repair Lab	3
DST 273	Diesel Shop Practices	4
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
Total minimum credits required for degree		66

- ¹ Meets Communications Requirement
² Meets Computation Requirement
³ Meets Human Relations Requirement

Certificate of Applied Science Diesel Technology

Code	Title	Credits
ATDI 134	Electrical/Electronic Sys I	6
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
DST 216	Heavy Duty Power Trains	4
DST 219	Heavy Duty Chassis	4
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
WRIT 108	Elementary Technical Writing	3
COMX 115	Intro to Interpersonal Communc	3

Minor Diesel Technology

Code	Title	Credits
Required Courses		
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
DST 204	Intro to Hydraulics Pneumatics	2
DST 214	Intro to Hydr Pneumatics Lab	2
Select ten (10) credits from the following:		10
DST 314	Hydraulics and Pneumatics II	
DST 420	Diesel Shop Management	
DST 434	Current Model Year Technology	
DST 440	Advanced Fuel Systems	
DST 450	Diag Pwr Shifts and HD Atmtics	

Total minimum credits required for minor

Diesel Technology: Equipment Management

Our Diesel Technology programs offer a unique, hands-on technology education recognized by industry leaders as on the nation's leading diesel programs. Our curriculum is relevant to students' lives and careers, valuable in terms of content and competencies and connected to the needs of industry. It strives to provide an environment that fosters excellence in learning and one that nurtures discovery of knowledge for advancement, academic excellence in the classroom, and personal growth through collaboration and teamwork.

Bachelor of Science in Equipment Management

Learning Outcome: Demonstrate the effectiveness of incorporating computer based testing with the B.S. Diesel Technology - Equipment management option. Successful completion and submission of electronic work-orders. Demonstrate understanding of Cost Accounting

Required Courses

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
ATDI 134	Electrical/Electronic Sys I	6
DST 204	Intro to Hydraulics Pneumatics	2
DST 214	Intro to Hydr Pneumatics Lab	2
ATDI 264	Electrical/Electronic Sys II	6
DST 216	Heavy Duty Power Trains	4
DST 498	Cooperative Education	4
DST 264	Diesel Engine Diagnosis Repair	3
DST 274	Diag Diesel Engine Repair Lab	3
ACTG 201	Principles of Fin Acct	3
BGEN 253	Business Statistics & Research	3
ACTG 202	Principles of Mang Acct	3
ATDI 265	Heating and Air Conditioning	4
ATDI 384	AT/DI Elctrcl/Elctrn Sys III	4
BFIN 322	Business Finance	3
BMGT 335	Management & Organization	3
BMGT 322	Operations Management	3
BMGT 422	Project Management	3
BUS 348	Business Communications	3
BGEN 360	International Business	3
DST 440	Advanced Fuel Systems	4
ACTG 410	Cost/Mgmt Acct I	3
DST 450	Diag Pwr Shifts and HD Atmtics	4
BMGT 329	Human Resource Management	3
Total Credits		120

Diesel Technology: Field Maintenance

Our Diesel Technology programs offer a unique, hands-on technology education recognized by industry leaders as on the nation's leading diesel programs. Our curriculum is relevant to students' lives and careers, valuable in terms of content and competencies and connected to the needs of industry. It strives to provide an environment that fosters excellence in learning and one that nurtures discovery of knowledge for advancement, academic excellence in the classroom, and personal growth through collaboration and teamwork.

Bachelor of Science Diesel Technology: Field Maintenance Option

Learning Outcomes: Demonstrate the effectiveness of incorporating computer based testing with the B.S. Diesel Technology - Field Maintenance program. The student will successfully complete selected weld performance certifications. Successful completion and submission of electronic work-orders.

Required Courses

Code	Title	Credits
General Education Core (p. 19) ¹		33
Required Courses		
ATDI 134	Electrical/Electronic Sys I	6
ATDI 264	Electrical/Electronic Sys II	6
ATDI 265	Heating and Air Conditioning	4
ATDI 384	AT/DI Elctrcl/Elctrn Sys III	4
ATDI 400	Shop Procedures	3
DST 104	Intro to Diesel Engines	3
DST 114	Intro to Diesel Engines Lab	3
DST 115	Intro to Diesel Fuel Systems	5
DST 204	Intro to Hydraulics Pneumatics	2
DST 214	Intro to Hydr Pneumatics Lab	2
DST 216	Heavy Duty Power Trains	4
DST 264	Diesel Engine Diagnosis Repair	3
DST 274	Diag Diesel Engine Repair Lab	3
DST 314	Hydraulics and Pneumatics II	4
DST 434	Current Model Year Technology (Capstone)	3
DST 440	Advanced Fuel Systems	4
DST 450	Diag Pwr Shifts and HD Atmtics	4
MCH 200	Machining	3
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
WLDG 114	Mig/Tig Welding	3
WLDG 186	Welding Qual Test Prep w/Lab	3
WLDG 260	Repair & Maintenance Welding	3
WLDG 356	Welding Certifctn Procdrs II	3
WLDG 357	Welding Certifctn Procdrs III	3
Total minimum credits required for degree		120

* **Please Note: In addition to WRIT 350 and TSCI 304, four (4) credits of the General Education Core must be at the upper division level.**

Drafting (Design) Technology

MSU-Northern offers an Associate of Applied Science (AAS) degree in Design Drafting Technology through its College of Technical Science. A minor in Design Drafting Technology is also available. The fundamentals of technical drawing remain constant, but the tools used to produce technical drawings and models change almost daily. In response to these changes, our program strives to incorporate the latest technological advancements from the field to aid in the application of the basic to advanced design concepts. There is a strong emphasis on computer-aided design throughout the program along with the courses emphasizing technical animation, simulation, and multimedia design and development.

Associate of Applied Science Design Drafting Technology

Code	Title	Credits
WRIT 101	College Writing I ¹	3
M 121	College Algebra ²	3
COMX 111	Intro to Public Speaking ³	3
Required Courses		
SRVY 230	Intro to Srvy for Engineers	3

EGEN 203	Applied Mechanics	3
EGEN 208	Applied Strength of Materials	3
DDSN 119	Technical Graphics I	3
ETCC 173	Architectural Const & Material	3
DDSN 114	Introduction to CAD	3
DDSN 255	Machine Drafting	3
DDSN 245	Civil Drafting	3
DDSN 265	Architectural Drafting	3
DDSN 116	3D CAD	3
M 112	Trigonometry & Complex Numbers	2
MCH 200	Machining	3
MCH 250	Manuf Processes and Materials	3
PHSX 205	College Physics I	3
PHSX 206	College Physics I Laboratory	1
DRFT 216	Industrial CAD Modeling	3
MFGT 2XX	CAD/CAM	3
BGEN 112	Creative Problem Solving	3
Total minimum credits required for degree		60

- 1 Meets Communications Requirement
 2 Meets Computation Requirement
 3 Meets Human Relations Requirement

Minor Design Drafting Technology ****Currently in Moratorium****

Code	Title	Credits
Required Courses		
DDSN 119	Technical Graphics I	3
DRFT 132	Descriptive Geometry	3
DDSN 114	Introduction to CAD	3
DDSN 265	Architectural Drafting	3
DDSN 255	Machine Drafting	3
DDSN 116	3D CAD	3
Select three of the following:		9
ETCC 385	Highway Design & Construction	
DDSN 239	Parametric CAD	
DDSN 376	Presentation & Animatn (=276)	
DDSN 435	Industrial Product Design	
DRFT 428	Technical Illustration	
DDSN 465	Architectural CAD II	
MCH 351	CAD/CAM Applications	
Total minimum credits required for minor		27

Education (Teaching)

Education (Teaching)

Professional Education Core Requirements

Upper division Elementary Education Core Requirements must be taken in a block. Please see below.

Code	Title	Credits
Elementary Education Core Requirements		
EDU 270	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3

EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDU 397MA	Methods: K-8 Mathematics	2
EDU 397SC	Methods: K-8 Science	2
EDU 397SS	Methods: K-8 Social Studies	2
EDU 397CA	Methods: K-8 Int. Arts All Lrn	2
EDUC 334	Method Tchng Intgrtd Lang Arts	3
EDU 335	Fund & Corr Strtg Elem Rdg Prg	3
EDUC 336	Integrated Field Experiences	2
EDU 311	C, D & E in Global Ed	3
EDU 397HE	Methods: K-8 Health Enhancemen	2
EDU 383	Assessment in Education	3
EDU 340	Classroom Management	3
EDU 315	Integrat IEFA Across the Curr	2
EDU 337	Reading Materials Elem Child	2
EDU 452	Advanced Practicum	3
HTH 110	Personal Health and Wellness	3
M 130	Math for Elementary Teachers I	3
PSYX 230	Developmental Psychology	3
Select one of the following:		12
EDU 495EL	Student Teaching K-8	
EDU 495ES	Student Teaching K-12 *	
TOTAL		68

* Upon Admission to Teacher Education, prescribed courses must be taken in sequence). See your advisor for more information.

Code	Title	Credits
Secondary Education Professional Education Core Requirements		
EDU 270	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 452	Advanced Practicum	3
EDU 495	Student Teaching	12
HTH 110	Personal Health and Wellness	3
PSYX 230	Developmental Psychology (CAT IV)	3
TOTAL		42

Industrial Technology and Business Education majors (or minors) who plan on being able to verify appropriate work experience through the Office of Public Instruction and who want to qualify for vocational approval to teach in a state or federally reimbursed program please speak with your advisor.

Bachelor of Science in Education

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Elementary Education K-8

Prerequisites for admission to Elementary Education Program refer to page 29.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
Any BIOx, or CHMY and any GEO or PHSX (CAT III Lab Science). (Meets CAT III Requirement)		3
EDU 270	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child *	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice *	3
EDU 397MA	Methods: K-8 Mathematics *	2
EDU 397SC	Methods: K-8 Science *	2
EDU 397SS	Methods: K-8 Social Studies *	2
EDU 397CA	Methods: K-8 Int. Arts All Lrn	2
EDUC 334	Method Tchng Intgrtd Lang Arts *	3
EDU 335	Fund & Corr Strtg Elem Rdg Prg *	3
EDUC 336	Integrated Field Experiences *	1
EDU 311	C, D & E in Global Ed	3
EDU 397HE	Methods: K-8 Health Enhancemen	2
EDU 383	Assessment in Education *	3
EDU 340	Classroom Management *	3
Select one of the following:		12
EDU 495	Student Teaching (K-8) *	
EDU 495	Student Teaching (K-12) *	
EDU 315	Integrat IEFA Across the Curr *	2
EDU 337	Reading Materials Elem Child	2
EDU 452	Advanced Practicum *	3
HSTA 255	Montana History (Meets CAT IV Requirement)	3
HTH 110	Personal Health and Wellness	3
Any LIT (Meets CAT VI Requirement)		
M 121	College Algebra (Meets CAT II Requirement)	3
M 130	Math for Elementary Teachers I	3
Any NASX or NASL (Meets CAT V Requirement)		3
AG 204, or ESCL, or GEO, or GPHY, or GSCI, or NSCI, or PHSX, or TSCI 110 (Meets CAT III Requirement)		3
PSCI 210	Intro to American Government (Meets CAT IV Requirement)	3
PSYX 230	Developmental Psychology (CAT IV)	3
COMX 115	Intro to Interpersonal Communc (Meets CAT I Requirement)	3
WRIT 101	College Writing I (Meets CAT I Requirement)	3
Any Humanities/Fine Arts. Meets CAT VI Requirement		3
Major/Minor/Electives		29
Total minimum credits required for degree		128

* Upon Admission to Teacher Education, prescribed courses must be taken in sequence. See your advisor for more information.

Bachelor of Science in Education

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Prerequisites for admission to Elementary Education Program refer to page 29.

Health and Physical Education (K-12) **Degree in Moratorium***

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
BIOH 104 or BIOH 201	Basic Human Biology (Meets CAT III Requirement) Human Anat Phys I	4
EDU 270	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child *	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice *	3
EDU 395	Field Experience: Grades 9-12 *	1
EDU 311	C, D & E in Global Ed *	3
EDU 397	Methods (K-8 Health Enchanment) *	2
EDU 340	Classroom Management *	3
EDU 481	Content Area Literacy	2
EDU 452	Advanced Practicum (in Education) *	3
EDU 495	Student Teaching (K-12) *	12
HSTA 255	Montana History (Meets CAT IV Requirement)	3
HTH 101	Opport in Health Professions	2
HTH 110	Personal Health and Wellness	3
CHTH 262	Community Health	3
HEE 300	PE in the Elementary School *	3
HEE 340	Methods of Health Education *	3
HEE 310	Methods of Adapted HE *	2
HEE 435	Curr Planning in HE	3
HEE 303	Methods Lifetime Fit Act	3
KIN 327	Kinesiology & Biomechanics	3
KIN 320	Exercise Physiology	3
HEE 376	Assessment in Health Education *	3
M 121	College Algebra (Meets CAT II Requirement)	3
PSYX 230	Developmental Psychology (Meets CAT IV Requirement)	3
COMX 115	Intro to Interpersonal Communc (Meets CAT I Requirement)	3
WRIT 101	College Writing I (CAT I)	3
Advisor Approved Electives		4
Select one course from the following: 15X Aquatic Skills Selectives		1
ACT 170	Beginning Swimming	
ACT 270	Intermediate Swimming	
ACT 274	Scuba Diving	
ACT 178	Canoeing	
ACT 133	Water Exercise	
ACT 191	Special Topics (Aquatic Skills)	
Select one of the following two Areas of Concentration (required only if no minor)		
Teaching and Coaching		
REC 236	Intramural Recreational Activi	3
COA 210	Intro to Sports Officiating	2
COA 205	Introduction to Coaching	3
HEE 395	Field Experience in PE	1
AHAT 210	Prev and Care Athletic Injur	3
HTH 378	Sex Education	3
COA 407 or KIN 440	Issues in Competitive Athl Sport Psychology	3

HPEA Advisor Approved Elective		1
Select one course from the following		2
COA 242	Coaching Football	
COA 245	Coaching Basketball	
COA 256	Coaching Track/Field	
COA 240	Coaching Volleyball	
COA 258	Coaching Wrestling	
COA 246	Coaching Softball/Baseball	
COA 260	Coaching Gymnastics	
COA 262	Coaching Swimming	
Health Enhancement		
REC 236	Intramural Recreational Activi	3
REC 307	Community Recreation	3
AHAT 210	Prev and Care Athletic Injur	3
HTH 391	Special Topics	3
HTH 378	Sex Education	3
REC 388	Outdoor Education	3
Select two courses from the following list of 18X Fitness and Wellness		2
ACT 131	Weight Control	
ACT 110	Beginning Weight Training	
ACT 107	Beginning Aerobic Dance	
ACT 157	Beginning Martial Arts	
ACT 135	Trimnastics	
ACT 106	Beg Conditioning and Fitness	
ACT 150	Beginning Yoga	
ACT 210	Intermediate Weight Training	1
Total minimum credits required for degree		128

* Upon Admission to Teacher Education, prescribed courses must be taken in sequence (blocks). See your advisor for more information.

Minors

Art K-12 (Teaching)

Code	Title	Credits
Required Courses		
ARTH 160	Global Visual Culture (CAT VI)	3
ARTZ 231	Ceramics I (CAT VI)	3
ARTZ 105	Visual Language - Drawing (CAT VI)	3
ARTZ 106	Visual Language - 2-D Fndtns	3
ARTZ 221	Painting I	3
or ARTZ 224	Watercolor I	
ARTH 330	Art Hist of Western Civ I (CAT VI)	3
or ARTH 340	Art History of Western Civ II	
EDUC 308	Meth & Mat Tchg Elem & Sec Art	3
EDU 481	Content Area Literacy	2
Total minimum credits required for minor		23

Health and Physical Education K-12 (Teaching)

Code	Title	Credits
Required Courses		
EDU 395	Field Experience: Grades 9-12	1
HTH 101	Opport in Health Professions	2
CHTH 262	Community Health	3

HEE 300	PE in the Elementary School *	3
HEE 340	Methods of Health Education *	3
HEE 310	Methods of Adapted HE *	2
HEE 435	Curr Planning in HE	3
HEE 303	Methods Lifetime Fit Act	3
KIN 327	Kinesiology & Biomechanics	3
KIN 320	Exercise Physiology	3
HEE 376	Assessment in Health Education	3
Select one course from the following:		1
ACT 170	Beginning Swimming	
ACT 270	Intermediate Swimming	
ACT 274	Scuba Diving	
ACT 178	Canoeing	
ACT 133	Water Exercise	
ACT 191	Special Topics	
Total minimum credits required for minor		37

Reading Specialist K-12 (Teaching)

Code	Title	Credits
Required Courses		
EDSP 460	Learning Disabilities	3
EDUC 334	Method Tchng Intgrtd Lang Arts	3
EDU 335	Fund & Corr Strtg Elem Rdg Prg	3
EDUC 345	The Adolescent Reader	3
EDUC 355	Phonics & Word Identification	3
EDUC 356	Exploring Writing in Elem Ed	3
or ENGL 328	Media Literacy	
EDU 315	Integrat IEFA Across the Curr	2
EDU 484	Asmt in Remedial Reading	2
EDU 315	Integrat IEFA Across the Curr	2
LING 340	English Language	3
LIT 382	Lit for Children/Adolescents (CAT VI)	3
Total minimum credits required for minor		30

Traffic Education K-12 (Teaching)

Code	Title	Credits
Required Courses		
TED 461	Methods of Traffice Safety Ed	3
TED 462	Methods of Behind-the-Wheel In	3
TED 465	Motor Vehicle Law	2
HPE 234	First Aid and CPR	2
TED 468	Safety Education	2
Advisor Approved Electives (Additional possibilities for electives must be approved by your advisor.)		8
TED 452	Traffic Ed & Adolescent Brain	3
TED 454	Impaired & Distracted Driving	2
TED 455	Crash Dynamics	2
TED 456	Coaching Novice Drivers	2
TED 457	Roadway Safety Tech & Design	2
TED 458	Vehicle Safety Tech & Design	2
TED 459	Adaptive Driver Education	1
Total minimum credits required for minor		20

Education- Secondary (5-12)

Bachelor of Science in Education English 5-12 (Teaching) - Teaching Minor Required

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Refer to transfer guide or articulation agreement if you are a transfer student.

Prerequisites for Admission to Secondary Education English 5-12 Program refer to page 28.

****Degree is currently in Moratorium*****

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
EDU 270	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDU 497	Methods: (5-12 English)	3
or ENGL 313	Methods of Teaching English	
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495	Student Teaching (5-12)	12
EDU 452	Advanced Practicum	3
CRWR 340	Interm Creative Writing Wkhp (Meets CAT VI Requirement)	3
LING 340	English Language	3
LIT 110	Intro to Lit (Meets CAT VI Requirement)	3
or LIT 230	World Lit Survey	
LIT 300	Literary Criticism	3
LIT 327	Shakespeare (CAT VI)	3
LIT 382	Lit for Children/Adolescents (CAT VI)	3
HSTR 101	Western Civilization I (Meets CAT IV Requirement)	3
or HSTR 102	Western Civilization II	
HTH 110	Personal Health and Wellness	3
Select one of the following:		6-8
NASX 120	Native American Language I (3 crs)	
SPNS 101	Elementary Spanish I (4 crs; CAT V)	
NASX 340	Native American Literature (CAT V)	3
or NASX 235	Oral/Written Trads Native Amer	
PSYX 230	Developmental Psychology (CAT IV)	3
COMX 111	Intro to Public Speaking (Meets CAT I Requirement)	3
or COMX 115	Intro to Interpersonal Communc	
WRIT 101	College Writing I (Meets CAT I Requirement)	3
Select three courses from the following:		9
LIT 210	American Lit I (CAT VI)	
LIT 211	American Lit II (CAT VI)	
LIT 223	British Lit I (CAT VI)	
LIT 224	British Lit II (CAT VI)	
Select two courses from the following (at least one at the 400 level):		6
ENGL 360	Survey of Dramatic Literature	

LIT 363	Modern Poetry (CAT VI)	
LIT 435	Development of the Novel	
LIT 463	Studies in Contemporary Lit	
Minor		23
Total minimum credits required for degree/minor		128

Bachelor of Science in Education General Science 5-12 (Teaching) - No Minor Required

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Refer to transfer guide or articulation agreement if you are a transfer student.

Prerequisites for Admission to Secondary Education General Science 5-12 Program refer to page 28.

****Degree is currently in Moratorium*****

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
BIOB 160	Principles of Living Systems	4
BIOB 161	Principles Living Systems Lab	1
BIOB 420	Evolution	4
BIOO 220	General Botany	3
BIOO 221	Gen Botany Lab	2
BIOE 370	General Ecology	4
BIOE 371	General Ecology Lab	0
BIOO 380	Zoology	3
BIOO 381	Zoology Lab	2
Select one of the following:		3
BIOL 425	Methods of Tchng Sec Science	
EDU 497	Methods: (5-12 Science)	
CHMY 141	College Chemistry I	5
CHMY 142	College Chemistry Lab I	0
CHMY 143	College Chemistry II	5
CHMY 144	College Chemistry Lab II	0
EDU 225	Intro to Education Psychology	3
EDU 270	Integrating Tech in Education	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495	Student Teaching (5-12)	12
EDU 452	Advanced Practicum (in Education)	3
GEO 101	Intro to Physical Geology	4
GEO 102	Intro to Physical Geology Lab	0
GEO 328	General Hydrology	3
GPHY 111	Intro to Physical Geography	4
HTH 110	Personal Health and Wellness	3
PHSX 205	College Physics I	3
PHSX 206	College Physics I Laboratory	1
PHSX 207	College Physics II	3

PHSX 208	College Physics II Laboratory	1
PSYX 230	Developmental Psychology (Meets CAT IV Requirement)	3
Select four credits from the following:		4
BIOH 201	Human Anat Phys I	
BIOH 211	Human Anat Phys II	
BIOO 320	General Botany	
BIOO 321	General Botany Laboratory	
BIOO 462	Entomology	
BIOO 463	Entomology Lab	
BIOO 470	Ornithology	
BIOO 471	Ornithology Lab	
BIOB 450	Molecular Biology Techniques	
BIOB 451	Molecular Biology Technqus Lab	
BIOE 428	Freshwater Ecology	
BIOE 429	Freshwater Ecology Lab	
BIOE 410	Field Biology Methods	
BIOE 411	Field Biology Methods Lab	
BIOM 400	Medical Microbiology	
BIOM 401	Medical Microbiology Lab	
GEO 314	Intro to Paleontology	
NSCI 450	Undergraduate Research I	
NSCI 451	Undergraduate Research II	
Total minimum credits required for degree		128

Bachelor of Science in Education Industrial Technology 5-12 (Teaching)

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Refer to transfer guide or articulation agreement if you are a transfer student.

Prerequisites for Admission to Secondary Education Industrial Technology 5-12 Program refer to page 28.

****Degree is currently in Moratorium****

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
AST 160	Automotive Engine Repair	5
CIS 308	Industrial Electronics	4
EDU 270	Integrating Tech in Education	3
CSTN 105	Introduction to Woodworking	3
CSTN 217	Furniture & Cabinetmaking	3
DDSN 119	Technical Graphics I	3
DDSN 114	Introduction to CAD	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495	Student Teaching (5-12)	12
EDU 452	Advanced Practicum	3

EET 110	Electronics Survey I	3
HTH 110	Personal Health and Wellness	3
IT 100	Introduction to Technology (Meets CAT VII Requirement)	3
IT 130	Construction Technology	3
M 145	Math for the Liberal Arts (Meets CAT II Requirement)	3-4
or M 121	College Algebra	
MCH 200	Machining	3
MCH 250	Manuf Processes and Materials	3
PSYX 230	Developmental Psychology (Meets CAT IV Requirement)	3
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
Technical Endorsement (see advisor for more information)		10
Electives		2
Total minimum credits required for degree		128

Bachelor of Science in Education Mathematics (5-12) - Minor Required (Teaching)

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Refer to transfer guide or articulation agreement if you are a transfer student.

Prerequisites for Admission to Secondary Education Industrial Technology 5-12 Program.

****Degree is currently in Moratorium****

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
EDU 270	Integrating Tech in Education	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fid Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495	Student Teaching (5-12)	12
EDU 452	Advanced Practicum (in Education)	3
HTH 110	Personal Health and Wellness	3
M 112	Trigonometry & Complex Numbers	2
M 121	College Algebra (Meets CAT II Requirement)	3
M 171	Calculus I	5
M 172	Calculus II	5
M 301	Math Technology for Teachers	3
M 327	Methods for Teaching Sec Math	3
M 329	Modern Geometry	3
M 333	Linear Algebra	3
M 351	Algebraic Structures I	3
PSYX 230	Developmental Psychology (Meets CAT IV Requirement)	3
COMX 115	Intro to Interpersonal Communc (Meets CAT I Requirement)	3
STAT 217	Interm Statistical Concepts	4
WRIT 101	College Writing I (Meets CAT I Requirement)	3
Minor in Secondary Education (5-12) or (K-12) and Electives		26

Bachelor of Science in Education Social Science-Broadfield 5-12 (Teaching) - No Minor Required

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Refer to transfer guide or articulation agreement if you are a transfer student.

Prerequisites for Admission to Secondary Education Social Science-Broadfield 5-12 Program.

**** Degree is currently in Moratorium****

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
EDU 270	Integrating Tech in Education	3
ARTH 330 or ARTH 340	Art Hist of Western Civ I (Meets CAT VI Requirement) Art History of Western Civ II	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDUC 336	Integrated Field Experiences	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495	Student Teaching (5-12)	12
EDU 452	Advanced Practicum	3
HSTA 101	American History I (Meets CAT IV Requirement)	3
HSTA 102	American History II (CAT IV)	3
HSTR 101	Western Civilization I (CAT IV)	3
HSTR 102	Western Civilization II (CAT IV)	3
HSTA 255	Montana History	3
HSTA 499 or HSTR 499	Sen Capstone: Hist Methodology Sen Capstone: Hist Methodology	3
HTH 110	Personal Health and Wellness	3
LIT 110 or LIT 230	Intro to Lit (Meets CAT VI Requirement) World Lit Survey	3
Select one of the following:		6-8
NASX 120	Native American Language I	
SPNS 101	Elementary Spanish I (CAT V - three (3) of these credits meets CAT V Requirement)	
PSCI 210	Intro to American Government (CAT IV)	3
PSCI 250	Intro to Political Theory (CAT IV)	3
PSCI 260	Intro to State and Local Govt	3
PSCI 471	American Constitutional Law (CAT IV)	3
POL 344	International Relations	3
PSYX 230	Developmental Psychology (Meets CAT IV Requirement)	3
SOSC 325 or EDU 497SS	Teaching Hist & Social Science Methods: 5-12 Social Studies	2-3
WRIT 101	College Writing I (Meets CAT I Requirement)	3
Advisor Approved Electives		7

Select six credits HSTA or HSTR prefix at the 300 or 400 level	6
Select twelve credits from one of the following prefixes (3 credits must be at the 300 level): ECNS, PSYX, SOCI	12
Total minimum credits required for degree	128

Minors

English 5-12 (Teaching) ** Currently in Moratorium**

Code	Title	Credits
Required Courses		
LIT 230	World Lit Survey (CAT VI)	3
LIT 300	Literary Criticism	3
LIT 382	Lit for Children/Adolescents (CAT VI)	3
Select one of the following:		
ENGL 313	Methods of Teaching English	
EDU 497	Methods: (5-12 English)	
LING 340	English Language	3
Select three courses from the following:		
LIT 210	American Lit I (CAT VI)	
LIT 211	American Lit II (CAT VI)	
LIT 223	British Lit I (CAT VI)	
LIT 224	British Lit II (CAT VI)	
Total minimum credits required for minor		24

Electrical Technology

MSU-Northern's Electrical Technology program is the only program in the stat to offer an Associate of Applied Science degree in conjunction with State of Montana Apprenticeship program. With an electrical technology degree, students will be prepared to start their career as an apprentice electrician or to continue their education in electrical engineering.

Associate of Applied Science Electrical Technology

Code	Title	Credits
WRIT 108	Elementary Technical Writing ¹	3
or WRIT 101	College Writing I	
Select one of the following: ²		3
M 111	Technical Mathematics	
M 121	College Algebra	
M 145	Math for the Liberal Arts	
COMX 115	Intro to Interpersonal Communc	3
Required Courses		
CAPP 120	Introduction to Computers	3
ELCT 101	Electrical Fundamentals I	3
ELCT 102	Electrial Fundamentals II	3
ELCT 103	Electric Code Study/Codeology	3
ELCT 106	Electrical Formulas & Calc	3
ELCT 111	Electric Meters & Motors	3
ELCT 133	Basic Wiring	5
ELCT 137	Electrical Drafting	2
ELCT 139	Elctrcl Code Study-Residential	3
ELCT 201	Alternating Current Theory	3
ELCT 204	Elctrcl Planning & Estimating	3
ELCT 205	Electrical Design & Lighting	3
ELCT 211	AC Measurements	3
ELCT 230	Industrial Electrical Wiring	3

ELCT 233	Commercial Wiring Lab	3
ELCT 236	Conduit/Rcwys & Code Calc Lab	3
ELCT 239	Grounding & Bonding Fund	3
ELCT 241	Electric Motor Controls	3
IT 111	Industrial Safety/Waste Mgmt	2
HPE 234	First Aid and CPR	2
Total minimum credits required for degree		66

- 1 Meets Communications Requirement
- 2 Meets Computation Requirement
- 3 Meets Human Relations Requirement

Engineering Technology

A civil engineering technology degree gets you started on your path to a professional engineering career. Graduates with a Bachelor degree in Civil Engineering Technology may sit for the Fundamentals of Engineering (FE) Examination administered by the State Board of Professional Engineers and Surveyors. This examination is the first of two required for registration as a professional engineer in the State of Montana. After passing the FE, students are qualified under the state law to pursue careers as engineers in training. With that FE and four years of progressive responsible experience and other criteria as set out by the Montana Board of Professional Engineers and Land Surveyors, graduates may then sit for the Principles and Practice of Engineering Exam. Successfully passing this exam means the individual will be licensed as a professional engineer in the State of Montana.

Bachelor of Science Engineering Technology: Civil Engineering Technology

Learning Outcomes: Conducting Standardized Field and Laboratory Testing on Engineering Materials Utilizing modern surveying methods for land measurements and/or construction layout. Selecting appropriate engineering materials and practices. Planning and preparing design and construction documents, such as specifications, contracts, change orders, engineering drawings, and construction schedules.

Accredited by:

Technology Accreditation Commission of ABET
 111 Market Place, Suite 1050
 Baltimore, MD 21202-4012
 Telephone: 410.347.7700

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
CAPP 120	Introduction to Computers (Meets CAT VII Requirement)	3
CAPP 158	MS Access	3
SRVY 230	Intro to Srvyng for Engineers	3
ETCC 173	Architectural Const & Material	3
ECIV 230	Const Mgmt & Bid Estimation	3
EGEN 203	Applied Mechanics	3
EGEN 208	Applied Strength of Materials	3
EGEN 325	Engineering Economic Analysis	3
ETCC 307	Structural Analysis	3
ETCC 302	Soils & Foundations	4
ETCC 361	Design/Details Steel Building	4
ETCC 375	Applied Mechanics of Fluids	3
ETCC 385	Highway Design & Construction	4
ETCC 411	Reinforced Concrete Dsgn/Detls	4
CHMY 121	Intro to General Chemistry	3
CHMY 122	Intro to Gen Chem Lab	1
CIS 410	Enterprise Resource Planning	3
DDSN 119	Technical Graphics I	3
DDSN 114	Introduction to CAD	3
DDSN 245	Civil Drafting	3
EET 110	Electronics Survey I	3

ETCC 489	Senior Project I	1
ETCC 499	Capstone: Senior Project II	2
IT 100	Introduction to Technology (CAT VII)	3
IT 111	Industrial Safety/Waste Mgmt	2
M 112	Trigonometry & Complex Numbers (CAT II)	2
M 121	College Algebra (Meets Category II Requirement)	3
M 162	Applied Calculus (CAT II)	3
M 171	Calculus I (CAT II)	5
MCH 457	Quality Assurance	3
PHSX 205	College Physics I (Meets Category III Requirement)	3
PHSX 206	College Physics I Laboratory (Meets Category III Requirement)	1,2
COMX 111	Intro to Public Speaking (Meets Category I Requirement)	3
WRIT 101	College Writing I (Meets Category I Requirement)	3
WRIT 350	Technical Editing	3
Advisor Approved Electives: Math/Science - 4 credits, Science - 3 credits (ABET Requirement)		7
Total minimum credits required for degree		124

Associate of Applied Science Engineering Technology: Civil Engineering Technology

NOTE: The Associate of Applied Science in Civil Engineering Technology is not accredited by the Technology Accreditation Commission of ABET.

Code	Title	Credits
WRIT 108 or WRIT 101	Elementary Technical Writing ¹ College Writing I	3
M 121	College Algebra ²	3
COMX 111 or COMX 115	Intro to Public Speaking ³ Intro to Interpersonal Communc	3
Required Courses		
CAPP 120	Introduction to Computers	3
CAPP 158	MS Access	3
SRVY 230	Intro to Srvyg for Engineers	3
ETCC 173	Architectural Const & Material	3
ECIV 230	Cnst Mgmt & Bid Estimation	3
EGEN 203	Applied Mechanics	3
EGEN 208	Applied Strength of Materials	3
CHMY 121	Intro to General Chemistry	3
CHMY 122	Intro to Gen Chem Lab	1
DDSN 119	Technical Graphics I	3
DDSN 114	Introduction to CAD	3
DDSN 245	Civil Drafting	3
EET 110	Electronics Survey I	3
IT 100	Introduction to Technology	3
IT 111	Industrial Safety/Waste Mgmt	2
M 112	Trigonometry & Complex Numbers	2
M 162	Applied Calculus	3
PHSX 205	College Physics I	3
PHSX 206	College Physics I Laboratory	1
Advisor Approved Elective		2
Advisor Approved Science Elective *		3
Total minimum credits required for degree		65

- ¹ Meets Communications Requirement
² Meets Computation Requirement
³ Meets Human Relations Requirement

* Advisor approved ABET requirement. Student should select a science elective if planning to get a bachelor's degree.

Minor Engineering Technology: Civil Engineering Technology

Code	Title	Credits
Select one of the following options:		
GIS Option		
CAPP 158	MS Access	3
SRVY 230	Intro to Srvyg for Engineers	3
EGEN 325	Engineering Economic Analysis	3
ETCC 385	Highway Design & Construction	4
CIS 410	Enterprise Resource Planning	3
DDSN 245	Civil Drafting	3
IT 100	Introduction to Technology (CAT VII)	3
Structures Option		
EGEN 203	Applied Mechanics	3
EGEN 208	Applied Strength of Materials	3
EGEN 325	Engineering Economic Analysis	3
ETCC 307	Structural Analysis	3
ETCC 361	Design/Details Steel Building	4
ETCC 411	Reinforcd Concrete Dsgn/Detls	4
IT 100	Introduction to Technology	3
Total minimum credits required for minor		22-23

Graduate Programs

Master of Education

Counselor Education

Code	Title	Credits
Graduate Core		
CNSL 549	Research Methods in Counselor	3
EDUC 507	Educational Measurement	3
CNSL 530	Life Span Dev & Adjustment	3
Area of Specialization		
CNSL 506	K-12 Counsing Progm Dev & Admn	3
CNSL 551	Educational & Psychological Ap	3
CNSL 508	Theories of Counseling	3
CNSL 517	Counseling Skills & Practice	3
CNSL 571	Counseling Practicum	3
CNSL 525	Child & Adolescent Counseling	3
CNSL 565	Marriage & Family Counseling	3
CNSL 502	Professional Ethics	2
CNSL 563	Multicultural Counseling	2
CNSL 560	Crisis Intervention Counsel	2
CNSL 567	Community & Agency Counseling	2
CNSL 564	Diagnosis & Treatment in Cnsl	3
CNSL 521	Counseling & Medications	2
CNSL 522	Group Dynamics & Counseling	3
CNSL 558	Career Cnsl & Info Systems	2
CNSL 594	School Counseling Internship I	6
or CNSL 595	Com/Agncy Counseling Intern I	
CNSL 596	School Counseling Intern II	6

or CNSL 597

Comm/Agency Cnsl Intern II

Total minimum credits required for degree

60

Students who complete the Master of Education, Counselor Education, can plan their program in a manner that may qualify them to be eligible to apply to the Licensing Board to become licensed clinical professional counselors (LCPC). Candidates for licensure must complete the Graduate Core, the Area of Specialization, a list of Specified Counseling Courses, for a minimum of (60) sixty semester credits.

Master of Science in Education

Instruction and Learning Program

Learning Outcomes: The graduate candidate will conduct action research in their professional learning environment. Graduate candidates develop appropriate assessment methodology for use in their action research project. Graduate candidates demonstrate critical, creative and reflective thinking processes throughout the program. The graduate candidate will identify and analyze contemporary issues in education. Graduate candidates demonstrate the utilization of learning theories and self-regulation in their instructional practice. Graduate candidates demonstrate the integration of technology in course work and program exit requirements.

The Master's of Science degree, Learning Development option, is offered in a cohort format. All courses are offered on weekends (Internet support) and with a start to finish time of two years. Individuals and groups interested in starting a cohort group in their location should contact the Graduate Programs Office at 1-800-662-6132, extension 3738. Further information regarding the delivery of the program will be made available upon inquiry.

Code	Title	Credits
Required Courses		
EDUC 517	Research Methods	3
EDUC 507	Educational Measurement	3
EDUC 520	Learning Technologies	3
EDUC 532	Assessment & Evaluation	3
EDUC 548	Learning Theories	3
EDUC 550	Critical and Creative Thinking	3
EDUC 552	Learning Systems	3
EDUC 554	Graduate Seminar	3
EDUC 558	Mastery Learning	3
EDUC 598	Graduate Action Research	3
EDUC 511	Change Theory and Praticce	3
EDUC 522	Motication and Learning	3
Total minimum credits required for degree		36

Graphic Design

MSU-Northern's Graphic Design program integrates traditional arts education with current technology to prepare designers for both print and electronic media. Drawing, design, and painting courses provide a foundation focusing on development of perceptual skills and visual conception abilities.

Students are expected to continue to build on those skills and abilities in subsequent courses. These foundation courses also provide the student with experience in a broad range of traditional art materials an techniques.

Bachelor of Arts Graphic Design (Minor Required)

Learning Outcomes: Ability to use basic design principles to visually communicate a message and give meaningful visual form to content. Student displays an understanding of the historical and cultural implications of the Art canon. Students will demonstrate professional graphic design standards and methods needed for entry level employment. Students will apply learned knowledge to designs through the development of printed materials. Students will apply learned knowledge to electronic designs.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
ARTZ 105	Visual Language - Drawing (CAT VI)	3
ARTZ 106	Visual Language - 2-D Fndtns (CAT VI)	3
ARTZ 107	Visual Language - 2-D Fdtns II (CAT VI)	3
ARTZ 221	Painting I	3
or ARTZ 224	Watercolor I	

ARTH 330	Art Hist of Western Civ I (CAT VI)	3
or ARTH 340	Art History of Western Civ II	
LIT 110	Intro to Lit (Meets CAT VI Requirement)	3
or LIT 230	World Lit Survey	
GDSN 220	Illustration I	3
GDSN 231	Graphic Design Applications	3
GDSN 240	Electronic Design I	3
GDSN 250	Graphic Design I	3
ARTZ 284	Photo I-Techs and Processes (Meets CAT VI Requirement)	3
GDSN 320	Illustration II	3
GDSN 340	Electronic Design II	3
GDSN 350	Graphic Design II	3
ARTZ 384	Photo II-Theory, Crit, Prctice	3
GDSN 450	Graphic Design III	4
HSTR 102	Western Civilization II (CAT IV)	3
or SOSO 201	Introduction to Social Science	
WRIT 101	College Writing I (Meets CAT I Requirement)	3
Language (CAT VI)		6-8
Minor and Advisor Approved Electives (18 credits must be upper division)		41
Total minimum credits required for degree/minor		120

Associate of Applied Science Graphic Design

Code	Title	Credits
WRIT 101	College Writing I ¹	3
M 121	College Algebra ²	3
or M 145	Math for the Liberal Arts	
COMX 111	Intro to Public Speaking ³	3
Required Courses		
ARTH 160	Global Visual Culture	3
ARTZ 105	Visual Language - Drawing	3
ARTZ 106	Visual Language - 2-D Fndtns	3
ARTZ 107	Visual Language - 2-D Fdtns II	3
ARTZ 221	Painting I	3
or ARTZ 224	Watercolor I	
CAPP 120	Introduction to Computers	3
GDSN 220	Illustration I	3
GDSN 231	Graphic Design Applications	3
GDSN 240	Electronic Design I	3
GDSN 250	Graphic Design I	3
ARTZ 284	Photo I-Techs and Processes	3
Select 18 credits from the following:		18
BGEN 105	Introduction to Business	
BGEN 112	Creative Problem Solving	
BFIN 205	Personal Finance (equiv 305)	
BGEN 235	Business Law	
DDSN 119	Technical Graphics I	
DDSN 114	Introduction to CAD	
DDSN 116	3D CAD	
CIS 112	Web Site Development	
CSCI 110	Programming w/Visual Basic I	
CSCI 111	Programming with Java I	

Total minimum credits required for degree

60

- 1 Meets Communications Requirement
- 2 Meets Computation Requirement
- 3 Meets Human Relations Requirement

Health Promotion

The Health Promotion program prepares students for a career as a health care professional capable of implementing the disease preventing wellness programs sought after by today's health care delivery system. The program offers a Bachelor degree for student interested in working in the health and fitness fields. The focus is on providing student with an educational background in health, fitness, and business with an emphasis on real-world rather than scholastic situations. The minor is a good fit for students in the community leadership program. Students in business programs may also want to minor in health promotion if they are interested in working in the insurance industry. The health promotion degree can also be tailored for those students wishing to pursue an advanced degree in athletic training or physical therapy.

Bachelor of Science Health Promotion (Non-Teaching)

Learning Outcomes: Students can plan, design, implement and assess a health promotion intervention Students can articulate the various settings where health promotion techniques would be applicable. Students are engaged in personal and professional activities in the field of health promotion.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
ENGL Upper Division Selective in Writing		3
HTH 101	Opport in Health Professions	2
HTH 110	Personal Health and Wellness	3
NUTR 121	Clinical Human Nutrition	2
AHAT 210	Prev and Care Athletic Injur	3
HPE 234	First Aid and CPR	2
CHTH 262	Community Health	3
KIN 320	Exercise Physiology	3
HTH 325	Etiology of Disease	3
KIN 327	Kinesiology & Biomechanics	3
CHTH 355	Theory Pract Comm Hlth Ed	3
HTH 368		2
HTH 378	Sex Education	3
HTH 391	Special Topics	3
KIN 415	Adv Exercise Test & Prescrip	3
CHTH 445	Prgm Planning Comm Health	3
Areas of Concentration		
Business		
BMGT 245	Customer Service Management	3
BGEN 112	Creative Problem Solving	3
BGEN 110	Applied Business Leadership	3
BGEN 235	Business Law	3
BMGT 335	Management & Organization	3
BMGT 329	Human Resource Management	3
BMKT 325	Principles of Marketing	3
BMGT 461	Small Business Management	3
Pre-Professional		
STAT 216	Introduction to Statistics	3
Select one of the following:		4
CHMY 123/124	Intro to Organic & Biochem	
CHMY 141/142	College Chemistry I	
CHMY 321	Organic Chemistry I	3

CHMY 322	Organic Chemistry Lab I	2
PHSX 205	College Physics I	3
PHSX 206	College Physics I Laboratory	1
PHSX 207	College Physics II	3
PHSX 208	College Physics II Laboratory	1
BIOM 250	Microbiology for Hlth Sciences	3
BIOM 251	Microbiology Hlth Sciences Lab	1
AHAT 495	Practicum: Sports Medicine (additional credits in AHAT 495 may be substituted for HPE 498)	3

Health Education

23-24 credits in the area of: Education (not for teaching endorsement)**, Community Leadership, Nursing, Other as developed by student and advisor

Select one of the following:

CHTH 498	Cooperative Education	
M 121	College Algebra (CAT II)	3
PSYX 100	Intro to Psychology (CAT IV)	3
or SOCI 101	Introduction to Sociology	
PSYX 230	Developmental Psychology	3
BMGT 461	Small Business Management	3
COMX 111	Intro to Public Speaking (CAT I)	3
or COMX 115	Intro to Interpersonal Communc	
WRIT 101	College Writing I (CAT I)	3

Advisor Approved Electives

2

HPEA Fitness and Wellness Skills – Select one course from the following:

ACT 131	Weight Control	
ACT 157	Beginning Martial Arts	
ACT 135	Trimnastics	
ACT 106	Beg Conditioning and Fitness	
ACT 150	Beginning Yoga	
ACT 210	Intermediate Weight Training	
ACT 191	Special Topics	

Total minimum credits required for degree

120

Minor Health Promotion (Non-Teaching)

Code	Title	Credits
Required Courses		
NUTR 121	Clinical Human Nutrition	2
HTH 325	Etiology of Disease	3
HTH 110	Personal Health and Wellness	3
CHTH 262	Community Health	3
CHTH 355	Theory Pract Comm Hlth Ed	3
HTH 374	Current Issues in Health	3
HTH 368		2
CHTH 445	Prgm Planning Comm Health	3
Total minimum credits required for minor		22

Industrial Technology**Bachelor of Science in Education Industrial Technology 5-12 (Teaching)**

Learning Outcomes: Candidates apply theory-to-practice pedagogy that will help them become effective 21st century educators. Candidates have a comprehensive content knowledge base used to instruct research based strategies to meet the needs of diverse student populations. Candidates demonstrate an understanding of and actively embrace the differences among diverse people, cultures, circumstances, environments. Candidates demonstrate a willingness to assist their future students' academic, emotional, personal, cultural, and physical needs.

Refer to transfer guide or articulation agreement if you are a transfer student.

Prerequisites for Admission to Secondary Education Industrial Technology 5-12 Program refer to page 28.

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
AST 160	Automotive Engine Repair	5
CIS 308	Industrial Electronics	4
EDU 370		
CSTN 105	Introduction to Woodworking	3
CSTN 217	Furniture & Cabinetmaking	3
DDSN 119	Technical Graphics I	3
DDSN 114	Introduction to CAD	3
EDU 225	Intro to Education Psychology	3
EDSP 304	Ed and Psyc Exceptl Child	3
EDU 201	Intro to Educ with Fld Exprnce	3
EDU 380	Intro Curric Plan/Practice	3
EDUC 321	Integrating Tech into Educ	1
EDU 383	Assessment in Education	3
EDU 481	Content Area Literacy	2
EDU 495	Student Teaching (5-12)	12
EDU 452	Advanced Practicum	3
EET 110	Electronics Survey I	3
HTH 110	Personal Health and Wellness	3
IT 100	Introduction to Technology (Meets CAT VII Requirement)	3
IT 130	Construction Technology	3
MCH 200	Machining	3
MCH 250	Manuf Processes and Materials	3
PSYX 230	Developmental Psychology (Meets CAT IV Requirement)	3
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
Technical Endorsement (see advisor for more information)		10
Electives		1
Total minimum credits required for degree		128

Liberal Studies

Our Bachelor of Arts degree in Liberal Studies is designed to provide you with a flexible liberal education emphasizing the humanities and social sciences. This coursework provides a foundation for understanding the ideas shaping our society. In addition, the program is founded on a general education core, with an emphasis on advanced work in tow areas of liberal study with options in the humanities and social sciences.

Bachelor of Arts Liberal Studies-Minor Required

Learning Outcome: Candidate demonstrates the ability to frame a meaningful question in a academic discipline and to find information relevant to that question

Code	Title	Credits
General Education Core (p. 19)		33
Required Courses		
Select one of the following:		3
ARTH 330	Art Hist of Western Civ I (Meets CAT VI Requirement)	
ARTH 340	Art History of Western Civ II (Meets CAT VI Requirement)	
MUSI 201	Introduction to Music History (Meets CAT VI Requirement)	
THTR 101	Introduction to Theatre	
LIT 110	Intro to Lit (Meets CAT VI Requirement)	3

or LIT 230	World Lit Survey	
LSH 201	Intro to Humanities The Art of (Meets CAT VI Requirement)	3
PHIL 210	Ethics (Meets CAT VI Requirement)	3
Select one of the following:		
HSTR 101	Western Civilization I (Meets CAT IV Requirement)	
HSTR 102	Western Civilization II (Meets CAT IV Requirement)	
SOSC 201	Introduction to Social Science (Meets CAT IV Requirement)	
WRIT 101	College Writing I (Meets CAT I Requirement)	3
Foreign Language (Meets CAT V Requirement)		6-8
Select (6) six credits from each of two of the following major areas (12 credits total) (100-200 level)		12
Art, Drama, English, Graphic Design, Music, Native American Studies, Speech *		
Community Leadership, Economics, Geography, Political Science, Social Sciences *		
Select (15) fifteen credits from each of two of the following major areas at the 300-400 level. You must INCLUDE a Capstone course in one of the area.		15
Art, Drama, Graphic Design, Music, Native American Studies, Speech		
English		
Community Leadership, Economics, History, Political Science, Sociology		
Minor and Advisor Approved Electives		30
Total minimum credits required for degree/minor		120

* Methods courses excepted

Manufacturing

Overview

Associates of Applied Science in Manufacturing

Code	Title	Credits
Required Courses		
WRIT 101	College Writing I (Meets CAT I Requirement)	3
M 121	College Algebra (Meets CAT II Requirement)	3
COMX 111	Intro to Public Speaking (Meets CAT I Requirement)	3
PHSX 105	Fund of Physical Science	3
PHSX 106	Fund of Physical Science Lab	0
BGEN 105	Introduction to Business	3
CAPP 120	Introduction to Computers	3
DDSN 119	Technical Graphics I	3
DDSN 114	Introduction to CAD	3
DDSN 255	Machine Drafting	3
IT 111	Industrial Safety/Waste Mgmt	2
MCH 200	Machining	3
MCH 250	Manuf Processes and Materials	3
WLDG 110	Welding Theory I	2
MFGT 252	CNC Machining	
WLDG 111	Welding Theory I Practical	2
WLDG 114	Mig/Tig Welding	3
WLDG 180	Shielded Metal Arc Welding	3
WLDG 186	Welding Qual Test Prep w/Lab	3
WLDG 195	Practicum: Welding	6
WLDG 260	Repair & Maintenance Welding	3
Total Credits Required		66

Mathematics

Overview

Native American Studies

Overview

Minor

Code	Title	Credits
Required Courses		
NASX 120 or NASX 121	Native American Language I Native American Language II	3
NASX 105	Intro Native Amer Studies (CAT V)	3
NASX 232	MT Ind Cltrs/Hstry/Iss (= 332)	3
NASX 310	Native Cultures of North Amer (CAT V)	3
NASX 235 or NASX 340	Oral/Written Trads Native Amer (CAT V) Native American Literature	3
NASX 376	Fed Indian Law & Policy (CAT V)	3
NASX 450	History of American Indians (CAT V)	3
Total minimum credits required for minor		21

Nursing

Nursing

Office: Cowan Hall Room 309

MSU-Northern offers rigorous Nursing Programs that promote collaborative clinical learning, critical thinking, and personal growth in a career that is dynamic, diverse, and offers the opportunity to work in a variety of different capacities and places. Achieving the Associate of Science Degree in Nursing (ASN) prepares you to establish the seamless pathway into the Bachelor of Science Degree in Nursing (RN-BSN Completion Program). MSU-Northern enhances the registered nurses opportunity to complete an advanced degree in nursing while working as a healthcare professional.

The ASN qualifies the graduate to take the National Council Licensure Examination (NCLEX-RN). The ASN program prepares the nursing graduates for the advanced beginner entry-level as a RN in a variety of health care organizations.

The RN-BSN Completion Program provides a seamless pathway for graduates of the ASN program and for licensed registered nurses to continue their education in the nursing profession. The RN-BSN Completion program builds on previous nursing education and is directed toward an expanded educational base in the areas of nursing leadership and management, community health, and advanced clinical practice. The RN-BSN Completion program is offered through MSU-Northern's distance learning program. This program allows the student to maintain employment and residency in their geographical area while completing the required BSN courses. The RN-BSN Completion graduate is prepared as a generalist to practice in varied settings and has the foundation for graduate education.

Instruction for Nursing courses can be delivered in multiple forms; Face-to-Face, Online (only), Hybrid (combination of Face-to-Face and Online), and Distant Technologies. ASN courses are predominantly Face-to-Face and RN-BSN Completion courses are primarily Online with the two credit clinical in the student's geographical area.

Montana State University-Northern Department of Nursing Associate of Science Degree in Nursing program (ASN) is fully approved by: Montana State Board of Nursing (MT BON) 301 South Park, P.O. Box 200513, Helena, MT 59620. Phone: 1-406-841-2340 www.nurse.mt.gov (<http://www.nurse.mt.gov>) The RN-BSN Completion Program follows the Rules and Statutes of the Montana State Board of Nursing.

Montana State University-Northern Department of Nursing Associate of Science Degree in Nursing (ASN) and Bachelor of Science Degree in Nursing (RN-BSN Completion) are accredited by:

Accreditation Commission for Education in Nursing (ACEN)

3343 Peachtree Road NE, Suite 850

Atlanta, Georgia 30326

Phone 404-975-5000

www.acenursing.org (<http://www.acenursing.org>)

Advising Information

Pre-Nursing students receive advisement from the advising center, located in Cowan Hall 213. ASN Nursing students are assigned nursing faculty advisors upon admission to the program. For information regarding the RN-BSN Completion Program, call the MSU-Northern Department of Nursing at 406-265-4196 for the application/advisement packet.

Academic advising follows the University's rules as stated in the *MSU-Northern Course Catalog*. The nursing student is required to meet with the assigned advisor each semester to discuss grades, academic plans, or course changes, etc. These meetings can take place face-to-face, by telephone, or by email according to the student's and advisor's schedules and location. The student or the advisor has the right to initiate a change in the advising assignment. Students are encouraged to confer with advisors as needed. During the summer, faculty who are teaching, the Nursing Program Chair, and the Department of Nursing Director are available for advising.

The prerequisite semester of the ASN program is offered in both Havre and Lewistown. Upon admission to the nursing program, students will participate in clinical experiences at various sites in various communities.

All students in the MSU-Northern ASN program are required to take standardized proficiency examinations during the program. These examinations provide the student, faculty, and program with information concerning student comprehension, application of nursing content and academic growth. Nursing students are required to pay fees for these examinations. These fees will be paid during the semester of the examination and are not refundable.

Further information and program requirements may be obtained by calling the Department of Nursing office at 406-265-4196 or the University toll-free number, 1-800-662-6132 or by visiting the Department of Nursing webpage at <http://www.msun.edu/academics/nursing>

To be considered for Fall 2017 admission into the Associate of Science Degree in Nursing (ASN) Program the following requirements must be met:

1. Be admitted to Montana State University-Northern (a separate application to the University is required)
2. Submit official transcripts from any college and/or university that you have attended or currently attending; Send transcripts to MSU-Northern, P.O. Box 7751, Havre, Montana 59501. Transcripts will be evaluated to determine credit allotment and articulation. No required course, including basic skills courses, will be waived simply on the basis that the applicant has a prior college degree.
3. GPA Admission requirements: a cumulative GPA of 2.50 or higher
4. Have at least a 2.85 extracted GPA with the following required pre-nursing courses: College Algebra, Anatomy & Physiology I, College Writing I, and General Chemistry w/lab. A grade of "C" or higher is required. A grade of C- in any course is not acceptable; the course must be retaken. These courses may be taken at MSU-Northern or at other accredited institutions. An advisor from the Department of Nursing will evaluate the transcripts from other institutions and will recommend the credit, if any, to be transferred.
5. Complete a Kaplan Entrance Exam with a minimum score of 65%. The Kaplan Entrance Exam can be taken a second time if there are any more testing days available.
6. Copy of government issued photo identification document (driver's license, passport, etc.)
7. Obtain an application and information packet from the Department of Nursing Office to apply for ASN admission. Applications are accepted May 1 through June 15.
8. Students who desire to transfer into the Associate Degree Program from another school of nursing may apply by submitting a petition to the Director of Nursing. Placement in the program is determined on an individual basis through transcript and/or course evaluations. Applicants may be asked to take a standardized or teacher-constructed test, and demonstrate specific skills in the University nursing laboratory or in a clinical setting. Once placement is determined, admission is granted on a space-available basis.
9. Applicants not admitted into the Nursing Program by their expected date of admission must reapply for future consideration.

***** Please note: the Fall 2018 admission into the Associate of Science Degree in Nursing (ASN) requirements are in the process of review for revision during Fall 2017. *****

Upon admission, current documentation is required to be on file in the Department of Nursing office:

1. Health Insurance Card
2. A physical examination verifying: *Nursing Students Functional Expectations* as specified in the Nursing Student Handbook

3. A copy of a current CPR certification (Health Care Provider or Professional version)
4. A TB skin test, Tuberculosis Policy: All nursing students are screened annually, for tuberculosis. Initially a two-step tuberculin skin test (TST) will be used to provide a baseline. Thereafter, nursing students will fill out the MSU-Northern annual TB questionnaire. Each nursing student is responsible for providing evidence of screening for TB. Documentation includes: TB screening form (date and test result cited as positive or negative). If symptomatic, the nursing student is required to submit documentation of medical evaluation of the nursing student's health status related to TB. Nursing students with a positive skin test are required to provide written clearance from their health care provider in order to provide patient/client care. Additional requirements may be expected based upon current Centers of Disease Control (CDC).
5. MMR immunization, MMR Policy: Have immunizations that are current for, or have documented proof of, immunity to measles, mumps, and rubella (MMR). Adults born before 1957 are generally considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 2 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine or laboratory evidence of immunity to each of the three diseases. Documentation of provider-diagnosed disease is not considered acceptable evidence of Immunity for Measles, Mumps or Rubella, (Recommended Adult Immunization Schedule United States 2015, CDC.gov).
6. Current Tetanus, Diphtheria, and Pertussis (Tdap) vaccination according to the Center for Disease Control guidelines.
7. Documentation of the Hepatitis B vaccination B series, including titer, or have a valid waiver on file.
8. Federal fingerprint/background check. Fingerprints can be obtained from the Sheriff's Office and background checks are obtained through the State of Montana Department of Justice. The cost of the background check will be the student's responsibility and the price varies in each country.
9. Professional liability insurance which is provided by MSU-Northern through student program fees.
10. Health standards are to be met as required by the participating clinical facilities. Additional laboratory/diagnostic test results or verification of required health standards/status may be required by these facilities. The Department of Nursing faculty will require documentation that the standards/status are met.
11. HIPPA Policy: All Nursing Students are legally accountable under the Health Information Privacy and Accountability Act (HIPPA) of 1996 to ensure the confidentiality of patient health information.

Students are expected to participate in clinical experiences in hospitals, nursing homes, and other community agencies at varied time schedules.

Students who are employed must arrange with employers to allow for flexibility in meeting their academic and clinical schedules. The clinical schedule may involve day, evenings, and weekend assignments. Participation in the clinical area is dependent upon space availability. Those students having the highest academic achievement will be selected first, if the space is limited. Students must provide their own transportation to and from the classroom and the clinical areas.

Faculty members have an obligation to the client to ensure that nursing students who care for them are competent to do so. In the interest of safeguarding the client's welfare, students must meet the criteria detailed in the Nursing Student Handbook. To be allowed to participate in clinical assignments the student must:

12. Demonstrate good health status and practices and be free from any condition that could jeopardize client safety and comfort.
13. Demonstrate emotional stability
14. Demonstrate sensitivity to client safety and comfort
15. Practice within legal standards and demonstrate regard for professional ethics
16. Comply with agency requirements pertinent to student participation
17. Carry out client care assignments with the required knowledge and skill as determined in classroom theory and laboratory demonstrations.

Students Note: You cannot participate in clinical experience if you fail to keep current proof of requirements. Failure in clinical experience also results in failure in the nursing course(s).

General Requirements for Progression through the ASN Program

The MSU-Northern Department of Nursing is required to follow the Montana University System's ASN model curriculum adopted in 2016.

18. All courses required for the nursing program major are required to earn a grade of "C" or higher.
19. Nursing students are required to maintain a 80% average on tests and quizzes in each nursing course in order to pass.
20. To progress in the program, the nursing student is required to successfully pass both the didactic and clinical portions of a course. If either is not passed, the entire course must be repeated.

21. Standardized testing is required throughout the ASN program. The nursing student is required to meet the criteria established within each course.
22. The nursing student is required to maintain an overall GPA of 2.25 or higher on a 4.0 scale.

Clinical Rotations

Nursing Students may be required to travel to other locations for several days to complete the state mandated clinical hours. Nursing students need to make their own arrangements for transportation to health care agencies for clinical and are expected to do so at their own expense for travel, food, and lodging.

Additional information regarding student policies and guidelines are found in the Nursing Student Handbook.

Program Fee

All students admitted into the ASN program pay a \$500 program fee per semester.

RN-BSN Completion Program

To be considered for admission into the Bachelor of Science in Nursing Degree program (RN-BSN Completion):

23. Be admitted to Montana State University-Northern (a separate application to the University is required)
24. Submit official transcripts from any college and/or university that you have attended or are currently attending; transcripts will be evaluated to determine credit allotment and articulation per university policy. No required course, including basis skills courses, will be waived simply on the basis that the applicant has a prior college degree.
25. GPA admission requirements: a cumulative GPA of 2.50 is required to be admitted into the RN-BSN Completion Nursing Program.
26. Submit a copy of government issued photo identification document (driver's license, passport, etc.)
27. Submit a copy of current licensure as a Registered Nurse (for U.S. state where the practicum is to be done) or proof of registration and scheduled date for the NCLEX exam
28. Submit a copy of current CPR certification (Health Care Provider or Professional version)
29. Submit a signed and completed Degree Plan of Study
30. Applications are accepted year around.

***** Please note: the Fall 2018 admission into the Bachelor of Science Degree in Nursing (RN-BSN Completion) requirements are in the process of review for revision during Fall 2017. *****

Upon Admission, current documentation is required to be on file in the Department of Nursing Office:

1. Personal Health Insurance Card
2. A physical examination verifying: *Nursing Students Functional Expectations* as specified in the Nursing Student Handbook
3. A TB skin test, Tuberculosis Policy: All nursing students are screened annually, for tuberculosis. Initially a two-step tuberculin skin test (TST) will be used to provide a baseline. Thereafter, nursing students will fill out the MSU-Northern annual TB questionnaire. Each nursing student is responsible for providing evidence of screening for TB. Documentation includes: TB screening form (date and test result cited as positive or negative). If symptomatic, the nursing student is required to submit documentation of medical evaluation of the nursing student's health status related to TB. Nursing students with a positive skin test are required to provide written clearance from their health care provider in order to provide patient/client care. Additional requirements may be expected based upon current Centers of Disease Control (CDC).
4. MMR immunization, MMR Policy: Have immunizations that are current for, or have documented proof of, immunity to measles, mumps, and rubella (MMR). Adults born before 1957 are generally considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 2 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine or laboratory evidence of immunity to each of the three diseases. Documentation of provider-diagnosed disease is not considered acceptable evidence of Immunity for Measles, Mumps or Rubella, (Recommended Adult Immunization Schedule United States 2015, CDC.gov).
5. Current Tetanus, Diphtheria, and Pertussis (TDAP) vaccination according to the Center for Disease Control guidelines.
6. Documentation of the Hepatitis B vaccination B series, including titer, or have a valid waiver on file.
7. Federal fingerprint/background check. Fingerprints can be obtained from the Sheriff's Office and background checks are obtained through the State of Montana Department of Justice. The cost of the background check will be the student's responsibility and the price varies in each country.

8. Submit proof of current personal professional liability insurance
9. Health standards are to be met as required by the participating clinical facilities. Additional laboratory/diagnostic test results or verification of required health standards/status may be required by these facilities. The Department of Nursing faculty will require documentation that the standards/status are met.
10. HIPPA Policy: All Nursing Students are legally accountable under the Health Information Privacy and Accountability Act (HIPPA) of 1996 to ensure the confidentiality of patient health information.

Students are expected to participate in clinical experiences in hospitals, nursing homes, and other community agencies at varied time schedules. Students who are employed must arrange with employers to allow for flexibility in meeting their academic and clinical schedules. The clinical schedule may involve day, evenings, and weekend assignments.

General Requirements for Progression thru the RN-BSN Completion Program

The MSU-Northern Department of Nursing is required to follow the Montana University System's RN-BSN model curriculum adopted in 2016.

1. A grade of "C" or higher must be earned in all courses required for the nursing program major.
2. Maintain a GPA of at least 2.5, or higher, while enrolled in the RN-BSN Completion Program
3. Students accumulating two grades of "W" or two grades below "C" in any course(s) required for the Nursing Major will be dropped from the program and may not be readmitted for 3 years.
4. To progress in the program, the nursing student is required to successfully pass both the didactic and clinical portions of a course. If either is not passed, the entire course must be repeated.
5. RN-BSN Completion students are required to complete the program within five (5) consecutive years of beginning the program as described with your approved Degree Plan. RN-BSN Completion students may petition the faculty if an extension is needed due to extenuating circumstances.

Clinical Rotations for the RN-BSN Completion Program

Nursing students may be required to travel to other locations within their geographical area to complete the required clinical hours. Nursing Students are required to make their own arrangements for transportation to health care agencies for clinical and are expected to do so at their own expense for travel, food, and lodging.

ASN and RN-BSN Completion Program Graduation

Graduation is dependent upon the Nursing Student meeting the professional standards and criteria of safe and effective nursing care as prescribed by the curriculum.

Students who are going to graduate need to follow all university policies and procedures relating to graduation as published in *MSU-Northern Course Catalog*. The current *MSU-Northern Course Catalog*: <https://www.msun.edu/registrar/catalogs.aspx>

1. Application for graduation forms must be completed and submitted to the registrar's office in Havre during the fall semester for spring graduation and spring semester for fall graduation.
2. Gowns and announcements need to be ordered through the bookstore during the fall semester prior to graduation.
3. All students who have received financial aid during their college experience must have an exit interview with the Financial Aide Officer.

Bachelor of Science

Learning Outcomes: Synthesize knowledge from the humanities, technological sciences, and arts and sciences to provide competent client-centered care with sensitivity and respect for individuals, groups and communities. Demonstrates skill in actively collaborating with other health care professionals and clients by fostering open communication, mutual respect, and sound nursing judgement Utilize nursing evidence based practice to make clinical decisions based on the science of nursing and knowledge of other disciplines to promote safe quality care. Analyze and implement client safety goals that minimize risk of harm to clients, providers and communities. Create health promotion, wellness and personal growth strategies for self, clients, families groups and communities Incorporates leadership skills while taking individual responsibility and accountability for nursing decisions and actions based on ethical codes and standards of nursing practice.

Students who plan to complete the BSN degree must first earn an ASN degree at MSU-Northern or another approved nursing program (first and second year nursing course requirements are met). Registered nurses who earn their nursing diploma will be evaluated on an individual basis.

Code	Title	Credits
General Education Core (p. 19)		33
Required General Education Courses		
PSYX 230	Developmental Psychology	3
STAT 216	Introduction to Statistics	3
WRIT 350	Technical Editing	3
Upper Humanities Elective		3
Spring Semester		
NRSG 322	Health Promotion and Education	
NRSG 325	Health Assessment	3
NRSG 326	Complex Health Care Needs	
Summer Semester		
NRSG 305	Nursing Ethics	3
NRSG 301	Nursing in the Community	
NRSG 302	Nursing in the Comm Clinical	
NRSG 320	Nursing/Healthcare Informatics	
NRSG 424	Nursing Research & Evidence	
Fall Semester		
NRSG 344	Family Nursing	
NRSG 361	Global Nursing/Healthcare	
NRSG 463	Leadership & Mang for RN	
NRSG 464	Leadership & Mang RN Clinical	
Total minimum credits required for degree		120

* Courses used to meet general education requirements cannot be used to meet the Nursing elective requirement.

Associate of Science

This program is for students who began Fall Semester 2008 and thereafter.

Code	Title	Credits
Semester 1 - 14 credits		
BIOH 201	Human Anat Phys I (Meets CAT III Requirement)	4
CHMY 121	Intro to General Chemistry	3
CHMY 122	Intro to Gen Chem Lab	1
WRIT 101	College Writing I (Meets CAT I Requirement)	3
M 121	College Algebra (Meets CAT II Requirement)	3
Semester 2 - 15 credits		
BIOH 211	Human Anat Phys II (Meets CAT III Requirement)	4
NRSG 230	Nursing Pharmacology	
NRSG 231	Nursing Pharm Lab	
NRSG 232	Foundations of Nursing	
NRSG 233	Foundations of Nursing Lab	
Semester 3 - 14 credits		
NRSG 256	Pathophysiology	3
NRSG 234		
NESG 235		
NRSG 236		
NRSG 237		
PSYX 100	Intro to Psychology (Meets CAT IV Requirement)	3
Semester 4 - 15 credits		
NRSG 244		
NRSG 245		
NRSG 254	Complex Care Mental Health	2

NRSG 255	Cmplx Care Mental Health Cncl	0
NRSG 246		
NRSG 247		
SOCI 101	Introduction to Sociology (Meets CAT IV Requirement)	3
Semester 5 - 14 credits		
NRSG 259		
NRSG 260		
NRSG 261		
NRSG 266	Managed Client Care	4
NRSG 267	Managed Client Care Clinical	0
BIOM 250	Microbiology for Hlth Sciences (CAT III)	3
BIOM 251	Microbiology Hlth Sciences Lab	1
Total minimum credits required for degree		72

* Course only for LPNs articulating into the ASN program.

After graduation from ASN program students are eligible to sit for NCLEX for RN licensure.

PLEASE NOTE: Students enrolled in this program will pay \$500.00 program fee. This fee are in addition to tuition and other mandatory fees.

Plumbing Technology

Our Associate of Applied Science degree in Plumbing Technology integrates the theory and applications of today's plumbing materials, technology, and installation practices with the requirements the state plumbing code to prepare the graduate for entry into the fields of plumbing as a apprentice plumber.

MSU-Northern's innovative program is the only one of a kind in Montana and has the board support of the state's plumbing industry. The plumbing degree provides the student with a comprehensive course of student designed to make the program graduate a valuable asset to the plumbing industry and to provide the graduate with a lifetime career in the trade of journeyman plumber.

Associate of Applied Science

Code	Title	Credits
Plumbing Credits		
WRIT 108	Elementary Technical Writing ¹	3
M 111	Technical Mathematics ²	3
COMX 111	Intro to Public Speaking ³	3
Required Courses		
CAPP 120	Introduction to Computers	3
CSTN 135	Basic Rigging	1
DDSN 119	Technical Graphics I	3
EET 110	Electronics Survey I	3
HPE 234	First Aid and CPR	2
IT 111	Industrial Safety/Waste Mgmt	2
PLUM 100	Intro to the Plumbing Trades	4
PLUM 110	Intro to Plumbing and Drawing	1
PLUM 120	Intro to Piping Systems	3
PLUM 125	Intro to Plumbing Fixtures	2
PLUM 170	Plumbing Codes	2
PLUM 200	Pipe Fitting Tools & Motor Eq	3
PLUM 210	Advanced Blueprint Reading	2
PLUM 230	Hngrs, Supports, & Fld Testing	2
PLUM 250	Special Piping	3
PLUM 260	Intro to Cntrl Circuit Trblsht	2
PLUM 270	Hydronic Heating & Cooling Sys	2
PLUM 280	Energy Management	1
PLUM 285	System Startup & Shutdown	1
WLDG 110	Welding Theory I	2

WLDG 111	Welding Theory I Practical	2
Select from either TSCI or WLDG to complete the degree		
PLUM 240	Distribution Systems	3
PLUM 206	Applied Water Hydraulics	3
OR		
WLDG 180	Shielded Metal Arc Welding	3
WLDG 186	Welding Qual Test Prep w/Lab	3
Total minimum credits required for degree		61
¹	Meets Communications Requirement	
²	Meets Computation Requirement	
³	Meets Human Relations Requirement	

PLEASE NOTE: Students enrolled in this program will pay \$175/semester in program fees. These fees are in addition to tuition and other mandatory fees.

Psychology

The minor will complement the ongoing cross-disciplinary activities of the MSUN college of Education, Arts, Sciences and Nursing (CEASN), as well as the College of Technical Sciences (COTS), by providing opportunities for all students regardless of major to learn about psychology.

Code	Title	Credits
PSYX 100	Intro to Psychology	3
PSYX 230	Developmental Psychology	3
PSYX 360	Social Psychology	3
PSYX 361	Industrial Organizational Psyx	3
Elective Courses (must complete 12 credits)		
PSYX 340	Abnormal Psychology	3
PSYX 362	Multicultural Psychology	3
PSYX 382	Forensic Psychology	3
PSYX 383	Health Psychology	3
PSYX 238	Adolescent Psychology	3
PSYX 150	Drugs and Society	3
KIN 440	Sport Psychology	3
Total Minor Credits 24		

Sustainable Energy Technology

This program is currently in Moratorium. We are not accepting new students into this program. Students currently enrolled will be able to complete this degree. This program is being reviewed and may become available in the future.

Associate of Applied Science

Code	Title	Credits
Credits		
WRIT 104	Workplace Communications (Category I Communications)	2
M 121	College Algebra (Category II Mathematics)	3
CAPP 120	Introduction to Computers (Category IX Technology)	3
Required Courses		
CAPP 120	Introduction to Computers (Meets CAT IX Requirement)	3
EET 101	AC/DC Electronics I	3
EET 103	AC/DC Electronics II	3
EET 220	Electrical Power & Dstrbution	3
EET 230	Electrical Power & Dstrbtn II	3
EET 240	Electronic Drive Systems	3
ELEC 111		

ELEC 250		
M 111	Technical Mathematics	3
M 121	College Algebra (Meets CAT II Requirement)	3
NRGY 101	Intro to Sustainable Energy	3
NRGY 110	Fundmtl Hydraul/Pneu Systems	3
NRGY 120	Industrial Safety and Rigging	3
NRGY 130	Fundmtl of Mechanical Systems	3
NRGY 210	Wind Technician Safety	4
NRGY 220	Wind Turbine Equipment	3
NRGY 230	Wind Turb Operations & Maint	3
COMX 115	Intro to Interpersonal Communc	3
WRIT 104	Workplace Communications (Meets CAT I Requirement)	2
Total minimum credits required for degree		61

Certificate of Applied Science

Code	Title	Credits
Required Courses		
CAPP 120	Introduction to Computers	3
EET 101	AC/DC Electronics I	3
EET 103	AC/DC Electronics II	3
ELEC 111		
M 111	Technical Mathematics	3
NRGY 101	Intro to Sustainable Energy	3
NRGY 110	Fundmtl Hydraul/Pneu Systems	3
NRGY 120	Industrial Safety and Rigging	3
NRGY 130	Fundmtl of Mechanical Systems	3
COMX 115	Intro to Interpersonal Communc	3
WRIT 104	Workplace Communications	2
Total minimum credits required for degree		32

Water Quality Technology: Environmental Health

** This program is currently in Moratorium. We are not accepting new students into this program. Students currently enrolled will be able to complete this degree. This program is being reviewed and may become available in the future.**

Associate of Applied Science Water Quality Technology: Environmental Health

Code	Title	Credits
Category I Communications		6
WRIT 101 & comx 111 or writ 108 or comx 115	College Writing I and (Category I Communications)	
Category II Mathematics		3-4
M 121 or m 145	College Algebra (Category II Mathematics)	
Category VII Technology		3
CAPP 120 or it 100	Introduction to Computers (Category VII Technology)	
Required Courses		
BIOE 110	Intro to Environmental Health (CAT III)	3
BIOM 250 & biom 251	Microbiology for Hlth Sciences and (CAT III)	3
BIOM 251	Microbiology Hlth Sciences Lab	0

CHMY 121	Intro to General Chemistry (CAT III)	3
CHMY 122	Intro to Gen Chem Lab	1
HPE 234	First Aid and CPR	2
TSCI 110	Intro to Water & Wastewater	4
PLUM 240	Distribution Systems	3
PLUM 206	Applied Water Hydraulics	3
TSCI 230	Intro to Groundwater Concepts (CAT III)	3
TSCI 231	Wastewater Processes	3
TSCI 232	Wastewater Processes Lab	2
TSCI 233	Water Treatment Processes	3
TSCI 234	Water Treatment Processes Lab	2
TSCI 298	Cooperative Education	6
Advisor Approved Electives		6
Suggested Electives:		
ELEC 101		
WLDG 111	Welding Theory I Practical	
PLUM 100	Intro to the Plumbing Trades	
PLUM 120	Intro to Piping Systems	
WLDG 260	Repair & Maintenance Welding	
Total minimum credits required for degree		60

Welding

The Welding Technology program at MSU-Northern is a nine month certificate program that prepares you for a successful employment in a variety of settings. As a welding school that integrates practical experience with welding theory, the program helps you build skills and knowledge that will give you an edge with employers.

Certificate of Applied Science Welding Technology

Code	Title	Credits
Required Courses		
DDSN 119	Technical Graphics I	3
COMX 111	Intro to Public Speaking ¹	3
or COMX 115	Intro to Interpersonal Communc	
WLDG 110	Welding Theory I	2
WLDG 111	Welding Theory I Practical	2
WLDG 114	Mig/Tig Welding	3
WLDG 180	Shielded Metal Arc Welding	3
WLDG 186	Welding Qual Test Prep w/Lab	3
WLDG 195	Practicum: Welding (may be taken for 3 credits twice)	6
WLDG 260	Repair & Maintenance Welding	3
Elective		2
Total minimum credits required for certificate		30

¹ Meets Communication Requirement

Admission

Students are encouraged to apply early to ensure a smooth transition to MSU-Northern. If you have questions about admission requirements or the application process, please contact the Admissions Office at 800.662.6132 x3704. Check out the online checklist at <http://msun.edu/admissions> to determine what other steps you still need to complete to become an MSU-Northern Student.

Each student is responsible for knowing and complying with all regulations regarding admission procedures. A student's failure to be informed will not excuse a student from responsibility or from any penalty or difficulty which he or she may encounter. The falsification or omission of any information requested on the Application for Admission will be grounds for cancellation of registration.

Students may apply for admission at any time without all the necessary required materials. Applicants will be notified of missing or incomplete documents needed to complete the admissions process.

Campus Visits

VISIT US and see it for yourself! Visiting our campus while classes are in session allows you to experience life as a Northern student first hand. We are confident that you will appreciate the numerous advantages of a smaller university, including small class sizes, a community-oriented campus and quality academic programs that combine to create Northern's superior learning environment. During your visit, you will be able to meet with faculty and staff from your area of interest, view our facilities, and possibly have a meal in the dining hall or spend a night in a residence hall. You will also have the opportunity to discover our various special services, which range from learning assistance to financial aid counseling. This will allow you to get a feel for student life and Northern's campus environment. We invite you to schedule a visit to MSU-Northern by contacting the Admissions Office at 800.662.6132 x3704 and we look forward to hearing from you soon!

Because family members play an important role in college planning, they are welcome to learn more about the university by participating in the campus visit with you. If you have a disability and desire assistance, please notify the Admissions Office.

When to Apply

Applicants are encouraged to apply at least six to eight months prior to the first semester of attendance. This will allow adequate time for the student to request any academic credentials needed to complete the application file, make housing arrangements, process financial aid materials, and participate in New Student Orientation and Registration.

Applications should be on file in the Admissions Office according to the following priority dates:

Fall Semester	July 1
Spring Semester	December 1
Summer Session	May 1

Applicants will be notified of their admission status as soon as possible after all necessary credentials to determine a student's admissions status have been received by the Admissions Office.

Admission General Information

Students are encouraged to apply early to ensure a smooth transition to MSU-Northern. If you have questions about admission requirements or the application process, please contact the Admissions Office at 800.662.6132 x3704. Check out the online checklist at <http://msun.edu/admissions> to determine what other steps you still need to complete to become an MSU-Northern Student.

Each student is responsible for knowing and complying with all regulations regarding admission procedures. A student's failure to be informed will not excuse a student from responsibility or from any penalty or difficulty which he or she may encounter. The falsification or omission of any information requested on the Application for Admission will be grounds for cancellation of registration.

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VISIT US and see it for yourself! Visiting our campus while classes are in session allows you to experience life as a Northern student first hand. We are confident that you will appreciate the numerous advantages of a smaller university, including small class sizes, a community-oriented campus and quality academic programs that combine to create Northern's superior learning environment. During your visit, you will be able to meet with faculty and staff from your area of interest, view our facilities, and possibly have a meal in the dining hall or spend a night in a residence hall. You will also have the opportunity to discover our various special services, which range from learning assistance to financial aid counseling. This will allow you to get a feel for student life and Northern's campus environment. We invite you to schedule a visit to MSU-Northern by contacting the Admissions Office at 800.662.6132 x3704 and we look forward to hearing from you soon!

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Applicants are encouraged to apply at least six to eight months prior to the first semester of attendance. This will allow adequate time for the student to request any academic credentials needed to complete the application file, make housing arrangements, process financial aid materials, and participate in New Student Orientation and Registration.

Applications should be on file in the Admissions Office according to the following priority dates:

Fall Semester	July 1
Spring Semester	December 1
Summer Session	May 1

Applicants will be notified of their admission status as soon as possible after all necessary credentials to determine a student's admissions status have been received by the Admissions Office.

Admission as an Undergraduate Student

Undergraduate students are first-time college students, student who have attempted college-level credits during high school and/or after graduating high school, or students who have not been awarded a bachelor's degree.

Applications are accepted from resident, non-resident, and international students. Eligible undergraduate students may attend full-time or part-time. MSU-Northern reserves the right to establish requirements which will ensure successful scholastic performance.

General Admission Information

Applicants are responsible for submitting applications for admission, financial aid and housing, and must provide verification of immunizations. Applicants should be aware of the following:

1. Applicants are requested to voluntarily provide their Social Security number, which permits the school to distinguish between individuals with the same or similar names.
2. Students intending to apply for financial aid may obtain appropriate forms from their high school guidance office, on-line at www.fafsa.ed.gov (<http://www.fafsa.ed.gov>), or by contacting Financial Aid at 800.662.6132 x3787. MSU-Northern's FAFSA school code is 002533.
3. Students with less than 30 credits of college level coursework are required to live in the residence halls. Additional information about residence life and family housing should be referred to the Dean of Student Engagement/Director of Residence Life, 800.662.6132 x4113.
4. Students must submit proof of required immunizations prior to registration for classes. In order to be in compliance with Montana state law, students born on or after January 1, 1957 who are taking seven or more credits OR are enrolled in a degree program must either:
 - a. Show proof of two vaccinations against measles and one against rubella. Immunizations must have been given after 1967 and after the student's first birthday and must have been administered at least thirty days apart. Current immunizations must have been administered in the form of the MMR vaccine. Immunizations must be documented by a physician, registered nurse or school official.
"OR"
 - b. Show documentation of having contracted measles and rubella. Documentation by a physician is required including dates of illness.
"OR"
 - c. File a medical or religious exemption.
International students have additional immunization requirements. Please refer to the section entitled "INTERNATIONAL STUDENTS" for additional information.
5. Students with a health condition or a disability which should be brought to MSU-Northern's attention may submit a confidential letter of need to Disability Services (<http://www.montana.edu/wwwres>) Library 203B. Questions about services for disabled students should be referred to Disability Services 800.662.6132 x4133.

Freshmen (First-Time Undergraduates)

Freshmen students are those who have completed high school, or its equivalent, and have never attended a college or university. Students that have attempted less than 12 quarter or semester college-level credits at another regionally accredited college or university after high school graduation are considered an incoming freshman. Students who have earned college-level course credit, Advance Placement, or International Baccalaureate credits while still attending high school are also considered incoming freshmen.

Academic Eligibility

Students who do not meet all freshman admission requirements listed below are still encouraged to apply for admissions and submit the necessary credentials. MSU-Northern is allowed a number of exemptions to the stated requirements and will examine each student's credentials on a case-by-case basis for admissibility.

Admission Requirements (Resident and Non-Resident)

1. Graduation from a regionally accredited high school or one accredited by the State Department of Education, or passed a General Educational Development (GED) Diploma, or obtained qualifying scores on the ACT Compass Exam.
2. MSU-Northern Academic Requirements:
ONE of the following:

- A High School Grade Point Average of 2.5 (on a 4.0 scale), **OR**
- ACT Enhanced Composite score of 20, **OR**
- SAT combined critical reading/mathematics/writing score of 1440 **OR**
- Rank in the upper half of the graduating class

AND

Students must meet one of the three following categories for admission as a full-time freshman.

A Minimum Core with Test Requirement

Course	Years	College Prep	Exam	Score
Mathematics	3	Algebra I, II and Geometry (or the sequential content equivalent of these courses). Mathematics course in senior year encouraged	ACT Math	22
			SAT Math	520
			CLEP	500
English	4	Written and oral communication skills and literature.	ACT/SAT Essay	7
			ACT Eng/Writ	18
			SAT Writing	440
			MUS	3.5
Science	2	2 lab sciences: one year must be earth science, biology, chemistry or physics.		
Social Studies	3	Global studies (world history, world geography), American history, and government. Economics, American Indian history or other third-year courses.		
Electives	2	Foreign language, computer science, visual and performing arts, or vocational education.		

OR**B Minimum Core with AP Credit by Exam**

Course	Years	Advanced Placement	Exam	Score
Mathematics		Advanced Placement courses designed to prepare students for these exams.	Calculus AB	3+
			Calculus BC	3+
English		Advanced Placement Courses designed to prepare students for these exams.	English Language	3+
			English Literature	3+
English	4	Written and oral communication skills and literature.		
Science	2	2 lab sciences: one year must be earth science, biology, chemistry or physics.		

Social Studies	3	Global studies (world history, world geography), American history, and government. Economics, American Indian history or other third-year courses.
Electives	2	Foreign language, computer science, visual and performing arts, or vocational education.

OR

C Rigorous Core without Test Requirement

Course	Years	
Mathematics	3	Algebra I, II, geometry (or the sequential content equivalent of these courses, i.e. three levels of Integrated Mathematics)
	1	A course beyond Algebra II or beyond Integrated Math III (such as Trigonometry, Pre-Calculus, Calculus, Computer Math, Integrated Math IV). All with grades of C or better.
English	4	Written and oral communication skills, literature, and a designated college-prep composition or research-writing course.
Science	3	Full year each: General, physical or earth science; biology; chemistry or physics.
Social Studies	3	Global studies (world history, world geography), American history; government, economics, American Indian history or other third-year courses. Recommendation: one half year or more of other courses such as psychology, humanities.
Electives	3	2 years of a second language, music, fine arts, speech/debate, career and technical education (such as information technology, computer science).

Students who are not eligible to enter a four-year program may pursue an associate degree or certificate program and change to a four-year program upon successful completion of MATH 121 or higher and/or WRIT 101.

The following categories of students are exempt from the admissions requirements above:

1. Non-traditional students (students that graduated from high school at least three years prior to enrollment);
2. Summer-only students;

Part-time students taking seven or fewer college or university level credits. For the purpose of this section, "university- level credits" means those courses that are applicable toward an associate of applied science, associate of science, bachelor of applied science, or baccalaureate degree at Montana State University-Northern. **Such courses shall include neither remedial nor developmental courses.**

Transfer Students

A transfer student has graduated high school or its equivalent and completed 12 or more quarter or semester credits in college-level courses at a regionally accredited institution. College-level work means those courses that are applicable towards at least an associate degree and does not include remedial or developmental courses. Students who previously attended MSU-Northern and are returning after attending another institution should refer to the Former NMC/MSU-Northern Students section.

Academic Eligibility

Applicants will be considered for admission based on transferable credits from all regionally accredited colleges or universities previously attended. As determined by the Admissions Office, a 2.0 (or C) cumulative transferable GPA (on a 4.0 scale) is required in order to be accepted for admission in good academic standing. Transfer students start with a new GPA upon enrolling at MSU-Northern.

Students who do not meet the 2.0 cumulative transferable GPA are still encouraged to apply for admissions and submit the necessary credentials. MSU-Northern will examine each student's credentials on a case-by-case basis for admissibility. Some students who do not meet the requirements may be admitted on scholastic probation and will need to earn a 2.0 or higher GPA during the first term attended at MSU-Northern to be placed in good academic standing.

Application Procedures

Receipt of the following credentials in the Admissions Office constitutes a complete application for admission. Requests to have final credentials sent to MSU-Northern must be initiated by the applicant. Requests should be made by contacting the high school, the registrar's office at the college/university, or agency. Credentials must be sent directly from the school to the Admissions Office. **Credentials received from the student are considered unofficial, working copies and will not be accepted as official documents.**

Application materials and fees will be retained for one year from the original application term. To apply for a semester other than the one originally intended, notify the Admissions Office as soon as possible.

Be sure to submit the following items (if applicable):

1. **Admissions Application:** An application may be submitted online or printed out at <http://www.msun.edu>. The application may also be obtained from a high school counselor or from the Admissions Office.
2. **Application Fee (nonrefundable): \$36 online application or \$30 paper application.** Checks should be made payable to MSU-Northern. The application fee will not be waived or refunded. The fee must be paid before the application for admission will be processed. Applicants who have applied for Financial Aid, participate in a federally funded TRIO program or are receiving public assistance may apply for deferral of the application fee by contacting the Admissions Office at 800.662.6132 x3704.
3. **High School Transcript:** A complete and official transcript must be sent directly from the high school to the Admissions Office after graduation. Courses completed, GPA (on a 4.0 scale), rank in class, and date of graduation must be posted.
4. **GED transcript:** A complete official General Educational Development (GED) score report/transcript must be sent directly from the Department of Education from the state in which the exam was given to the Admissions Office.
5. **ACT/SAT Scores:** All first-time incoming freshmen under the age of 21 are required to take either the American College Test (ACT) (<http://www.actstudent.org/scores/send>) or the Scholastic Aptitude Test (SAT) Reasoning Test (<http://www.collegeboard.com/student/testing/sat/scores/sending.html>), with the exception of those applicants that meet the Minimum Core with AP Credit by Exam requirements or Rigorous Core without Test requirements. MSU-Northern does not accept the SAT Subject Tests (formally SAT II Subject Test) for admissions purposes. The test results are used in determining admission status, awarding certain scholarships, and in assisting with academic planning. Applicants who have graduated three or more years prior to the semester in which they intend to enroll are not required to submit ACT/SAT test results.
6. **Official College/University Transcripts:** Applicants who have attended another college or university, whether credit was earned or not, **MUST** have an official transcript sent directly from each regionally accredited institution to the Registrar's Office. This academic information will be used to determine admission status as well as transfer credit. Applicants who are enrolled at a transfer school while applying to MSU-Northern will be considered for admission based on an incomplete official transcript showing all academic work completed and posted to date. A final official transcript must be received in the Registrar's Office by the 15th class day of the first term of attendance. Academic eligibility will be reviewed again upon receipt of that final transcript. For more information on how college/university courses will transfer to MSU-Northern, refer to the Transfer of Credits section of the catalog.
7. **Advanced Placement (AP):** Applicants who have completed an Advanced Placement Examination should request that the official scores be sent directly to the Registrar's Office. Scores of 3 or higher on an AP Exam will be granted college credit for the equivalent courses upon successful completion of 12 semester credits of coursework at MSU-Northern. This credit will be awarded to degree-seeking students. Grades will not be awarded. A notation of the award will be placed on the student's transcript.
8. **International Baccalaureate (IB):** Applicants who have completed an International Baccalaureate Examination should request that the official scores be sent directly to the Registrar's Office. IB Exams with scores of 4 or higher (Higher Level only) will be granted college credit with a Pass grade for equivalent courses. For more information on how IB courses will transfer to MSU-Northern, contact the Registrar's Office at 800.662.6132 x3703.

International Undergraduate Students

Students who are citizens of countries other than the United States are encouraged to apply to MSU-Northern as international first-time freshmen or transfer students. Those who have completed secondary school are considered freshmen. Those who have completed an equivalent of 12 credits or more of post-secondary university-level course work after secondary graduation are considered transfer students.

Academic Eligibility

Freshmen

Freshmen students will be considered for admission on the basis of their secondary school record and their English proficiency. Applicants who meet a TOEFL score of 525 Paper/195 Computer/71 Internet or IELTS 6 and have a minimum cumulative grade-point average (GPA) of a 2.5 on a 4.0 scale will qualify for admission.

Transfer Students

Transfer students will be considered on the basis of their post-secondary education record and their English proficiency. Applicants who meet a TOEFL score of 525 Paper/195 Computer/71 Internet or IELTS 6 and have a minimum cumulative transferable grade-point average (GPA) of a 2.0 or C on a 4.0 scale will qualify for admission.

Application Procedures

All application materials must bear the official school seal and signature and be sent directly from the institution or agency to the Admissions Office. Transcripts and test scores received from students are unofficial and not acceptable. To provide time for evaluation and for notice of acceptance to reach the applicant in a timely manner, the application and required credentials must be received by the Admissions Office according to the following deadlines:

Fall Semester - May 15
 Spring Semester - October 15
 Summer Session - March 1

Receipt of the following credentials in the Admissions Office constitutes a complete application for admission. Requests to have final credentials sent to MSU-Northern must be initiated by the applicant. To apply for a semester other than the one originally intended, notify the Admissions Office as soon as possible.

Be sure to submit the following items:

1. **International Undergraduate Application for Admissions:** A paper application can be obtained from the Admissions Office 800.622.6132 x3704. An on-line application may be submitted at: <https://applyweb.com/apply/msunorth/>.
2. **Application Fee (nonrefundable):** U.S. \$36 online application or U.S.\$30 paper application. The fee must be in U.S. currency. Checks should be made payable to MSU-Northern and must indicate the U.S. banking codes. The application fee will not be waived, deferred, or refunded. The fee must be paid before the application will be processed.
3. **English Language Proficiency:** If the applicant's native language is not English, an English TOEFL score of 525 Paper/195 Computer/71 Internet, or IELTS score 6 is required to qualify for admission. Only official score/grade reports sent directly from the language testing center will be accepted. Certificates of completion with official grade reports and the instructor's recommendation from English as a Second Language programs may be considered. Those students who are citizens of countries where English is the native languages do not need to submit proof of English language proficiency, unless English is not the student's native language.
4. **Evidence of Financial Support:** MSU-Northern requires a statement of financial support from a bank or financial institution regarding funds from a financial sponsor, the student or the parent. The statement must verify financial support available to the applicant in US Dollars based on current year cost of attendance budget, for each year of attendance. Contact the Admissions Office for current year cost of attendance budget for international students at 1.800.662.6132 x3704. Admission will not be considered until the signed statement of financial support is received.
5. **Educational Credentials:** International students must meet the equivalent of out-of-state admission requirements for the appropriate category of freshman, transfer, or graduate student. Official/certified transcripts and marks are required from all secondary and college or university education completed.
 - a. Freshmen must submit official secondary transcripts posting date of completion and must include an English translation. Certified true copies of original transcripts are acceptable.
 - b. Transfer Students must request official transcripts from each international or U.S. post-secondary institution attended, directly from the institution(s) to MSU-Northern. An English translation must be received for all non-English academic credentials.
 - c. All transcripts of academic work undertaken outside of the U.S. or in non-English speaking Canada must be submitted to World Education Services (WES) for evaluation of foreign educational credentials. For further information contact:
World Education Services
PO Box 745
Old Chelsea Station
New York, NY 10113-0745
 or visit <http://www.wes.org>.
6. Non U.S. Citizens must show a physician validated immunization record of measles (rubeola) and rubella immunity, Diphtheria-Tetanus (DT or Td), and skin testing for Tuberculosis that was completed within one year of the planned attendance date. This evidence must be presented before a student is permitted to register.

Notification of Admission

Applicants are reviewed for admission when all required final and official credentials have been received at the Office of International Programs. Successful candidates will promptly be issued a letter of acceptance and an I-20 form necessary for obtaining an F-1 student visa. A packet of information regarding orientation, the registration process, and other important information will follow directly in a separate mailing.

Special Admission Programs

Early Admission

A high school student may apply for admission to take regular university courses while concurrently enrolled in high school. High school students may be accepted for admission when academic ability and general maturity warrant acceptance. Such admission shall be based on providing educational opportunities not available in the high school setting.

Academic Eligibility

To be eligible for early admission, the applicant:

1. Must have completed their sophomore year in high school.
2. Must have a minimum grade point average of a 3.00 and/or a 20 ACT/SAT composite score or 1440 SAT score or higher.
3. Students attending non-accredited high schools must have taken the ACT and received a 20 composite score or 1440 SAT score or higher.

Application Procedure

Receipt of the following credentials in the Admissions Office constitutes a complete application for admission.

1. **Admissions Application:** An application may be submitted online or printed out at: <http://www.msun.edu>. The application may also be obtained from a high school counselor or from the Admissions Office.
2. **Application Fee (nonrefundable): \$36 online application or \$30 paper application.** Checks should be made payable to MSU-Northern. The application fee will not be waived or refunded. The fee must be paid before the application for admission will be processed. Applicants who have applied for Financial Aid, participate in a federally funded TRIO program or are receiving public assistance may apply to deferral of the application fee by contacting the Admissions Office at 800.662.6132 x3704.
3. **High School Transcript:** An official transcript must be sent directly from the high school to the Admissions Office. Transcript must post all courses completed and a minimum grade point-average (GPA) of 3.00 **and/or** test scores listed below.
4. **ACT/SAT scores:** An ACT score of a 20 or an SAT score of a 1440. Official ACT/SAT scores should be sent directly to the Admissions Office from the ACT/SAT testing agency.
5. **Letter of Recommendation:** A letter must be submitted from the high school principal and/or guidance counselor recommending the student for Early Admission.
6. **University Instructor Recommendation:** An approval letter must be obtained from the instructor and college dean for each course in which enrollment is planned stating that the student is apparently prepared to take the course in question and is granted permission to do so.

Adult Special

An applicant, 21 years of age or over, who is not a high school graduate, may seek admission as an Adult Special student by presenting evidence that s/he is adequately prepared to pursue a selected University program. Upon completing the work of the freshman and sophomore years with a grade average of "C" or better, an Adult Special student may, upon the recommendation of his/her faculty advisor and major academic College Dean, be accepted as a regular student and a candidate for a degree on the same basis as students who have been admitted upon graduation from an accredited high school. Adult Special students cannot enter the nursing program. Nursing students must have a minimum of a GED.

Application Procedure

Receipt of the following credentials in the Admissions Office constitutes a complete application for admission:

1. **Admissions Application:** An application may be submitted on-line or printed out at: <http://www.msun.edu>. The application may also be obtained from a high school counselor or from the Admissions Office.
2. **Application Fee (nonrefundable): \$36 online application or \$30 paper application.** Checks should be made payable to MSU-Northern. The application fee will not be waived or refunded. The fee must be paid before the application for admission will be processed. Applicants who have applied for Financial Aid, participate in a federally funded TRIO program or are receiving public assistance may apply to deferral of the application fee by contacting the Admissions Office at 800.662.6132 x3704.
3. **High School Transcript:** (if available) An official transcript must be sent directly from the high school to the Admissions Office. Courses completed and grade point average must be posted.

Non-degree Undergraduate Level

The undergraduate non-degree admissions status is designed to meet the needs of students who do not wish to pursue a degree at MSU-Northern. Once admitted to non-degree status, the student may retain that status indefinitely. If the student wishes to change to regular status, the steps outlined under "Changing from Non-Degree Status" (<http://msun.edu/stuaffairs/admissions/nondegree.htm#status>) must be followed. An application form must be completed. ACT/SAT test scores will not be required. Non-degree applicants will not be required to submit transcripts from previous institutions. The applicant must certify that s/he has not been suspended from any post-secondary institution within the past 12 (twelve) months. A non-degree student in good standing (2.00 or higher cumulative GPA) may apply for a change from non-degree to regular status. Requirements for regular admission must be met at that time. Professional Teacher Education, Nursing, and Graduate courses are not available to non-degree students. Non-degree status is not suitable for any person receiving financial aid or veteran's benefits. Non-degree students may not participate in intercollegiate athletics or any other program requiring regular admission status. Non-degree students are subject to the same University regulations as regular students.

Application Procedure

Receipt of the following credentials in the Admissions Office constitutes a complete application for admission.

1. **Admissions Application:** An application may be submitted on-line or printed out at <http://www.msun.edu>. The application may also be obtained from a high school counselor or from the Admissions Office.
2. **Application Fee (nonrefundable): \$36 online application or \$30 paper application.** Checks should be made payable to MSU-Northern. The application fee will not be waived or refunded. The fee must be paid before the application for admission will be processed. Applicants who have applied for Financial Aid, participate in a federally funded TRIO program or are receiving public assistance may apply to deferral of the application fee by contacting the Admissions Office at 800.662.6132 x3704.

Changing from Non-Degree Status

To change from non-degree status to regular status, a student must have at least a 2.00 cumulative GPA and do the following:

1. Submit ACT/SAT scores if they would have been required at the time of first admission to Montana State University-Northern. (*for information on ACT & SAT tests, finding testing centers and more, visit the **ACT** and **SAT** websites*)
2. Submit high school and/or official college, university, or other post secondary transcripts from all other institutions attended. The student must submit transcripts from ALL institutions attended, whether or not credit was earned. A transcript will be accepted as official only when sent directly from the Registrar of the institution to the Admissions Office at Montana State University- Northern.
3. Show proof of two vaccinations against measles and one against rubella. Immunizations must have been given after 1967 and after the student's first birthday and must have been administered at least thirty days apart. Current immunizations must have been administered in the form of the MMR vaccine. Immunizations must be documented by a physician, registered nurse or school official.
"OR"
 Show documentation of having contracted measles and rubella. Documentation by a physician is required including dates of illness.
"OR"
 File a medical or religious exemption.

Former NMC/MSU-Northern Students (Readmission)

A former Northern Montana College/Montana State University-Northern student who did not attend the preceding semester must submit an Application for Re-Admission to the Admissions Office and official copies of transcripts from all institutions attended since his/her last registration at Montana State University-Northern. A transcript will be accepted as official only when sent directly from the Registrar of the institution(s) previously attended to the Admissions Office at Montana State University-Northern.

Western Undergraduate Exchange (WUE)

WUE is the Western Undergraduate Exchange, a program coordinated by the Western Interstate Commission for Higher Education (WICHE). Through WUE, resident students of participating states may enroll in two-year and four-year public college programs at a reduced tuition level: approximately 150 percent of the institution's regular resident tuition. **WUE tuition is considerably less than nonresident tuition.** Resident students from the following states may participate if they meet eligibility requirements: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

How to Apply

Information and a WUE program application for Montana State University-Northern may be downloaded at <http://msun.edu/stuaffairs/admissions/forms> or obtained from the Admissions Office at 1.800.662.6132 x3704 or 406.265.3704. Or email: admissions@msun.edu.

March 1 is a Priority Deadline for WUE applicant consideration.

1. Apply for Admission to MSU-Northern following the guidelines of the appropriate admissions category.
2. Submit the WUE program application.

Send WUE application and supporting documents to:
 MSU-Northern Admissions Office
 PO Box 7751
 Havre, MT 59501

Conditions for Enrollment

A limited number of students are granted the WUE tuition rate on a competitive and space-available basis. Montana State University-Northern reserves the right to change the requirements for admission into the WUE program without notice.

1. To be eligible for a WUE tuition rate, applicants must be admitted to Montana State University-Northern and be a resident of a participating WUE state.
2. Duration of the WUE tuition rate is four years or until completion of 120 credits, whichever comes first.
3. Recipients of a WUE tuition rate must maintain a GPA of 2.5 or above and maintain a minimum of 15 credits per semester.
4. Time as a WUE tuition rate recipient cannot be used toward fulfilling Montana residency requirements.
5. Spring Semester WUE tuition rate applicants may be considered by the WUE coordinator on a space-available basis.

To obtain information about WUE programs in other states visit: <http://www.wiche.edu/states/>.

Admission as a Graduate Student

Students who wish to pursue graduate work at MSU-Northern should contact the Graduate Office for application materials.

Graduate Office
 Montana State University-Northern
 PO Box 7751
 Havre, MT 59501
 800.662.6132 x3738

All application materials should be returned to the Graduate Office one month prior to the proposed date of registration to allow adequate time for complete processing.

To be considered for admission to graduate study, an applicant must have been granted a baccalaureate degree from an accredited college or university. An undergraduate student who is within 16 credits of completion of the baccalaureate degree, and who has at least a 3.00 grade point average over the last 60 credits, may petition the Graduate Council for approval to take up to nine credits of graduate coursework which may apply toward a graduate degree. These credits may not be applied to the student's undergraduate program. Graduate credit earned in this manner will not become a part of the student's permanent record until all requirements for the baccalaureate degree have been met.

Admission to graduate studies does not constitute matriculation for degree candidacy. Students who wish to matriculate for advanced degrees must make proper application for the specific degree sought (see Graduate Studies Overview in the current catalog (<http://msun.edu/stuaffairs/catalog>)). Information regarding candidacy is available from the Graduate Studies Office.

How to Apply

1. Submit the Graduate Application for Admission to the Graduate Office. This form may be obtained from the Admissions Office or the Graduate Studies Office.
2. A \$30/ \$36 for online submissions, a non-refundable application fee, payable to Montana State University-Northern, is required of first-time applicants to Montana State University Northern. If the applicant is admitted but does not register, the \$30 application fee is valid for the subsequent twelve months.
3. One copy of the applicant's official transcript, showing a baccalaureate (or higher) degree must be sent directly to the Graduate Office by the college or university previously attended, if other than Montana State University-Northern. A transcript will be accepted as official only when sent directly from the Registrar of the institution to the Graduate Office at Montana State University-Northern.
4. Proof of 2 (two) MMR (Mumps, Measles and Rubella) immunizations are required.

Fees

Fees

A full listing of current tuition, fees, room and board, and other University-related expenses is available at either the Admissions or Business Office or on our website www.msun.edu

Course Fees

Section 1.02 In addition to the usual tuition and fees paid by students, special fees may be attached to specific courses. Those course fees are used to pay for materials that are damaged or consumed by students, particularly during the laboratory portion of the classes. As a consequence, course fees are most often attached to classes in the sciences, the arts, and technical programs.

On the Montana State University-Northern campus, students who take classes in the following degree areas will often have to pay additional fees because of the courses they take: Art, Automotive, Biology, Carpentry Technology, Civil Engineering Technology, Chemistry, Diesel, Design Drafting, Electrical Technology, Electronics Engineering Technology, Earth Science, Health and Physical Education, Metals Technology, Nursing, and Plumbing Technology. Course fees are also assessed in other program areas, but not as extensively as the previous listing.

To find out if a course fee will be assessed for a particular course, students should refer to the specific course descriptions (p. 119) listed in this catalog.

Due Dates

Fees are due as payments in full the Friday before classes begin.

MSU-Northern offers an Installment Payment Plan if needed (please contact Business Services for approval)

Installment Payment Plan

The following installment payment plan for tuition/fees, room and board is available:

1. At least ¼ of the total amount must be paid the Friday before classes begin.
2. One-half of the total due must be paid within 30 days.
3. Three-fourths of the total due must be paid within 60 days.
4. The full amount due must be paid within 90 days.
5. A late fee of \$15.00 will be assessed if the final payment is late.
6. An administrative charge of \$30.00 per semester will be levied for use of the installment plan.
7. Payments must be made even though the student withdraws from school. Any refund due the student because of withdrawal, either voluntary or involuntary, will be applied toward the satisfaction of the obligation. Should the refund be larger than the amount outstanding, the excess of refund due over balance outstanding will be returned to the student. Any unpaid balance of the obligation must be paid before the student may re-enroll, graduate, obtain a transcript, or transfer to another college and/or university.

Tuition/Fee Refunds

1. Refunds for withdrawals from school are made by the Business Office only after verification of enrollment status as of the 14th day of classes.
2. The registration fee is non-refundable. The health insurance fee will be refunded to the end of the 10th day of instruction.
3. Ninety (90) percent of all remaining fees (tuition, network, computer, equipment, building, gym use, SUB use, student activity, athletic, non-resident tuition, non-resident building, health service fee, internet fee, radio fee, distributed learning access fee, Great Falls fee, campus facilities fee, library fee) will be refunded to the end of the fifth day of instruction for students enrolled in full semester courses.
4. Seventy-five (75) percent of all remaining fees will be refunded to the end of the eighth day of instruction.
5. Fifty (50) percent of all remaining fees will be refunded to the end of the eleventh day of instruction.
6. No refunds for withdrawals from school are made after the eleventh day of instruction.
7. Drop/adds will be computed in accordance with regular institutional fee schedules. There will be no refund for classes dropped after the eleventh day of instruction.

Financial Aid

Financial Aid

Phone Number: 406.265.3787

Student financial assistance at Montana State University Northern is available in the form of loans, scholarships, tuition waivers, grants, and work opportunities. A typical Financial Aid package is a combination of several of these sources.

Financial assistance is based on financial need and academic ability, although some scholarships are given on the basis of academic achievement only. All forms required to apply for Financial Aid may be obtained through the Financial Aid Office.

To apply for aid, students must complete a FAFSA (Free Application for Federal Student Aid). This form is found at fafsa.ed.gov, it is used in determining the total amount of aid which a student may be eligible to receive. Aid eligibility is determined through an analysis of the student's family financial strength.

Determining Eligibility

The three components used to determine your eligibility for financial aid are:

1. Cost of Education or allowable expenses
2. Expected Family Contribution
3. Other Financial Resources available to you.

Cost of Education

This is the estimated average amount for expenses at Northern according to your residency classification, hours enrolled, and program of study. This budget uses average costs and includes everything from tuition and fees to miscellaneous expenses. Expense budgets may also include adjustments for childcare, and costs related to a disability or other non-discretionary expenses.

Since expense budgets reflect average costs, you may spend more or less than the amounts allowed. However, you may pay more for your personal expenses than the amount budgeted. The amount you spend, except for tuition and fees, is up to you and depends on your own individual lifestyle, priorities, and obligations.

The estimated expense budget for the 2017-2018 (nine months) academic year includes the following (fees will vary for upper level and graduate students):

	RESIDENT	NON-RESIDENT
Tuition/Fees	\$5820.00	\$18130.00
Books/Supplies	\$1200.00	\$1200.00
Room/Board	\$7500.00	\$7500.00
Misc./Travel	\$3200.00	\$3200.00
Loan Fee	\$64.00	\$64.00
TOTAL	\$17,784.00*	\$30,094.00*

* **All amounts subject to change without notice.**

Tuition and Fees: Average charges for basic instructional costs and mandatory fees. Actual fees paid may vary based on the number of credits carried each semester. Room and Board: An average amount for housing and food charges for students living on or off campus. Books and Supplies: A standard allowance for required books and supplies. Transportation and Personal Expenses: A modest allowance for non-local transportation, (such as a trip from campus to home), entertainment, medical, laundry, toiletries, clothing, etc. If attendance is less than or greater than nine months, or if enrollment is less than 12 credit hours per semester, budget components will be prorated accordingly. Please remember, financial aid often cannot meet all of your costs while attending MSU Northern, so it is very important for you to manage your financial resources wisely.

Expected Family Contribution

Since financial aid is designed to assist with your educational expenses, Expected Family Contribution is the amount that you and your parents (if applicable) are expected to contribute toward your costs. This amount is determined from information provided on your Free Application for Federal Student Aid (FAFSA) according to a formula established by Congress.

Other Financial Resources

This component represents other known and expected financial resources you will have available to assist you with your educational costs, such as scholarships, Veterans Education Benefits, etc.

Your eligibility (financial need) is calculated by subtracting your Expected Family Contribution and Other Financial Resources from your allowable Costs of Education.

How Aid is Awarded

Your award package is based on a combination of funds available and your eligibility. Your award package may not include funds from all aid programs. Some funds carry restrictions, and some are limited as to amounts that can be awarded. Financial aid packages are based on the level of eligibility from highest to lowest and files are worked generally in the order received by the Financial Aid office.

The Federal Pell Grant is the first program awarded, if you are eligible. The next programs awarded are grants (federal, state, institutional) and scholarships. Some awards stipulate further restrictions such as residency. MSU Northern funds are limited and awarded until funds are committed. Work-study funds are awarded after grants. Stafford loans are awarded after Perkins Loans have been awarded. PLUS Loans are the last category of

aid to be awarded. PLUS (Parent) loans are awarded only when requested by the student or parent after the student applicant receives his/her award letter.

Your Award Package

Your financial aid award package is designed to meet as much of your financial eligibility as possible. All awards are contingent on the following:

1. Availability of funds from federal, state, and institutional sources.
2. Accuracy of information provided on your application by you and/or your parents or spouse.
3. Adjustments to your award when our office receives information that affects your eligibility. Any aid you receive, in addition to that listed on your award offer, which exceeds your unmet eligibility will result in an adjustment in your award(s) from MSU-Northern.
4. Satisfactory academic progress toward your degree.
5. Compliance with our requests to send additional documentation to support your application.
6. Eligibility to receive funds. i.e., you are a U.S. citizen or eligible non-citizen, you have signed all required documentation, and you are enrolled in a degree-seeking program of study for the appropriate number of credit hours based on your funding status.

Accepting or Declining Your Award

Unless otherwise indicated, the awards listed on your Financial Aid Award Letter represent an offer based on your anticipated enrollment funding level. You must accept or decline each part of your aid package. It is important that you make your decision, sign the award offer, and submit/return the document by the deadline date. If you want to accept a lesser amount than the amount awarded, indicate the amount you wish to request. This is very important, particularly on the loan amounts. Think about the amount and type of loan being accepted. If you have more than one type of loan, you will likely be required to repay those loans simultaneously. Do not borrow more than you absolutely need.

If you have unique circumstances which may affect your costs of attending MSU-Northern, please contact the Financial Aid Office. We may be able to reevaluate your eligibility based on special conditions.

First time students may indicate your acceptance or rejection of the aid offered by returning one copy of your Financial Aid Award Letter to:

Montana State University Northern
Financial Aid Office
P. O. Box 7751
Havre, MT 59501

or

Electronically on our web site at <http://www.msun.edu>

Continuing students can accept, reject, or adjust their awards electronically on our web site at <http://www.msun.edu>

Financial Aid Programs

Financial aid is money in the form of loans, grants and employment available to students to help pay the cost of attending the institution of their choice. Financial aid comes from the Federal Government, which is the largest provider of aid, as well as state governments, the schools themselves, and a large variety of other public and private sources.

Federal Pell Grant

A Federal Pell Grant, unlike a loan, does not have to be repaid. Pell Grants are awarded only to undergraduate students who have not earned a bachelor's or professional degree. The maximum Pell Grant for the 2017-2018 award year is scheduled to be \$5815. How much you receive will depend on your cost of attendance, whether you are a full-time or part-time student, and whether you attend school for a full academic year or less. You may not receive Pell Grant funds from more than one school at a time. Pell Grant funds will be credited to your student account in the registration process in the Business Office.

Federal Supplemental Educational Opportunity Grant (FSEOG)

A Federal Supplemental Educational Opportunity Grant (FSEOG) is for undergraduates with exceptional financial need, with priority being given to students who receive Federal Pell Grants. A FSEOG does not have to be paid back. FSEOG funds will be credited to your expenses in the registration process in the Business Office.

Student Employment and Work-Study

The Career Center located in Cowan Hall assists students attending MSU Northern to locate employment. Both work-study and other part-time employment are listed with the Career Center. On and off campus employment opportunity assistance is available. Referral systems are in place for you to choose jobs that interest you and assistance is available to help with interviews.

- You must receive work-study as part of your financial aid package in order to apply for a work-study job. It is not necessary that you accept work-study if you are successful in finding other part-time employment. If you accept work-study aid, please contact the Career Center for job fair, hiring policies and other information you may need to secure employment.

If you did not receive a work-study award as part of your financial aid package, you may have your name added to the work-study waiting list. If work-study funds become available, students on the waiting list will be considered for an award based on their eligibility. Being placed on the list in no way assures that you will receive a work-study award.

Work-study awards are not credited to your expenses in the Business Office. You are paid on scheduled pay days for the actual hours worked during the preceding month. When you have earned the amount of your work-study award, your employer may decide to continue your employment as a regular student employee. If you still have a balance owing you may be required to make payment with your work study funds.

Federal Perkins Loans

A Perkins loan is a low interest (5%) loan for students with exceptional need. This program is for both graduate and undergraduate students and offers many principal forgiveness opportunities. There are no origination or other loan fees assessed. The grace period before repayment begins is 9 months. Principal and interest payments begin at that time, and you have 10 years in which to repay the loan. If you accept this loan, a promissory note and other loan documents will need to be completed before the loan can be disbursed. These funds will then be credited to your student account.

Federal Direct Loans

Direct Loans are either subsidized or unsubsidized. With a subsidized loan, the Federal Government pays interest on the loan until you begin repayment and during authorized periods of deferment. If you receive an unsubsidized loan, you will be charged interest from the time the loan is disbursed until it is repaid in full. If you allow the interest to accumulate, it will be capitalized (added to the principal which means the loan "grows") and the amount you repay can become very expensive. If you choose to pay the interest as it accumulates, you will repay less over the life of the loan. You can receive both a subsidized and an unsubsidized loan for the same enrollment period.

The interest rate is fixed at 3.76% sub and 3.76% unsub.

The borrower must also pay a loan fee of 1.069% of the amount borrowed, which is deducted from each disbursement. The loan fee is paid to the lending institution.

Repayment begins after you graduate, leave school, or drop below half-time enrollment. You have six months before payments begin. This is called a "grace period". Contact the U.S. Department of Education for more information about repayment options.

Stafford Loans will be credited to your expenses in the Business Office.

Federal Direct Plus Loans (Parent Loan)

Federal PLUS Loans enable parents with good credit histories to borrow to pay the education expenses of their children. To be eligible, the child must be a dependent undergraduate student enrolled at least half time. The yearly borrowing limit on the PLUS loan is equal to your cost of education minus any other financial aid you receive.

The interest rate is fixed at 6.31%. The interest is charged on the loan from the date that the first disbursement is made until the loan is paid in full.

The borrower must also pay a loan fee of 4.276% of the amount borrowed, which is deducted from each disbursement. The loan fee is paid to the lending institution.

Repayment generally begins within 60 days after the loan disbursement. There is no grace period. This means that interest begins to accumulate at the time of the first disbursement and repayment of both interest and principal begins while the student is in school.

Contact the Financial Aid Office for information on how to process this type of loan.

Funds that exceed expenses are returned to the borrower.

Scholarships

The Financial Aid Office awards scholarships. Committees make selections and application information is available at the Financial Aid Office.

Scholarships are awarded generally in the spring of each year for disbursement in the following year. These awards are made on the basis of academic achievement, financial need, or a combination of the two. Many scholarships have additional requirements as well. Institutional scholarships are provided to the institution by donors who specify the award criteria. The selection process is managed by a committee and awards are disbursed through the Financial Aid Office. The Financial Aid Office serves continuing, transfer and incoming potential scholarship students. Private scholarships are directly controlled by the donor, not the institution; the application process, selection criteria, and recipients are determined by the donor. The donor notifies you of the award, but usually sends the funds to the school for distribution.

How Scholarships Are Paid

Most scholarships are credited to your expenses each semester. Some may be sent directly to you, but this is the exception. Normally, the institution must confirm that you have enrolled before payment will be made. If your scholarship arrives after you have paid your bill for the semester, funds will be delivered to you after you sign the check and it is applied to your account. Generally, scholarships of more than \$500 are divided equally between fall and spring semesters. Scholarships totaling less or equal to \$500 will be disbursed in full and applied to your current enrollment semester. If your scholarship is not available at the time of payment deadlines, you must make other arrangements to pay your bill to avoid cancellation of classes or late charges.

Disbursement of Funds

Provided you meet all qualifications to receive financial aid funds and you have accepted your charges, any scholarship, grant, or loan awarded to you will be automatically credited to your expenses (tuition, fees, room and board if you live on campus) and any other charges assessed by the institution. You may decline this automatic crediting of your charges by writing to the Financial Aid Office at any time prior to payment being made to you for the applicable term.

If financial aid credited to your expenses exceeds allowable charges due for the term, a check will be prepared for the difference and will be mailed to your current address on file in BANNER upon completion of processing. The check will usually be available approximately 14 days after the first day of classes of each term.

Check your fee statement carefully. Some types of financial aid appear on your fee bill as credits and others (such as work-study) are paid at other intervals. Compare your receipts, which show your aid against your award letter to reconcile funds awarded to you. NOTE: If for any reason you register for classes late or enroll for insufficient credits, your aid will be delayed and possibly adjusted. Loan funds will not be credited to your charges until all required documents have been processed.

Other aid, such as BIA grants and some scholarships arrive in the form of checks. These funds will be made available after processing is completed in the Financial Aid Office and distributed by the Business Office. Please remember, fees and other charges must be paid when due or a late fee may be applied and/or your registration may be canceled. If a check does not arrive in time for you to pay your fees and other charges, you are responsible for payment of your bill on the due date. If you have specific questions regarding charges, distribution of change checks, or release processes, please contact the Business Office at 406.265.3733.

Short-Term Loans

This is a loan which will permit a student, who may be experiencing temporary difficulties, to borrow small sums of money for a short period of time. No collateral is required for a short-term loan although the student must identify a reliable source of repayment and have a satisfactory repayment record with respect to any previous loan(s) received.

There is a \$25.00 organization fee.

The institution reserves the right to reject or decline any application, and to determine the amount and date of repayment for any loan approved. Applications and other information regarding the short-term loan may be obtained from the Financial Aid Office. Allow a minimum of (3) three working days to process a short-term loan application, which may be submitted at any time during the semester.

Your Rights and Responsibilities

- You have the right to privacy. All records and data submitted with your application for financial aid are treated as confidential information.
- You have the right to a complete explanation of the award process. If you do not understand your financial aid award, or feel your application has not been evaluated fairly, please contact the Financial Aid Office.
- You have the right to be notified of cancellation or withdrawal of aid and to be informed of why this action is being taken.
- You have the right to appeal. You may request a review of any decision concerning your financial aid eligibility. Please contact the Financial Aid Office and make an appointment. If necessary you may be directed to submit a written appeal and supporting documentation.
- You have the responsibility to report funds or benefits from any source (such as outside scholarships) that you receive or are promised (before and after you are awarded financial aid).
- The Financial Aid Office is required BY LAW to make adjustments to prevent or correct over awards. We take this responsibility seriously. You will save yourself frustration, inconvenience, and possible financial penalty by reporting any changes in your financial status promptly.
- You have the responsibility to report any change in your student status immediately. If you move, change your name, drop credits, withdraw from school, or do anything else that may affect your financial situation, please report that information to the Financial Aid Office and your student loan lender/servicer.

- You have the responsibility to keep copies of all correspondence regarding your financial aid, whether it is from the Financial Aid Office, governmental agencies, or outside lenders.
- You have the responsibility to use financial aid funds for educationally related expenses only, such as tuition and fees, books, supplies, and reasonable living costs.
- You have the responsibility to repay loans on time. Acceptance of any loan carries the serious obligation to repay. Failure to meet this obligation affects the availability of loans to future students. Before you accept any loans for financing your education, you should carefully consider the total amount and repayment requirements for which you will be responsible when you terminate your educational objectives.
- You have the responsibility to understand how the Financial Aid Office determines if you are making satisfactory academic progress and what happens if you do not maintain satisfactory progress.

How to Avoid Problems

Come to the institution with some money of your own. Even if your aid is prepared on time, funds may not be available until classes begin and processing is complete. You will need money for housing, books, and other immediate expenses. If you are able to save money during the summer before school starts, these savings will be useful in meeting your beginning-of-the semester expenses and protecting you from hardships if your aid is delayed.

Register for the appropriate number of credits. You must register for the appropriate number of credits, which correspond to the funding level indicated on your Financial Aid Award letter.

Be sure to complete a loan/debt management counseling session and complete a Master Promissory Note if you are a first-time borrower at MSU Northern. This may be completed online at <https://studentloans.gov>. Your funds will be delayed until you complete this requirement.

Pay your own fees and other charges by the due date if your aid is late. Fees are due at the beginning of each semester. If not paid when due, you are subject to a late fee and/or cancellation of registration. The Financial Aid Office may be able to offer you assistance depending on the nature of the processing problem but cannot prevent cancellation for non-payment of fees. If you anticipate problems, see either the Financial Aid Office or the Business Office for assistance.

If you are not sure how dropping or adding classes will affect your aid status, do not drop any of your classes or withdraw from MSU-Northern without checking first with the Financial Aid Office. If you drop below the required minimum credit load or fail to complete the appropriate number of credits, your aid may be canceled and repayment of the aid may be required.

Please notify the Financial Aid Office of any changes in either your permanent or school address.

Dropping or Adding Credits

When an award letter is prepared for you, the Financial Aid Office has reviewed what you reported on the FAFSA (application) and the Student Data Form and funded you at the level you indicated. At the time of disbursement, your credit load and Satisfactory Progress status is reviewed. Coordination with the Registrar's Office, Business Office and Financial Aid Office will dictate whether or not aid can be released or needs to be adjusted. Not all award amounts are affected by changes in enrollment. If your award is affected, you will be notified.

Disbursement of your aid is based upon the number of credits for which you are enrolled at the time your aid is disbursed. Your award letter will indicate this information. If you add credits after your financial aid has been disbursed, you may be entitled to additional funds. You should check with the Financial Aid Office for a review of your funding level.

If you drop credits after all your financial aid funds have been disbursed, including a retroactive drop of credits, you may have received funds that you were not entitled to receive. You will receive a bill for any overpayments that may occur.

Satisfactory Progress Requirements

To remain eligible for financial aid at MSU Northern, you must make satisfactory academic progress toward your degree objective. Satisfactory Progress is a condition for continued eligibility and is measured by the following factors:

1. Students who receive financial aid assistance must complete the appropriate number of credit hours based on their aid funding level (credits funded). Failure to do so will result in one of two financial aid statuses, WARNING or TERMINATION. See the "Satisfactory Academic Progress" policy enclosed with your award letter for complete details.
2. A student's eligibility is terminated at the point when maximum time frame parameters have been met. Generally, limitations are: 98 attempted credits for an Associate degree, 186 attempted credits for a bachelor's degree, or 45 attempted credits for an undecided degree seeking student. Graduate student eligibility expires at 68 attempted credits. Transfer credit will affect these time frames.
3. Students must meet a Grade Point Average (GPA) and a percentage of credits attempted (usually 67%) requirement to continue their eligibility. Minimum accumulative GPA is 2.00 for undergraduates and 3.00 for graduates. Satisfactory completion means a student has received a minimum grade of 'D' or 'P' (pass). Grades other than A, B, C, D, or Pass do not meet satisfactory academic progress requirements.

4. Students whose status is "Termination" will not be considered for aid while in the "Termination" status. A student's file will be reviewed and an award letter produced when a student is re-instated.
5. This policy is applicable to all students receiving institutionally administered aid. Any federal, state, and institutional aid (including scholarships, fee waivers, work-study and loans) are included in this policy. MSU-N Staff waivers are the only exception. The eligibility of students may be reviewed at any time during the semester.
6. Students declared ineligible for financial aid under this policy will have the opportunity to appeal. The appeal procedure must be initiated by the student by completing an appeal form and returning the form with appropriate documentation to the Financial Aid Office (Cowan Hall, Room 213).

A copy of the "Satisfactory Progress" policy is posted at our web site <http://www.msun.edu/admin/policies/600/601-1.aspx> (<https://www.msun.edu/admin/policies/600/601-1.aspx>). You are responsible for knowing and understanding this policy thoroughly. The information in this policy provides more detailed instructions on how the institution monitors progress and on how to exercise the appeal process.

Withdrawing from MSU Northern

If you stop attending classes, you should officially withdraw to prevent assignment of grades of "F". If you don't withdraw, your status will be "TERMINATION", and you will not be eligible for aid until you reinstate your eligibility. In order to reinstate your eligibility, you must re-enroll and earn a GPA of 2.00 with no funding assistance from any funding source included in this policy. You must complete 67% of any credits attempted during your reinstatement period with a minimum GPA of 2.00 in order to regain eligibility. For more information on withdrawal procedures, contact the Registrar's Office or Student Services, both located in Cowan Hall.

If you withdraw from all courses either officially or unofficially your aid will be terminated and a withdrawal calculation will be performed by the Financial Aid Office to determine whether you received funding for which you were not eligible. A copy of this refund/ return of Title IV funds is available in the Financial Aid Office located in Cowan Hall. **IF YOU DROP ALL YOUR CLASSES VIA THE WEB, YOU MUST NOTIFY THE FINANCIAL AID OFFICE IMMEDIATELY.** If you received funds for which you were not eligible, you will receive a bill from the institution for repayment of those funds.

If you are eligible for a refund of your registration or housing fees from MSU-Northern, Federal regulations require that the refund first be applied to any student loan disbursed to you during the current loan period and then to repay any other financial aid for which you were billed. Any remaining amount will be refunded to you.

If you have any student loans, your lender or servicer will be notified of your enrollment status change and you may enter a "grace period" or repayment status. In keeping with the terms of your loans, you are required to inform your lenders of changes in your enrollment status.

If you plan to return to MSU-Northern and apply for assistance, please refer to the Satisfactory Progress policy to determine your eligibility status for future applications for aid.

Special Circumstances

If you or your parent(s) have had a substantial change in family income or assets due to unemployment, disaster, disability, divorce, or the loss of other compensation or benefits since applying for financial aid, you and/or your parent(s) may be eligible for special consideration. In addition, if you have non-discretionary expenses, which may affect your ability to meet educational expenses, you may ask for reconsideration to increase your eligibility. As in any special consideration, all requests must follow the "Appeals" process outlined in the Satisfactory Progress policy. All requests must be documented and reasons for the exception must be provided.

If you or your parent(s) have special circumstances, please contact the Financial Aid Office for assistance with the "Appeal" process.

Reporting Changes in Circumstances

If your residency or student classification status changes, your aid eligibility may be affected. If you receive any new or additional aid from any source, your eligibility may be affected. Report these changes in writing to the Financial Aid Office as soon as you know of them. If these changes do not appear on your Award Letter, it is your responsibility to report them when you sign and return the office copy of the Award Letter.

The office will follow up on changes made and, if necessary, recalculate your eligibility. If you are no longer eligible for any part of the aid you have been offered, the Office will work with you to resolve the over award. If, however, it is necessary that you repay a portion of your financial aid, you must repay it before you are eligible to receive further aid.

Verification of Information

Some applicants are selected at the federal level for verification of information contained on their application (FAFSA). This means that the Financial Aid Office needs additional information from you in order to determine your eligibility. You will be asked to data retrieve your tax information from the IRS or provide a tax return(s) transcript from the IRS of the student (and parent or spouse) when applicable. Failure to provide this requested documentation would stop further processing.

Additional Information

Our goal is to provide information for you the student, to enable you to meet your educational objectives and longer term goals. We have a qualified staff of professionals to further assist you with questions beyond what is provided in this guide. If you have questions, please call us at 406.265.3787 or come in to the office located at Cowan Hall, room 213 in Havre. Office hours are 8:00 a.m. to 5:00 p.m. weekdays. Although personnel usually are available on a walk-in basis, appointments are recommended.

Policies and procedures governing financial aid programs are subject to change at any time without prior notice or publication due to changes of policy by federal and state governments. MSU-Northern is an equal opportunity/affirmative action institution that does not discriminate on the basis of race, color, national origin, sex, sexual orientation or preference, marital status, age, physical or mental disability, creed or political belief, religion, or veteran status.

Academic Information

Students are responsible for meeting graduation requirements.

General Requirements and Academic Procedures

The catalog serves as a guide for students and advisors in planning academic programs and degrees offered at the University. Students are responsible for knowledge of and compliance with procedures and standards, but should seek guidance from their advisors or the Registrar when questions arise. The following procedures and policies have been adopted to help students, faculty, and administrators successfully carry out the academic program of the University. These policies reflect University policy when the catalog was published. Changes enacted after this date will be published by appropriate means. Exceptions and deviations from normal academic policy may be requested through petition procedures available from the Registrar's Office.

Academic Advising

Montana State University-Northern is committed to the fundamental principle that the University exists to serve the students. All efforts of the University are aimed toward enabling students to realize their full potential in whatever field of endeavor they attempt. As a result of this commitment, Montana State University-Northern's academic advising process is an integral component of the academic program and is considered to be a faculty responsibility. The academic advising program will enable students to:

1. Better understand the nature and purpose of higher education and its relevance to their future.
2. Become more sensitive to cultural differences.
3. Set and obtain individual goals, consistent with each person's interests and abilities.
4. Better plan appropriate educational programs.
5. Proceed through individual educational programs in an orderly fashion, with continual monitoring and evaluation.
6. Become familiar with the many university and community resources available (educational, financial, social, etc.) academic competency.
7. Receive accurate information regarding University requirements, options, and procedures.
8. Make intelligent career choices based upon realistic and accurate information.

Students may select or change their major and/or minor program at any time through the College of Education, Arts/Sciences, and Nursing or the College of Technical Sciences depending on which College their new major and/or minor program is in.

New students at Montana State University-Northern will work with the Advising Center during their first term of residency at MSU-Northern. The Center will help students select appropriate classes and complete the registration process during their first term.

After their first term of attendance at MSU-Northern, a faculty member in the student's major program area will assume the advising responsibility. The faculty advisor will explain University academic requirements and assist individuals in selecting courses and fulfilling the steps necessary to satisfy graduation requirements. Students with questions about their majors are encouraged to contact their faculty advisor.

Admission to Classes

In order to be enrolled in a class, the student must register for the class by means of the procedures set out for registration. The student's name must appear on the official class roster. Students who fail to register for classes prior to the deadline for doing so will not receive credit for the classes, even if they attend the classes and meet course requirements.

Advanced Placement Program Policy

Applicants for Advanced Placement credit should ask the College Entrance Examination Board to submit official examination scores to the Office of Admissions. Credit will be granted for scores of 3, 4, or 5. This credit will be awarded to degree students for corresponding courses at the University. Grades will not be awarded. A notation of the award will be placed on the student's transcript.

Auditor

An auditor is a student who wishes to enroll in a course but does not wish to pursue the course for credit. Auditors will not be required to take examinations or meet course requirements. Audited courses are noted on the transcript as such. Enrollment as an auditor requires permission of the instructor after students pursuing course credit have had an opportunity to enroll. Auditors pay the same fees as credit students. Auditors may not change to credit enrollment after the last day to add classes.

Cancellation for Failure to Make Fee Arrangements

A number of students who pre-register for classes do not return for the following term as anticipated. In order to establish orderly administration of the financial affairs of the University and to open the positions of these non-returning students in classes for which they pre-registered, a deadline for making fee arrangements is set for each term and announced by the Business Office. Registrants who do not complete fee arrangements prior to the deadline are unregistered, and their positions in classes are made available to other students. Students whose registrations are canceled but who wish to attend the University for the canceled term must repeat the registration process. In addition, a late registration fee of \$40.00 may be charged to offset the additional administrative expense of late registration.

Challenge by Examination

Montana State University-Northern seeks to serve students who have achieved through nontraditional forms of study or work experience. The University awards credit based on Advanced Placement (AP) examinations, College Level Examination Program (CLEP) tests, DANTES transcripts, military training, [Trade Competency Examinations](#), and other faculty approved competency measures. The Registrar maintains a list of courses and the procedures a student must follow in order to be awarded credit.

Changes in Registration

See "Dropping and Adding Classes" later in this section.

Change of Grade

Grades submitted to the Registrar's Office by faculty members are final and may not be changed except in the case of clerical error, upon successful appeal, or if they were fraudulently obtained. Students who believe an error in grading has occurred should first consult with the instructor. Final grade changes may not be used to extend the time for completion of a course, to allow a student to submit late work, or to retake examinations after the term is completed. A grade change is not meant to substitute for an "Incomplete" when an Incomplete cannot be justified. Grade changes made under this policy must be submitted to the Registrar by faculty by means of forms and procedures available in the Registrar's Office. The College Dean must approve these forms.

Class Attendance

Each student is responsible for attending all classes regularly. Individual professors establish attendance policies for their courses. While a professor may not withdraw a student from a course, excessive absences may result in a grade of "F."

Classification of Students

Students are classified as follows:

By year in school:

Freshman:	0-29 semester credits earned. May not enroll in an upper division course with the permission of the instructor.
Sophomore:	30-59 semester credits earned.
Junior:	60-89 semester credits earned.
Senior:	90 semester credits and above.
Post-Graduate:	Baccalaureate students earning additional hours of undergraduate or graduate credit, but not following a master's degree program
Graduate:	Baccalaureate students enrolled in a master's degree program.

By credits:

Undergraduate Students

Full-Time:	Enrolled for 12 or more semester credits with 15 to 16 semester credits being considered a normal load depending on the degree.
Half-Time:	Enrolled for 6 or more semester credits, but fewer than 12.
Part-Time:	Enrolled for fewer than 6 semester credits.

Graduate Students

Full-Time:	Enrolled for 9 or more semester credits.
Half-Time:	Enrolled for more than 5 semester credits, but fewer than 9.
Part-Time:	Enrolled for fewer than 5 semester credits.

Student Status

Degree-Seeking:	A student who plans to pursue a degree at Montana State University-Northern.
Non-Degree Seeking:	A student who does not plan to pursue a degree at Montana State University-Northern.
Adult Special:	A student 21 years of age or over, who is not a high school graduate, has not received their GED, and is not a transfer student, but wants to pursue a degree at Montana State University – Northern.
Continuing:	A student who completed the last regular semester at Montana State University-Northern. The spring or summer term is considered the last regular semester for the students returning for fall semester.
Former:	A student who has previously attended the Montana State University-Northern but did not complete the last regular semester and who has not enrolled at another institution of higher learning since last attending the University. Former students must file an application for readmissions.
Transfer:	Any student who was last registered for 12 or more credits at another institution of higher learning.

CLEP (College Level Examination Program)

The College-Level Examination Program (CLEP) is a national credit by examination program. This program provides students with the opportunity to demonstrate college-level achievement by taking an exam. Each institution determines which CLEP test and passing score it will accept for a specific course. All CLEP testing at MSU-Northern is online and costs a total of \$75.00. Each exam is approximately 90 minutes long, and except for English Composition with Essay, is made up primarily of multiple-choice questions; however, some exams do have fill-ins. Credit earned through CLEP is assigned a grade of "Pass" and does not affect the grade point average. All CLEP credits awarded appear on the transcript and may apply towards graduation. CLEP credits may not be used for financial aid purposes or athletic eligibility.

For a complete list of exams that have equivalent courses at Northern or to schedule an exam please contact the Student Success Center at 406.265.4133 or in Vande Bogart Library Room 203A.

Continuing Education Courses

Continuing education courses may be offered for credit. However, no more than 30 such credits may be applied toward a bachelor's degree. At the graduate level, no more than 12 credits may be applied toward a Master's degree.

Cooperative Education

Cooperative Education is a program that allows students to earn academic credit and gain on-the-job experience in positions related to their field of study. Most disciplines include cooperative education courses, numbered 298 or 498. Cooperative Education is initiated with learning objectives defined through an agreement between the student, faculty, Director of Career Center, and the work supervisor. To be eligible for Cooperative Education, students must have completed two semesters at the University and maintain a cumulative 2.00 grade point average. Students pursuing an associate degree may apply a total of 12 credits of Cooperative Education toward their degree requirements with the exception of Engineering Technology programs. Students pursuing a bachelor's degree may apply a total of 18 credits of Cooperative Education toward their degree requirements with the exception of Engineering Technology programs. These courses are taken Pass/Fail only.

Course Numbering System

001-099	Development courses, not considered for graduation credit and not computed in credits earned or grade point average. These credits may be considered for financial aid and certification purposes.
100-299	Lower division courses.
300-499	Upper division courses.
500-599	Graduate division courses only.
1390	Undergraduate level Continuing Education courses.

Course Repetition

Students repeating a course will forfeit the original grade and will receive the new grade. The previous grade will remain on the transcript.

Credit Load

Students must complete 15 - 16 credits each semester in order to complete a two-year or four-year degree within the minimum time. The following table explains the rules governing maximum credit loads:

...If a student's cumulative grade point average is:	...then he/she may take the following semester credits without approval	...then he/she must have approval to carry the following semester credits:
3.00 and above	1-22	More than 22
2.50-2.99	1-20	More than 20
2.00-2.49	1-18	More than 18
Below 2.00	1-12	More than 12

First-time University students may not take more than 18 credits during their first semester.

Transfer students: In determining the maximum credit load that a transfer student can carry during his or her first semester at Montana State University-Northern, the University will use the cumulative grade point average earned by that student before he/she came to Northern. Once a student has earned credits at Northern, his/her Northern grade point average will be used to determine credit load. Students wishing to take more than their pre-determined credit load may submit a petition the Admissions and Standards Committee requesting permission. Petitions may be obtained from the Registrar's Office.

The rules for credit load are different during summer semester, and students should consult the summer semester bulletin for an explanation.

Credit Not Pertaining to a Traditional Term

The posting of credit earned outside of a traditional academic calendar term to Northern transcripts will be governed by the following rule: The credit will be posted to the Northern term during which the official transcript or report of the credit is received. If the official transcript or report is received when no Northern term is in progress, the credit will be posted to the Northern term following the receipt of the official transcript or report. In order to be considered an "official" transcript or report of credit, it must:

1. Be an original document produced by the issuing agency or institution. It must contain sufficient information to be identified as such. Telephone reports are not acceptable. Faxes are not acceptable. Documents transmitted by other electronic means, such as electronic mail, are not currently acceptable.
2. Be received directly from the issuing agency or institution without passing through the hands of the student. The transcript can pass through the hands of an official agent of the institution, however, such as a Dean or the administrative support personnel of an academic college.

Distance/Extended Learning

Students who are not able to physically attend classes on the Montana State University-Northern campus may still take courses leading to a degree by utilizing Northern's distance learning options. Regional centers in Great Falls and Lewistown provide alternative sites for students to receive administrative and advising assistance, enroll in classes, pay fees, and register for financial aid. For more information about distance learning options please call 406.265.3730.

Double Major

A student may earn a second major and have it noted on his or her transcript by completing all course work for the second major. Students whose second majors fall within another degree type must follow procedures for a second undergraduate degree. Students should consult the policy on second undershy;graduate degrees, on page 207 of this catalog, to make sure they understand and satisfy the requirements of that policy if it applies to their additional program of study. Students who are applying for graduation with two majors will not be required to complete additional requirements for a minor required by either program.

Dropping and Adding Courses

Since Montana State University-Northern delivers coursework in a variety of formats, methods, and time frames, the drop and add deadlines for students are determined by the percentage of instructional time that has passed in each course. The specific deadlines are set out below:

1. Students may add classes if 10 percent or less of the instructional time has passed in the course.
2. Students may drop classes, and eliminate all notice of those classes from their transcript if 20% or less of the instructional time for the class has elapsed.

3. Students may drop classes and receive a "W" on their transcript, if 60% or less but 20% or more of the instructional time has passed.
4. Students may not withdraw from classes if 61% or more of the instructional time for the involved class or classes has passed. The Registrar will determine and publish the drop and add deadlines for each class, using these percentages. Students may add or drop a class until the close of business on the deadline day.

Final Examination Weekly Policy

The last week of each regular semester will be set aside for final examinations. The Registrar will publish an examination schedule every semester. The final examination week is the only time when final exams may be given for full semester classes. The University expects every class to meet at its scheduled time for final exams. There will be no scheduled extra-curricular activities or meetings during finals week. Each scheduled exam period will be two hours.

If students are scheduled for more than two (2) final examinations on the same day, they may ask for an adjustment. They should contact the instructors in their classes, and try to arrange alternative test times during the final exam week. If those negotiations are unsuccessful, students should ask their College Dean to mediate the conflict.

Fresh Start Policy

Montana State University-Northern students may eliminate part of their previous coursework at the institution under this "fresh start" option. The policy is subject to several restrictions, and may not be available to all students. Under the policy, students may erase a maximum of two consecutive semesters or three consecutive quarters of previous Montana State University-Northern coursework. The coursework will remain on the student's academic record, but the credits and the grades will not be carried forward into the student's cumulative GPA. Once a student has elected to exercise the Fresh Start policy, the effects of the policy may not be rescinded.

Students must meet the following conditions to apply for the fresh start option:

1. they must be undergraduates; they may only exercise the fresh start option once at Montana State University-Northern;
2. they must not have been enrolled at Montana State University-Northern for at least one calendar year;
3. they must apply for the fresh start option during the first year of their return to Montana State University-Northern.

Grades

The quality of a student's work in each course is represented by a letter grade. In computing scholastic averages, each letter grade is assigned a specific number of grade points for each credit.

Faculty at Montana State University-Northern may use the following scale when assigning final grades to students in courses. Criteria for assigning these grades are left to the discretion of course faculty, and shall be clearly communicated to the students in the course using the course Syllabus or any other means of official course communications. These criteria should be provided to the students during the first week of class during each semester. Use of plus and minus grading is left to the discretion of course faculty.

Grades	Description of Grades	Grade Points
A	Excellent	4
A-		3.7
B+		3.3
B	Above Average	3
B-		2.7
C+		2.3
C	Average	2
C-		1.7
D+		1.3
D	Below Average	1
D-	Passing	.7
F	Failure	0
P	Pass	0
I	Incomplete	0
I/**SEE BELOW	Incomplete grade subsequently finished	0
AUDIT	Audit	
W	Withdrawal	0
X	Continuation	
NR	Not Reported by Instructor	

PF	Failure Due to Academic Dishonesty	0
(P)	Passing-developmental courses-not counted in GPA	0
IP	In Progress-developmental courses-not counted in GPA	0
NP	Not Passing-developmental courses-not counted in GPA	0

** (I/* = I/A, I/A-, I/B+, I/B, I/B-, I/C+, I/C, I/C-, I/D+, I/D, I/D-, I/F)

Explanation of Grades and Notations

P	Indicates that the student registered for the course on a “Pass-Fail” basis and passed the course. Pass grades are computed in the earned hours only; however, failures are computed in the grade point average like any other F.
I	Indicates that the work of the course is more than three-fourths complete, not finished, but may be completed. An incomplete is given only to a student who has a proper excuse for not having completed all the requirements of a course. The faculty member and student must arrange to complete the work prior to the ending of the following term. Arrangements must be completed in the next resident semester, or the “I” is changed to an “F.” If the student is not in residence, two semesters are given to complete the work, or the incomplete becomes an “F.” The final grade for the course will replace the notation of “I” in the semester in which the course was originally registered, and the credit for the course will be counted in that semester. The final grade will affect the grade point average of that semester, just as if the work had originally been completed in that semester.
I/*	Incomplete grade subsequently finished. The * represents the final grade. Points are those appropriate to the final grade.
Audit	Indicates that the student registered as an auditor for the course. This course is computed in the attempted hours; however, no credit is given and it is not used to calculate the cumulative gpa.
W	Indicates that the student withdrew from the course or University after 20% of the course had been completed but before 60% of the class time was completed.
X	Indicates that the final grade for the course will be assigned when the sequence is completed and may extend beyond one semester. Only graduate students receive this notation.
(P)	Indicates that the student has passed the developmental course.
IP	Indicated that the student’s work is still in progress.
NP	Indicates that the student was not passing remedial course work at the time the grades were turned in.
NR	Indicates that the instructor did not report the grade. This is a temporary notation and a grade report will be issued as soon as possible.
PF	Indicates that the student failed due to Academic Dishonesty.

Grade Reports

Following each semester students and their advisors may see a report of the students’ grades by logging onto Northern’s website and getting into “My Info” on Banner. Students performing unsatisfactory work during the semester may also be notified. Grade point average (GPA) is computed by dividing the cumulative number of grade points by the total number of GPA hours.

Graduation Academic Latin Honors

Graduation academic Latin honors levels are based on all higher education work completed at the time the program was printed. This does not include work completed at the end of the Spring Semester of commencement. If work completed after the commencement program was printed changed any honors levels, every effort will be made to provide the proper cords, and the new honors levels will be read as the graduates during commencement are introduced.

Latin Honors	Minimum GPA
Cum Laude	3.50
Magna Cum Laude	3.75
Summa Cum Laude	4.00

Honor Cords: Montana State University-Northern recognizes associate and baccalaureate students with excellent grades by awarding traditional Latin academic honors at graduation. Honored graduates wear honors cords and their names are noted in the commencement program. Cord colors are as follows:

Cum Laude	Maroon
Magna Cum Laude	Silver
Summa Cum Laude	Gold

Incompletes

An incomplete grade must be completed in the next resident semester, or the "I" is changed to an "I/F". If the student is not in residence, two semesters are given to complete the work, or the incomplete becomes an "I/F".

Independent Study

Independent study courses are offered at the discretion of individual faculty members and their Dean. Students who wish to enroll in independent study courses must first discuss the requested coursework with the instructor, then obtain the approval of the instructor's dean.

Such approval is based on a preliminary plan of the intended nature, duration, and scope of the project. The work may be a regular catalog course or a course designed to meet the special needs of an individual student. Independent study courses will be numbered 292, 392, 492, 592, or 692 and will not appear on the regular schedule of classes. Students may not add independent study courses after the deadline for adding full-semester classes. No more than 6 independent study credits may apply toward a Master's degree, no more than 9 independent study credits may be applied toward a bachelor's degree and no more than 6 independent study credits may be applied toward an Associate or associate of applied science degree. Independent study forms are available in the Registrar's Office.

Learning Experience Assessment Program (LEAP)

The Learning Experience Assessment Program is designed to provide opportunities to earn university credit for what has been learned through life and work experiences. Students who wish to pursue this means of earning credit will complete portfolios demonstrating how their competencies contribute toward degree requirements. Details concerning the LEAP program may be found in the university policy and procedures manual.

The only academic programs that currently accept LEAP credit are business and community leadership and criminal justice. Students may also ask to have LEAP credits evaluated as distribution coursework under the general education program.

Major, Minor or Advisor Changes

Degree-seeking students may change their academic majors and minors by completing a change of major form and return it to the appropriate College office.

Non-degree-seeking students may apply for degree-seeking status at the Office of Admissions.

For students who have not declared a major, the Advising Center provides advising to help students fulfill their general education requirements and to select a major field of study. Montana State University – Northern will allow students to remain undeclared until they have earned 45 semester hours. After a student has earned 45 semester hours, the student must declare a major, or petition the Admissions and Standards Committee to continue attending without a declared major. Some academic majors require that specific courses be taken during the freshman and sophomore years. Students should, therefore, declare their intended major as early as possible to ensure proper advisement.

Those who have selected a major are assigned faculty advisors by the academic College which administers their chosen major and may request a change of advisor from the Dean of that academic College. Non-degree-seeking students are not assigned faculty advisors, but may seek assistance from the Advising Center.

Pass-Fail Grades

Students may take classes on a pass-fail basis. When considering that option, students should keep the following limitations in mind, however:

1. Courses that satisfy the requirements of a major, a minor, an area of concentration, or the professional education core cannot be taken on a pass-fail basis. Graduate courses cannot be taken on a pass-fail basis.
2. Students can only use eighteen (18) semester credits of pass-fail work in a bachelor's degree program; they can only use nine (9) semester credits of pass-fail work in an associate or associate of applied science degree program.

3. The two previous restrictions do not apply to specific coursework that is only offered on a pass-fail basis. That coursework would include cooperative education classes, student teaching, Advanced Placement, CLEP and challenge exams and trade competency tests.
4. Some academic Colleges have their own rules governing the use of pass-fail credits, and students should consult their faculty advisors for those limitations.
5. Students may change from a grade to pass or pass to a grade prior to the close of the "add" period for the class by means of forms and procedures available from the Registrar's Office. Once pass-fail has been elected, the election cannot be reversed.

Faculty members are not notified when courses are taken on a pass-fail basis. Letter grades turned in by the instructor are converted to Pass or Fail when the grades are recorded on the student's permanent record. A passing grade is defined as a "C-" or better. A failing grade is an "F." Pass grades are not counted in the grade point average but the credit may meet graduation requirements subject to the limitations set out above. Grades of "F" are counted in the grade point average.

The University cautions students that some graduate and professional schools and some employers do not recognize non-traditional grades (i.e., those other than A, B, C, D, F) and students who use the pass/fail option may be at a disadvantage in such situations.

Petitions

Exceptions and deviations from normal academic policy may be requested through petition forms and procedures available from the Registrar's Office. Petitions and requested waivers are reviewed in a timely manner and students are notified of their approval or disapproval.

Privacy Rights

In accordance with the *Family Educational Rights and Privacy Act of 1974*, the Registrar informs students that the University may disclose information from the education record of a student who is or has been in attendance at Montana State University-Northern. The following information is considered by the University to be public in nature:

1. Name
2. Address
3. Telephone number
4. Year in school
5. Major
6. Scholarships awarded
7. Degrees conferred
8. Honors granted
9. Dates of attendance

Currently enrolled students have the right to refuse to permit the University to disclose the above information by submitting a "Privacy Rights" form. This form is the means by which the student notifies the Registrar of his/her intentions concerning the above information. The student is herewith notified that:

1. If the student signs the request to have the Registrar keep the above information private, the University will not even acknowledge the fact of the student's enrollment to third parties, except in cases otherwise provided for, such as written requests for transcripts.
2. Emergency messages will not be taken for or relayed to the student.
3. The student's name will not appear on any lists released to third parties, including honor rolls and graduation.
4. This is an "*all or nothing*" policy. The student may not select certain information or certain circumstances for non-disclosure.
5. Non-disclosure requests may be reversed by submission of notification to the Registrar's Office.

Registration Restrictions

A student classified as a freshman may not enroll in an upper division course without the permission of the instructor.

Scholastic Honor Roll

In recognition of scholastic achievement, the University publishes at the conclusion of each semester an honor roll of undergraduate students who have earned a minimum grade point average of 3.25 in twelve or more credits of work. Students with a grade of Incomplete or "F" are not included on the honor roll listing.

Scholastic Probation/Suspension Review

Students whose semester and/or cumulative grade point average falls below 2.00 will be placed on academic suspension or probation according to the following guidelines. Suspended students may appeal for readmission prior to their elapsed suspension period by means of forms and procedures available from the Registrar's Office.

1. **Scholastic Warning:** Applies only to first-time freshmen or new students who have earned less than twelve credits from a regionally accredited post-secondary institution. Such students are placed on scholastic warning at the end of their first semester of enrollment if they earn less than a 2.00 cumulative grade point average. A student may be on academic warning a maximum of one semester. Probation or suspension status applies to all subsequent enrollments in which the cumulative grade-point average remains below a
2. **Scholastic Probation:** Students (other than those described in situation 1 above) are placed on probation at the end of a semester of enrollment when their cumulative grade point average falls below a 2.00. Transfer students (admitted under special conditions) who have earned 12 or more semester credits and whose transcript(s) indicates less than a 2.00 cumulative grade point average are admitted on scholastic probation.
3. **Continued Scholastic Probation:** Students may continue to enroll while on probation provided they earn at least a 2.00 semester grade point average, even though their cumulative grade point average remains below a 2.00.
4. **Restrictions in enrollment while on Scholastic Warning or Scholastic Probation status:** No student on scholastic warning or probation may enroll for more than 12 credits during the semester without approval of the Admissions and Standards Committee.
5. **Removal of Scholastic Probation:** Such academic standing is removed when the cumulative grade point average is raised to a 2.00 or higher.

Scholastic Suspension: Students currently enrolled on scholastic probation or continued on scholastic probation are suspended when both the semester and cumulative grade point average are below 2.00. The first suspension from Montana State University-Northern will be for one semester. The second suspension will be for one calendar year. Students suspended for a third time, or those seeking early re-admission from a first or second suspension, must appeal by petition to the Admissions and Standards Committee.

A student re-admitted after a period of suspension will be placed on scholastic probation.

Suspended students may attend classes until their appeal is decided.

Second Undergraduate Degrees

To earn an additional degree, students must complete all coursework required in the degree program. A second degree will be awarded only when it differs from the student's first degree. For example, if the second major is a bachelor of science degree and the first was a bachelor of arts degree, then a second degree would be awarded.

A second associate or associate of applied science degree requires a minimum of twelve additional credits; and a second baccalaureate degree requires a minimum of thirty additional credits. Normal residency requirements and all other academic regulations also apply. Students wishing to earn a second associate, associate of applied science, bachelor, or bachelor of applied science degree must complete the regular admission procedures. For double major, i.e., a second major within the same degree type, see the section entitled "Double Major" on page 203.

Semesters

Semester: Northern has three semesters in an academic year: Fall, Spring, and Summer. Students normally attend two semesters in an academic year: Fall and Spring. When a policy refers to a number of semesters, or to "regular" semesters, it is referring to the Fall and Spring semesters only, to the exclusion of Summer semester, unless the policy expressly indicates to the contrary.

Special Topics

Experimental courses and courses for special topics may be offered from time to time. Such courses are numbered 291, 391, 491, 591, and 691 and will not be offered more than twice, excluding summer sessions or continuing education offerings, which may be offered more often.

Substitutions

Course substitutions are exceptions and deviations from normal academic policy and may be requested on forms available from the Registrar's Office. A substitution requires the approval of the student's faculty advisor, the academic College Dean of the student's major, and the Dean of the academic College that offers the course. A course description or syllabus must accompany the form. They are then returned to the Registrar's Office for processing.

Trade Competency Test

Students who have had five or more years of work experience in an apprenticeable trade or licensed occupation may have their experience evaluated through a written and performance test administered by the National Occupational Competency Test Institute (NOCTI). This testing process, coupled with a committee evaluation of job success, may generate up to 39 credits toward earning a degree. Contact the Registrar or Dean of Education and Graduate Studies for more information.

Transcript of Academic Record

A transcript is the complete academic record of a student's work and status. The official transcript bears the signature of the Registrar and the seal of Montana State University-Northern. Beginning March 1, 2016 Montana State University Northern will accept electronic transcripts from The National Student Clearinghouse and Parchment. Electronic Transcripts must be address to the Registrar's office or registrar's email (registrar@msun.edu). Electronic transcripts received from other departments or emails will not be honored and will be considered unofficial. Another other copies are unofficial

as well. The University retains a permanent transcript. Official transcripts are issued only upon the written request of the student. Transcripts will not be released until all University admissions or financial obligations have been met.

The education records, as defined by federal right-to-privacy laws, of deceased persons in the custody of Montana State University-Northern will be released only to individuals who document themselves as personal representatives of the deceased's estate or remaining next-of-kin. The death of the alumnus must also be documented.

Transfer of Credits

Transfer students should read these policies carefully, so they are comfortable with the process of transcript evaluation and understand its steps.

1. The Registrar's Office will begin the evaluation of transfer credits when the transfer student has been admitted to the University as a degree-seeking student.
2. Transfer students must submit official transcripts from every post-secondary school they have attended before they may be admitted.
3. The Registrar determines the acceptability of course work from other post-secondary institutions, using these rules. The Registrar also determines the acceptability of transfer credit to meet general education requirements. Faculty in the respective majors and minors determine whether transfer credit will meet specific program-area degree requirements.

Acceptability of Credits

1. The University accepts all college and/or university level courses from institutions accredited by regional association of schools and colleges. This does not include remedial or developmental courses.
2. If an institution was not accredited at the time the transfer student enrolled there, but accreditation has subsequently been granted by a regional association, the student may petition to have the credits accepted.
3. If the institution was a candidate for accreditation at the time the transfer student took classes, credit will be granted after successful completion of 20 semester credits at Northern.
4. Credit will be granted for college-level continuing education, correspondence and extension courses successfully completed at regionally accredited institutions.
5. International coursework must be evaluated by a professional foreign transcript-evaluating agent, designated by the Office of Admissions, or by other means approved by university policy.
6. Credit may be granted for military service and for completed military service schools based on the recommendations of "A Guide to the Evaluation of Educational Experiences in the Armed Forces." See the Registrar for details.
7. Credit may be granted for education received from non-collegiate institutions on the basis of recommendations published by the American Council on Education.

Evaluation of Degree Requirements

1. The Registrar determines the acceptability of transfer credits toward general education requirements at the University. Academic Colleges may also be consulted.
2. The academic College that awards the student's degree will determine applicability of transfer courses to specific program-area degree requirements.
3. Secondary education majors may work with two different academic Colleges. The Department of Education will determine how transfer of credits fit into the education core. The major and minor academic Colleges will determine how transfer credits fit into major or minor curricula.
4. Articulation agreements may have been negotiated between Northern and the transfer student's institution. Those agreements will determine the use of credits in a student's degree program.
5. Transfer students are encouraged to assist academic College faculty in evaluating previous coursework. Catalog descriptions, course syllabi and classroom work can all be used to document the content and rigor of transfer credits.
6. Courses with grades of less than C- will not be applicable to general education, major or minor requirements.

Transfer Grades

Transfer credit will be given for courses in which satisfactory grades were received. A satisfactory grade for transfer purposes is defined as A, A-, B+, B, B-, C+, C, C-, D+, D, D- or S. Transfer Grade-point

1. The transfer grade point average will be used to determine eligibility for acceptance at Montana State University-Northern. Coursework from all higher education institutions will be used to calculate that grade point average.
2. Transfer grade point averages will not be computed for students whose 1st term of attendance at Northern is Fall 1989 or after. Student course work completed at the College of Technology in Great Falls will be treated as resident course work and included in MSU-Northern's grade point average.
3. University honors may be based on the combined grade point average for all higher education work completed.

Waivers

Course waivers are exceptions and deviations from normal academic policy and may be requested on forms available from the Registrar's Office. A waiver requires the approval of the student's advisor, the academic Director of the student's major. A waiver does not constitute a reduction of required credits. Students who receive a waiver for a course do not receive the credit hours for that course.

Withdrawals from the University

Students may withdraw from the University by completing the procedures and forms available in the Registrar's Office. Course grades will be determined as set out in the Drop and Add Policy (see Drop and Adds).

Special Transfer Program

Students may complete preparatory course work at Montana State University Northern for the Dental Hygiene program at the College of Technology in Great Falls.

Dental Hygiene. For many years, Montana was the only state in the United States without a dental hygiene program. That educational deficit was corrected in 2001, when the Montana Board of Regents approved such a program at Montana State University-Great Falls College of Technology in Great Falls, Montana.

Students complete 93-98 credits to earn the associate of applied science degree in Dental Hygiene. Fourteen (14) students each year are admitted to the Dental Hygiene program under a competitive process. Preference is given to Montana residents. Employment prospects for dental hygienists are quite good, however, and graduates may earn a salary in the \$52,000 - \$68,000 range for full-time employment.

Students interested in the program can complete the pre-requisite courses required for the degree at campuses other than the MSU-Great Falls College of Technology campus. At Montana State University-Northern, for instance, the following classes can be completed at this institution and transferred to the Great Falls Dental Hygiene program. Some of the classes are pre-requisites and others are courses with the program:

Code	Title	Credits
BIOM 250	Microbiology for Hlth Sciences	3
BIOM 251	Microbiology Hlth Sciences Lab	1
BIOH 201	Human Anat Phys I	4
BIOH 211	Human Anatomy & Physiology II	4
CHMY 141	College Chemistry I	5
CHMY 143	College Chemistry II	5
M 121 or M 145	College Algebra Math for the Liberal Arts	3-4
PSYX 100 or PSYX 230	Intro to Psychology Developmental Psychology	3
SOCI 101 or COMX 111	Introduction to Sociology Intro to Public Speaking	3
WRIT 101	College Writing I	3
M 145	Math for the Liberal Arts (or higher)	4

Students who are interested in the Dental Hygiene program, and who would like to complete the 9 classes outlined above, should consult with a faculty advisor on the MSU-Northern campus. The MSU-Northern faculty advisor assigned to the Dental Hygiene program are:

Carol Reifschneider
Hagener Science Center Room 206
phone: 406.265.4126

Students are also encouraged to consult the MSU-Great Falls web site for current information about the actual program.

Faculty

BACHMEIER, Randy (2017)
Assistant Professor, Community Leadership
Ed. Ph.D., Regent University, 2009; M.S. Ed., Montana State University-Northern, 2004; B.A., Montana State University-Northern, 1993

BALEMBA, Samantha (2016)
Assistant Professor, Criminal Justice

Doctorate of Philosophy, Simon Fraser University, 2014; Master of Arts, Criminology, 2010

BIEGER, Jack (2016)

Assistant Professor, Criminal Justice

Doctorate Organizational Leadership, University of Phoenix 2010; M.S., University of Phoenix 2010; B.S., University of Phoenix, 2008

BOYSUN, Wane (1997)

Professor, Automotive Technology and Agricultural Mechanics

B.S., M.Ed., Montana State University-Northern, 1996, 1999

BRAITHWAITE, Virginia (2011)

Director of Field and Clinical Experiences and Instructor, Education

B.A., St. Thomas Aquinas College, 1973; M.Ed., University of West Alabama, 1986

CARLSON, Kevin S. (1986)

Professor, Business

B.T., Northern Montana College, 1983; M.B.A., University of Montana, 1986

CLOUSE, Gregory S. (1987)

Professor, Diesel Technology

B.T., M.Ed., Northern Montana College, 1984, 1989

CLOUSE, Vickie (2002)

Assistant Professor, Biology and Earth Science

B.S., M.Ed., Northern Montana College, 1989; Montana State University-Northern, 2001

DANLEY, William H. (1973)

Associate Professor, Agricultural Technology

B.S., M.S., New Mexico State University, 1971, 1973

DON, Steven (2003)

Chair College of Technical Sciences

Assistant Professor, Automotive and Diesel Technology

A.S., Montana State University-Northern, 1994; B.C., University of Canterbury, 1984; M.Ed., Montana State University-Billings, 2008

DUKE, Jamie (2016)

Assistant Professor of Nursing

B.S., Nursing, Walden University, 2013; M.S., Walden University, 2016

FOLEY, John (2001)

Assistant Professor, Counselor Education

B.S., M.A., Central Missouri State, 1972, 1973; M.A., Ph.D., University of North Dakota, 1984, 1986

GUYANT, Valerie (2016)

Associate Professor, English

B.S., Dual Degree, University of Wisconsin-River Falls, 1992; M.S., University of Wisconsin-Stevens Point, 2002; Doctorate, Northern Illinois University, 2011

HART, Peter (2013)

Associate Professor, Health Promotion

B.S., Georgia College, 1994; M.A., Furman University, 1996; Ph.D., Middle Tennessee State University, 2012

HESSKE, Steve D. (1994)

Professor, English

B.S., Ohio University, 1971; M.A., Ph.D., Bowling Green State University, 1981, 1992

HILDEBRAND, Terri (2014)

Associate Professor of Biology,

B.S. Biology/Math, Black Hills State University, 1991; Ph.D. Botany, University of Kansas, 2005

HOWLAND, James C. (1990)

Professor, Computer Information Systems

B.S., Oregon State University, 1986; M.I.S., City University, 1992

HUSE, Shawn (2002)

Head Men's Basketball Coach

Assistant Professor, Education

B.S., Montana Tech of the University of Montana, 1995; B.A., University of Montana, 1997; M.A., University of Nebraska-Kearney, 2002

KEGEL, Gregory D. (1982)

*Chancellor**Professor, Design Drafting and Manufacturing Technology*

B.S., Northern Montana College, 1976; M.S., Central Washington University, 1987

KIRKPATRICK, James (2010)

Instructor of Electrical Technology

Inside Wireman, North Dakota State School Of Science, 1996

LOCKWOOD, Stephen P. (1988)

Professor, English

B.A., San Jose University, 1970; Ph.D., Indiana University, 1985

MACK, Charlie (2017)

Assistant Professor, College of Technical Science

A.A.S., Montana State University Northern, 2014; B.S., Montana State University Northern, 2014

MAGELSEN, Trygve (2006)

Associate Professor, Electrical Technology

B.S., Montana State University-Northern, 2002; M.S., University of North Dakota, 2004

MATSON, Brandon (2016)

Assistant Professor, Diesel Technology

National Academy of Railroad Science (NARS), 2007; B.S., Montana State University-Northern, 2004

MCCLENDON, Marvin (2017)

Assistant Professor, Mathematics

B.S., Rice University, 1978; M.A. Princeton University, 1980; Ph.D., Princeton University, 1988

MCKENZIE-JONES, Paul (2016)

Assistant Professor, Native American Studies

M.S. University of Oklahoma, 2006; Ph.D., University of Oklahoma, 2012

MEYER, Joshua (2013)

Assistant Professor, Automotive/Diesel Technology

A.S., Waubensee Community College, 2004; B.S., Southern Illinois University, 2006

MOUAT, Chris (2005)

Head Women's Basketball Coach

B.Ed., University of Montana-Missoula, 1993; M.Ed., Montana State University-Northern, 2016

OBERQUELL, Christian (2001)

*Head Athletic Trainer/Athletic Director**Instructor, Education*

B.S., University of Mary, 1994; NATA Certified, 1995; M.S., California University of Pennsylvania, 2010

OBUNAGA, Roselidah (2017)

Head Women's Volleyball Coach

M.A., University of Evansville, 2011; B.S., Columbia College, 2006; A.S., Missouri University-West Plains, 2004

ODEGARD, Maureen (2015)

Assistant Professor, Education

B.S., Montana State University Bozeman, 1994; M.S., Montana State University Billings, 2001

OPHUS, Byron (2002)

Assistant Professor, Business

B.T., Northern Montana College, 1983; MBA, University of Montana, 2005

OZBURN, Cristy (2013)

Assistant Professor, Arts and Science

M.S., Boston University, 2009; B., University of North Florida, 2002; Ph.D., University of the Rockies, 2017

PEASE, Norton (2002)

Chair, College of Education, Arts and Sciences, And Nursing

Associate Professor, Graphic Design

B.F.A., Iowa State University, 1995; M.F.A., Washington University, St. Louis, 1999

POLLINGTON, Charles (2004)

Assistant Professor, Mathematics

B.S., Northern Montana College, 1990; M.S. Montana State University, 1993

REIFSCHNEIDER, Carol (1995)

Interim Dean, College of Education, Arts & Sciences and Nursing,

Professor, Water Quality Technology: Environmental Health

B.A., M.S., Ph.D., University of Kansas, 1977, 1982, 1993

RESURRECCION, Eleazer (2014)

Assistant Professor, Civil Engineering Technology

B.S. University of the Philippines, Los Banos, 1999; M.S., Ph.D., University of Virginia, 2010, 2013

RIDENOUR, Rodney (2012)

Assistant Professor of Business

BA, Luther College, 1975; MPAC, Montana State University-Bozeman, 1996

RIGGIN, Aaron (2015)

Assistant Professor, Design Drafting

RUBY, Kevin (2014)

Assistant Professor Automotive/Diesel Technology

A.A.S., Montana State University Northern, 2003; B.S., Montana State University-Northern, 2003

SCHLOTFELDT, Lorren (2007)

Instructor of Plumbing Technology

B.S., Northern Montana College, 1978

SEIFFERT, Mark A. (1994)

Professor, Speech Communication

B.A., Montana State University, 1984; M.A., Texas Tech University, 1985; Ed.D., West Virginia University, 1990

SELLERS, Darlene (1998)

Professor, Education

B.S., University of Wyoming, 1988; M.Ed., University of Southern Mississippi, 1990; Ph.D., University of Wyoming, 1995

SIEMENS, Jeremy (2005)

Assistant Professor, Automotive Technology

B.S., Montana State University-Bozeman, 1994

SMEBY, Curtis (1998)

Professor, Curriculum and Instruction

B.A., Acadia University, 1980; M.S., University of Oregon, 1981; Ed. Specialist University of Southern Mississippi, 1990; Ph.D, University of Wyoming, 1996; B.S., Northern Montana College, 1990; M.S. Montana State University, 1993

SMILEY, Frederick (2008)

Associate Professor of Education

B.A., California State University-Chico, 1966; M.A., Chapman College, 1982; Ed.D., Oklahoma State University, 1992

SNIDER, John M. (1989)

Professor, English

B.A., Dickinson College, 1972; M.A., Ph.D., University of Illinois, 1974, 1983

SOISETH, Joel K. (1988)

Professor, Art

B.A., B.F.A., M.F.A., University of North Dakota, 1970, 1980, 1983

SPANGLER, Chad (2014)

Assistant Professor of Health Promotion

B.S., Montana State University- Northern, 1995; M.S., University of Montana, 2002; Ph. D., Walden University, 2012

STRIZICH, Lawrence J. (1988)

Dean, College of Technical Sciences, Professor, Electronics Engineering Technology

B.S.E.E., University of Colorado, 1974; M.E., University of Idaho, 1996; PE-Licensed Engineer Ed. D Montana State University, 2011

TERRY, Charles (2016)

Instructor of Welding

THIVIERGE, Tyson (2008)

Head Wrestling Coach, Instructor

B.S., Montana State University Northern, 2003

TODD, Joseph (2014)

Assistant Professor in Teacher Education

B.S., Metropolitan State College, 2007; MBA, Colorado Technical University, 2009; Ed. PhD. Montclair State University, 2015

UDAYKUMAR, Kasthuri (2016)

Assistant Professor, Nursing

M.S., Nursing, Valparaiso University, 2015; B.S., Nursing, Amrita Institute of Medical Sciences and Research Centre, 2008

UNDERWOOD, Jamie (2005)

Assistant Professor, History

B.A., West Georgia College, 1990; B.A., M.A., Valdosta State College, 1991; 1992

VERPLOEGEN, Mary (2000)

Assistant Professor, Computer Information Systems

B.S.Ed., Northern Montana College, 1987; M.S., Oregon State University, 1988

WELCH, Thomas M. (1981)

Professor, Agricultural Technology

B.S., South Dakota State University, 1979; M.S., Montana State University, 1984

WILKE, Lanny (1996)

Associate Professor, Business

A.A., Pensacola Junior College, 1981; B.A., B.S., M.Ed., Montana State University-Northern, 1995, 1996, 1998

WILLIAMS, Arlys (2005)

Chair Nursing, Associate Professor, Nursing

B.S.N., Valparaiso University, 1974 M.S., University of Colorado, 2005, A.P.R.N., P.N.P., B.C.

ZUCK, Barbara (2008)

Associate Professor, Business

B.A., Luther College; M.P.A., Portland State University; Ed.D., Montana State University-Bozeman. 2007

Emeriti Faculty List

EMERITI FACULTY

ANDERSON, Dale E. (1962-1982)

Associate Professor Emeritus, Drafting/ Construction Technology

B.S., Northern Montana College, 1966; M.Ed., Montana State University, 1971

BARBER, Roger (1980-2003)

Professor Emeritus, Business

B.A., M.B.A., J.D., University of Montana, 1967, 1971, 1983

BLACK, Amy A. (1969-1987)

Associate Professor Emerita, Nursing

B.S., Montana State University, 1957; M.S., University of California, 1966

BLEW, Mary R. (1969-1987)

Professor Emerita, English

B.A., M.A., University of Montana, 1962, 1963; Ph.D., University of Missouri, 1969

BORCHERT, Horace F. (1959-1988)

Professor Emeritus, Science

B.S., Valley City State Teachers College, 1949; M.S., University of Colorado, 1956; Ph.D., Montana State University, 1969

CHRISTECK, Robert P. (1977)

Professor, Chemistry

B.S., St. Cloud State College, 1964; M.N.S., University of South Dakota, 1968; M.S., University of Wisconsin-LaCrosse, 1968; Ph.D., University of Colorado-Boulder, 1972

CROWLEY, Joseph R. (1959-1961) (1962-1975)

President Emeritus; Professor Emeritus, Psychology

B.A., University of Washington, 1937; M.A., Ed.D., University of Montana, 1951, 1963

EDWARDS, James R. (1988-1996)

Professor Emeritus, Economics

B.A. Brigham Young University, 1966; Ph.D. University of Utah, 1983

ERICKSON, James H.M. (1978-1985)

President Emeritus; Professor Emeritus, Education

B.S., University of Minnesota, 1949; M.Ed., University of Colorado, 1949; Ed.D., University of Wyoming, 1954

EVENSON, Vivian W. (1975-1996)

Professor Emerita, Nursing

B.S., M.N., M.S., Montana State University, 1970, 1971, 1979; Ed.D., University of Montana, 1989

GREENWOOD, David H. (1969-1989)

Professor Emeritus, Health and Physical Education

B.S., Southern State Teachers College, 1959; M.S., South Dakota State University, 1961; Ed.D., University of New Mexico, 1969

HAWKINSON, Virgil C. (1984-2013)

Professor Emeritus, Manufacturing and Metals Technology

B.A., M.S., St. Cloud State university, 1969, 1978;

Ed.D., Montana State University-Bozeman, 2000

HOLMES, Charles H. (1972-1990)

Professor Emeritus, Social Science

B.S., M.S., Utah State University, 1950, 1956; Ph.D., Syracuse University, Maxwell Graduate School, 1960

KAFTAN, Robert E. (1966-1990)

Professor Emeritus, Education

B.A., University of North Dakota, 1950; M.S., University of Wisconsin, 1960; Ed.D., University of Montana, 1967

KLARICH, Duane A. (1986-2002)

Associate Professor Emeritus, Chemistry and Biology

B.S., Eastern Montana College, 1965; M.S., Ph.D., Montana State University, 1967, 1977

KORB, August W. (1955-1994)

Assistant Vice President for Academic Affairs and Professor Emeritus, Education

B.S., Northern Montana College, 1959; M.Ed., Colorado State University, 1965; Ph.D., Ohio State University, 1972

MILLER, Robert L. (1971-)

Professor Emeritus, Automotive Technology

B.A., Simpson College Iowa, 1951

M.Ed., Northern Montana College, 1980

NYSTROM, Conrad O. (1968-2000)

Professor Emeritus, Metals Technology

B.S., Walla Walla College, 1955; M.Ed., Northern Montana College, 1980

OPHUS, L. Lynn (1966-1988)

Instructor Emerita, Health and Physical Education

B.A., Montana State University, 1954

PARKER, Reno L. (1988-2005)

Professor Emeritus, Biology

B.A., University of Minnesota, 1963; M.S., Montana State University, 1966; Ph.D., Kent State University, 1970

PETERSON, Hans J. (1966-1987)

Professor Emeritus, History and Social Science

B.A., University of Louisville, 1959; M.A., Ph.D., University of Denver, 1961, 1966

PHILLIPS, Laura L. (1971-1988)

Assistant Professor Emerita, Nursing

B.S., M.S. Nurs., Montana State University, 1968, 1982; R.N.

PITT, C. Everett (1967-1988)

Professor Emeritus, Biology and Science Education

B.S., M.S., Ed.D., University of Utah, 1954, 1955, 1969

ROUSH, Allan (1966-1990)

Associate Professor Emeritus, Industrial Arts

B.S., Northern Montana College, 1959; A.M., University of Northern Colorado, 1966

SHELLENBERGER, William Carl (1966-1994)

Professor Emeritus, Science

B.S., Bloomsburg Teachers College, 1958; M.S., Syracuse University, 1961

SMITH, Terry James (1965-1994)

Associate Professor Emeritus, Math

B.S., Montana State University, 1959; M.A., University of Denver, 1964

SKORNORGOSKI, Brenda (1986-2010)

Associate Professor of Business;

BS, MBA, University of Montana 1980, 1984

STALLKAMP, Lloyd E. (1988-2008)

Professor, Electronics Technology

B.A., St. Cloud State University, 1970; B.S., Bemidji State University, 1982; M.Ed., South Dakota State University, 1986

STILGER, Lynn (1990-2010)

Professor of Diesel Technology

BS, Northern Montana College, 1977

STONE, Roger D. (1988-2007)

Associate Professor Emeritus, Computer Technology

B.A., College of Great Falls, 1983; M.I.S., City University, 1992

THACKERAY, JR, William W. (1965-2006)

Professor Emeritus, English

B.S., Northern Montana College, 1958; M.A., University of Utah, 1964; D.A., Idaho State University, 1985

VALDEZ, Valdamar E. (1968-1978; 1986-1991)

Professor Emeritus, Drafting

B.A., M.S., Kearney State College, 1957, 1965

VARNUM, John P. (1963-1986)

Associate Professor Emeritus, Music

B.M., M.M., University of Montana, 1958, 1959

WESTENSKOW, David L. (1966-2001)

Professor Emeritus, Languages

B.A., M.A., Brigham Young University, 1963, 1967

WIBERG, Janice L. (1979-2009)

Professor, Music

B.M.E., M.M., D.M.A., University of Missouri-Kansas City,

1968, 1972, 1979

WOJTOWICK, Michael J. (1967-1995)

Associate Professor Emeritus, Automotive Technology

B.S., Northern Montana College, 1967; M.Ed. Oregon State University, 1970

YEAGER, Francis E. (1952-1977)

Associate Professor Emeritus, Chemistry

B.A., Intermountain Union College, 1936; M.A., University of Northern Colorado, 1949

Directory

Board of Regents of Higher Education

Steve Bullock, Governor	Ex-Officio
Elsie Arntzen, Superintendent of Public Instruction	Ex-Officio
Clayton Christian, Commissioner of Higher Education	Ex-Officio
Paul Tuss, Havre	2020
Casey Lozar, Helena	2018
Fran M. Albrecht, Missoula	2019
William Johnstone, Great Falls	2017
Robert A. Nystuen, Kalispell	2022
Martha Sheey, Billings	2021
Chase Greenfield, Student Regent	2018

Commissioner of Higher Education

The Board of Regents appoints a Commissioner of Higher Education as the chief administrative officer of the Montana University System. The current commissioner is:

Clay Christian, Commissioner of Higher Education
2500 Broadway Street
PO Box 203201
Helena, Montana 59620-3201

Administration

Greg Kegel, Chancellor	406.265.3720
Larry Strizich, Interim Provost and Vice Chancellor for Academic Affairs	406.265.3726
Larry Strizich, Dean of College of Technical Sciences	406.265.3736
Carol Reifschneider, Interim Dean of College of Education/Arts/Sciences/ Nursing	406.265.3735
Steve Wise, Dean of Student Engagement/Residence Life	406.265.4113
Brian Simonson, Vice Chancellor Administration & Finance	406.265.3733
Lourdes Caven, Accounting Associate	406.265.3509
Marianne Hoppe, Interim Chief Information Officer	406.265.3765
Cindy Small, Director of Financial Aid	406.265.3787
Vicki Gist, Director of the Library	406.265.3706
Dan Ulmen, Facilities Operations Manager	406.265.3755
Suzanne Hunger, Director of Human Resources	406.265.4147
Alisha Schroeder, Registrar	406.265.4191
, Director of Nursing	406.265.4196
James Potter, Director of University Relations	406.265.3727
Tracey Jette, Senior Director of Student Success Center	406.265.3566
Jim Bennett, Director of Foundation	406.265.3711
Christian Oberquell, Athletic Director	406.265.3761
Sherry Kegel, Director of Student Health Services	406.265.3599
Norton Pease, Chair, College of Education, Arts and Sciences, and Nursing	406.265.3596
Steven Don, Chair, College of Technical Sciences	406.265.4185

Phone Directory

Frequently called numbers

- Police 406.265.4361

- Fire406.265.6511
- Campus Operator406.265.3700
- Chancellor406.265.3720
- Provost/Vice Chancellor for Academic Affairs406.265.3726

A

- Admissions Office406.265.3704
- Alumni Affairs406.265.3761
- Athletics406.265.3761

B

- Bookstore406.265.3761
- Business Services406.265.3733

C

- CAD Lab406.265.3700 ext.3370
- Career Center406.265.3708
- Chancellor406.265.3720
- College of Education, Arts and Sciences, and Nursing406.265.3751
- College of Technical Sciences406.265.3736
- Cultural and Gender Equity406.265.3589

D

- Dean of Students406.265.4113
- Disability Services406.265.4152
- Distance Learning406.265.3730

E

- Education406.265.3751
- Educational Opportunity Center406.265.4141
- Extended University406.265.3730

F

- Farm Mechanics Building406.265.3700 ext. 3195
- Financial Aid406.265.3787
- Food Service406.265.3796
- Foundation406.265.3711

G

- Graduate Studies406.265.3738
- Great Falls Campus406.771.4437

H

- Housing406.265.4113
- Human Resources406.265.4147

I

- Information Technology Services (ITS)406.265.3765
- Intramural Sports406.265.3732

K

- KNMC Radio Station406.265.3732

L

- Lewistown Campus 406.265.3710
- Library (Vande Bogart) 406.265.3706

M

- MacKenzie Residence Hall 406.265.3503
- Media and Reprographics 406.265.3702
- Morgan Residence Hall 406.265.3579

R

- Registrar 406.265.3703
- Risk Management 406.265.3509

S

- Student Affairs 406.265.4190
- Student Health Services 406.265.3599
- Student Senate 406.945.9230
- Student Support Services 406.265.3783
- Student Union Building 406.265.3561
- Summer Session 406.265.3730
- Switchboard 406.265.3700

T

- Technical Sciences 406.265.3736
- Theater 406.265.3700 ext 3121

U

- University Relations 406.265.3727

V

- Veteran's Upward Bound (Billings) 1.877.356.2075

W

- Wellness 406.265.3599

Important Notice

This general bulletin is published by Montana State University-Northern in, Havre, Montana, as a guide for students and others interested in the institution.

Students are expected to be familiar with all University regulations and information set forth in this publication or any amendments to or modifications thereof. Montana State University-Northern reserves the right, AT ANY TIME AND WITHOUT ADVANCE NOTICE, to change the University regulations, academic offerings, and the contents of this publication, including but not limited to the right to:

- Withdraw or cancel, courses or programs,
- Change fee schedules,
- Change admission and registration requirements,
- Change the regulations and requirements governing instruction and graduation from Montana State University-Northern,
- Change any other regulations affecting students.

This list is meant to be illustrative only and not exhaustive. Changes shall go in to effect whenever the proper authorities so determine and shall apply not only to prospective students but also to those who are already attending the University. Degree programs and course sequences contained in this bulletin are models and may or may not reflect actual course scheduling patterns.

Montana State University-Northern places full responsibility upon the student for registering for the proper courses and for fulfilling all requirements for a degree as set forth in this bulletin, as amended from time to time. No agent or employee of the University has the authority to warrant graduation, the attainment of any type of license, or the attainment of any other career goal. The institution does not accept responsibility for delays in graduation or

attainment of career goals resulting from errors in graduation, canceled courses, time schedule changes, changes in degree requirements, or similar changes, or for errors resulting from consultation with and reliance upon any information acquired from any University employee. Advisor's signatures on pre-registration, drop-add, or similar cards or forms do not necessarily indicate agreement with or approval of the student's choice of courses, nor may they be construed in any way as a warranty that the student's choice of courses is sufficient for graduation or attainment of any career goals.

Other University documents may contain official University policies. For example, academic college or program handbooks may contain University policies that supplement those found in this catalog. The reader is herewith notified that this catalog is not an exhaustive source of official University policy and is encouraged to refer to the college or program handbooks of any academic area in which he/she is interested.

Montana State University-Northern also reserves the right to deny a student the privilege of re-registering and the right not to release a student's records or any information based on them, when the student has failed to satisfy any obligations to Montana State University-Northern. Students may verify the status of their financial obligations by checking with the Business Office in Cowan Hall.

Montana State University-Northern is accredited by the Northwest Commission on Colleges and Universities.

Montana State University-Northern is committed to a program of equal opportunity for education, employment, and participation in University activities without regard to race, color, national origin, sex, age, religion, sexual orientation or preference, marital status, physical or mental disability, creed or political belief, or status as a Vietnam era or disabled veteran. This right shall be guaranteed to all students presently enrolled, students applying for admission, employees, and applicants for employment at Montana State University-Northern. Persons with inquiries or complaints regarding discrimination should contact the Director of Human Resources, Cowan Hall 204, 406.265.4147 at Montana State University-Northern, or Office of Civil Rights, Seattle Office, U.S. Department of Education, 915 Second Ave, Room 3310, Seattle, WA 98174, (206)-607-1600.

Course Descriptions

Accounting (ACCT)

ACCT 190. Special Topics. 1-12 Credits.

ACCT 199. Independent Study. 1-12 Credits.

ACCT 270. Acctng for Non-Profit Orgs. 3 Credits.

Accounting for Non-Profit Organizations is an introductory course in school accounting systems. The course is outlined after the model presented in the Montana School Accounting Manual published by the Office of Public Instruction. The course will note the differences in accounting systems as learned in the ACTG 201 and ACTG 202 Accounting Principles courses and those systems used for school accounting.

ACCT 290. Special Topics. 1-12 Credits.

ACCT 390. Special Topics. 1-12 Credits.

ACCT 479. Cooperative Edcation. 1-12 Credits.

Accounting (ACTG)

ACTG 191. Special Topics. 12 Credits.

ACTG 192. Independent Study. 12 Credits.

ACTG 201. Principles of Fin Acct. 3 Credits.

This course introduces the student to financial accounting. It includes recording transactions, making adjustments, and preparation of financial statements. Detailed coverage of accounting for cash, receivables, inventories, property, plant and equipment, payroll, and other current liabilities is included. The course covers the various forms of ownership including sole proprietorships, partnerships, and corporations. Formerly ACCT 261.

ACTG 202. Principles of Mang Acct. 3 Credits.

This course completes the introduction to financial accounting by covering long-term investments and liabilities. Students learn to prepare and understand a statement of cash flows and perform financial statement analysis. The course then turns its focus to managerial accounting: Cost analysis and decision making, job costing, process costing, capital budgeting, cost-volume-profit analysis, and variance analysis. Prerequisite: ACTG 201. (ACCT 261) Formerly ACCT 262.

ACTG 205. Computerized Accounting. 3 Credits.

This course presents qualities in manual and computer accounting systems. Students will learn how to establish a system to give them more detailed information for decision-making. Internal controls to safeguard both assets and records will be emphasized. Prerequisite: ACTG 201. (ACCT 261). (offered even numbered years) Formerly ACCT 285.

ACTG 291. Special Topics. 12 Credits.**ACTG 292. Independent Study. 1-12 Credits.****ACTG 301. Intermediate Accounting I. 3 Credits.**

The class emphasizes accounting principles and theory as they relate to the balance sheet and income statement. This course is primarily concerned with the conceptual basis of accounting, current and noncurrent assets, liabilities including lease obligations, and deferred taxes. Prerequisite: ACTG 202 (ACCT 262). (offered even numbered years) Formerly ACCT 315.

ACTG 302. Intermediate Accounting II. 3 Credits.

This class completes the financial accounting sequence. It focuses on problem areas including pension obligations, various equity instruments, counting for inflation, earnings per share, and Statement of Cash Flows. Prerequisite: ACTG 301 (ACCT 315). (offered even numbered years) Formerly ACCT 316.

ACTG 391. Special Topics. 12 Credits.**ACTG 392. Independent Study. 12 Credits.****ACTG 399. Independent Study. 1-12 Credits.****ACTG 401. Principles of Fed Tax - Ind. 3 Credits.**

This course examines the fundamental principles of the federal income tax system primarily as they apply to business entities. A decision-making approach guides students in understanding the ways in which taxes affect both the planning process and financial outcomes. Topics include income and expense determination, property concepts and transactions, and specific applications to various forms of business entities as well as to individuals. Tax planning is a primary theme. Prerequisite: ACTG 202 (ACCT 262). Formerly ACCT 365.

ACTG 410. Cost/Mgmt Acct I. 3 Credits.

This course emphasizes the use of accounting information in managerial decision-making. Content includes cost-volume-profit analysis, budget preparation, analysis of variances, relevant costs, and pricing decisions. Prerequisite: ACTG 202 (ACCT 262). (offered odd numbered years) Formerly ACCT 321.

ACTG 411. Auditing 1. 3 Credits.

Presents a theory of auditing by considering the auditing environment, auditing standards, professional ethics, techniques of internal control, audit evidence, audit approaches and the auditor's report.

ACTG 441. Financial Statement Analysis. 3 Credits.

Financial Statement Analysis trains the participant to thoroughly understand the financial statements of a business. It is useful for indicating problems a business may have while there is still time to take corrective action. Students learn that lenders and investors analyze a financial statement from a different perspective than management. It is, therefore, very useful for students planning to enter banking, accounting, management, or investing careers. Specific elements of the course include ratio analysis, understanding "window dressing", or the deliberate attempts by a company to glorify its financial statements, Dupont analysis, industry analysis, and forecasting bankruptcy. Prerequisite: ACTG 202 (ACCT 262). (offered odd numbered years).

ACTG 491. Special Topics. 12 Credits.**ACTG 492. Independent Study. 1-12 Credits.****ACTG 498. Cooperative Education. 1-12 Credits.**

Activities (ACT)

ACT 102. Recreational Activities. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 134.

ACT 104. Beginning Bowling. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 138.

Course Fees: \$15.75

ACT 106. Beg Conditioning and Fitness. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 185.

ACT 107. Beginning Aerobic Dance. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 182.

ACT 109. Beginning Racquetball. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 133.

ACT 110. Beginning Weight Training. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 181.

ACT 113. Beginning Softball. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 164.

ACT 114. Beginning Rock Climbing. 1 Credit.

Courses contained in this area will include those activities which take place in the outdoors and can be given lifelong consideration. Formerly HPEA 173.

ACT 115. Soccer. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 160.

ACT 116. Wallyball. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 167.

ACT 117. Floor Hockey. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 162.

ACT 119. Beginning Nordic Skiing. 1 Credit.

Courses contained in this area will include those activities which take place in the outdoors and can be given lifelong consideration. Formerly HPEA 171.

ACT 120. Beginning Alpine Skiing. 1 Credit.

Courses contained in this area will include those activities which take place in the outdoors and can be given lifelong consideration. Formerly HPEA 170.

ACT 131. Weight Control. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 180.

ACT 133. Water Exercise. 1 Credit.

These courses are designed to teach aquatic activities, which will provide lifetime skills, safety skills, and training skills for instructors of aquatic activities. Formerly HPEA 154.

ACT 135. Trimnastics. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 184.

ACT 140. Beginning Basketball. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 163.

ACT 142. Beginning Gymnastics. 1 Credit.

Courses in this series will provide the student an opportunity to develop skills in the areas of elementary dance, folk and social dance, square dance, modern dance, contemporary dance, and gymnastics and tumbling. Formerly HPEA 197.

ACT 146. Beginning Golf. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 136.

Course Fees: \$21.50

ACT 150. Beginning Yoga. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 186.

ACT 151. Beginning Billiards. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 131.

Course Fees: \$10.75

ACT 153. Beginning Badminton. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 137.

ACT 157. Beginning Martial Arts. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Formerly HPEA 183.

ACT 162. Team Handball. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 166.

ACT 169. Beginning Tennis. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 130.

ACT 170. Beginning Swimming. 1 Credit.

These courses are designed to teach aquatic activities, which will provide lifetime skills, safety skills, and training skills for instructors of aquatic activities. Formerly HPEA 150.

ACT 174. Introduction to Backpacking. 1 Credit.

Courses contained in this area will include those activities which take place in the outdoors and can be given lifelong consideration. Formerly HPEA 172.

Course Fees: \$5.35

ACT 178. Canoeing. 1 Credit.

These courses are designed to teach aquatic activities, which will provide lifetime skills, safety skills, and training skills for instructors of aquatic activities. Formerly HPEA 153.

ACT 180. Beginning Volleyball. 1 Credit.

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 161.

ACT 191. Special Topics. 1-12 Credits.**ACT 203. Flag Football. 1 Credit.**

Courses contained in this area will include those activities found to be reflective of what is generally considered team sports. Formerly HPEA 165.

ACT 210. Intermediate Weight Training. 1 Credit.

These courses are designed to teach lifetime activities which will promote fitness and wellness for a healthy lifestyle. Prerequisite: HPEA 181 Formerly HPEA 187.

ACT 217. Frisbee. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 135.

ACT 270. Intermediate Swimming. 1 Credit.

These courses are designed to teach aquatic activities, which will provide lifetime skills, safety skills, and training skills for instructors of aquatic activities. Formerly HPEA 151.

ACT 274. Scuba Diving. 1 Credit.

These courses are designed to teach aquatic activities, which will provide lifetime skills, safety skills, and training skills for instructors of aquatic activities. Formerly HPEA 152.

ACT 287. Archery. 1 Credit.

Courses contained in this area will be reflective of activities generally regarded as recreation and can be individual, dual, or group in nature. Formerly HPEA 132.

ACT 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

ACT 498. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in education, business, government, or community service agencies related to the University program of study. Prerequisites: Junior standing and approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

Activities - Varsity (ACTV)

ACTV 110. Football I-Varsity. 1 Credit.

Courses in this series reflect participation in varsity athletics and may be repeated up to four times. Formerly HPEA 104.

ACTV 120. Basketball I-Varsity. 1 Credit.**ACTV 160. Rodeo I-Varsity. 1 Credit.**

Courses in this series reflect participation in varsity athletics and may be repeated up to four times. Formerly HPEA 108.

ACTV 170. Volleyball I-Varsity. 1 Credit.

Courses in this series reflect participation in varsity athletics and may be repeated up to four times. Formerly HPEA 105.

ACTV 180. Cheerleading I-Varsity. 1 Credit.

Courses in this series reflect participation in varsity athletics and may be repeated up to four times. Formerly HPEA 106.

ACTV 185. Golf I-Varsity. 1 Credit.

Courses in this series reflect participation in varsity athletics and may be repeated up to four times. Formerly HPEA 107.

ACTV 191. Varsity Sport. 1 Credit.**ACTV 250. Wrestling-Varsity. 1 Credit.**

Courses in this series reflect participation in varsity athletics and may be repeated up to four times. Formerly HPEA 100.

ACTV 291. Varsity Sports. 1 Credit.**ACTV 391. Varsity Sport. 1 Credit.**

Ag Business & Economics (AGBE)

AGBE 105. Ag Marketing. 3 Credits.

Principles of economics and agricultural marketing functions, agencies, services, and economic problems associated with production agriculture in Montana. The course includes an overview of commodity trading and the futures market. Formerly AG 105.

AGBE 125. Intro to Farm Management. 3 Credits.

Agricultural development and advancement; managerial balance of land, labor, capital, and implementation to provide for greatest returns; also includes farm business organization and arrangements, estate planning, credit, and farm business analysis. Formerly AG 125.

AGBE 305. Ag Commodity Marketing. 3 Credits.

An examination of marketing tools available to farmers and ranchers, including futures and options. The course addresses costs of production, storage and transportation, risk management, financial planning, and means of securing market information. Prerequisite: AG 105 or AG 150 Formerly AOT 305.

AGBE 353. Co-op Business Prin & Practice. 2 Credits.

This course is an exploration of issues facing rural areas and the impacts of those issues on conducting business. The focus will include agriculturally dependent cooperatives with particular emphasis given to issues most relevant to Montana. Prerequisite: Junior standing. Formerly AOT 300.

AGBE 499. Capstone. 3 Credits.

This course is an examination of past and contemporary agricultural issues as they affect the producer, agribusiness, and the consumer. Formerly AOT 440.

Agricultural Education (AGED)

AGED 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only. Formerly AG 298.

AGED 498. Cooperative Education. 1-12 Credits.

Agricultural Mechanics (AGMT)

AGMT 114. Small Engines and RVs. 3 Credits.

Basic theory and principles of two and four stroke engines. Service, repair, and reconditioning of small bore engines. Units include mechanical, lubricating, electrical, cooling, and recreation vehicle applications. Lab work includes engine overhaul and troubleshooting.

Course Fees: \$15.75

AGMT 190. Special Topics. 1-12 Credits.

AGMT 199. Independent Study. 1-12 Credits.

AGMT 290. Special Topic. 1-12 Credits.

AGMT 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

AGMT 299. Independent Study. 1-12 Credits.

AGMT 350. AG-Tractor & Equip App Tech. 4 Credits.

This is an applied technology course designed to measure tractors and equipment efficiencies, which will include: Ballasting, weight ratios, fuel consumption and PTO horsepower. Prerequisites: DIES 262 and 272.

Course Fees: \$15.75

AGMT 370. Adv Grain Harvesting Equip. 4 Credits.

This is an advanced combine class designed to cover the following: diagnosis and repair of hydraulic and electronic components; a study of the application of hydraulics and electronic components; diagnosis and repair of major internal combine components. Prerequisites: AGTE 225, DIES 114, and DIES 214.

Course Fees: \$15.75

AGMT 390. Special Topics. 1-12 Credits.**AGMT 399. Independent Study. 1-12 Credits.****AGMT 490. Special Topics. 1-12 Credits.****AGMT 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

AGMT 499. Independent Study. 1-12 Credits.

Agricultural Operations Tech (AOT)

AOT 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

AOT 301. Global Positioning Systems. 3 Credits.

This course is a study of global positioning systems (GPS) technology and how it can be used in agriculture, outdoor activities, orienteering, land resources, transportation and in a large number of other applications. Class participants will use handheld and mapping grade GPS receivers and become familiar with GPS data collection, DGPS or differential correction, processing of spatial data, map types, coordinate grinds, map datum, and waypoints. Students will learn how to link GPS receivers with computers and equipment, manage GPS data with software, upload and download coordinate information and create printouts of spatial data, locations and routes.

AOT 315. Geographic Information Systems. 3 Credits.

This course will involve the study of Geographic Information Systems (GIS) for natural resource and land management. Students will develop an understanding of spatial reasoning and methods used to visually inventory and analyze land based resources. GIS software, images and data sources commonly used for natural resource management by industry and government agencies will be featured in this class.

AOT 390. Special Topics. 12 Credits.**AOT 490. Special Topics. 12 Credits.****AOT 498. Cooperative Education. 1-18 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in agricultural business, agricultural production, or government agencies related to agriculture. Prerequisites: Junior standing and approval of minor advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

AOT 590. Spec Topic. 1-12 Credits.**AOT 1591. Spec Topic Con Ed. 1-12 Credits.**

Agricultural Science (AGSC)

AGSC 102. Agricultural Plant Science. 3 Credits.

A general introductory class covering basic plant structure, physiology, reproduction, ecology, geography and evolution. Emphasis will be on crops relating to Montana agriculture. Formerly AG 102.

AGSC 218. Crop Production. 4 Credits.

Art and science of crop production; growth, development, and management of various agricultural field crops; emphasis given to crops important to the Northern Great Plains. Includes yield estimation, storage and handling facilities, tillage and harvesting methods, and practical applications in grading grains. Prerequisite: AG 102. Formerly AG 218.

AGSC 219. Crop Production Lab. 0 Credits.**AGSC 230. Agricultural Pest Management. 4 Credits.**

This is a study of pest management for common Montana agriculture crops. Chemical and non-chemical controls will be discussed. Topics will include pest identification, biology and control; chemicals, safety and application. There will be an opportunity to qualify for private and commercial pesticide applicator certification as required by the State of Montana. Formerly AG 230.

AGSC 231. Agricultural Pest Management Lab. 0 Credits.**AGSC 310. Soil & Water Management. 2 Credits.**

This course is a study of soil and water and plant relationships. Emphasis will be on dry land soil practices, irrigation principles and practices, point source pollution, and measurement and methods of control. Formerly AOT 310.

AGSC 498. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience extending the student's learning experience in agricultural business, agricultural production, or government agencies related to agriculture. Prerequisites: Junior standing and approval of minor advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only. Formerly AOT 479.

Agricultural Technology (AGTE)

AGTE 120. Forage Implements. 3 Credits.

Introduction to maintenance, repair, and adjustment of balers, swathers, rakes, and other forage harvesting equipment. Formerly AGMT 120.

AGTE 130. Intro to Agricultural Tractors. 3 Credits.

Introduction of AG tractors covering sizes, types, efficiencies, preventative and minor maintenance of tractor components and applications of AG tractors. Course Formerly AGMT 130.

Course Fees: \$10.75

AGTE 206. Applied Water Hydraulics. 3 Credits.

An applied course in hydraulics which included topics of water and wastewater collection and distribution, maintenance, and safety. This course includes lecture and laboratory hours, but the laboratory hours are not the kind of experience that satisfies the laboratory science requirement. This course does not meet the laboratory science requirement. Formerly TSCI 206.

AGTE 210. Tlg, Pintg, Spray Implements. 3 Credits.

This course will cover the repair, maintenance, adjustments, and calibrations of tillage, seeding and spraying equipment. Electronic control systems will be examined on all systems. Formerly AGMT 210.

AGTE 225. Intro to Grain Harvstng Equip. 3 Credits.

Introduction to theory, preventative maintenance, repair, and adjustment of conventional and rotary combines. Formerly AGMT 205.

Course Fees: \$10.75

AGTE 230. Intro to Ag Machines & Equip. 2 Credits.

This course is an introduction to agricultural machines and equipment. Agricultural machine uses, terminology, components, efficiencies, characteristics, and maintenance will be studied. Topics relating to safety, power transfer principles (gears, belts, chains, and fluid drives), field operations, hitching, operator manuals, trends in machinery, and basic machinery management will be examined. Formerly AGMT 110.

AGTE 292. Independent Study. 1-12 Credits.**AGTE 410. Agriculture Technology Mgt. 4 Credits.**

This course is a study in the use of agricultural technologies from a management perspective. Topics will include a study in the use of technologies in the management of agricultural finances, land, machinery, crops and livestock. Computer and software technologies will be used for budgeting, enterprise accounting, enterprise analysis, recordkeeping, and to analyze machinery decisions and costs. FINPACK and other farm/ranch financial planning and machinery analysis software will be featured. Formerly AOT 420.

AGTE 498. Cooperative Education. 1-12 Credits.

Agriculture (AG)

AG 100. Leadership Development. 2 Credits.

Students will learn how to be more effective as a member, officer and leader in meetings and groups. Emphasis will be placed on developing parliamentary procedure skills for effectively conducting meetings. Leadership skill development, characteristics of leaders, and ways to become a more effective leader will be explored. Active participation in a campus club or organization is required for those enrolled in this class.

AG 150. Intro to Ag Computing. 3 Credits.

This is a class designed to acquaint students with a number of agricultural computer applications and features agricultural specific software. Emphasis is placed on software useful to the farmer, rancher and agri-business. Livestock, cropping, financial management, digital mapping of land resources and other agricultural based computerized applications will be featured.

AG 190. Special Topics. 1-12 Credits.**AG 199. Independent Study. 1-12 Credits.****AG 290. Special Topics. 1-12 Credits.****AG 299. Independent Study. 1-12 Credits.****AG 390. Special Topics. 1-12 Credits.****AG 399. Independent Study. 1-12 Credits.****AG 490. Special Topics. 1-12 Credits.****AG 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in agricultural business, agricultural production, or government agencies related to agriculture. Prerequisites: Junior standing and approval of minor advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

AG 499. Independent Study. 1-12 Credits.**AG 1390. Cont. Education. 1-12 Credits.****AG 1590. Cont. Education. 1-12 Credits.****AG 1591. Spec Top Continuing Education. 1-12 Credits.**

Allied Hlth: Athletic Training (AHAT)

AHAT 210. Prev and Care Athletic Injur. 3 Credits.

A study of conditioning and evaluation to prevent injuries; recognition and evaluation of injuries; treatment and rehabilitation of injuries. Additional topics of nutrition, ergogenic aids, and risk management are included. Lab will involve the application of evaluation and rehabilitation skills as well as the practice of basic taping techniques. Prerequisite: BIOH 104 or BIOH 201. Formerly HPE 370.

Course Fees: \$50.00

AHAT 292. Independent Study. 1-12 Credits.**AHAT 495. Practicum: Sports Medicine. 3 Credits.**

An internship in Athletic Training is available to those students interested in the prevention, recognition, treatment and rehabilitation of athletic injuries. This hands-on experience compliments those students interested in coaching, athletic training, or physical therapy. Prerequisites: Athletic training/taping course (HS level accepted); First Aid/CPR certification. Restricted entry: Consent of instructor required. May be repeated for credit up to three times.

Course Fee: \$20.00 Formerly HPE 410.

Course Fees: \$25.00

Animal Science (ANSC)

ANSC 100. Introduction to Animal Science. 3 Credits.

A general introductory class on animal agriculture dealing with livestock terminology, breeds, beef, sheep, swine, poultry, horses, and dairy animals. Livestock marketing, market classes and grades, and the industry as a whole will be covered. Formerly AG 101.

ANSC 202. Livestock Feeding & Nutrition. 4 Credits.

Principles of animal nutrition and practical feeding of livestock; comprehensive information concerning the composition, properties, and uses of feeds, application of balanced rations incorporating the use of substitution, Pearson Square, and Computerized ration formulation for private and commercial use. Course Fee: \$5.00 Formerly AG 244.

ANSC 203. Livestock Feeding & Nutrition Lab. 0 Credits.

Principles of animal nutrition and practical feeding of livestock; comprehensive information concerning the composition, properties, and uses of feeds, application of balanced rations incorporating the use of substitution, Pearson Square, and Computerized ration formulation for private and commercial use.

Course Fees: \$5.35

ANSC 262. Range Livestock Prod. 3 Credits.

This is a course that correlates and applies the art and science of production of the four-footed meat animals - beef, sheep, and swine. Topics include breeding and selection, reproduction and physiology, disease, sanitation and pollution control, housing and confinement production, and marketing and processing. Prerequisite: AG 101/ANSC 100 or consent of instructor. Formerly AG 245.

Art (ART)

ART 101. Studio Foundation. 3 Credits.

Introduction to studio process and concepts of two and three dimensional media processes.

ART 190. Special Topics. 1-12 Credits.**ART 192. Independent Study. 1-12 Credits.****ART 204. Printmaking. 3 Credits.**

An introduction to the fundamental graphic techniques of relief and intaglio printmaking including: woodcut, linocut, dry point, etching, and collograph.
Course Fee: \$10.00.

ART 220. Drawing II. 3 Credits.

Studio exercise in observational and imaginative drawing including rendering of the human figure. A variety of expressive techniques and media will be explored. Prerequisite: ART 120.

ART 290. Special Topics. 1-12 Credits.**ART 292. Independent Study. 1-12 Credits.****ART 355. Painting II. 3 Credits.**

Development of individual technique and expression in chosen painting medium/media. The student will continue to work with the painting medium taken as prerequisite for this course. Emphasis will be on composition as a means of expression. Prerequisite: ART 254 or ART 256.

ART 391. Special Topic. 1-12 Credits.**ART 392. Independent Study. 1-12 Credits.****ART 490. Special Topics. 1-12 Credits.****ART 492. Independent Study. 1-12 Credits.****ART 591. Special Topic. 1-12 Credits.****ART 1390. Cont Ed. 1-12 Credits.**

Art - Visual & Studio Arts (ARTZ)

ARTZ 105. Visual Language - Drawing. 3 Credits.

Study and supervised practice in observational drawing focusing on accurate representation of observed subject matter. Formerly ART 120.

ARTZ 106. Visual Language - 2-D Fndtns. 3 Credits.

A lecture/studio course in investigating basic design elements: line, shape, texture, and value. The elements considered in the context of compositional principles. Formerly ART 150.

Course Fees: \$15.75

ARTZ 107. Visual Language - 2-D Fdtns II. 3 Credits.

A lecture/studio course investigating the elements of color: hue, value, and intensity. Color harmony and contrasts studied in compositional context. Formerly ART 151.

ARTZ 192. Independent Study. 1-12 Credits.**ARTZ 221. Painting I. 3 Credits.**

A beginning studio course in still life painting in oil or acrylic. Drawing, color, and design emphasized. Prerequisite: ART 120 Formerly ART 254.

ARTZ 224. Watercolor I. 3 Credits.

A beginning studio course in watercolor painting. Research of the medium and observed material toward appropriate use of the transparent medium. Prerequisite: ART 120 Formerly ART 256.

ARTZ 231. Ceramics I. 3 Credits.

Elementary studio practice involving hand building and wheel techniques of forming functional and nonfunctional stoneware. Formerly ART 115.
Course Fees: \$26.50

ARTZ 284. Photo I-Techs and Processes. 3 Credits.

Basic introduction to photography. Use of the camera, film, compositional techniques, and fundamental darkroom procedures. Formerly GDSN 270.
Course Fees: \$43.00

ARTZ 292. Independent Study. 1-12 Credits.**ARTZ 363. Metal Sculpture. 3 Credits.**

Metal sculpture is a lecture/studio course which is team taught by art and welding faculty. The course examines all phases of the creative process from concept to criticism of the finished form. Both abstract and representational sculpture will be examined with emphasis on welding fabrication. Formerly ART 353.

Course Fees: \$110.00

ARTZ 384. Photo II-Theory, Crit, Prctice. 3 Credits.

A lecture/studio course emphasizing individuality in the conception and preparation of projects. Course content includes aesthetics, experimental darkroom techniques, color concepts, and a basic history of photography. Prerequisite: ARTZ 284 or consent of instructor. Formerly GDSN 370.

Course Fees: \$43.00

ARTZ 391. Special Topics. 1-12 Credits.

ARTZ 392. Independent Study. 1-12 Credits.

Art History (ARTH)

ARTH 160. Global Visual Culture. 3 Credits.

A slide-lecture survey of the visual arts and architecture. Analytical study of specific works and techniques, and consideration of broad contexts and principles. Formerly ART 100.

ARTH 330. Art Hist of Western Civ I. 3 Credits.

A survey of the development of the visual arts of the Western World from Prehistoric through Gothic Art. Formerly ART 361.

ARTH 340. Art History of Western Civ II. 3 Credits.

A survey of the development of the visual arts of the Western World from the Renaissance through Post-Modernism. Formerly ART 362.

ARTH 391. Special Topic. 1-12 Credits.

ARTH 392. Independent Study. 1-12 Credits.

Auto Service Tech (AST)

AST 100. Consumer Mechanics. 2 Credits.

An awareness course for the passenger car owner-operator. A study of the operation and minor maintenance and repair techniques used in service stations and garages. Also a study of the cost of repair, purchasing, financing, and insuring an automobile. Formerly AUTO 105.

Course Fees: \$4.30

AST 102. Intro to Automotive Service. 1 Credit.

An introductory course designed to assist the novice automotive technician in adjusting to the demands of an automotive service facility. This course will expose the students to the flat rate method of shop pay. Students will also develop a portfolio which showcases the student's technical expertise and human relation skills for obtaining cooperative education and full-time employment. This course meets the human relation component of related instruction for Certificates of Applied Science and Associate of Applied Science degrees. Students will fulfill human relations requirements for the Automotive Certificate of Applied Science and Associate of Applied Science by completing this course. Formerly AUTO 115.

AST 106. Auto Manual Drive Train/Axles. 5 Credits.

This course examines automotive manual power trains. It includes the construction maintenance, diagnosis, and repair of manual transmissions and transaxles, transfer cases, rear axles, drive shafts, and clutches. Driveline angles and Noise, Vibration and Harshness (NVH) will be discussed. Lab application of service procedures is included. Course Fee: \$20.00 Formerly AUTO 117.

AST 107. Auto Man Drive Train/Axles Lab. 0 Credits.

AST 114. Automotive Brakes. 5 Credits.

This course examines automotive braking systems, including hydraulic and friction theory. The construction, maintenance, diagnosis, and repair of disc, drum and antilock braking systems are studied. Use of off-the-car and on-the-car-brake lathes are included in lab. Lab application of service procedures is included. Course Fee: \$20.00 Formerly AUTO 119.

AST 115. Automotive Brakes Lab. 0 Credits.

AST 160. Automotive Engine Repair. 5 Credits.

This course is an overview of the design, operation, diagnosis, and service procedures of modern automotive engines. Students participate in the disassembly and the reassembly of engines. Students will participate in the removal and installation of engines in school vehicles. Service and technical engine data are presented to prepare the students for practical experience in engine service and repair. Course fee: \$20.00 Formerly AUTO 128.

AST 161. Automotive Engine Repair Lab. 0 Credits.

AST 164. Intro to Engine Performance. 6 Credits.

This course examines the theory and diagnosis of gasoline engines and related systems. These systems include engine mechanical testing, ignition systems, fuel delivery, emission control systems and an introduction to computerized fuel injection systems. Students will use the latest diagnostic equipment available to test and diagnose these systems during the lab. Course Fee: \$20.00 Formerly AUTO 151.

AST 165. Auto Diagnostics & Tune Up Lab. 0 Credits.

AST 191. 1. 1-12 Credits.

AST 220. Auto Steering and Suspension. 5 Credits.

This course examines automotive suspension and steering systems. The theory of operation, construction, maintenance, diagnosis and repair of steering and suspension systems is examined. Alignment procedures, wheel balancing, steering, suspension, headlight aiming, and structural damage diagnosis will be discussed. Lab application of service procedures is included. Course Fee: \$20.00 Formerly AUTO 120.

AST 221. Auto Steering & Suspension Lab. 0 Credits.**AST 266. Computerized Engine Control. 6 Credits.**

This course examines the theory and diagnosis of computerized gasoline fuel injected engines. Students will work with the latest diagnostic equipment to test and repair computerized engine control systems on Toyota, Ford, General Motors and Chrysler vehicles. Prerequisites: AUTO 128, AUTO 151, ATDI 134. Formerly AUTO 251.

Course Fees: \$21.50

AST 285. ASE Exam Prep: Section One. 1 Credit.

Students will prepare for ASE tests in Engine Repair (A1), Brakes (A5), Suspension and Steering (A4) and Manual Drive Train and Axles (A3). At the conclusion of this class students will take their ASE certification tests. Prerequisite: AUTO 117, AUTO 119, AUTO 120, AUTO 128, AUTO 151. Formerly AUTO 210.

Course Fees: \$144.00

AST 286. ASE Exam Prep: Section Two. 1 Credit.

Students will prepare for ASE tests in Automatic Transmission/Transaxle (A2), Electrical/Electronic Systems (A6), Heating and Air Conditioning (A7) and Engine Performance (A8). At the conclusion of this class students will take their ASE certification tests. Prerequisite: ATDI 134, ATDI 257, ATDI 264, ATDI 265, AUTO 251. Formerly AUTO 211.

AST 298. Cooperative Education. 1-12 Credits.**AST 408. Current Trends Mobility Tech. 2 Credits.**

This course presents an examination of current model year design and trends in the mobility industries. Extensive undergraduate research and the latest techniques for presenting material will be employed. Formerly AUTO 408.

AST 450. Advanced Engine Performance. 4 Credits.

Students in this course will use advanced diagnostic equipment to dynamically test and analyze computer-controlled emission, fuel delivery and ignition systems. Students will follow manufacturer drive cycles to see what effect the alternative fuels, additives and trouble codes have on drivability, emissions and performance. The ASE L1-Advanced Engine Performance Specialist will be heavily emphasized during this course. Prerequisite: AST 266 (AUTO 251) Formerly AUTO 450.

Course Fees: \$21.50

AST 457. Advanced Power Trains. 4 Credits.

This course examines advanced component operation and diagnosis in automotive power trains. Topics covered in the class are automatic transmissions, automatic transaxles, all wheel drive systems, CVT (constant variable transmissions), power train electronic control systems and NVH (noise, vibration and harshness) diagnosis. Prerequisites: AUTO 117 and ATDI 257. Formerly AUTO 457.

Course Fees: \$21.50

AST 495. Automotive Practicum. 3 Credits.

Individualized research practicum selected by the student and an automotive instructor. Survey of literature available, testing and evaluation of project with an oral defense of the resulting paper. Prerequisites: WRIT 101, SPCH 141, all required AUTO courses, and Senior standing. Formerly AUTO 488.

AST 498. Cooperative Education. 1-12 Credits.

Automotive/Diesel (ATDI)

ATDI 134. Electrical/Electronic Sys I. 6 Credits.

A beginning course in the study of electrical/electronic fundamentals applied to mobile and transportation technology. The course will create the foundation of electrical systems and will include theory, design, diagnosis, and repair of wiring and circuits, batteries, alternators, starters and electrical circuits. The use of test instruments and electrical troubleshooting manuals currently recommended by industry will be emphasized. Course fee: \$20.00.

Course Fees: \$36.00

ATDI 191. Special Topic. 1-12 Credits.**ATDI 199. Independent Study. 1-12 Credits.****ATDI 220. Auto Diesel & Hybrid Vehicles. 3 Credits.**

This course examines the theory and diagnosis of automotive hybrid systems and automotive diesel engines. Lab activities will be based on Toyota Hybrid systems and General Motors, Ford and Chrysler light duty pick-up diesel engines. Students will use the latest resources and diagnostic equipment available to understand and diagnose these systems. Prerequisite: ATDI 134, AUTO 128 and AUTO 151. Course Fee: \$20.00.

ATDI 257. Automatics. 4 Credits.

A course in automatic transmissions including lecture, demonstration, and student participation in disassembling and reassembling of selected transmissions for the purpose of understanding the function, construction, operation, servicing, and troubleshooting procedures. Prerequisite: AUTO 117 or DIES 216. Course Fee: \$20.00.

Course Fees: \$21.50

ATDI 262. Automatics Remove and Repair. 1 Credit.

A course in Automatic Transmissions designed to Remove and Install selected automatic transmissions or transaxles from a vehicle. Students will learn to adjust, diagnose, and test for proper operation and also correct industry troubleshooting procedures.

ATDI 264. Electrical/Electronic Sys II. 6 Credits.

This course is a continuation of the study of electrical/electronic systems in use on current automotive and heavy equipment. The course will be study industry recommended diagnostic and repair procedures on systems including charging and cranking systems, ignition systems, power accessories, networking systems and microprocessor-based engine, powertrains, and brake/suspension control systems. Prerequisite: ATDI 134 Course Fee: \$20.00.

Course Fees: \$21.50

ATDI 265. Heating and Air Conditioning. 4 Credits.

Theory of heating and basic air conditioning equipment in automotive, heavy truck, and farm applications; servicing and repairing of these units. Prerequisite: ATDI 134. Course Fee: \$20.00.

Course Fees: \$21.50

ATDI 291. Special Topic. 1-12 Credits.**ATDI 298. Cooperative Education. 1-12 Credits.****ATDI 299. Independent Study. 1-12 Credits.****ATDI 383. Alt Auto Power Systems. 4 Credits.**

This course examines a variety of alternative power sources used in the automotive transportation industry. Topics covered in the class are compression ignition engine systems, propane and CNG systems, hybrid electric systems, and electric propulsion systems. Prerequisites: AUTO 128 and ATDI 264.

Course Fees: \$10.25

ATDI 384. AT/DI Elctrc/Elctrn Sys III. 4 Credits.

This course provides an in-depth study of microprocessor-based vehicle control systems, diagnostic systems, and development/testing systems. Students will experience oral and written reporting on current applications. Topics include multiplexed communications, bi-directional scanners, data structures and PC-based service bay systems, and test cells. Prerequisites: ATDI 134 and ATDI 264. Course Fee: \$20.00.

Course Fees: \$21.50

ATDI 390. Special Topics. 1-12 Credits.**ATDI 399. Independent Study. 1-12 Credits.****ATDI 400. Shop Procedures. 3 Credits.**

This is a lecture course addressing diesel and automotive shop management issues. Students will be exposed to shop management environments and issues including customer relations, parts inventory, repair order preparation, shop efficiency and productivity, shop organization, work flow, labor guides, work ethics and stewardship. Computerized shop management software will be integrated throughout the course. Prerequisites: Junior standing, ATDI 134, ATDI 264, AUTO 151, AUTO 251, DIES 262, DIES 272, DIES 273.

ATDI 479. Cooperative Education. 1-12 Credits.**ATDI 490. Special Topics. 1-12 Credits.****ATDI 498. Cooperative Education. 1-12 Credits.****ATDI 499. Independent Study. 1-12 Credits.**

Biochemistry (BCH)

BCH 360. Fundamentals of Biochemistry. 3 Credits.

Principles of modern biochemistry. Prerequisite: CHMY 321 or consent of instructor. This course does not meet the laboratory science requirement. Formerly CHEM 330.

Biology: Ecological (BIOE)

BIOE 110. Intro to Environmental Health. 3 Credits.

An orientation to the field of environmental health and human interactions with the environment, including a survey of topics of environmental protection, food and water, wastewater processes, solid waste disposal, living and working environments, epidemiology of environmentally associated diseases, and pollution control policy. Current federal and state regulations are reviewed. This course does not meet the laboratory science requirement. Formerly BIOL 110.

BIOE 192. Independent Study. 1-12 Credits.**BIOE 370. General Ecology. 4 Credits.**

Integrated principles of ecology with special emphasis on terrestrial ecosystems. Some attention directed to selected ecological methods and statistical evaluations via laboratory activities. Prerequisites: BIOB 160 or BIOB 101 and 102, or BIOO 220 and 221. Concurrent enrollment in BIOE 371 Lab is required. Formerly BIOL 314.

BIOE 371. General Ecology Lab. 0 Credits.

Laboratory for BIOE 370. Laboratory exercises that include selected ecological methods and statistical evaluations. Concurrent enrollment in BIOE 370 is required. This course taken in conjunction with the lecture portion of the course (BIOE 370) meets the laboratory science requirement. Formerly BIOL 314.

Course Fees: \$40.00

BIOE 410. Field Biology Methods. 4 Credits.

This course provides experience in using various ecological techniques to measure certain parameters of populations of organisms found in Montana. The course emphasizes careful observation and measurement and allows students to develop an understanding of using statistical methods and demographic data to interpret biological processes and population trends. The course will include such topics as using taxonomic keys, reviewing and evaluating technical literature, habitat surveys, population census methods and others. Prerequisite: BIOB 101 and 102 or BIOE 370 and 371 or BIOB 380 or consent of the instructor. Concurrent enrollment in BIOE 411 Lab is required. Formerly BIOL 410.

BIOE 411. Field Biology Methods Lab. 0 Credits.

Laboratory for BIOE 410. Concurrent enrollment in BIOE 410 is required. This course taken in conjunction with the lecture portion of the course (BIOE 410) meets the laboratory science requirement. Formerly BIOL 410.

BIOE 417. Ecological Methods. 3 Credits.

Study of methodologies used by ecologists to examine the environment. Laboratory and field procedures are stressed, together with review of associated ecological concepts. Prerequisite: Basic ecology course. Concurrent enrollment in BIOE 418 is required. Formerly BIOL 415.

BIOE 418. Ecological Methods Lab. 0 Credits.

Laboratory for BIOE 417. Laboratory and field procedures provide practical experiences in applying ecological concepts to study of the environment. Concurrent enrollment in BIOE 417 is required. This course taken in conjunction with the lecture portion of the course (BIOE 417) meets the laboratory science requirement. Formerly BIOL 415.

BIOE 428. Freshwater Ecology. 4 Credits.

This course will demonstrate and provide an opportunity for students to develop skills in selected techniques used in the examination, identification and classification of a wide variety of the freshwater organisms that live in Montana's aquatic systems. Extensive laboratory work and field trips are required. Prerequisites: BIOB 160 and 161 or BIOB 101 and 102 or approval of instructor. Concurrent enrollment in BIOE 429 is required. Formerly BIOL 407.

BIOE 429. Freshwater Ecology Lab. 0 Credits.

Laboratory for BIOE 428. Concurrent enrollment in BIOE 428 is required. This course taken in conjunction with the lecture portion of the course (BIOE 428) meets the laboratory science requirement. Formerly BIOL 407.

BIOE 492. Independent Study. 1-12 Credits.

Biology: General (BIOB)

BIOB 101. Discover Biology. 4 Credits.

An introduction to biology, including chemical principles; cell structure and function; classification and characteristics of bacteria, protists, fungi, plants, and animals, and such ecological concepts as ecosystems, energy relationships, cycles, succession, and populations. Concurrent enrollment in BIOB 102 Lab is required. Course Fee: \$10.00 Formerly BIOL 151.

BIOB 102. Discover Biology Laboratory. 0 Credits.

Laboratory for BIOB 101. Concurrent enrollment in BIOB 101 is required. This course taken in conjunction with the lecture portion of the course (BIOB 101) meets the laboratory science requirement. Formerly BIOL 151.
Course Fees: \$10.75

BIOB 160. Principles of Living Systems. 4 Credits.

The structure and function of plant and animal cells, including respiration, photosynthesis, reproduction, genetics, and protein synthesis. Other topics considered are tissues, embryology, and unicellular organisms. Concurrent enrollment in BIOB 161 lab is required. Formerly BIOL 140.

BIOB 161. Principles Living Systems Lab. 1 Credit.

Laboratory studies in cell structure and function, respiration, photosynthesis, reproduction, genetics, tissues, embryology, and unicellular organisms. Must be taken concurrently with BIOB 160. This course taken in conjunction with the lecture portion of the course (BIOB 160) meets the laboratory science requirement. Course Fee: \$12.00 Formerly BIOL 141.
Course Fees: \$25.00

BIOB 192. Independent Study. 1-12 Credits.**BIOB 290. Undergraduate Research. 3 Credits.**

Opportunity to perform undergraduate research under the counsel and guidance of departmental staff. Students will summarize research results in scientific papers and oral presentations. Prerequisite: consent of instructor. This course does meet the laboratory science requirement. Formerly BIOL 250.

BIOB 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts & Sciences, and Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement.

BIOB 420. Evolution. 4 Credits.

This course provides a comprehensive introduction to modern evolutionary biology, which explains the unity and diversity of life. This integrative course synthesizes principles from molecular, cellular, and organismal biology in an analysis of biological diversity in the context of evolutionary patterns and processes. Class periods include lecture/seminar, group activities, and discussion of journal articles from the primary literature. A literature review and research paper using peer-reviewed primary literature is required. Prerequisites: BIOB 160, BIOB 161, BIOB 380, and BIOB 381.

BIOB 450. Molecular Biology Techniques. 3 Credits.

Introduction to such techniques of molecular biology as electrophoresis and chromatography as these methodologies are employed in the fields of cytology, molecular genetics, and physiology. Graduate credit requirements are described in the course syllabus. Concurrent enrollment in BIOB 451 Lab is required. Formerly BIOL 406.

BIOB 451. Molecular Biology Technqus Lab. 0 Credits.

Laboratory for BIOB 450. Concurrent enrollment in BIOB 450 is required. This course taken in conjunction with the lecture portion of the course (BIOB 450) meets the laboratory science requirement. Formerly BIOL 406.

BIOB 485. Molecular Biology and Genetics. 4 Credits.

Structure and function of cells emphasizing molecular aspects at cellular, organelle, and physiological levels. Molecular composition of cell organelles, structure of eukaryotic genomes including chromosomes, recombination, gene structure and transcription, gene control during development, hormonal influence on gene experssion, chemical synthesis, and factors influencing inheritance patterns. Emphasis is on animal cells. Prerequisite: BIOB 160 or equivalent: one semester of college chemistry. Concurrent enrollment in BIOB 486 is required. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course. Formerly BIOL 468.

BIOB 486. Molecular Biology Genetics Lab. 0 Credits.

Laboratory for BIOB 485. Concurrent enrollment in BIOB 485 is required. This course taken in conjunction with the lecture portion of the course (BIOB 485) meets the laboratory science requirement. Formerly BIOL 468.

Course Fees: \$40.00

BIOB 492. Independent Study. 1-12 Credits.**BIOB 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Education, Arts & Sciences and Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement. Formerly BIOL 479.

Biology: Human (BIOH)

BIOH 104. Basic Human Biology. 4 Credits.

An introduction to the organ systems of the human body, including chemical principles, cell and tissue study, and the organ systems: integumentary, digestive, circulatory, immune, respiratory, excretory, nervous, muscular, skeletal, endocrine, and reproductive. Includes lecture and laboratory hours. This course does meet the laboratory science requirement. Course Fee: \$8.00 Formerly BIOL 204.

BIOH 105. Basic Human Biology Lab. 0 Credits.**BIOH 192. Independent Study. 1-12 Credits.****BIOH 201. Human Anat Phys I. 4 Credits.**

An introduction to the form and function of the parts of the human body, with studies on the tissues, bones, muscles, respiration, and circulation. Includes lecture and laboratory hours. Prerequisite: High School Biology. This course does meet the laboratory science requirement. Course Fee: \$13.00 Formerly BIOL 241.

BIOH 202. Human Anat & Phys I Lab. 0 Credits.**BIOH 211. Human Anatomy & Physiology II. 4 Credits.**

Emphasis on the regulations of the energy supply and the internal environment. Units covered are nerves, endocrine, digestion, respiration, blood, cardiovascular, immune, cell metabolism, excretion, acid base balance and reproduction. Includes lecture and laboratory hours. Prerequisites: BIOH 201 or equivalent course. This course does meet the laboratory science requirement. Course Fee: \$13.00 Formerly BIOL 242.

BIOH 212. Human Anatomy & Physiology II Lab. 0 Credits.

BIOH 292. Independent Study. 1-12 Credits.

BIOH 298. Cooperative Education. 12 Credits.

BIOH 392. Independent Study. 12 Credits.

BIOH 492. Independent Study. 1-12 Credits.

BIOH 498. Cooperative Education. 12 Credits.

Biology: Micro (BIOM)

BIOM 250. Microbiology for Hlth Sciences. 3 Credits.

This course provides a survey of the microbial world including the organisms included in the group making up microorganisms and the relationship of microorganisms to humans. The course presents the fundamental concepts of cellular structure, metabolic functions, genetics and control of microbial growth. Formerly BIOL 217.

BIOM 251. Microbiology Hlth Sciences Lab. 1 Credit.

This course will provide students with the opportunity to learn and utilize basic microbiological laboratory skills used for isolation, culturing and identification of bacteria. The student will have the opportunity to fully use these skills in the identification of an unknown as a final laboratory project. Formerly BIOL 217.

Course Fees: \$26.50

BIOM 291. Special Topic. 1-12 Credits.

BIOM 292. Independent Study. 1-12 Credits.

BIOM 400. Medical Microbiology. 3 Credits.

Review of the microbial world involving bacteria and viruses and their impact on human immune function, disease prevention, environmental and industrial applications, and microbial ecology. Designed for students interested in continuing in science, particularly in pharmacy and pre-med. Prerequisites: BIOB 160 and BIOM 250. Concurrent enrollment in BIOM 401 Lab is required. Formerly BIOL 460.

BIOM 401. Medical Microbiology Lab. 0 Credits.

Laboratory for BIOM 400. Concurrent enrollment in BIOM 400 is required. This course taken in conjunction with the lecture portion of the course (BIOM 400) meets the laboratory science requirement. Formerly BIOL 460.

Biology: Organismal (BIOO)

BIOO 220. General Botany. 3 Credits.

Introduction to the plant kingdom that primarily focuses upon the cytology, anatomy, morphology, and general physiology of the flowering plants. Concurrent enrollment in BIOO 221 is required. Prerequisite: Basic college biology course. Formerly BIOL 221.

BIOO 221. Gen Botany Lab. 2 Credits.

Laboratory activities that primarily focus upon the cytology, anatomy, morphology, taxonomy of the flowering plants. Concurrent enrollment in BIOO 220 is required. This course taken in conjunction with the lecture portion of the course (BIOO 220) meets the laboratory science requirement. Course Fee: \$5.00 Formerly BIOL 222.

Course Fees: \$30.00

BIOO 320. General Botany. 4 Credits.

A general survey of the plant kingdom and plant classification with special emphasis on bryophytes, and the non-flowering tracheophytes and their reproductive processes, together with an introduction to algae and the fungi. Offered alternate years. Prerequisite: Basic college biology course. Concurrent enrollment in BIOO 321 Lab is required. Formerly BIOL 322.

BIOO 321. General Botany Laboratory. 0 Credits.

Laboratory for BIOO 320. Offered alternate years. Concurrent enrollment in BIOO 320 is required. This course taken in conjunction with the lecture portion of the course (BIOO 320) meets the laboratory science requirement. Formerly BIOL 322.

BIOO 335. Rocky Mountain Flora. 3 Credits.

Study of flowering plants found in prairie, foothill, mountain, riparian, and aquatic habitats. Graduate credit requirements are described in the syllabus. Concurrent enrollment in BIOO 336 is required. Formerly BIOL 408.

BIOO 336. Rocky Mountain Flora Lab. 0 Credits.

Methods of collection, general identification, and preservation of a series of plant specimens, including development of a herbarium are included. Concurrent enrollment in BIOO 335 is required. This course taken in conjunction with the lecture portion of the course (BIOO 335) meets the laboratory science requirement. Formerly BIOL 408.

Course Fees: \$40.00

BIOO 380. Zoology. 3 Credits.

A survey of invertebrate and vertebrate animal phyla including classification, morphology, physiology, characteristics, and natural history. Concurrent enrollment in BIOO 381 required. Prerequisite: BIOB 160 or equivalent. Formerly BIOL 348.

BIOO 381. Zoology Lab. 2 Credits.

The laboratory component of BIOO 380. Microscopic and macroscopic studies of animals. Dissection of squid, earthworms, crayfish, sea stars, dogfish sharks, frogs, fetal pigs, and others. Concurrent enrollment in BIOO 380 required. This course taken in conjunction with the lecture portion of the course (BIOO 380) meets the laboratory science requirement. Course Fee: \$13.00 Formerly BIOL 350.

Course Fees: \$13.75

BIOO 391. Special Topic. 1-12 Credits.**BIOO 391A. Special Topics Lab. 5 Credits.****BIOO 392. Independent Study. 1-12 Credits.****BIOO 462. Entomology. 3 Credits.**

An introduction to the anatomy, characteristics and classification of insects. Offered alternate years. Prerequisite: BIOO 380 or consent of instructor. Concurrent enrollment in BIOO 463 Lab is required. Course Fee: \$9.00 Formerly BIOL 324.

BIOO 463. Entomology Lab. 0 Credits.

Laboratory for BIOO 462. Methods of collecting, preserving, identifying and displaying insects. Preparation of an insect collection is required. Offered alternate years. Concurrent enrollment in BIOO 462 is required. This course taken in conjunction with the lecture portion of the course (BIOO 462) meets the laboratory science requirement. Formerly BIOL 324.

Course Fees: \$9.75

BIOO 470. Ornithology. 3 Credits.

The biology of birds, including their morphology, physiology, behavior, ecology, and classification. Offered alternate years. Prerequisite: BIOO 380 or consent of instructor. Concurrent enrollment in BIOO 471 Lab is required. Course Fee: \$5.00. Formerly BIOL 334.

BIOO 471. Ornithology Lab. 0 Credits.

Laboratory for BIOO 470. The field identification of birds with emphasis on the recognition of Montana species developed through the use of photos, preserved skins, and local field trips. Concurrent enrollment in BIOO 470 is required. This course taken in conjunction with the lecture portion of the course (BIOO 470) meets the laboratory science requirement. Formerly BIOL 334.

Course Fees: \$45.00

BIOO 492. Independent Study. 1-12 Credits.

Body (BODY)

BODY 140. Panel Adjustment and Glass. 2 Credits.**BODY 141. Intro to Metal Refinishing. 3 Credits.****BODY 142. Metal Repair Lab. 3 Credits.****BODY 143. Refinishing. 3 Credits.****BODY 144. Refinishing Lab. 3 Credits.****BODY 190. Special Topics. 1-12 Credits.****BODY 199. Independent Study. 1-12 Credits.****BODY 215. Prin of Unibody Repair Fund. 3 Credits.****BODY 216. Unibody Repair Technology. 3 Credits.****BODY 243. Shop Production. 3 Credits.**

The students will learn to identify plastics used in current automotive manufacturers and how to repair them correctly. They will also learn the steps in door repair panels and quarter panel replacement. They will also learn acceptable shop procedures by keeping track of time and materials spent on live work plus safety shop practices. The students learn the proper use of industry estimating guide.

BODY 244. Shop Production Lab. 3 Credits.

The student will work on live projects completing required projects in one and one half times the estimate. They will learn how to weld on doors and quarter panels as well as keep track of materials and the time spent on each job. By the completion of the course they will understand how to write an estimate in good form as accepted by the insurance industry and have good skills in estimating areas to be repaired. Course Fee: \$20.00.

BODY 290. Special Topics. 1-12 Credits.**BODY 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

BODY 299. Independent Study. 1-12 Credits.

BODY 390. Special Topics. 1-12 Credits.

BODY 399. Independent Study. 1-12 Credits.

BODY 490. Special Topics. 1-12 Credits.

BODY 499. Independent Study. 1-12 Credits.

Business (BUS)

BUS 142. Intro to Word Processing. 2 Credits.

A class on word processing concepts, terminology, and machine manipulation. Prerequisite: 30 Net WPM on pretest or consent of instructor.

BUS 190. Special Topics. 1-12 Credits.

BUS 192. Independent Study. 1-12 Credits.

BUS 215. Mngrl Ping Not-For-Profit Entr. 3 Credits.

This course examines the basic managerial planning functions for a Not-For-Profit enterprise. Emphasis is placed on the identification and development of annual organizational activities and the preparation of a working budget for those activities. The course also examines the difference between capital campaigns and fundraising activities. An introduction to writing proposals for both activities is also part of the course as is an introduction to Microsoft Excel as a tool to assist in financial analysis and reporting.

BUS 240. Office Skills. 2 Credits.

Application of procedures in the modern office including office communications technology, filing systems, organizational skills, time management, and professional conduct. The course will also cover a number of clerical operations including calculators, dictaphones/transcription, telephone skills, and reprographics. Prerequisite: BUS 142 or instructor consent.

BUS 291. Special Topic. 1-12 Credits.

BUS 292. Independent Study. 1-12 Credits.

BUS 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

BUS 303. Intro E-Comm & Internet Mktg. 3 Credits.

Students will develop an Internet marketing plan and subsequent Internet marketing tools. Students will conduct market research, photograph products, layout pages, develop customer service strategies, and perform the technical aspects of web catalog production.

BUS 308. Video Editing and Production. 3 Credits.

This course will provide students with a basic foundation in the concepts of video production and editing. Students will tap into your higher level thinking skills by translating an idea into effective video utilizing digital hardware and computer editing software. They will also learn to use video technology to bridge the printed word with visuals. A number of projects will be required including techniques of creating school news broadcasts, video resumes, video yearbooks, and the use of video technology in marketing and promotion. Students will also research equipment that would be needed to equip a school television studio.

BUS 321. Cost Accounting I. 3 Credits.

BUS 345. Marketing Trends. 3 Credits.

This advanced marketing course builds on the basic marketing course (BUS 335) in that it will teach students to understand how the field of Marketing is changing, and how the impact of this evolutionary process will change the practice of marketing on a daily basis. The focus of the class will be to understand and apply new concepts, ideas and technologies to the world of business in the 21st century.

BUS 348. Business Communications. 3 Credits.

This course presents a comprehensive view of the scope and importance of communications for business, emphasizing the composition of letters and memos typically utilized by business, sales and claims correspondence, and special situation letters. Employment applications and resume writing will be reviewed. Preparation of business reports and proposals, along with oral, multimedia presentations covering a wide range of business situations, is also included. Prerequisites: completion of fundamental skills English and speech requirements.

BUS 360. Project Management. 3 Credits.

This course will teach students the essential skills they need to make effective contributions to projects in which they are involved. Thinking critically about project management principles and applying them within the context of the real world is stressed. Project management software programs will be evaluated and utilized by students.

BUS 391. Special Topic. 1-12 Credits.**BUS 392. Independent Study. 1-12 Credits.****BUS 399. Independent Study. 1-12 Credits.****BUS 406. Management Information Systems. 3 Credits.**

Concepts of MIS from a user's perspective. Explores the questions of analysis design, selection and implementation of MIS. How do I use information as a manager? How do I organize the MIS department's information in a form I can use and understand (methods and procedures)? This is a non-technical course which includes forecasting PERT/CPM, inventory models, and written and oral communications. Prerequisites: CAPP 120 or CAPP 151 and BGEN 253.

BUS 430. Senior Project. 3,6 Credits.

The student will work on an approved project, under the supervision of a faculty member. The project will include goals and objectives appropriate to a senior-level course, and must include some device for evaluating completion of those goals. Development, approval and evaluation of the project will be done by a panel of three business faculty. May be repeated for credit. Prerequisite: Senior standing.

BUS 440. Internship. 3-12 Credits.

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government or community service agencies related to the University program of study. The internship is an alternative to cooperative education, and will only be used in situations where the employer is unable to pay for the student's employment. Prerequisite: see section on cooperative education in this catalog.

BUS 455. Managing Not-For-Profit Org. 3 Credits.

This course introduces students to not-for-profit management. It provides students with a historical and contemporary understanding of the creation and changing structure of not-for-profit organizations and the not-for-profit sector including factors that impact on individual clients, staff and the larger community. It includes an exploration of classical organizational theory as well as current management practices as they relate to not-for-profit organizations.

BUS 490. Special Topics. 1-12 Credits.**BUS 492. Independent Study. 1-12 Credits.****BUS 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

BUS 499. Independent Study. 1-12 Credits.**BUS 590. Spec Topic. 1-12 Credits.****BUS 1390. Con Ed. 1-12 Credits.****BUS 1590. Con Ed. 1-12 Credits.**

Business Education (BUED)

BUED 190. Special Topics. 1-12 Credits.**BUED 199. Independent Study. 1-12 Credits.****BUED 279. Cooperative Education. 1-12 Credits.****BUED 290. Special Topics. 1-12 Credits.****BUED 299. Independent Study. 1-12 Credits.****BUED 390. Special Topics. 1-12 Credits.****BUED 399. Independent Study. 1-12 Credits.****BUED 479. Cooperative Education. 1-12 Credits.****BUED 490. Special Topics. 1-12 Credits.****BUED 499. Independent Study. 1-12 Credits.****BUED 590. Spec Topic. 1-12 Credits.**

Business Finance (BFIN)

BFIN 205. Personal Finance (equiv 305). 3 Credits.

Provides the student with the tools to make them better financial consumers. Class will examine the techniques of budgeting, investing, using credit, and purchasing capital goods. Additionally, students will be provided with the option of investigating retirement programs and estate planning as well as tax preparation. A number of projects are required to help students apply information from the class to their own real-life situation. Formerly BUS 245.

BFIN 322. Business Finance. 3 Credits.

This course teaches broad analytical skills to future managers to help them make financial decisions. The student learns basic skills like break-even analysis, budgeting, time-value of money, risk and financial statement analysis. They will apply those concepts to more sophisticated problems like capital budgeting projects, working capital management, and choosing sources of capital. Prerequisites: ACTG 201 and ACTG 202 Formerly BUS 350.

BFIN 410. \$50,000 Portfolio. 3 Credits.

This course is devoted to the study of various types of investments including stocks, bonds, real estate, insurance, IRAs, commodities, collectibles, and limited partnerships. The course will also examine tax implications of investments, investment analysis, and investment strategies. Prerequisite: Junior standing or consent of instructor and BFIN 322. Formerly BUS 355.

BFIN 498. Cooperative Education. 1-12 Credits.

Business: General (BGEN)

BGEN 105. Introduction to Business. 3 Credits.

Fundamental concepts of terminology in the business administration field: covers such areas as management, marketing, accounting, production, purchasing, data systems, personnel, and finance with practical application of fundamental principles. Formerly BUS 100.

BGEN 110. Applied Business Leadership. 3 Credits.

Leadership for First Line Management. Study of the practices, roles, attributes, challenges, and principles of leadership. The implementation of the qualities of leadership - kindness, justice, self-control, and energy. Formerly BUS 120.

BGEN 112. Creative Problem Solving. 3 Credits.

The course teaches the application of the basic elements of reasoning to common business scenarios. The student will identify reasoning abilities that are necessary for developing management skills. The student will be introduced to the standards used in evaluating their reasoning and a variety of case studies will be used to apply the concepts of the course. Formerly BUS 110.

BGEN 235. Business Law. 3 Credits.

The course serves as both a basic introduction to the legal system and a general overview of specific legal topics. In the introductory phase of the class, students will study the different kinds of law that make up our legal system, the courts, and the steps in a court case. The class will cover traditional legal topics like contract law, property law, torts, and business organizations. Students will also study newer areas of law like sales contracts, product liability law, and consumer protection law. Formerly BUS 271.

BGEN 253. Business Statistics & Research. 3 Credits.

This course builds on the basic mathematical skills learned in M 121 and adapts them for statistical analysis used by business and industry to aid decision making. Topics covered include data gathering, descriptive statistics, probability, inferential statistics, analysis of variance and regression analysis. Autocorrelation analysis, nonparametric statistics, decision making under uncertainty and business forecasting are introduced. Prerequisite: M 145 or M 121 or consent of instructor. Formerly BUS 250.

BGEN 360. International Business. 3 Credits.

Differences in culture, including religion, social structure, language, education, economic philosophy, and political philosophy are discussed. Students will examine cultural and ethnic group differences and change from both a historical and current issues perspective. The functional, economic, political, and financial aspects of international business are explored. Prerequisite: WRIT 101. Formerly BUS 365.

BGEN 468. Contemp Issues in Bus Ethics. 3 Credits.

An analysis of the technical, social, and environmental forces which influence business activities and decision-making. The impact of business decisions on society and the influence and impact of society on business, social responsibility, business and society in the role of business decision making are discussed. The role of personal and organizational values and beliefs on business ethics. Formerly BUS 405.

BGEN 494. Seminar. 3 Credits.

The Business Program's capstone course is the culmination of the courses building up to the bachelor's degree. In the course, students will demonstrate their knowledge of the program learning outcomes through testing, evidence, and case analysis. Prerequisite: Senior standing. Course Fee: \$30.00 Formerly BUS 450.

BGEN 498. Cooperative Education. 12 Credits.

Business: Management (BMGT)

BMGT 192. Independent Study. 1-12 Credits.**BMGT 245. Customer Service Management. 3 Credits.**

The course is designed to be a first exposure to the ideas of identifying and fulfilling customer needs. It leads the students through steps on getting to know the customer, developing a customer report card, examining customer satisfaction through customer eyes versus company eyes, and building a customer satisfaction measuring system. Formerly TSS 222.

BMGT 292. Independent Study. 3 Credits.**BMGT 322. Operations Management. 3 Credits.**

Management processes applied to design and operation of a production or service system. This course includes various methods of forecasting sales, linear programming, inventory and material management, physical facilities design, critical path and PERT scheduling, and quality control. Prerequisite: BGEN 253. Formerly BUS 380.

BMGT 329. Human Resource Management. 3 Credits.

An analysis and description of present day personnel practices; stresses labor supply sources, equal employment opportunity, employee selection processes, management and employee training, collective bargaining, grievances, job description and job evaluation analysis, and judging effectiveness of the labor force in the public and private sector. Prerequisite: BMGT 335 Formerly BUS 332.

BMGT 335. Management & Organization. 3 Credits.

A study of the basic management and organizational principles within business entities. Direct application of management theory is examined with consideration of the functional aspects of decision making, planning, application of ethics, implementation of change and corporate culture. Course will examine and evaluate organizational change with particular interest in individuals, groups and team processes as applied in the domestic business operations and international business. Formerly BUS 300.

BMGT 392. Independent Study. 1-12 Credits.**BMGT 422. Project Management. 3 Credits.**

This course will teach students the essential skills they need to make effective contributions to projects in which they are involved. Thinking critically about project management principles and applying them within the context of the real world is stressed. Project management software programs will be evaluated and utilized by students.

BMGT 448. Entrepreneurship. 3 Credits.

An introduction to the subjects of background research, financial analysis and business plan development necessary for the start of a new business or venture. Analysis of entrepreneurial skills, the formation of the venture management teams, and dealing with venture capital sources are also covered in the course. Prerequisite: Senior standing or permission of instructor. Formerly SBM 416.

BMGT 461. Small Business Management. 3 Credits.

Practical analysis of principles of small business management and owner-operated business are covered including management methods, location decision making, financial support for startups, marketing management, common administration and control problems, and analysis trends, professional practices, and family applications. Prerequisites: BMGT 335 and BMKT 325 Formerly SBM 402.

BMGT 492. Independent Study. 1-12 Credits.**BMGT 494. Seminar/Workshop. 3 Credits.**

The Business Program's capstone course is the culmination of the courses building up to the bachelor's degree. In the course, students will demonstrate their knowledge of the program learning outcomes through testing, evidence, and case analysis. Prerequisite: Senior standing. Formerly BUS 450.

BMGT 498. Cooperative Education. 1-12 Credits.

Business: Management Info Sys (BMIS)

BMIS 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only. Formerly CIS 279.

BMIS 311. Management Information Systems. 3 Credits.**BMIS 391. Special Topics. 1-12 Credits.****BMIS 392. Independent Study. 1-12 Credits.****BMIS 492. Independent Study. 1-12 Credits.****BMIS 498. Internship. 1-12 Credits.**

Business: Marketing (BMKT)

BMKT 112. Applied Sales. 3 Credits.

The purpose of this course is to acquaint the student with the sales methods available for the professional sales arena and to develop the framework for preparing professional sales plans. The students will work their way through basic one-on-one small item sales to counter sales, to retail floor sales, to single item industrial sales, to multi-item sales. An emphasis will be put on fast moving technology that requires detailed specifications in sales activities. Formerly TSS 246.

BMKT 244. Retail/Distributorship. 3 Credits.

This course addresses issues that would be of concern to a person interested in a retail career as an owner, a manager of an enterprise, or an employee looking to the future. Such topics as organizing and financing, location decisions, merchandise and expense planning, inventory management, pricing, materials handling, design and layout, and promotions will be discussed. Part of the course will focus on the distributorship as a special form of retail franchising. Formerly TSS 248.

BMKT 325. Principles of Marketing. 3 Credits.

Study and analysis of the elements of marketing and marketing strategy, stressing product-development, policies, pricing strategies, promotion, distribution strategies, and market and institution structures and middlemen according to the functions they perform and other marketing information systems. Formerly BUS 335.

BMKT 337. Consumer Behavior. 3 Credits.

Basic perspectives of consumer behavior; interdisciplinary approach using the fields of economics, psychology, sociology, and anthropology as they relate to marketing; emphasizes the fundamental process of motivation, perception and learning, as well as analysis of individual and group behaviors and influences in marketing. Prerequisite: BMKT 325. Formerly BUS 337.

BMKT 338. Advertising and Promotion. 3 Credits.

Advertising and promotion form the means by which organizations communicate the distinctive characteristics of their offerings to potential buyers. This course examines the theory and practice of promotions and advertising. The primary focus is on how advertising and promotions contribute to the overall marketing plan. While this course is not intended to train students to be proficient at the skills of creating effective advertising, they will gain a working knowledge of those skills by designing and implementing a full range of ads using various media as part of an overall advertising campaign.

BMKT 341. Advanced Marketing Application. 3 Credits.

This course is a marketing applications course that adds depth to student understanding of marketing concepts. The course uses the case study approach, a comprehensive marketing project, and a marketing simulation that requires the application of concepts learned in the Principles of Marketing class. Case studies that apply directly to the four P's of Marketing (Product, Price, Place, Promotion) will be used to emphasize pertinent concepts and procedures used in the marketing of products and services. The project and the simulation require the synthesis of all marketing knowledge to application situations. Prerequisite: BMKT 325. Formerly BUS 341.

BMKT 345. Marketing Trends. 3 Credits.

This advanced marketing course builds on the basic marketing course (BMKT 325) in that it will teach students to understand how the field of Marketing is changing, and how the impact of this evolutionary process will change the practice of marketing on a daily basis. The focus of the class will be to understand and apply the new concepts, ideas and technologies to the world of business in the 21st century.

BMKT 392. Independent Study. 1-12 Credits.**BMKT 436. Sales and Sales Management. 3 Credits.**

The course will provide a strong foundation in professional selling and sales management. The course will introduce such topics as: Developing a Personal Sales Philosophy, Developing a Product Strategy, Developing a Customer Strategy, and Developing a Professional Presentation. The course will also introduce the concepts of sales management and address such topics as management of the sales force, personal productivity, and the ethical aspects of personal selling. Formerly BUS 436.

BMKT 492. Independent Study. 1-12 Credits.**BMKT 498. Cooperative Education. 1-12 Credits.**

Career & Technical Education (CTE)

CTE 350. Prin of Indust Tech Education. 3 Credits.

An introductory course designed for the industrial technology student to provide a survey and appreciation for the social and economic values of all forms of education in a democratic society. Major areas of inquiry will center around program requirements, historical development, career opportunities, methods of organizing and advising youth groups, and the major academic clusters of the degree, i.e., energy power transportation, production technology, communication technology, and construction technology. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course. Formerly VOED 350.

CTE 360. Analysis and Prep Lab Mgmt. 3 Credits.

This course will provide the student the opportunity to gain an understanding of the basic materials and design applications that form the foundation of our technological society and environment. The course will also provide the 5-12 technology education teacher with information related to effective planning, organizing and controlling of technology facilities. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course. Formerly VOED 360.

CTE 370. Methods Tchng Indust Tech Edu. 3 Credits.

This course is designed to develop skills in teaching industrial technology education. The course will provide a study of the curriculum materials and techniques needed for effective instruction. Prerequisites: Level I Admission to Teacher Education, EDU 380, EDU 383, VOED 350 and VOED 360 (VOED may be concurrent). Co-requisite: EDUC 339. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course. Formerly VOED 370.

CTE 392. Independent Study. 1-12 Credits.

Carpentry Technology (CARP)

CARP 230. Adv Roof/Floor/Wall/Stair Sys. 4 Credits.

This course covers the installation methods and materials for various roofing systems. It covers a variety of flooring applications as well as interior wall construction for residential and commercial structures. It also covers advanced staircase construction. Prerequisites: CARP 130 or CARP 150, or instructor's approval.

CARP 240. Adv Topics/Comm. Applications. 3 Credits.

This course introduces the basic structural components, fastening methods, and assembly techniques for metal buildings. It provides an overview of the materials and procedures used in application of roofs, wall panels, windows, doors and flashings relating to metal buildings. Introduces basic concepts, practices, and procedures related to the floor covering installation trade. It covers proper safety procedures in the operation of hand and power tools that are related to the trade. This course also reviews and applies math related to floor covering installation. Co-requisite: CSTN 260. Prerequisites: IT 115, IT 111, and CSTN 120 or instructor's approval. Course Fee: \$25.00.

Chemistry (CHEM)

CHEM 311. Quantitative Analysis. 4 Credits.

Introduction to the theory and laboratory techniques of volumetric, gravimetric, and spectrophotometer methods of analysis. Prerequisites: Chem 122 and Chem 124. This course does meet the laboratory science requirement. Course Fee: \$20.00.
Course Fees: \$21.50

CHEM 312. Quant & Instrumental Analysis. 4 Credits.

Continuation of CHEM 311. Further examination of the theory and laboratory techniques of volumetric, gravimetric, and spectrophotometric methods of analysis. Examines the chemical principles dealing with non-aqueous processes, electrochemical principles, and instrumental techniques. Offered alternate years. Prerequisite: CHEM 311. This course does meet the laboratory science requirement. Course Fee: \$20.00.
Course Fees: \$21.50

CHEM 331. Biochemistry II. 3 Credits.

Continuation of Biochemistry (BCH) 360. Prerequisite: BCH 360. This course does not meet the laboratory science requirement.

CHEM 351. Instrumental Analysis. 3 Credits.

Modern methods of chemical analysis with emphasis on spectrometric, electrometric, and chromatographic techniques of analytical chemistry. Offered alternate years. Prerequisite: CHEM 311. This course does meet the laboratory science requirement.

CHEM 356. Physical Chemistry. 3 Credits.

An introduction to Physical chemistry emphasizing the quantitative aspects of thermodynamics, kinetic processes, equilibrium situations, and electrochemical phenomena. Prerequisite: CHEM 311. This course does meet the laboratory science requirement.

CHEM 590. Special Topics. 1-12 Credits.**CHEM 599. Independent Study. 1-12 Credits.****CHEM 690. Special Topics. 1-12 Credits.****CHEM 699. Independent Study. 1-12 Credits.**

Chemistry (CHM)

CHM 111. Inorganic Chemistry w/Lab. 4 Credits.

Chemistry (CHMY)

CHMY 121. Intro to General Chemistry. 3 Credits.

This course introduces students to the science of chemistry. The course covers the physical states of matter, including the nomenclature used in chemistry, along with atomic structure, elements, the periodic chart, chemical bonding, chemical reactions, and acid-base theory. This course is a general overview for non-science. It must be taken concurrently with CHMY 122. Formerly CHEM 111.

CHMY 122. Intro to Gen Chem Lab. 1 Credit.

This course must be taken concurrently with CHMY 121. The course does meet the laboratory science requirement. Course Fee: \$20.00 Formerly CHEM 111.

Course Fees: \$21.50

CHMY 123. Intro to Organic & Biochem. 3 Credits.

Basic topics in organic chemistry and biochemistry; chemistry as it relates to the human body--functional groups, nomenclature, categories of compounds, and reactions, metabolism, cellular processes, nutrition, and foods. Prerequisite: High School Chemistry or CHMY 121 and CHMY 122. Second of a two-semester sequence for majors that do not require a strong background in chemistry. It must be taken concurrently with CHMY 124. Formerly CHEM 112.

CHMY 124. Intro to Organic & Biochem Lab. 1 Credit.

This course must be taken concurrently with CHMY 123. This course does meet the laboratory science requirement. Course Fee: \$20.00 Formerly CHEM 112.

Course Fees: \$21.50

CHMY 141. College Chemistry I. 3 Credits.

An introductory survey of chemistry. This is the first semester of a two-semester sequence. The sequence provides an introduction to the principles of physical and inorganic chemistry appropriate for the level of knowledge necessary for students who plan on majoring in medicine, pharmacy, engineering, or the sciences. A major theme of the course is to introduce students to the chemist's view of the universe, with an emphasis on making connections between the macroscopic and the particulate levels of matter. This course is primarily for science majors and other students planning to take more than one year of chemistry. Includes laboratory. Prerequisite: High School Algebra. CHMY 142 must be taken concurrently to fulfill the laboratory science requirement. Formerly CHEM 121.

CHMY 142. College Chemistry Lab I. 2 Credits.**CHMY 143. College Chemistry II. 3 Credits.**

An introductory survey of chemistry. This is the second semester of a two-semester sequence. The sequence provides an introduction to the principles of physical and inorganic chemistry appropriate for the level of knowledge necessary for students who plan on majoring in medicine, pharmacy, engineering, or the sciences. A major theme of the course is to introduce students to the chemist's view of the universe, with an emphasis on making connections between the macroscopic and the particulate levels of matter. This course is primarily for science majors and other students planning to take more than one year of chemistry. Includes laboratory. Prerequisite: CHMY 141. This course meets the laboratory science requirement. Course fee: \$25.00 Formerly CHEM 122.

CHMY 144. College Chemistry Lab II. 2 Credits.

This laboratory will demonstrate the concepts encountered in College Chemistry II. Prerequisite: High School Algebra. CHMY 143 must be taken concurrently to fulfill a laboratory science requirement, unless CHMY 143 has already been successfully completed. Formerly CHEM 124.

Course Fees: \$26.50

CHMY 190. Special Topics. 1-12 Credits.**CHMY 192. Independent Study. 1-12 Credits.****CHMY 291. Special Topics. 1-12 Credits.****CHMY 292. Independent Study. 1-12 Credits.****CHMY 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement.

CHMY 321. Organic Chemistry I. 3 Credits.

Organic chemistry for science and related majors with emphasis on the structure of molecules, chemical and physical properties, and reactions mechanisms of hydrocarbons, alkyl halides, and alcohols. Examines the nature of alkanes, alkenes, alkynes, cyclic alkanes, and aromatic hydrocarbon compounds. Concurrent enrollment in CHMY 322 is required. Prerequisites: CHMY 143 and CHMY 144 Formerly CHEM 341.

CHMY 322. Organic Chemistry Lab I. 2 Credits.

Laboratory portion of Organic Chemistry I. Experiments in organic techniques of distillation, extraction, and recrystallization, preparation and identification of hydrocarbons, alcohol, cyclic alkanes, and alkyl halides compounds. Concurrent enrollment in CHMY 321 is required. Prerequisite: CHMY 144. This course taken in conjunction with the lecture portion of the course (CHMY 341) meets the laboratory science requirement. Course Fee: \$25.00 Formerly CHEM 343.

Course Fees: \$26.50

CHMY 323. Organic Chemistry II. 3 Credits.

Examination of molecules, their chemical and physical properties, reactions mechanisms of ether, carboxylic acids and their derivatives, aldehydes, ketones, amines, aryl halides, phenolic compounds, and introduction into biochemistry. Concurrent enrollment in CHMY 344 is required. Prerequisite: CHMY 321 Formerly CHEM 342.

CHMY 324. Organic Chemistry Lab II. 2 Credits.

Laboratory portion of Organic Chemistry II. Preparation and identification of ether, carboxylic acid, esters, amines, aldehydes, ketone, other compounds, and reaction mechanisms. Concurrent enrollment in CHMY 323 is required. Prerequisite: CHMY 322. This course taken in conjunction with the lecture portion of the course (CHMY 323) meets the laboratory science requirement. Course Fee: \$25.00 Formerly CHEM 344.

Course Fees: \$26.50

CHMY 391. Special Topics. 1-12 Credits.**CHMY 392. Independent Study. 1-12 Credits.****CHMY 490. Special Topics. 1-12 Credits.****CHMY 491. Special Topics. 12 Credits.****CHMY 492. Independent Study. 1-12 Credits.****CHMY 498. Cooperative Educaiton. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: CHMY 298 or Junior standing and approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement.

Civil Engineering (ECIV)

ECIV 230. Cnst Mgmt & Bid Estimation. 3 Credits.

Preparing cost estimates of construction projects. Introduction to construction contracts. Construction planning and scheduling. Using software for estimating and scheduling. Prerequisite: ETCC 173. Course Fee: \$15.00 Formerly CET 220.

Civil Engineering Technology (CET)

CET 190. Special Topics. 1-12 Credits.**CET 192. Independent Study. 1-12 Credits.****CET 213. Carpentry. 3 Credits.**

This course is designed to provide the student with an introduction to carpentry. Topics covered include the use of special tools, measuring devices, wood types, framing, floor wall and roof construction, & evaluation of alternative construction techniques.

CET 291. Special Topic. 1-12 Credits.**CET 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

CET 299. Independent Study. 1-12 Credits.**CET 391. Special Topic. 1-12 Credits.****CET 392. Independent Study. 1-12 Credits.****CET 491. Special Topic. 1-12 Credits.****CET 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

CET 499. Independent Study. 1-12 Credits.

Coaching (COA)

COA 205. Introduction to Coaching. 3 Credits.

An introductory course encompassing the general duties and responsibilities of coaches in all sports including philosophy, organization, administration, and supervision. Formerly HPE 248.

COA 210. Intro to Sports Officiating. 2 Credits.

Students will learn the current rules/regulations of the major team sports offered by schools in Montana and proper techniques of officiating these sports. Sports included are football, basketball, volleyball and softball. Students will also learn the process/requirements of becoming a MOA official for these and other sports. Formerly HPE 247.

COA 215. Basic Athletic Taping. 1 Credit.

Practical experience in learning basic athletic taping techniques. Some injury evaluation and exercise rehabilitation included. Course Fee: \$15.00 Formerly HPE 215.

COA 240. Coaching Volleyball. 2 Credits.

A study of training techniques, offensive and defensive strategy, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 343.

COA 242. Coaching Football. 2 Credits.

A study of training techniques, offensive and defensive strategy, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 340.

COA 245. Coaching Basketball. 2 Credits.

A study of training techniques, offensive and defensive strategy, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 341.

COA 246. Coaching Softball/Baseball. 2 Credits.

A study of training techniques, offensive and defensive strategy, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 345.

COA 256. Coaching Track/Field. 2 Credits.

A study of training techniques, strategy, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 342.

COA 258. Coaching Wrestling. 2 Credits.

A study of training techniques, offensive and defensive strategy, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 344.

COA 260. Coaching Gymnastics. 2 Credits.

A study of training techniques, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 346.

COA 262. Coaching Swimming. 2 Credits.

A study of training techniques, selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 347.

COA 291. Special Topics: Coaching. 2 Credits.

For a MHSA approved sport, the course consists of a study of training techniques, offensive and defensive strategy (if appropriate), selection of team, methods of conducting practice, and utilization of personnel. Formerly HPE 349.

COA 292. Independent Study. 1-12 Credits.**COA 294. Workshop. 1-12 Credits.****COA 394. Workshop. 1-12 Credits.****COA 407. Issues in Competitive Athl. 3 Credits.**

A study of individual administrative, supervisory, and organizational problems directly related to athletics as they affect the coach, athletic director, or profession. Formerly HPE 407.

COA 494. Workshop. 1-12 Credits.**COA 498. Cooperative Education. 1-12 Credits.**

Communication (COMX)

COMX 111. Intro to Public Speaking. 3 Credits.

A study and utilization of the principles and techniques of oral communication. Problems of research, preparation, content, organization, argument, and delivery are examined. Formerly SPCH 141.

COMX 115. Intro to Interpersonal Communc. 3 Credits.

A study of the theory and application of verbal and nonverbal communication as they occur in relatively unstructured person-to-person settings. Formerly SPCH 142.

COMX 210. Communication in Small Groups. 3 Credits.

An introduction to the theory and practice of purposeful leadership and participation in group, committee, conference, and public discussion. A focus of this course will include analysis and participation in small groups, how small groups function and an examination of conflict management in small groups. Group interaction will focus on a service learning activity that has outreach components. Formerly SPCH 240.

COMX 212. Intro to Intercultural Comm. 3 Credits.

The purpose of this course is to develop the skills necessary to build and maintain positive communication and relationships across cultures. Students will focus on similarities and differences in communication. Perceptions, language usage, nonverbal style, thinking modes, and values all will be explored to see how they influence face-to-face communication between individuals of different cultures. Formerly SPCH 245.

COMX 291. Special Topic. 1-12 Credits.**COMX 292. Independent Study. 1-12 Credits.****COMX 320. Prin of Organizational Comm. 3 Credits.**

This course features the study of the communication process in an organizational society. This study includes an examination of contrasting theories of organization. The class will also examine the role of communication in different types of organizational structures, the impact of organizational culture and performance, and the nature of communication on different levels within the organization. Particular attention will be paid to the constituting nature of communication in contemporary organizations. Formerly SPCH 310.

COMX 392. Independent Study. 1-12 Credits.**COMX 400. Communication Theory. 3 Credits.**

Examination of the current state of representative theorizing about communication. Includes a summary of communication theories and examination of the root assumptions, conceptualizations, and explanatory power of the major theories of the nature of communication. Formerly SPCH 320.

COMX 412. Communication and Conflict. 3 Credits.

Designed to explore research and practice about conflict as a process of social interaction. This course focuses on communication-oriented perspectives, key properties of conflict interaction, strategies and tactics for moving through conflict, self-regulation and third-party intervention. Formerly CMSV 350.

COMX 491. Special Topics. 1-12 Credits.

Topics of special interest as announced in the "Schedule of Classes." May be repeated for credit if there is no duplication of topics.

COMX 492. Independent Study. 1-12 Credits.

Community Health (CHTH)

CHTH 262. Community Health. 3 Credits.

Evaluation of personal health in relation to the services available throughout a community. Application to K-12 teachers for coordinating/utilizing community services in a health enhancement curriculum. Formerly HPE 274.

CHTH 292. Independent Study. 1-12 Credits.**CHTH 355. Theory Pract Comm Hlth Ed. 3 Credits.**

Health Promotion is the art and science of assisting individuals in their progress toward a greater level of personal wellness. This course will introduce various theories of health promotion and allow for the exploration and practice of a variety of techniques used in the field. Prerequisite: Junior standing. Formerly HPE 302.

CHTH 391. Special Topics. 3 Credits.**CHTH 392. Independent Study. 12 Credits.****CHTH 440. Principles of Epidemiology. 3 Credits.**

Epidemiology is focused on understanding the distribution of health outcomes across populations. This epidemiology course delivers a brief review of basic concepts and then offers several opportunities to practice different applications such as outbreak management, hospital epidemiology, case control and cohort analyses, data collection and descriptive analysis with Microsoft Excel. There are no prerequisites for this course, but completion of college algebra and/or statistics along with Microsoft Excel familiarity will be very helpful.

CHTH 445. Prgm Planning Comm Health. 3 Credits.

Program Planning Community Health.

CHTH 450. Worksite Health Promotion. 3 Credits.**CHTH 490. Undergraduate Research. 1-12 Credits.****CHTH 492. Independent Study. 12 Credits.****CHTH 498. Cooperative Education. 1-12 Credits.****CHTH 499. Senior Thesis. 12 Credits.**

Community Leadership (CMLD)

CMLD 101. Intro to Community Leadership. 3 Credits.

This course provides an introduction to community leadership concepts, focusing on the dynamics of civic engagement, and understanding the role and function of governmental and not-for-profit organizations in a community. Formerly CMSV 101.

CMLD 260. Fndtns of Non Profit Service. 3 Credits.

This course provides a theoretical and historical base to non profit service and the organizational structure of non profit services in rural areas. The course emphasizes the development of skills related to service in non profit agencies and community building, and explores the dynamics of professional careers in non profit agencies. Formerly CMSV 260.

CMLD 292. Independent Study. 12 Credits.**CMLD 301. Concepts in Comm Leadership. 3 Credits.**

This course provides an overview of social and philosophical concepts that inform leaders in community development, human services and related professional services to the community. Prerequisites: WRIT 101, CMLD 260 or permission of the instructor. Formerly CMSV 301.

CMLD 355. Assmnt & Dsgn Comm Programs. 3 Credits.

This course focuses on skills and techniques related to analyzing need and proposing changes to existing or potential community-based programs. The course content introduces concepts related to analysis, integrates application of assessment techniques and use of planning tools in order to understand and assess program needs, resulting in a program development proposal. Pre-requisite: CMLD 260 or permission of the instructor. Formerly CMSV 355.

CMLD 360. Eval of Comm-Based Programs. 3 Credits.

This course provides an overview of key concepts and skills related to evaluation process and outcomes of public sector and non-profit program. Topics focus on common qualitative and quantitative methods for data collection, work plans and timelines, budgets, and other practical issues related to both formative and summative evaluation. Pre-requisite: Junior standing or permission of the instructor; CMSV 355. Formerly CMSV 360.

CMLD 392. Independent Study. 1-12 Credits.**CMLD 401. Seminar in Comm Leadership. 3 Credits.**

As the capstone course for community leadership majors, this course focuses on preparation to enter the career field and provides practice in applying analytical and synthesis abilities to the professional, ethical, economic, cultural, and social issues in community leadership professions. Pre-requisite: Junior standing and completion of at least 6 credits in upper-division CMSV courses. Formerly CMSV 401.

CMLD 492. Independent Study. 1-12 Credits.**CMLD 498. Cooperative Education. 1-12 Credits.**

Community Service (CMSV)

CMSV 190. Special Topics. 1-12 Credits.**CMSV 199. Independent Study. 1-12 Credits.****CMSV 201. Volunteer Services Practicum. 1 Credit.**

This course provides volunteer experience in the context of community service and service learning. The students will perform activities that equal at least 30 hours of volunteer service, keep a reflective journal or portfolio, and write a final paper discussing what they have learned from the experience. It is repeatable for up to 8 credits and offered on a pass/fail basis only.

CMSV 290. Special Topics. 1-12 Credits.**CMSV 291. Special Topic. 1-12 Credits.****CMSV 292. Independent Study. 1-12 Credits.****CMSV 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, and Nursing, and cooperative education coordinator. Pass/Fail only.

CMSV 391. Special Topic. 1-12 Credits.**CMSV 392. Independent Study. 1-12 Credits.****CMSV 490. Special Topics. 1-12 Credits.****CMSV 492. Independent Study. 1-12 Credits.****CMSV 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's paraprofessional experience in non-profit and/or governmental environments. Prerequisites: Junior standing and approval of advisor, Dean of the College of Education, Arts and Sciences, and Nursing, and cooperative education coordinator. Pass/Fail only.

CMSV 499. Independent Study. 1-12 Credits.**CMSV 590. Special Topics. 1-12 Credits.**

Computer Applications (CAPP)

CAPP 120. Introduction to Computers. 3 Credits.

A literacy-based approach is used to survey the computer and the computer industry. Topics covered include: Microcomputer applications, input, processor, output, auxiliary storage, file and database management, communications, information system life cycle, program development and systems software, and trends, issues and career opportunities in the computer industry. An opportunity for hands-on work with standard software packages including word processors, electronic spreadsheets, database systems, and graphics packages is presented in lab sections. Course Fee: \$5.00 Formerly CIS 110.

Course Fees: \$5.35

CAPP 151. MS Office. 3 Credits.

An in-depth integrated application using the case method will be developed. Students will learn to use the integrated tools in modern applications programs to save time and increase the accuracy and integrity of the overall information used in building reports. OLE and file linking will be used extensively. Visual BASIC scripting will be used to increase application cohesion. Course Fee: \$5.00 Formerly CIS 111.

Course Fees: \$5.35

CAPP 156. MS Excel. 3 Credits.

This class includes theory and applications of spreadsheet software. Also included are advanced features such as programming, web linking, scripting, goal seeking, solver, application integration, list management, complex models, macro implementation, graph creation, and graphic presentation of analyzed data will be covered. Prerequisite: CAPP 120 or higher, M 145 or higher. Formerly CIS 285.

CAPP 158. MS Access. 3 Credits.

This course addresses the fundamental concepts of computerized database management and database design, with emphasis on the relational model. It includes hands-on experience using MS Access in creating databases, forms, reports, and queries. Prerequisite: Basic Computer Skills Formerly CIS 171.

CAPP 191. Special Topics. 1-12 Credits.

CAPP 192. Independent Study. 1-12 Credits.

CAPP 266. Advanced MS Excel Applications. 3 Credits.

This class includes theory and applications of spreadsheet software. Also included are advanced features such as programming, web linking, scripting, goal seeking, solver, application integration, list management, complex models, macro implementation, graph creation, and graphic presentation of analyzed data will be covered. Prerequisite: CAPP 120 or higher, M 121 or higher Formerly CIS 285.

CAPP 291. Special Topics. 1-12 Credits.

CAPP 292. Independent Study. 1-12 Credits.

CAPP 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, chairperson of department and cooperative education coordinator.

CAPP 391. Special Topics. 1-12 Credits.

CAPP 392. Independent Study. 1-12 Credits.

CAPP 491. Special Topics. 1-12 Credits.

CAPP 492. Independent Study. 1-12 Credits.

CAPP 498. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: CAPP 298 or Junior standing and approval of advisor, chairperson of the department, and cooperative education coordinator.

CAPP 1391. Continuing Education. 1-12 Credits.

Computer Engineering Tech (CPET)

CPET 101. Computer Hardware I. 3 Credits.

CPET 190. Special Topics. 1-3 Credits.

CPET 199. Independent Studies. 1-4 Credits.

CPET 260. Networking I. 3 Credits.

Coverage includes the basic concepts of networking including LAN & WAN hardware and software, OSI network model and the protocol services approach to networking.

CPET 290. Special Topics. 1-3 Credits.

CPET 299. Independent Study. 1-4 Credits.

CPET 390. Special Topics. 1-3 Credits.

CPET 399. Independent Study. 1-3 Credits.

CPET 490. Special Topics. 1-3 Credits.

CPET 499. Independent Study. 1-3 Credits.

Computer Information Systems (CIS)

CIS 112. Web Site Development. 3 Credits.

This class covers essential Internet Web Site skills for students. Topics covered include: web page construction, Photo editing, and file transfer protocol (FTP). Students will create a working Web site. Prerequisite: Basic Computer Skills.

CIS 235. Computer Hardware Support. 3 Credits.

An introduction to current computer hardware leading to the students' ability to successfully pass the COMP/TIAA+ Certification exam.

CIS 308. Industrial Electronics. 4 Credits.

This course focuses on basic power circuits and machines. Topics include power distribution systems, DC and AC motors, power control circuits, transducers, and industrial process control. Course Fee: \$9.00.

CIS 392. Independent Study. 1-12 Credits.

CIS 401. Interfacing. 3 Credits.

The course focuses on the student's education and experience on specific technical projects. Students will complete individual projects and then integrate the individual projects into a group project. Emphasis is placed on research, construction, testing, and presentation of individual and group projects based on developing interfacing circuits for a selected micro controller system. During the course the student will submit formally written reports and give public explanations and demonstrations of the projects. This course meets the general education requirement for a capstone course. Prerequisites: ITS 310 and senior standing. Course Fee: \$15.00.

CIS 410. Enterprise Resource Planning. 3 Credits.

This class covers the application of selected behavioral and quantitative decision support tools, emphasizing problem identification, technique selection, and results or computerized solution interpretations. Topics include: decision models, resource allocation models, project management models, and forecasting models including software contracts, proposals, data warehousing and data mining. Prerequisites: CAPP 266.

CIS 430. Adv Communications Systems. 3 Credits.

This course provides an advanced study of communications systems and circuits. Topics include FM circuits, antennas, transmission lines, and cellular and microwave systems. Course Fee: \$12.00.

CIS 590. Spec Topic. 1-12 Credits.

CIS 1390. Con Ed. 1-12 Credits.

CIS 1590. Con Ed. 1-12 Credits.

Computer Science/Programming (CSCI)

CSCI 110. Programming w/Visual Basic I. 3 Credits.

This course is an introduction to computer programming and problem solving techniques. Stresses modularity and structured techniques. Structured program design using design tools is heavily stressed. Programming structures including looping, sequence, and decision are thoroughly examined. Students will be exposed to the BASIC programming language with an overview of the language and specific implementation examples. Prerequisite: Basic Computer Skills Formerly CIS 115.

CSCI 111. Programming with Java I. 3 Credits.

This course focuses on intermediate computer program design and development using structured techniques. Includes small project development. Stresses modularity, program design, implementation, and testing. Object oriented programming/object oriented design (OOP/OOD) techniques will be utilized. Prerequisite: Basic Computer Skills Formerly CIS 155.

CSCI 201. Java/Experienced Programmers. 3 Credits.

This is an advanced object oriented programming and application development course using Java, a continuation of CSCI 111. This course will expand the student's knowledge of object oriented programming to include graphical user interface development utilizing programming language libraries. Advanced computer programming topics including arrays and mathematical topics including matrix multiplication and basic trigonometric functions used in graphics programming will be covered. Prerequisite: CSCI 111. Formerly CIS 350 or ISET 350.

CSCI 221. System Analysis and Design. 3 Credits.

This is a study of the systematic analysis and design of computer software using case tools, data flow analysis, culminating in a complete system design. Prerequisites: CAPP 120 or equivalent competencies, CAPP 158. Formerly CIS 270.

CSCI 232. Data Structures and Algorithms. 3 Credits.

This is an advanced programming techniques course and a survey of fundamental data structures. It covers pointers, arrays, user defined data structures, abstract data types, time-space complexity, algorithm proofs, program testing, and operating system interactions. Computability and intractable problems are discussed. Object oriented programming and object oriented design techniques will be utilized. Prerequisite: CSCI 111. Formerly CIS 355 or ISET 355.

CSCI 292. Independent Study. 1-12 Credits.**CSCI 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only. Formerly CIS 279.

CSCI 340. Database Design. 3 Credits.

In this course, the Oracle database server will be used for application creation including analysis, design, implementation, and testing of large scale, enterprise database oriented projects. It covers advanced database concepts including relational databases, client-server applications and Oracle Database Administration. Formerly CIS 371 or ISET 371.

CSCI 361. Computer Architecture. 3 Credits.

This course provides an advanced study of selected digital systems. Topics will include digital design and fabrication using ASIC, CPLD, FPLD devices as well as other programmable digital logic with emphasis on fabrication of a complete digital system. Other topics will include sensors, analog to digital conversion, digital to analog conversion, data logging, and telemetry systems. Prerequisite: ITS 310 or equivalent. Formerly CIS 361 or ISET 361.

CSCI 392. Independent Study. 1-12 Credits.**CSCI 411. Advanced Web Programming. 3 Credits.**

This course applies WWW and internet presentation and programming techniques for providing quality information content on internet and in house networks, including dynamic information generation and dissemination through the use of interactive database links, client-server connections, and distributed software architectures. Prerequisites: CSCI 111 and CAPP 158. Formerly CIS 455 or ISET 455.

CSCI 460. Operating Systems. 3 Credits.

Introduction to the basic principles of how operating systems function. Concepts cover single user operating systems and multi-user operating systems including the programming requirements and considerations under each. Prerequisites: CSCI 111 Formerly CIS 300 or ISET 300.

CSCI 476. Computer Security. 3 Credits.

This course will continue on the network course. It will include using routers. The students will see why and when to use routers and they will hook them up in the lab. It will provide a basic overview of routing. Security policy will be covered including common threats and attacks and the technologies that can address network security issues. It also covers installation, configuration and basic troubleshooting of security solutions. Students will be required to successfully install and configure equipment in a pre-determined lab environment. Pre-requisite: Junior/Senior status in CIS, EET; completion of CSCI 460 and ITS 360 or similar courses. Formerly ISET 335.

CSCI 492. Independent Study. 12 Credits.**CSCI 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in education, business, government, or community service agencies related to the University program of study. Prerequisites: CSCI 298 or Junior standing and approval of advisor, Dean of the College of Technical Science, and cooperative education coordinator. Pass/Fail only. Formerly CIS 479 or ISET 479.

CSCI 499. Senior Thesis/Capstone. 3 Credits.

Intensive Capstone Project requiring integration of knowledge and skills learned. This course should be taken in the last semester of attendance and requires completion of most of the student's degree program before entrance. Formerly CIS 471 or ISET 471.

Construction (CSTN)

CSTN 105. Introduction to Woodworking. 3 Credits.

A study in the use of equipment and procedures used in wood construction. Areas of concentration will be wood and related materials, joint design, adhesives, fasteners, hand tools, machine tools, setup and procedures, and safety. Emphasis will be on dedicated objectives with a final project. Course Fee: \$35.00 Formerly IT 109.

CSTN 120. Carpentry Bscs & Rough-In Frmg. 4 Credits.

This course introduces the carpentry trade, including history, career opportunities, and requirements. The course deals with the identification and application of a variety of building materials, fasteners, and adhesives. The skills needed for framing a simple structure are studied and practiced. The course also covers installation procedures for windows and exterior doors. Course Fee: \$25.00 Formerly CARP 120.

CSTN 132. Metal Building Construction. 1 Credit.

This course is designed to meet the needs of those entering a position in carpentry technology for the first time. The curriculum will provide students with working knowledge and experience in the field of carpentry technology. The specific course goals support the overall goals of a construction technology program. Co-requisite: CSTN 220. Prerequisites: IT 115, IT 111, and CSTN 120 or instructor's approval. Course Fee: \$10.00 Formerly IT 131.

CSTN 135. Basic Rigging. 1 Credit.

Explains how ropes, chains, hoists, loaders, and cranes are used to move material and equipment from one location to another on a job site. It describes inspection techniques and load-handling safety practices as well as reviews American National Standards Institute (ANSI) hand signals. Prerequisite: IT 111. Course Fee: \$10.00 Formerly IT 135.

Course Fees: \$10.50

CSTN 145. Ext Finish, Stair, & Metal SF. 3 Credits.

This course covers the stages involved in carpentry from site layout to constructing the footings and foundations. The course introduces site layout, measurement, and leveling procedures and introduces some applications of concrete and reinforcing materials. Prerequisites: IT 115 and CSTN 120 or instructor's approval. Co-requisites: CSTN 160 and CSTN 161 and IT 111. Course Fee: \$25.00 Formerly CARP 131.

CSTN 160. Constructn Cncpts & Bldg Lab. 3 Credits.

This course provides hands-on experience in which the student applies the basic skills and knowledge presented thus far in the NCCER Carpentry Program. This course is designed as a practical task-orientated exercise utilizing the skills covered in CSTN 120. Co-requisites: CSTN 145 and CSTN 161 and IT 111. Prerequisites: CSTN 120 or instructor's approval. Course Fee: \$25.00. Formerly CARP 150.

CSTN 161. Constructn Cncpts & Bldg Lb II. 3 Credits.

This course covers the stages involved in carpentry from site layout to constructing the footings and foundations. This course introduces site layout, measurement, and leveling procedures as well as some applications of concrete and reinforcing materials. The operation of light equipment such as skid steer, fork lift and back hoe equipment will be covered. Course Fee: \$25.00 Formerly CARP 130.

CSTN 171. Ste Prp, Fndtns, Cncrt Instltn. 4 Credits.

This course introduces building forms for footings and foundations as well as for a variety of concrete structures. It introduces methods for handling, placing, and finishing concrete. It also covers manufactured forms and their applications. Prerequisite: IT 115. Course Fee: \$40.00 Formerly IT 125.

CSTN 192. Independent Study. 1-12 Credits.**CSTN 217. Furniture & Cabinetmaking. 3 Credits.**

Students will be introduced to the principles and practices of furniture and cabinet making. Course Fee: \$35.00 Formerly IT 209.

CSTN 220. Interior Finishing. 4 Credits.

Introduces students to materials and methods for sheathing, exterior siding, stairs and roofing. The framing that was done on the building project during CSTN 120 will be used to continue studies in this course. Students will apply the knowledge and skills presented during this course to enclose the structure. Students will lay out and build a simple stair system. This course also covers framing with metal studs. Co-requisite CSTN 230 Prerequisites: IT 115, IT 111, and CSTN 120 or instructor's approval. Course Fee: \$25.00. Formerly CARP 210.

CSTN 230. Adv Rf, Flr, Wll, Stair Systms. 4 Credits.

Introduces students to trigonometric leveling, which is used to lay out foundations. This course covers the installation methods and materials for various roofing systems. It covers a variety of flooring applications as well as interior wall construction for residential and commercial structures. Prerequisites: CSTN 120, IT 115, or instructor's approval. Course Fee: \$25.00 Formerly CARP 220.

CSTN 260. Constructn Cncpts & Bldg Lb III. 4 Credits.

Provides students the opportunity to practice skills they have acquired in the entire carpentry program. It includes task-orientated projects in which students can apply many of the skills and knowledge that have been presented throughout the NCCER Carpentry program. This course is designed as a practical task-orientated exercise utilizing a variety of skills covered in all the NCCER carpentry courses required for the AAS degree. Co-requisites: CSTN 171, CSTN 230, and CARP 240. Prerequisite: CSTN 220 or instructor's approval. Course Fee: \$25.00 Formerly CARP 250.

CSTN 292. Independent Study. 1-12 Credits.**CSTN 392. Independent Study. 1-12 Credits.****CSTN 492. Independent Study. 1-12 Credits.****CSTN 498. Cooperative Education. 12 Credits.****CSTN 592. Independent Study. 1-12 Credits.**

Counselor Education (CNSL)

CNSL 502. Professional Ethics. 2 Credits.

This course examines the basis for ethical judgments and explores ethical responsibilities to clients, colleagues, organizations, and society. The course will provide the student with an introduction to the ethical and legal issues presently facing professionals in the helping professions. The emphasis of the course is on the ACA Codes of Ethics and legal requirements for counselors, psychologists, and other helping professionals who work with clients.

CNSL 506. K-12 Counseling Progm Dev & Admn. 3 Credits.

In this course the student will examine all the elements involved in planning, developing, implementing, administering, supervising and evaluating (including placement and follow-up data) a comprehensive K-12 guidance and counseling program. Educational philosophies, school curriculum patterns, federal and state rules and regulations, including IEFA are presented. Effective consultation skills with students (clients), parents, families, teachers, school administrators, and other allied professionals will be emphasized as an integral component of the comprehensive guidance and counseling program.

CNSL 508. Theories of Counseling. 3 Credits.

In this course the student will examine counseling theories which provide the student with models to conceptualize client presentation and help the student select appropriate counseling interventions. Student will be exposed to models of counseling that are consistent with the current professional research and practice in the field so that each student will develop a theoretical foundation of counseling. In addition, this course will provide an orientation to counselor characteristics and behaviors that influence the helping processes.

CNSL 515. Sem in Online Crse Design. 2 Credits.

This virtual seminar provides an immersion in course design for online delivery utilizing a "learning management system" (LMS). By concurrently experiencing the LMS from the perspective of a student and a course designer, learners gain both practical, first-hand knowledge of best practices in online course design and hands-on experience adapting these principles to the design of specific courses within their own disciplines. Discussion focuses on the challenge of course adaptation from the traditional to the virtual classroom environment as they relate to the organization, sequencing, and delivery of course content utilizing the web-based elements and tools available within the LMS. Particular emphasis is placed on the actual mechanics of the LMS.

CNSL 517. Counseling Skills & Practice. 3 Credits.

In this course the student will gain an orientation to wellness and prevention as desired counseling goals and understand counselor characteristics and behaviors that influence the helping professions. The emphasis will be on students developing skills to analyze their own counseling style and performance. This analysis will grow out of skills' development and theoretical applications experienced in the course. Students will be able to better conceptualize their theoretical framework, discuss the counseling process, and implement interviewing and counseling skills through a combination of didactic and experiential activities. Prerequisite: CNSL 508.

CNSL 521. Counseling & Medications. 2 Credits.

This course will familiarize students with the dimensions pharmacology has added to psychotherapy. The basic assumption of the course is treat a multi-model treatment model is usually the optimal approach for case management and that a holistic appreciation of the client's physiological, cognitive, emotional and behavioral dimensions is crucial to successful interventions and treatment planning. This course will assist the student to recognize the signs and symptoms of substance abuse, and the potential for substance use disorders to mimic and coexist with a variety of medical and psychological disorders.

CNSL 522. Group Dynamics & Counseling. 3 Credits.

In this course the student will examine the theory and techniques of groups counseling. Course topic areas will include: group dynamics, the types of groups, the stages of the group process, therapeutic forces within the group, etc. Student will participate in group experience and facilitate the group process. Prerequisite: CNSL 508, CNSL 517, and permission of instructor.

CNSL 525. Child & Adolescent Counseling. 3 Credits.

In this course the student will engage in a comprehensive overview of abnormal child and adolescent behaviors and their complex etiologies, with emphasis on the current edition of DSM classification system, differential diagnosis, and treatment considerations. Students will also explore historical and current view, theories, and models of childhood disorders. Topics will include an understanding of development crises, psychopathology in children, situational and environmental factors that affect both normal and abnormal behavior.

CNSL 530. Life Span Dev & Adjustment. 3 Credits.

In this course students will study the theories of life span development from conception to death in light of the changes and challenges that people experience throughout a lifetime. Adjustment will be studied through the lens of developmental and personality theories, social influences, coping strategies and therapeutic interventions. The Diagnostic Statistical Manual will be used as a source for understanding abnormal, maladaptive adjustment. Sequences and patterns of psychological and social development are emphasized. Instruction includes lecture, discussion, and experiential activities (e.g., videos, visiting experts, and role playing). In addition, students are required to complete research using electronic data bases, the Internet, and library resources.

CNSL 549. Research Methods in Counselor. 3 Credits.

The course is designed to assist teachers to develop the desire and the skills to read, interpret, evaluate, and utilize the results of systematic inquiry and empirically developed knowledge in their educational planning and decision making. This implies a positive value orientation towards research generated information as well as an understanding of strengths and limitations of research methodology when compared to other approaches to developing knowledge.

CNSL 551. Educational & Psychological Ap. 3 Credits.

In this course the student will learn the historical perspectives of the nature and meaning of assessment, including social and cultural influences. Basic concepts of standardized and nonstandardized testing and other assessment techniques, including norm-referenced and criterion referenced assessment, environmental assessment, performance assessment, individual and group test and inventory methods, psychological testing and behavioral observations used with individuals, groups and specific populations are introduced. Students will experience test administration, scoring and interpretation. Course Fee: \$25.00.

CNSL 558. Career Cnsl & Info Systems. 2 Credits.

In this course the student will examine the theories and techniques of career counseling. Course topic areas will include: theories of career development, techniques of career counseling, assessment instruments utilized in career counseling, etc. Course Fees: \$20.00

CNSL 560. Crisis Intervention Counsel. 2 Credits.

This course represents an examination of crisis situations and viable counseling interventions based on the application of theoretical models and ethical implications. An understanding of crisis (recognizing and defining crisis), crisis intervention models and implementation of specific crisis intervention techniques and strategies will be explored. The student will understand the counselors' roles and responsibilities as members of an interdisciplinary emergency management response team during a local, regional, or national crisis, disaster, or trauma-causing event.

CNSL 563. Multicultural Counseling. 2 Credits.

In this course the student will gain an understanding of the cultural context of relationships, issues, and trends in a multicultural society. Application of counseling theories and techniques as they apply to the unique concerns and issues of diverse groups (e.g., racial, ethnic, SES, cultural minorities, and special populations) will be examined. A focus of the course includes attitudes, beliefs, understandings, and acculturative experiences, including specific experiential learning activities designed to foster students' understanding of self and culturally diverse clients. Social justice and advocacy for diverse populations will be explored.

CNSL 564. Diagnosis & Treatment in Cnsl. 3 Credits.

This course will explore the diagnostic and treatment processes employed by helping professionals within schools and clinical settings. Students will develop specific skills in the use of diagnostic criteria in the current edition of the DSM in multi-axial diagnosis and the development of treatment plans. The course will explore the paradigms of mental illness and personality disorders with an emphasis on clinical techniques and professional practices used in the evaluation and treatment of clients.

CNSL 565. Marriage & Family Counseling. 3 Credits.

This course will acquaint students with a range of theories used in the diagnosis and treatment of couples and families with an emphasis on approaching clients from a system's based approach. Therapeutic interventions and appropriate treatment applications relative to premarital and marital couples, with and without children, will be introduced with an emphasis on recognizing societal trends and treatment issues related to working with multicultural and diverse family systems (e.g. families in transition, dual career couples, blended families, same-sex couples). Approaches to effective case management and consultation with families, school systems, and other professionals will also be presented.

CNSL 567. Community & Agency Counseling. 2 Credits.

This course will provide an overview of the theory and practice of counseling in human services agencies and other community settings. Emphasis will be placed on the role, function, and professional identity of the community counselor. Principles and practices of community outreach intervention, education, consultation, and client advocacy will be examined.

CNSL 570. Graduate Consultation Course. 3 Credits.

This course is permitted only for master's degree students who have completed all of their coursework but who need additional faculty or staff time. This course may not be used for degree credit. This course provides the Counselor Education student with the option of maintaining graduate status through the Graduate Studies continuous enrollment policy. Prerequisite: All required content course work must be completed and approval of instructor. The course is Pass/Fail.

CNSL 571. Counseling Practicum. 3 Credits.

In this course practicum students will develop skills necessary to apply basic competencies to the establishment of therapeutic relationships, the use of therapeutic communications, and use of influencing skills in helping clients to set goals and implement intervention strategies. The course demands 100 hours of supervised experiences which include 40 hours of direct client contact. Prerequisites include: CNSL 551, CNSL 508, CNSL 517, and permission of instructor.

CNSL 575. Counselor Ed Graduate Seminar. 1-3 Credits.

This course is delivered as a seminar in which students will investigate topics of current concern and special interest in counselor education.

CNSL 590. Special Topics. 1-6 Credits.**CNSL 591. Special Topics. 12 Credits.****CNSL 592. Independent Study. 1-12 Credits.****CNSL 594. School Counseling Internship I. 6 Credits.**

An extended practical experience in school or related setting where the counselor intern acquires 300 hours of knowledge and skills under professional supervision. The intern will acquire knowledge of school and related settings as well as observation and practice in the setting. Prerequisite: CNSL 551, CNSL 508, CNSL 517, and CNSL 571. Must submit and have approval for internship before registering.

CNSL 595. Com/Agncy Counseling Intern I. 6 Credits.

This is the first internship in the counselor education program. The program requires the completion of two supervised internship in the student's designated program area of 300 clock hours each. Each internship is intended to reflect the comprehensive work experience of a professional counselor appropriate to the designated program area. Prerequisite: CNSL 551, CNSL 505, CNSL 517, and CNSL 571 and at least 36 semester credits in the counselor education program; full admission to the program; and program faculty approval is required.

CNSL 596. School Counseling Intern II. 6 Credits.

This is the second internship in the counselor education program. The program requires completion of two supervised internship in the student's designated program area of 300 clock hours each. Each internship is intended to reflect the comprehensive work experience of a professional counselor appropriate to the designated program area. Prerequisites: CNSL 551, CNSL 508, CNSL 517, CNSL 571 and at least 36 semester credits in the counselor education program, full admission to the program, and program faculty approval is required.

CNSL 597. Comm/Agency Cnsl Intern II. 6 Credits.

The second internship in the counselor education program. The program requires completion of two supervised internship in the student's designated program area of 300 clock hours each. Each internship is intended to reflect comprehensive work experience of a professional counselor appropriate to the designated program area. Prerequisites: CNSL 551, CNSL 505, CNSL 517, CNSL 571 and at least 36 semester credits in the counselor education program; full admission to the program; and program faculty approval is required.

CNSL 690. Spec Topic. 1-12 Credits.**CNSL 691. Special Topic. 12 Credits.****CNSL 692. Independent Study. 1-6 Credits.****CNSL 698. Graduate Research. 3,6 Credits.**

Research and investigation into approved topics and problems. The student's Graduate Program Committee must approve the research plan and final product. May be repeated. A limit of 6 credits may be applied to your program.

CNSL 1390. Con. Ed.. 1-12 Credits.**CNSL 1590. Con Ed. 1-12 Credits.****CNSL 1591. Spec Topic Con Ed. 1-12 Credits.**

Creative Writing (CRWR)

CRWR 340. Intern Creative Writing Wkhp. 3 Credits.

Writing poetry and fiction. Study of the techniques of poetry--the creation and use of metre, rhyme, line, stanza, tone and figurative language--and of fiction--development of action, character, and narrative voice. Formerly ENGL 311.

CRWR 392. Independent Study. 1-12 Credits.

Criminal Justice (CJ)

CJ 291. Special Topic. 1-12 Credits.**CJ 298. Co-Operative Education. 1-12 Credits.****CJ 391. Special Topic. 1-12 Credits.****CJ 498. Cooperative Education. 1-12 Credits.**

Criminal Justice (CJS)

CJS 201. Intro to Criminal Justice. 3 Credits.

The course is designed to introduce students to the criminal justice system in America and our institutionalized response to the social problem of crime. The criminal justice system comprises several unique and related components. The course will consist of an examination of the various local, state and federal agencies that make up the system with particular attention to the police, courts and corrections. The course will also examine critical questions about the roles, responsibilities and challenges of the criminal justice system.

CJS 220. Correctional Systems. 3 Credits.

The course is designed to support student understanding of the American system of corrections and the roles of federal, state, and local governments. Students will study the laws pertaining to corrections and how they are applied to offenders and correctional personnel. Students will also study the importance of community corrections and the reasons why prison populations have continued to increase.

CJS 230. Policing Systems. 3 Credits.

The course is designed to develop an understanding of policing service in the United States. It provides a historical overview of how policing evolved and how it has changed. The student will understand the main types of policing agencies and comprehend their function as part of the criminal justice system. Student will develop an understanding of the organization of police agencies and analyze styles of policing and the policy it supports. Finally, the course will support students understanding the fine balance between actions, decision-making and discretion while working closely with community agencies.

CJS 291. Special Topic. 1-12 Credits.**CJS 325. Criminal Law. 3 Credits.**

This course is the study of principles, doctrines and selected rules of criminal law; the sources of substantive criminal law and historical development of common law principles of criminal responsibility; constitutional constraints on the decision to define behavior as criminal.

CJS 330. Admin of Juvenile Justice. 3 Credits.

This course offers an extensive systematic interdisciplinary examination of juvenile justice and juvenile justice administration in the United States.

CJS 335. Victimology. 3 Credits.

Criminal justice professionals, regardless of their specific role, will always come in contact with victims of crime. This course provides an introductory examination of criminal victimization in the United States via an overview of current theory, research, and trends within the context of specific victimization types. Students will examine specific crime types, the impact of crime on victims and society, the role of victims within the criminal justice system, specific remedies, and victim rights and services. Where possible, topics will be studied within a context of current events and local models of crime victim services.

CJS 391. Special Topic. 1-12 Credits.**CJS 392. Independent Study. 1-12 Credits.****CJS 427. Deviance and Social Control. 3 Credits.**

This course will begin to examine the belief that deviance and social control is a diverse and controversial concept, which is of great importance to society and individuals. The course will explore definitions of deviance, theoretical perspectives, which attempt to explain deviance, and how deviance is organized and managed in our society. It will also examine how our society views the processes that create and control deviant behavior. Contemporary forms of deviance will be analyzed and discussed.

CJS 491. Special Topic. 1-12 Credits.**CJS 492. Independent Study. 1-12 Credits.****CJS 498. Cooperative Education. 1-12 Credits.**

This course is designed to provide practical on-the-job experiences which augment in-class experiences. The student is placed with one of the following agencies: law enforcement agencies, prisons, probation and parole offices, social service organizations, governmental agencies, department store security firms, research institutions or foundations, judicial, legal, or political offices, and homeland security or emergency management organizations. Pre-Requisite: Criminal Justice major or minor, junior or senior status.

Criminal Justice (CJUS)

CJUS 121. Intro to Criminal Justice. 3 Credits.

The course is designed to introduce students to the criminal justice system in America and our institutionalized response to the social problem of crime. The criminal justice system comprises several unique and related components. The course will consist of an examination of the various local, state and federal agencies that make up the system with particular attention to the police, courts and corrections. The course will also examine critical questions about the roles, responsibilities and challenges of the criminal justice system.

CJUS 201. Introduction to Criminal Justice. 3 Credits.**CJUS 220. Intro to Corrections. 3 Credits.**

The course is designed to support student understanding of the American system of corrections and the roles of federal, state, and local governments. Students will study the laws pertaining to corrections and how they are applied to offenders and correctional personnel. Students will also study the importance of community corrections and the reasons why prison populations have continued to increase.

CJUS 230. Police Org and Behavior. 3 Credits.

The course is designed to develop an understanding of policing service in the United States. It provides a historical overview of how policing evolved and how it has changed. The student will understand the main types of policing agencies and comprehend their function as part of the criminal justice system. Student will develop an understanding of the organization of police agencies and analyze styles of policing and the policy it supports. Finally, the course will support student understanding the fine balance between actions, decision-making and discretion while working closely with community agencies.

CJUS 235. American Policing Systems. 3 Credits.**CJUS 292. Independent Study. 12 Credits.****CJUS 325. American Criminal Law. 3 Credits.**

This course is the study of principles, doctrines and selected rules of criminal law; the sources of substantive criminal law and historical development of common law principles of criminal responsibility; constitutional constraints on the decision to define behavior as criminal.

CJUS 330. Admin of Juv Justice. 3 Credits.

This course offers an extensive systematic interdisciplinary examination of juvenile justice and juvenile justice administration in the United States.

CJUS 335. Victimology. 3 Credits.

Criminal justice professionals, regardless of their specific role, will always come in contact with victims of crime. This course provides an introductory examination of criminal victimization in the United States via an overview of current theory, research, and trends within the context of specific victimization types. Students will examine specific crime types, the impact of crime on victims and society, the role of victims within the criminal justice system, specific remedies, and victim rights and services. Where possible, topics will be studied within a context of current events and local models of crime victim services.

CJUS 391. Special Topics. 3 Credits.**CJUS 392. Independent Study. 1-12 Credits.****CJUS 427. Deviance & Social Control. 3 Credits.**

This course will begin to examine the belief that deviance and social control is a diverse and controversial concept, which is of great importance to society and individuals. The course will explore definitions of deviance, theoretical perspectives, which attempt to explain deviance, and how deviance is organized and managed in our society. It will also examine how our society views the processes that create and controls deviant behavior. Contemporary forms of deviance will be analyzed and discussed.

CJUS 491. Special Topics. 12 Credits.**CJUS 498. Cooperative Education. 1-12 Credits.**

Dance (DANC)

DANC 100. Modern Dance I. 1 Credit.

Courses in this series will provide the student an opportunity to develop skills in the areas of elementary dance, folk and social dance, square dance, modern dance, contemporary dance, and gymnastics and tumbling. Formerly HPEA 195.

DANC 155. Square Dance. 1 Credit.

Courses in this series will provide the student an opportunity to develop skills in the areas of elementary dance, folk and social dance, square dance, modern dance, contemporary dance, and gymnastics and tumbling. Formerly HPEA 194.

DANC 158. Folk Dance. 1 Credit.

Courses in this series will provide the student an opportunity to develop skills in the areas of elementary dance, folk and social dance, square dance, modern dance, contemporary dance, and gymnastics and tumbling. Formerly HPEA 191.

DANC 194. Seminar/Workshop. 1 Credit.

Courses in this series will provide the student an opportunity to develop skills in the areas of elementary dance, folk and social dance, square dance, modern dance, contemporary dance, and gymnastics and tumbling. Formerly HPEA 198.

DANC 250. Social Dance II. 1 Credit.

Courses in this series will provide the student an opportunity to develop skills in the areas of elementary dance, folk and social dance, square dance, modern dance, contemporary dance, and gymnastics and tumbling. Formerly HPEA 192.

Diesel (DIES)

DIES 291. Special Topic. 12 Credits.**DIES 292. Independent Study. 12 Credits.****DIES 499. Independent Study. 1-12 Credits.****DIES 1590. Continuing Education. 1-12 Credits.**

Diesel Service Tech (DST)

DST 104. Intro to Diesel Engines. 3 Credits.

Construction, operation, and repair of diesel engines; logical steps of procedure for engine reconditioning; installing and timing of fuel injection components. Emphasis will be placed on diesel engine component reconditioning, engine tune-ups, and use of special diagnostic tools. To be taken concurrently with DIES 114. Formerly DIES 104.

DST 114. Intro to Diesel Engines Lab. 3 Credits.

This course will give the student hands-on experience rebuilding diesel engines and components. The student will learn manufacturer's procedures on engine rebuilding and special tool usage. To be taken concurrently with DIES 104. Course Fee: \$20.00. Formerly DIES 114.
Course Fees: \$21.50

DST 115. Intro to Diesel Fuel Systems. 5 Credits.

This lecture/lab course will introduce students to the diesel fuel injection system. Topics covered will include fuel characteristics and testing, fuel sub-system and components, mechanical diesel fuel systems (inline pumps, rotary distributor pumps, mechanical unit injectors) and electronically controlled diesel fuel systems (EUI, HEUI, High Pressure Common Rail). Lab exercises will relate to lecture material, and will include fuel subsystem components, disassembly/reassembly of fuel pumps, fuel testing, injector testing, removal/installation of fuel pumps and injectors. Safety, correct industry procedures, correct tool usage, and diagnosis of common fuel-related problems will be emphasized. Course Fee: \$6.00 Formerly DIES 115.
Course Fees: \$10.25

DST 191. Special Topics. 12 Credits.**DST 192. Independent Study. 1-12 Credits.****DST 198. Cooperative Education. 1-3 Credits.****DST 204. Intro to Hydraulics Pneumatics. 2 Credits.**

Theory and application of hydraulics and pneumatics used in automotive, agriculture, heavy equipment, and construction industries; to be taken concurrently with DIES 214. Formerly DIES 204.

DST 214. Intro to Hydr Pneumatics Lab. 2 Credits.

Application of hydraulics and pneumatics. Students will demonstrate hydraulic principles on live work stations. They will work with, tear down, and assemble equipment. They will also work on open and closed center systems, fixed and variable displacement pumps, linear and rotary actuators, pressure and flow controls, and directional valves. To be taken concurrently with DIES 204. Course Fee: \$15.00. Formerly DIES 214.

Course Fees: \$15.75

DST 216. Heavy Duty Power Trains. 4 Credits.

This course will give the students hands-on experience working on heavy duty power train components. Emphasis will be placed on calculating gear ratios and power flow on industry's common transmissions, final drives, and clutches. The student will measure drive line angles and diagnose vibration complaints. Course Fee: \$12.00. Formerly DIES 216.

Course Fees: \$15.75

DST 219. Heavy Duty Chassis. 4 Credits.

A course dealing with braking systems, suspensions, and alignment of medium and heavy duty vehicles. The major emphasis will be on air brakes, methods used to check and adjust alignment, and inspection and repair methods for suspension systems. Course Fee: \$6.00. Formerly DIES 219.

Course Fees: \$10.25

DST 264. Diesel Engine Diagnosis Repair. 3 Credits.

This course will include engine assembly and engine start-up after assembly. The course will also coordinate set-up, testing, and diagnosis of engine problems using test instruments and engine dynamometer. To be taken concurrently with DIES 272. Prerequisites: DIES 104 and DIES 114 Formerly DIES 262.

DST 273. Diesel Shop Practices. 4 Credits.

A course emphasizing actual shop operations: Long- and short-term jobs covering all aspects of a vehicle. It also includes vehicle maintenance, shop flat-rate procedures, work order and warranty claim procedures. Prerequisites: DIES 262 and DIES 272. Course Fee: \$20.00. Formerly DIES 273.

Course Fees: \$21.50

DST 274. Diag Diesel Engine Repair Lab. 3 Credits.

This course will give the student hands-on experience on diagnosing diesel engines using the proper test equipment. Diesel engine repair and assembly are addressed. To be taken concurrently with DIES 262. Course Fee: \$20.00 Formerly DIES 272.

Course Fees: \$21.50

DST 291. Special Topics. 12 Credits.**DST 292. Independent Study. 1-12 Credits.****DST 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

DST 314. Hydraulics and Pneumatics II. 4 Credits.

Application of hydraulics and pneumatics with emphasis on live work. Troubleshooting and diagnostics of hydraulic systems including testing, adjustment, and repair of components. Prerequisites: DIES 204 and DIES 214. Course Fee: \$15.00. Formerly DIES 314.

Course Fees: \$15.75

DST 391. Special Topics. 1-12 Credits.**DST 392. Independent Study. 1-12 Credits.****DST 420. Diesel Shop Management. 2 Credits.**

This course will cover management of equipment including establishing preventative maintenance programs, cost per hour operation, and investment analysis. Selected computer programs will be used. Formerly DIES 420.

DST 434. Current Model Year Technology. 3 Credits.

Current topics to bring Seniors up to date on changes in heavy duty technology, to include current model year. Provides latest information on equipment, systems components, troubleshooting and repair. Course will also review major diesel topics to enhance Senior students experience. Prerequisite: Senior standing. Formerly DIES 434.

DST 440. Advanced Fuel Systems. 4 Credits.

A course dealing with the diagnosis and repair of fuel systems using the proper test equipment and test standards. Prerequisites: DIES 115 and Senior standing. Course Fee: \$15.00 Formerly DIES 440.

Course Fees: \$15.75

DST 450. Diag Pwr Shifts and HD Atmtics. 4 Credits.

This is a course in Heavy Duty Power Shifts and Automatic Transmissions 6000 GVW and larger. This course consists of lab and lecture time covering the components, theory of operation; diagnosis; using proper instrumentation and manuals; and repair; with emphasis on troubleshooting and failure analysis. Prerequisites: DIES 216 and ATDI 257. Course Fee: \$15.00. Formerly DIES 450.

Course Fees: \$15.75

DST 491. Special Topics. 1-12 Credits.**DST 492. Independent Study. 1-12 Credits.****DST 498. Cooperative Education. 1-14 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only tkajtlkat;wjahtlaktho'aitnalskthw;aoith,asmnt;lajktyhathn.

Drafting (DRFT)

DRFT 132. Descriptive Geometry. 3 Credits.

Advanced theory and practices in descriptive geometry construction and pattern development in preparation for advanced courses in Design Drafting.

Prerequisite: DRFT 131, or permission of instructor. Course Fee: \$10.00.

Course Fees: \$10.75

DRFT 165. 3D CAD. 3 Credits.

This is a study in advanced concepts and procedures used to develop three-dimensional CAD models and produce working drawings from them.

Prerequisite: DRFT 156.

DRFT 190. Special Topics. 1-12 Credits.**DRFT 199. Independent Study. 1-12 Credits.****DRFT 216. Industrial CAD Modeling. 3 Credits.**

The student will explore advanced computer modeling techniques used in industrial design. Students will experiment with various applications in solving assigned problems. Prerequisite: DRFT 256, DRFT 356, or consent of instructor. Course Fee: \$10.00.

DRFT 290. Special Topics. 1-12 Credits.**DRFT 299. Independent Study. 1-12 Credits.****DRFT 390. Special Topics. 12 Credits.****DRFT 399. Independent Study. 1-12 Credits.****DRFT 428. Technical Illustration. 3 Credits.**

The application of pictorial representations to describe external and internal design features of manufactured components, subassemblies, and completed projects; and construction projects. Prerequisite: DRFT 132. Course Fee: \$15.00.

Course Fees: \$15.75

DRFT 490. Special Topics. 1-12 Credits.**DRFT 492. Independent Study. 1-12 Credits.****DRFT 499. Independent Study. 1-12 Credits.****DRFT 590. Spec Topic. 1-12 Credits.****DRFT 1390. Con Ed. 1-12 Credits.****DRFT 1590. Cont. Ed. Course. 1-12 Credits.****DRFT 1591. Sp Topic Cont Ed. 1-12 Credits.**

Drafting Design (DDSN)

DDSN 114. Introduction to CAD. 3 Credits.

This is a systems oriented course designed to introduce students to the concepts, techniques, and applications of PC-based computer aided drafting. It is the intent of the course to provide students with competencies that will allow them to use the system to create drawing files and down load files for hard copies. Command structure, coordinate systems, text dimensions, and plotting will be covered. Course Fee: \$15.00 Formerly DRFT 156.

Course Fees: \$15.75

DDSN 116. 3D CAD. 3 Credits.

This is a study in advanced CAD concepts and procedures to develop three-dimensional wire frame models. Emphasis will be on the creation and use of 3D primitives, surface modeling, basic solids modeling, shading techniques, and the use of animation software. Exercises will include rendered output to paint type printers. Prerequisite: DRFT 156. Course Fee: \$15.00 Formerly DRFT 256.

Course Fees: \$15.75

DDSN 119. Technical Graphics I. 3 Credits.

The student will gain knowledge and skills needed to produce drawings and understand basic drafting theory. Topics developed on the board will include sketching, lettering, instruments, scaling, applied geometry, orthographic projection, dimensioning, applied technical mathematical relations, primary auxiliary views, sections, threads, and weld symbols. Course Fee: \$15.00 Formerly DRFT 131.

Course Fees: \$15.75

DDSN 239. Parametric CAD. 3 Credits.

The student will explore advanced computer modeling and techniques used in industrial design. Students will experiment with various applications in solving assigned problems. Prerequisite: DRFT 256, DRFT 356, or consent of instructor. Course Fee: \$10.00 Formerly DRFT 316.

Course Fees: \$10.75

DDSN 245. Civil Drafting. 3 Credits.

Fundamentals of mapping and geographic information systems (GIS). Includes applications of mapping projections, presentation of surveying information, and GIS methods. Mapping and GIS computer applications will be used and developed throughout the course. Pre-requisites: DRFT 156. Course Fee: \$10.00 Formerly DRFT 244.

Course Fees: \$10.75

DDSN 255. Machine Drafting. 3 Credits.

The study and application of standards used for producing working drawings, including the fundamentals of geometric dimensioning and tolerancing. Both detail and assembly drawings will be produced. Prerequisites DRFT 165 3D CAD or DRFT 216 Industrial CAD Modeling. Formerly DRFT 205.

Course Fees: \$15.75

DDSN 265. Architectural Drafting. 3 Credits.

This course is the study of the principles involved in the construction drawings of an average wood frame residential structure. A complete set of working drawings will be developed. Prerequisite: DRFT 132. Course Fee: \$10.00 Formerly DRFT 201.

Course Fees: \$10.75

DDSN 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

DDSN 312. CAD Management. 3 Credits.

This course will introduce the successful student to various aspects of CAD Management and decision making. The successful student will gain knowledge applicable to an active CAD environment in which technological concerns need to be addressed in a clear and efficient manner. Prerequisite: DRFT 156 Formerly DRFT 346.

DDSN 376. Presentation & Animatn. 3 Credits.

A study in the effects of using CAD images and animation for professional presentations. Students will explore a variety of software and techniques. Prerequisite: DRFT 156 Formerly DRFT 356.

Course Fees: \$15.75

DDSN 435. Industrial Product Design. 3 Credits.

An advanced course designed to prepare the student for the basics of mechanical design. Techniques and procedures used in the design process, geometric tolerancing and dimensioning, and the application of CAD will be studied. This course meets the general education requirements for a capstone course. Prerequisites: DRFT 205 and DRFT 256. Course Fee: \$10.00 Formerly DRFT 409.

Course Fees: \$10.75

DDSN 465. Architectural CAD II. 3 Credits.

This course allows students to apply the design process to a residential project. A complete set of working drawings will be developed and published. Course Fee: \$15.00. Formerly DRFT 457.

Course Fees: \$15.75

DDSN 489. CAD Presentation II. 3 Credits.

A continuation in the study of CAD presentation and simulation techniques that builds on the skills learned in DRFT 356. Advanced multimedia and 3D studio concepts and methods will be explored to create still and animated images. Prerequisite: DRFT 356. Course Fee: \$10.00 Formerly DRFT 456.

Course Fees: \$10.75

DDSN 492. Independent Study. 12 Credits.**DDSN 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

Drama (DRMA)

DRMA 190. Special Topics. 1-12 Credits.

DRMA 199. Independent Study. 1-12 Credits.

DRMA 290. Special Topics. 1-12 Credits.

DRMA 299. Independent Study. 1-12 Credits.

DRMA 390. Special Topics. 1-12 Credits.

DRMA 399. Independent Study. 1-12 Credits.

DRMA 490. Special Topics. 1-12 Credits.

DRMA 499. Independent Study. 1-12 Credits.

DRMA 590. Spec Topic. 1-12 Credits.

Earth Science (ESCI)

ESCI 208. Environmental Geology. 4 Credits.

ESCI 307. Astronomy. 4 Credits.

ESCI 405. Earth Science Invstgtns Tchrs. 3 Credits.

ESCI 490. Special Topics. 12 Credits.

ESCI 499. Independent Study. 1-12 Credits.

ESCI 505. Earth Sci Investigations Tchrs. 3 Credits.

Astronomy, geology, and meteorology for science teachers. Graduate credit requirements are described in the course syllabus. This course does mee the laboratory science requirement. Course Fee: \$10.00.

Course Fees: \$10.75

ESCI 590. Spec Topic. 12 Credits.

ESCI 599. Ind Study. 1-12 Credits.

ESCI 699. Ind Study. 1-12 Credits.

ESCI 1390. Con Ed. 1-12 Credits.

ESCI 1590. Cont Ed. 1-12 Credits.

Economics (ECNS)

ECNS 191. Special Topics. 12 Credits.

ECNS 192. Independent Study. 12 Credits.

ECNS 201. Principles of Microeconomics. 3 Credits.

Principles of rational choice, price determination, market resource allocation, competition, and the role of government in the economy. Prerequisite: University competency in math or permission of instructor. Formerly ECON 241.

ECNS 202. Principles of Macroeconomics. 3 Credits.

This is a course in the principles of national income and product accounting, aggregate demand and supply, employment, monetary theory, macroeconomic stabilization, and basic principles of international trade and finance. Prerequisite: University competency in math. Formerly ECON 242.

ECNS 291. Special Topics. 12 Credits.

ECNS 292. Independent Study. 12 Credits.

ECNS 348. Public Choics and Interest. 3 Credits.

This is a study of political economy focusing on what modern public choice and public interest models say about the proper boundaries of the public and private sectors. It analyzes the rent-seeking activities of special interest groups and the relative impacts of altruism and self-interest in explaining political behavior and governmental policies in democratic systems. The material focuses on the nature of public goods, market failures, government regulation, and wealth redistribution, among other topics. Theoretical, historical and empirical forms of evidence are brought to bear on the issues. Formerly ECON 348.

ECNS 372. Economic History of the US. 3 Credits.

Students will study the growth and development of the U.S. Economy and business transformation from colonial times to the mid-20th century. The central organizing focus concerns the economic, cultural, and constitutional incentive structures in America that have motivated entrepreneurship and efficient resource use. A background in basic economics or business theory is useful but not required. Formerly ECON 346.

ECNS 391. Special Topics. 12 Credits.

ECNS 392. Independent Study. 12 Credits.

ECNS 491. Special Topics. 12 Credits.

ECNS 492. Independent Study. 12 Credits.

Economics (ECON)

ECON 190. Special Topics. 1-12 Credits.

ECON 199. Independent Study. 1-12 Credits.

ECON 290. Special Topics. 1-12 Credits.

ECON 299. Independent Study. 1-12 Credits.

ECON 390. Special Topics. 1-12 Credits.

ECON 490. Special Topics. 1-12 Credits.

ECON 499. Independent Study. 1-12 Credits.

Education (EDU)

EDU 201. Intro to Educ with Fld Exprnce. 3 Credits.

This course will focus on the history, purpose, role and scope of education in the U.S. Topics will include curriculum development, state and national standards, current trends in education and professional development. A requirement of 10 hours of field work relating to community involvement will be given, which will show how candidates can utilize neighborhood and city resources in their future teaching assignments. Formerly EDUC 100.

EDU 202. Early Field Experience. 1 Credit.

Supervised experience in community institutions and organizations. Investigation and competency development as related to a student's major and/or minor area. Formerly EDUC 259.

EDU 225. Intro to Education Psychology. 3 Credits.

This course will focus on concepts of educational psychology with an emphasis on learning theories. Topics relating to diversity, including special needs students, and the impact of culture within the classroom's learning and teaching environment plays a central part in the curriculum. Formerly EDPY 215.

EDU 270. Integrating Tech in Education. 3 Credits.

This course will engage students in the exploration of technology's use in society and its effects on teaching and learning. The course includes strategies for developing technology-rich curriculum and techniques for enhancing learning through integration of technology and 21st century skills. Formerly EDU 370, CIS 320.

EDU 292. Independent Study. 1-12 Credits.

EDU 311. C, D & E in Global Ed. 3 Credits.

Diversity issues include, but are not limited to, cultural and individual differences, gender, ethnicity, low social-economic background, and students with special needs. This course is designed to investigate ways in which technology may be used to support the learning needs of diverse students and expand the practices of community within the classroom. Graduate credit requirements are described in the course syllabus. Used to support the learning needs of diverse students and expand the practices of community within the classroom. Formerly EDUC 351 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 315. Integrat IEFA Across the Curr. 2 Credits.

This course will follow theory into practice where candidates build Indian Education for All instructional strategies for specific content areas in the elementary classroom. Candidates will explore, develop, and use advanced instructional strategies, materials, technologies, and activities to promote Indian Education for All across the K-8 curriculum.

EDU 335. Fund & Corr Strtg Elem Rdg Prg. 3 Credits.

This course is designed to investigate reading instruction in the elementary grades. This will include a study of the reading process, methods of instruction, materials available, and reading skills. Methods, procedures, and techniques of identifying, analyzing, and correcting reading difficulties will be explored. Students will participate in a practicum experience (45 hours maximum per semester arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in strategies that will help the struggling reader. Prerequisite: Level I Admission to Teacher Education, EDU 380, EDU 383, and EDUC 380. Graduate credit requirements are described in the course syllabus. Formerly EDUC 335 If this class is taken at the 500 level, it is graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 337. Reading Materials Elem Child. 2 Credits.

An examination of the variety of reading materials available for use in the teaching of reading and the application of those materials to the learning needs of children of differing reading competencies. Students will explore the role of reading and the communication arts in the elementary curriculum and the integration of literature in the elementary curriculum. Prerequisite: Level I Admission to Teacher Education. Graduate credit requirements are described in the course syllabus. Formerly EDUC 448 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 340. Classroom Management. 3 Credits.

A methodological course introducing basic principles and procedures for managing the behavior and academic time of children in the classroom and school environment. Students will explore topics related to teacher and student communication, teaching and learning styles, discipline models and procedures, records management (including electronic management systems) and the impact of facilities on the learner. Various development and counseling theories will be examined in light of enhancing the learning and acceptance of all students. Students will also examine the various applications of counseling issues (e.g., substance abuse, cross-cultural, crisis management) as they apply to K-12 classroom practice. Prerequisite: Level I Admission to Teacher Education, EDU 380 and EDU 383. Graduate credit requirements are described in the course syllabus. Formerly EDUC 380 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 361. Traffic Safety Education I. 3 Credits.

Basic course for the preparation of teachers in the field of traffic safety. Introduction to the history and philosophy of traffic safety. Emphasis is on the behind-the-wheel phase of traffic safety in the high school program. University students will give behind-the-wheel lessons to high school students. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 362. Traffic Safety Education II. 3 Credits.

A continuation of EDU 361 with emphasis on materials, organization, and content of the classroom phase of traffic safety. University students will give additional behind-the-wheel lessons and also give classroom theory lessons to their peers. EDU 361 may be taken concurrently. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 363. Motorcycle Safety. 2 Credits.

Analysis of the motorcycle accident problem and the role of the high school traffic safety program in motorcycle safety. Emphasis on classroom and laboratory content, organization, and instruction techniques. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 365. Motor Vehicle Law and Enfrmnt. 2 Credits.

A course designed to give driver education teachers and other interested individuals a more complete understanding of motor vehicle code and ordinances and the basic principles of their enforcement. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 370. Integrating Tech in Education. 3 Credits.

This class presents three strategies that enable a teacher to integrate computers into their educational environment to enhance their capabilities and productivity. topics covered include multi-media, telecommunications, and classroom management. Formerly CIS 320.

EDU 380. Intro Curric Plan/Practice. 3 Credits.

This course is an introduction to curriculum planning and practice. An overview of curriculum development, unit planning with an emphasis on lesson planning is the focus. How lesson design affects classroom management, how to meet state and national curriculum and practice standards, and how to integrate instructional technology in lesson and unit development are topics. Secondary education candidates will focus on reading/writing across the curriculum; elementary education candidates will focus on content curriculum. Students will participate in a practicum experience (45 hours arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in curriculum and planning. Prerequisite: Level I Admission to Teacher Education. Co-requisite: EDU 383. Course fee: \$25.00. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

Course Fees: \$10.75

EDU 383. Assessment in Education. 3 Credits.

This course is designed to provide candidates the foundation in assessment measures used in the K-12 classrooms that aid education decision-making. Fundamental assessment and evaluation topics include validity, reliability, item construction, test interpretation, norm-referenced, criterion-referenced and alternative methods of assessment. HPE Majors/Minors will substitute HPE 376 for this course. Pre-requisite: Level I Admission to Teacher Education, MATH general education requirements for Teacher Education major. Co-requisite: EDU 380. Graduate credit requirements are described in the course syllabus. Formerly EDUC 376 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 391. Special Topics/Exp Courses. 1-12 Credits.**EDU 392. Independent Study. 1-12 Credits.****EDU 395. Field Experience: Grades 9-12. 1 Credit.**

This course is taken by candidates in conjunction with their methods course(s). Candidates will be placed in field experiences with the express purpose of practicing the methodology of teaching in a classroom setting. This course may be repeated for up to 3 credits Prerequisite: Level I Admission to Teacher Education. Formerly EDUC 339.

EDU 397. Methods. 2-3 Credits.

Supervised experience in community institutions and organizations. Investigation and competency development as related to a student's major and/or minor area. May be repeated for credit.

EDU 397CA. Methods: K-8 Int. Arts All Lrn. 2-3 Credits.

This course is a "hands-on" course that teaches strategies and methodology to integrate the creative arts (e.g., art, music, and drama) into the elementary classroom to enhance learning for all students. Emphasis will be placed upon developing the candidate's creative abilities. Instruction and theory, implications for creative art instruction, and information on resources/materials for the classroom will be covered. Teacher education candidates will prepare and present lesson plans that take into consideration the development of strategies for integrating creative arts into the curriculum. A variety of formal and informal assessment techniques appropriate in assessing student achievement will be discussed. Prerequisites: Level I Admission to Teacher Education, EDU 380, and EDU 383. Course Fee: \$25.00.

Course Fees: \$10.75

EDU 397HE. Methods: K-8 Health Enhancemen. 2-3 Credits.

Elementary education teachers must be able to help students meet OPI benchmark requirements in health enhancement. This course will provide candidates with knowledge of a variety of topics within health enhancement for the elementary school child as well as strategies to teach these topics in a K-8 setting. Prerequisites: HPE 235 and Level I Admissions to Teacher Education. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 397MA. Methods: K-8 Mathematics. 2-3 Credits.

This course is a "hands-on" course that includes the study of the nature of mathematics instruction and theory, its implications for teaching elementary mathematics, and information on resources/materials for the classroom. Teacher education candidates will prepare and present lesson plans that take into consideration the development of mathematical abilities and attitudes following NCTM standards. A variety of formal and informal assessment techniques appropriate in assessing mathematical attitudes/ability will be discussed. Prerequisites: Level I Admission to Teacher Education, MATH general education requirements, EDUC 380 and EDU 383. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 397SC. Methods: K-8 Science. 2-3 Credits.

This is a "hands-on" course that includes the study of how to teach the nature of science, instructional theory and its implications for teaching elementary science, and information on resources/materials for the classroom. Each student will prepare and present lesson plans according to three models for teaching elementary science; experimental, discovery and inquiry. A variety of formal and informal assessment techniques appropriate in science instruction will be discussed. Prerequisites: Level I Admission to Teacher Education, Science requirements for elementary education majors, EDU 380 and EDU 383. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 397SS. Methods: K-8 Social Studies. 2-3 Credits.

This course is a "hands-on" course that includes the study of the social science instruction and theory, its implications for teaching social sciences, and information on resources/materials for the classroom. Teacher education candidates will prepare and present lesson plans that take into consideration the development of instructional abilities for social sciences. A variety of formal and informal assessment techniques appropriate in assessing student achievement will be discussed. Prerequisites: Level I Admission to Teacher Education, Social Science and History general education requirements, EDU 380 and EDU 383. Graduate credit requirements are listed in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 452. Advanced Practicum. 3 Credits.

This course is designed to assist candidates in their final preparations prior to their student teaching practicum. Polishing of professional skills, development of a portfolio, exploration of personal teaching styles, and discussions of field practicum experiences are the focus of this course. This intensive practicum focuses on application of theory and practice, assessment, the integration of technology in instruction, and teaching for diversity in the classroom. Students will participate in a practicum experience (45 maximum hours per semester arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in management and teaching. Prerequisites: Level I Admission to Teacher Education, completion of all methods courses with a C or better. Course Fee: \$10.00 Formerly EDUC 455.

Course Fees: \$10.75

EDU 481. Content Area Literacy. 2 Credits.

This course is designed to provide teacher education candidates with an understanding of reading, writing, and critical thinking processes, knowledge of the skills a teacher may use to help K-12 student deal more effectively with specific content materials, and implementation of those skills in the elementary, middle and secondary school setting. Prerequisite: Level I Admission to Teacher Education, EDU 380 and EDU 383. Graduate credit requirements are describe in the course syllabus. Formerly EDUC 445 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 484. Asmt in Remedial Reading. 2 Credits.

The purpose of this course will be to examine a variety of assessment tools used to evaluate the strengths and weaknesses of individual students experiencing difficulty with reading. Both formal and informal tools will be discussed. Students will administer, score, and interpret the results of the assessment instruments in light of relevant research in reading education. Prerequisites: Level I Admission to Teacher Education, EDU 335 and EDUC 336 or concurrent enrollment. Graduate credit requirements are described in the course syllabus. Formerly EDUC 440 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 491. Special Topics/Exp Courses. 11 Credits.**EDU 492. Independent Study. 1-12 Credits.****EDU 495. Student Teaching. 6,12 Credits.****EDU 495EL. Student Teaching K-8. 6-12 Credits.**

This is a supervised student teaching experience in an accredited elementary or middle school. Experiences will include typical responsibilities of an elementary or middle school first year teacher. Seminar will be held on campus. This course provides theory-based practice at an elementary level for Student Teacher Candidates seeking Montana K-8 teacher certification. Prerequisites: Level II Admission to Teacher Education, all methods courses, EDU 452 and cumulative GPA of 2.50. Course Fee: \$215.30.

EDU 495ES. Student Teaching K-12. 6,12 Credits.

This is a supervised student teaching experience in an accredited elementary and secondary school to be taken by all students seeking a K-12 endorsement. Experiences will include typical responsibilities of a first year teacher. Seminars will be held on campus. This course provides theory-based practice at K-12 level for Student Teacher Candidates seeking Montana K-12 teacher certification. Prerequisites: Level II Admission, all methods courses, EDU 452, and cumulative GPA of 2.50. Course Fee: \$215.30.

EDU 495SE. Student Teaching 5-12. 6-12 Credits.

This is a supervised student teaching experience in a Student Teacher Candidate's major and minor fields in an accredited secondary school. Experiences will include typical responsibilities of a first year teacher. Seminars will be held on campus. This course provides theory-based practice at a secondary level for Student Teacher Candidates seeking Montana 5-12 teacher certification. Prerequisites: Level II Admission to Teacher Education, all methods courses, EDU 452, and cumulative GPA of 2.50. Course Fee: \$215.30.

EDU 497. Methods:. 3 Credits.

Appropriate techniques for teaching Computer Science and Computer Information Systems at the secondary level. Includes topics for teaching computer software. Prerequisites: CAPP 120 or equivalent competencies, CSCI 110, CSCI 111, EDU 370 and CSCI 201. Formerly EDUC 313.

EDU 497EN. Methods: 5-12 English. 2,3 Credits.

This course is a study of the theories and methods of teaching English, including study of the theories and methods of teaching creative writing and composition. Theory and practice concentrates on teaching English at the middle school and senior high school level. Students will be required to complete a field experience in English at the middle or senior high school level while enrolled in this course. The maximum hours of field experience required during the term will be 45 hours. Prerequisites: Level I Admission to Teacher Education, EDU 380 and EDU 383. Graduate requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 497MA. Methods: 5-12 Mathematics. 3 Credits.

This course is a study of the theories and methods of teaching English, including study of the theories and methods of teaching creative writing and composition. Theory and practice concentrates on teaching English at the middle school and senior high school level. Students will be required to complete a field experience in English at the middle or senior high level while enrolled in this course. The maximum hours of field experience required during the term will be 45 hours. Prerequisites: Level I Admission to Teacher Education, EDUC 300 and EDUC 376. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDU 497SC. Methods:5-12 General Science. 3 Credits.

This course is a study of the practical and hands-on approaches that illustrate the techniques and materials for teaching at the secondary level in physical and biological sciences. Prerequisites: Level I Admission to Teacher Education, EDU 380 and EDU 383. Co-requisite: EDU 395.

EDU 497SS. Methods: 5-12 Social Studies. 2-3 Credits.

This course is a study of the theories and practices employed in teaching history and the social sciences on the secondary level. Prerequisites: A minimum of 15 semester hours in history and the social sciences and Junior standing, Level I Admission to Teacher Education, EDU 380 and EDU 383. Co-requisite: EDUC 339.

EDU 551. C, D, & E in Global Ed. 3 Credits.

Education (EDUC)

EDUC 199. Independent Study. 1-12 Credits.

EDUC 279. Cooperative Education. 1-12 Credits.

EDUC 290. Special Topics. 1-12 Credits.

EDUC 304. Methods Teaching Elem Science. 2 Credits.

This is a "hands-on" course that includes the study of how to teach the nature of science, instructional theory and its implications for teaching elementary science, and information on resources/materials for the classroom. Each student will prepare and present lesson plans according to three models for teaching elementary science; experimental, discovery and inquiry. A variety of formal and informal assessment techniques appropriate in science instruction will be discussed. Prerequisite: Level I Admission to Teacher Education, Science requirements for elementary education majors, EDUC 300 and EDUC 376.

EDUC 308. Meth & Mat Tchg Elem & Sec Art. 2 Credits.

This course will cover the theory and practice of teaching art appropriate to grade and ability level. Instruction will include approaches to teaching, the elements and principles of design, art history, art production, and criticism. This course will also include budget development, risk and safety management, equipment purchasing and storage, and record keeping. Prerequisite: EDUC 300 and EDUC 376, admission to Level 1 Teacher Education.

EDUC 321. Integrating Tech into Educ. 1-3 Credits.

This experiential course will assist the candidate in developing competencies in the integration of instructional technology into education and in developing skills to create an electronic portfolio. This course may be repeated for up to 3 credits. Prerequisite: EDU 370. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 334. Method Tchng Intgrtd Lang Arts. 3 Credits.

An introduction to the development of the communicative skills in the elementary grades. Both expressive and receptive skills will be studied. Emphasis will be placed upon the communicative arts as taught in the schools as well as the developmental aspects of language growth in the child. Attention will be placed upon the role of the communicative skills in the school curriculum with particular emphasis on the school reading program. Students will participate in a practicum experience (45 hours maximum per semester arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in the teaching of reading. Prerequisite: Level I Admission to Teacher Education, EDU 380, EDU 383, and EDUC 380. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 336. Integrated Field Experiences. 1-3 Credits.

This course is taken by candidates in conjunction with their "methods and reading methods" of the program. Candidates will be placed in field experiences with the express purpose of practicing the methodology of teaching in various areas in a classroom setting. This course may be repeated for up to 3 credits. Prerequisite: Level I Admission to Teacher Education. Co-requisite: EDUC 334. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 345. The Adolescent Reader. 3 Credits.

This course is designed to familiarize teacher candidates with national and state standards for adolescent reading proficiency and literacy. This course will explore the development of literacy skills and provide appropriate instructional strategies, methodologies, and materials necessary for creating a productive teaching and learning environment for all adolescent students, grades 5-12. Teacher candidates will learn to apply various strategies and technologies to enable and empower learners with diverse backgrounds, learning preferences, and ability levels.

EDUC 347. Spch Hrng & Lng Dev Pre-Sch Ch. 3 Credits.

An introduction to the area of hearing, speech, and language development of the pre-school child with opportunities for the student to explore the area of disorders due to developmental problems. Prerequisite: Level I Admissions to Teacher Education. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 355. Phonics & Word Identification. 3 Credits.

This course will look at the importance of phonological awareness in an elementary school setting. It will develop the understanding of different ways that oral language can be manipulated and divided into smaller components. At the less complex end of the continuum, strategies will be taught that demonstrate an awareness that speech can be broken down into individual words. At the top of the continuum, phonemic awareness strategies will be taught to demonstrate an understanding that words are made up of individual sounds or phonemes that can be manipulated and that by segmenting, blending, or changing individual phonemes within words, new words are created.

EDUC 356. Exploring Writing in Elem Ed. 3 Credits.

This course will prepare educators and pre-educators to understand the elements of writing in elementary grades. It will also provide strategies for employing writing. Some topics covered will include: Step-Up to Writing, Writer's Workshop, Six Traits of Writing, Writing Across the Curriculum, and Technical Writing.

EDUC 392. Independent Study. 1-12 Credits.**EDUC 397CA. Meth Tch Intrgrtd Creative Art. 2 Credits.**

This course is a "hands-on" course that teaches strategies and methodology to integrate the creative arts (e.g., art, music, and drama) into the elementary classroom to enhance learning for all students. Emphasis will be placed upon developing the candidates' creative abilities. Instruction and theory, implications for creative art instruction, and information on resources/materials for the classroom will be covered. Teacher education candidates will prepare and present lesson plans that take into consideration the development of strategies for integrating creative arts into the curriculum. A variety of formal and informal assessment techniques appropriate in assessing student achievement will be discussed. Prerequisites: Level I Admission to Teacher Education, HUM 210, EDUC 300, and EDUC 376.

EDUC 479. Cooperative Education. 1-12 Credits.**EDUC 491. Special Topics. 1-12 Credits.****EDUC 492. Independent Study. 1-12 Credits.****EDUC 498. Cooperative Education. 1-12 Credits.****EDUC 500. Intro Curr Planning/Practice. 3 Credits.**

This course is an introduction to curriculum planning and practice. An overview of curriculum development, unit planning with an emphasis on lesson planning is the focus. How lesson design affects classroom management, how to meet state and national curriculum and practice standards, and how to integrate instructional technology in lesson and unit development are topics. Secondary education candidates will focus on reading/writing across the curriculum; elementary education candidates will focus on content curriculum. Students will participate in a practicum experience (45 hours arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in curriculum and planning. Prerequisite: Level I Admission to Teacher Education. Co-requisite: EDUC 576. Course fee: \$10.00. Graduate requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 502. Methods of Elementary Math. 2 Credits.

This course is a "hands-on" course that includes the study of the nature of mathematics instruction and theory, its implications for teaching elementary mathematics, and information on resources/materials for the classroom. Teacher education candidates will prepare and present lesson plans that take into consideration the development of mathematical abilities and attitudes following NCTM standards. A variety of formal and informal assessment techniques appropriate in assessing mathematical attitudes/ability will be discussed. Prerequisites: Level I Admission to Teacher Education, MATH general education requirements, EDUC 500 and EDUC 576. Graduate credit requirements are described in the course syllabus. Because this class is at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 504. Methods of Elementary Science. 2 Credits.

This is a "hands-on" course that includes the study of how to teach the nature of science, instructional theory and its implications for teaching elementary science, and information on resources/materials for the classroom. Each student will prepare and present lesson plans according to three models for teaching elementary science; experimental, discovery and inquiry. A variety of formal and informal assessment techniques appropriate in science instruction will be discussed. Prerequisite: Level I Admission to Teacher Education, Science requirements for elementary education majors, EDUC 500 and EDUC 576. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 506. Mthds of Elem Soc Stdies. 2 Credits.

This course is a "hands-on" course that includes the study of the social science instruction and theory, its implications for teaching social sciences, and information on resources/materials for the classroom. Teacher education candidates will prepare and present lesson plans that take into consideration the development of instructional abilities for social sciences. A variety of formal and informal assessment techniques appropriate in assessing student achievement will be discussed. Prerequisites: Level I Admission to Teacher Education, Social Sciences and History general education requirements, EDUC 500 and EDUC 576. Graduate credit requirements are described in the course syllabus. Because this a 500 level class, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower level section of this course.

EDUC 507. Educational Measurement. 3 Credits.**EDUC 511. Change Theory and Praticce. 3 Credits.**

This course is designed for master's degree students who are enrolled in the Instruction and Learning program. It is designed to investigate change theory and practice in learning environments that are critical to effective instruction and learning. Models will be reviewed and analyzed to support initiatives that increase the learning of all students. Prerequisite: All required content course work must be completed and approval of instructor.

EDUC 512. Learning Theory. 3 Credits.

An examination of the variety of reading materials available for use in the teaching of reading and the application of those materials to the learning needs of children of differing reading competencies. Students will explore the role of reading and the communication arts in the elementary curriculum and the integration of literature in the elementary curriculum. Prerequisite: Level I Admission to Teacher Education. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 513. Methods of Teaching English. 3 Credits.

This course is a study of the theories and methods of teaching English, including study of the theories and methods of teaching creative writing and composition. Theory and practice concentrates on teaching English at the middle school and senior high school level. Students will be required to complete a field experience in English at the middle or senior high level while enrolled in this course. The maximum hours of field experience required during the term will be 45 hours. Prerequisites: Level I Admission to Teacher Education, EDUC 500 and EDUC 576. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 515. Sem in Online Crse Design. 2 Credits.

This virtual seminar provides an immersion in course design for online delivery utilizing a "learning management system" (LMS). By concurrently experiencing the LMS from the perspective of a student and a course designer, learners gain both practical, first-hand knowledge of best practices in online course design and hands-on experience adapting these principles to the design of specific courses within their own disciplines. Discussion focuses on the challenges of course adaptation from the traditional to the virtual classroom environment as they relate to the organization, sequencing, and delivery of course content utilizing the web-based elements and tools available within the LMS. Particular emphasis is placed on the actual mechanics of the LMS.

EDUC 516. Research Methods. 3 Credits.**EDUC 517. Research Methods. 3 Credits.**

The course is designed to assist teachers and other facilitators to develop the skills to read, interpret, evaluate, and utilize the results of systematic inquiry and empirically developed knowledge in their educational planning and decision-making. This implies a positive value orientation towards research-generated information as well as an understanding of the strengths and limitations of research methodology when compared to other approaches to developing knowledge.

Course Fees: \$30.00

EDUC 520. Learning Technologies. 3 Credits.

This course is an introduction to the theory and practice of both integrating technologies into the learner-centered classroom and to the learning technologies encountered throughout the graduate education courses at MSU-Northern. Candidates will explore the use of technologies to enhance learning environments, actively engage students, and to develop professional teaching practices. The development of standards-based electronic portfolios co-designed by the instructor and the individual candidate are a major outcome and learning project for this course.

EDUC 521. Integrating Tech into Educ. 1-3 Credits.

This experiential course will assist the candidate in developing competencies in integration of instructional technology into education and in developing skills to create an electronic portfolio. This course may be repeated for up to 3 credits. Prerequisite: EDU 370. Graduate credit requirements are described in the course syllabus. Because this class is at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 522. Motivation and Learning. 3 Credits.

This course is designed for master's degree students who are enrolled in the Instruction and Learning program. It is designed to investigate the theory, development and application of motivation in the learning environment. Major focus is placed on motivation models and strategies for enhancing motivation in individuals and groups. It will also analyze variables affecting motivation and environmental influences.

Course Fees: \$30.00

EDUC 524. Meth Tchng Hist & Soc Sci. 3 Credits.

This course is a study of the theories and practices employed in teaching history and the social sciences on the secondary level. Prerequisites include: A minimum of 15 semester hours in history and the social sciences and Junior standing, Level I Admission, EDUC 500 and EDUC 576. Co-requisite: EDUC 339.

EDUC 525. Methods of Teaching Science. 3 Credits.

This course is a study of the practical and hands-on approaches that illustrate the techniques and materials for teaching at the secondary level in physical and biological sciences. Prerequisites include: Level I Admission to Teacher Education, EDUC 500 and EDUC 576. Co-requisite: EDUC 339 Secondary Field Experience Because this is a graduate course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 530. Intgratng Cntnt Across Curr. 2 Credits.

This course will follow theory into practice where candidates build Indian Education for All instructional strategies for specific content areas in the elementary classroom. Candidates will explore, develop, and use advanced instructional strategies, materials, technologies, and activities to promote Indian Education for All instruction across the K-8 curriculum. Prerequisites: Level I admission to Teacher Education, completion of all methods courses with a grade of "C" or better. Graduate credit requirements are described in the course syllabus.

EDUC 532. Assessment & Evaluation. 3 Credits.

This course is designed to provide candidates the foundation in assessment measures used in the learning environment that aid thoughtful decision-making. Fundamental assessment and evaluation topics include validity, reliability, item construction, test interpretation, norm-referenced, criterion referenced and alternative methods of assessment focusing on research based best practices.

EDUC 534. Tchg Integrated Lang Arts. 3 Credits.

An introduction to the development of the communicative skills in the elementary grades. Both expressive and receptive skills will be studied. Emphasis will be placed upon communicative arts as taught in the schools as well as the developmental aspects of language growth in the child. Attention will be placed upon the role of the communicative skills in the school curriculum with particular emphasis on the school reading program. Students will participate in a practicum experience (45 hours maximum per semester arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in the teaching of reading. Prerequisites: Level I Admission to Teacher Education, EDUC 500, EDUC 576, and EDUC 580. Graduate credit requirements are described in the course syllabus. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 535. Fund & Corr Strat in Rdg. 3 Credits.

This course is designed to investigate reading instruction in the elementary grades. This will include a study of the reading process, methods of instruction, materials available, and reading skills. Methods, procedures, and techniques of identifying, analyzing, and correcting reading difficulties will be explored. Students will participate in a practicum experience (45 hours maximum per semester arranged with the instructor, school, and candidate) which will provide an opportunity to obtain classroom experience in strategies that will help the struggling reader. Graduate credit requirements are described in the course syllabus. Prerequisite: Level I Admission to Teacher Education, and EDUC 500, EDUC 576, and EDUC 580. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 536. Integrated Field Experiences. 1-3 Credits.

This course is taken by candidates in conjunction with their "methods and reading methods" of the program. Candidates will be placed in field experiences with the express purpose of practicing the methodology of teaching in various areas in a classroom setting. This course may be repeated for up to 3 credits. Prerequisite: Level I Admission to Teacher Education. Co-requisite: EDUC 534. Graduate credit requirements are described in the course syllabus. Because this class is at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 537. Educational Measurement & Stat. 3 Credits.

A course designed to enable students to understand and apply basic principles of educational and psychological measurement and evaluation emphasizing those statistical concepts used in the construction, implementation and interpretation of standardized and teacher generated measuring instruments.

EDUC 540. Assessment in Remedial Reading. 2 Credits.

The purpose of this course will be to examine a variety of assessment tools used to evaluate the strengths and weaknesses of individual students experiencing difficulty with reading. Both formal and informal tools will be discussed. Students will administer, score, and interpret the results of the assessment instruments in light of relevant research in reading education. Prerequisites: Level I Admission to Teacher Education, EDU 335 and EDUC 336 or concurrent enrollment. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 545. Rdg Wtg Crit Thkg Skills Curr. 2 Credits.

This course is designed to provide teacher education candidates with an understanding of reading, writing, and critical thinking processes, knowledge of the skills a teacher may use to help K-12 student deal more effectively with specific content materials, and implementation of those skills in the elementary, middle and secondary school setting. Prerequisite: Level I Admission to Teacher Education, EDUC 500 and EDUC 576. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 547. Spch Hrng & Lang Dev Pre Schl. 3 Credits.

An introduction to the area of hearing, speech, and language development of the pre-school child with opportunities for the student to explore the area of disorders due to developmental problems. Prerequisite: Level I Admission to Teacher Education. Graduate requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 548. Learning Theories. 3 Credits.

This course will look at developing knowledge of learning theory and skill necessary to create learning environments where learning theory is applied to empower students as learners. The course will develop an understanding of learning theory; the ways in which application can transform instruction and learning practices; and how you can adapt your practices to apply learning theory to your goals and the context of your instructional environment.

Course Fees: \$30.00

EDUC 550. Critical and Creative Thinking. 3 Credits.

This course will provide an examination of the epistemological and environmental elements underlying critical, creative and futures thinking to the educational setting. Candidates will develop an understanding of the application of theory and technique to various content fields and learning environments. A group project proposing an application to an educational setting will be completed.

EDUC 551. Diversity & Tech in the Clsrm. 3 Credits.

Diversity issues include, but are not limited to, cultural and individual differences, gender, ethnicity, low social-economic background, and students with special needs. This course is designed to investigate ways in which technology may be used to support the learning needs of diverse students and expand the practices of community within the classroom. Graduate credit requirements are described in the course syllabus. Used to support the learning needs of diverse students and expand the practices of community within the classroom. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 552. Learning Systems. 3 Credits.

This course is an examination of systems theory and applications in human development and learning environments. Emphasis is upon the understanding of cause and effect in the design and implementation of outcome oriented applications within diverse systems. A major component introduced in the course is the design of a learning system approach to a situation identified by the candidate.

EDUC 553. Hlth Enh Elem Ed Dvrsty/Tech. 2 Credits.

Elementary education teachers must be able to help students meet OPI benchmark requirements in health enhancement. This course will provide candidates with knowledge of a variety of topics within health enhancement for the elementary school child as well as strategies to teach these topics in a K-8 setting. Prerequisite: HPE 235 and Level I Admission to Teacher Education. Graduate credit requirements are described in the course syllabus. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 554. Graduate Seminar. 3 Credits.

This course will explore eontemporary dialogue in the field of education and learning at the international, national, state, regional and local levels. Specific attention will be given to conversations about improving learning and the challenges this entails in a system that is driven by local and state control but increasing funded and mandates at the federal level. Low performing school and strategies for improvement will be explored and discussed. Course Fees: \$30.00

EDUC 557. Safety Education. 2 Credits.

This course is a study of the basic principles of safety education and their application to the schools. Assigned work and examinations for graduate students are more extensive and will probe more deeply than those for undergraduate students.

EDUC 558. Mastery Learning. 3 Credits.

This course provides the student the opportunity to engage in the process of exploring the theory of mastery learning and its application to specific content areas by developing teaching strategies that will improve learning outcomes. Included in the course will be a review of literature that reflects research-based practices and content expert characteristics to improve learning outcomes.

EDUC 561. Traffic Safety Education I. 3 Credits.

Basic course for the preparation of teachers in the field of traffic safety. Introduction to the history and philosophy of traffic safety. Emphasis on the behind-the-wheel phase of traffic safety in the high school program. University students will give behind-the-wheel lessons to high school students. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 562. Traffic Safety Education II. 3 Credits.

A continuation of EDUC 561 with emphasis on materials, organization, and content of the classroom phase of traffic safety. University students will give additional behind-the wheel lessons and also give classroom theory lessons to their peers. EDUC 561 may be taken concurrently. Graduate credit requirements are described in the course syllabus. Becuase this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division of this course.

EDUC 563. Motorcycle Safety. 2 Credits.

Analysis of the motorcycle accident problem and the role of the high school traffic safety program in motorcycle safety. Emphasis on classroom and laboratory content, organization, and instruction techniques. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 565. Mtr Vehicle Law & Enforcement. 2 Credits.

A course designed to give driver education teachers and other interested individuals a more complete understanding of motor vehicle code and ordinances and the basic principles of their enforcement. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 571. Graduate Consultation Course. 3 Credits.

This course is permitted only for master's degree students who have completed all of their coursework but who need additional faculty or staff time. This course may not be used for degree credit. This course provides the Instruction and Learning student with the option of maintaining graduate status through the Graduate Studies continuous enrollment policy. Prerequisite: All required content course work must be completed and approval of instructor. The course is Pass/Fail.

EDUC 573. Lrng Technologies Assessments. 3 Credits.

This course is an inquiry into the evaluation of the appropriateness and potential of technologies to enhance learning objectives and learning environments - as well as the practice of using technologies to improve the assessment and evaluation of students within those environments. Students will be able to articulate the contexts, conditions, and values of utilizing particular assessments across a range of learning situations. Particular emphasis will be paid to the use of assessment strategies in meeting local, state, and national standards.

EDUC 575. Cooperative Learning. 3 Credits.

The Cooperative Learning course is designed to support instructors to effectively set-up, manage and debrief group work so that students learn content and interpersonal skills conducive for cooperative learning. Educators become proficient in group set-up, monitoring and debriefing. They learn how to prevent typical learning environment problems that often occur during group work and manage effectively those problems that do occur. Candidates learn to manage collaborative processes so that learners achieve course outcomes and interpersonal skills simultaneously.

EDUC 576. Assessment in Education. 3 Credits.

This course is designed to provide candidates the foundation in assessment measures used in the K-12 classrooms that aid education decision-making. Fundamental assessment and evaluation topics include validity, reliability, item construction, test interpretation, norm-referenced, criterion-referenced and alternative methods of assessment. HPE Majors/Minors will substitute HPE 376 for this course. Pre-requisite: Level I Admission to Teacher Education, MATH general education requirements for Teacher Education major. Co-requisite: EDUC 500. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 577. Multiple Intelligences. 3 Credits.

Multiple Intelligences will enable educators to understand in depth the characteristics of each of the intelligences, to create diverse strategies of teaching through the intelligences, and to develop various entry points for integrating the intelligences into a schoolwide program.

EDUC 580. Classroom Environment & Mangmt. 3 Credits.

A methodological course introducing basic principles and procedures for managing the behavior and academic time of children in the classroom and school environment. Students will explore topics related to teacher and student communication, teaching and learning styles, discipline models and procedures, records management (including electronic management systems) and the impact of facilities on the learner. Various development and counseling theories will be examined in light of enhancing the learning and acceptance of all students. Students will also examine the various applications of counseling issues (e.g., substance abuse, cross-cultural, crisis management) as they apply to K-12 classroom practice. Graduate credit requirements are described in the course syllabus. Prerequisite: Level I Admission to Teacher Education, EDUC 500 and EDUC 576. Because this is an upper division course, expectations for student performance is at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDUC 590. Special Topics. 1-12 Credits.**EDUC 591. Special Topics. 1-12 Credits.****EDUC 592. Independent Study. 1-12 Credits.****EDUC 598. Graduate Action Research. 3 Credits.**

This course continues the research process and investigation into IRB approved action research topics as selected by candidates. Program faculty will work closely with candidates in the final stages of the research study to facilitate journal selection and preparation for publication. The completed final document will be presented as an exit requirement upon completion of all course work.

Course Fees: \$30.00

EDUC 599. Independent Study. 1-6 Credits.**EDUC 603. Curriculum Foundtns & Design. 3 Credits.**

Examination of the historical, philosophical, sociological, economic, political, and legal foundational impacts on American school curriculum. Focus will include an analysis of these impacts in the identification of curriculum problems and the generation of curriculum designs.

EDUC 608. Multi-media Communicatns in Ed. 3 Credits.

Applies basic concepts and principles of communication to problems in teaching and learning with school and adult audiences; includes various systems approaches to instruction, multimedia presentation techniques, graphic images, Power Point, distance learning, telecommunications, and student experiences in programming materials for a specific curriculum.

EDUC 623. Learning Technologies. 3 Credits.**EDUC 627. Suprvsn Stdnt Tchrs/Fld Pract. 3 Credits.**

This course is designed to provide training and support to public school personnel who will be working directly with a student teacher or a field practicum student.

EDUC 628. Tchng & Tech II - Activities. 3 Credits.

This course engages students in an online discovery process about the integration of core curriculum and technology through guided practice, dialogue, and instructor presentations. This course is designed to illustrate the connection between teaching specific disciplines and implementing technology.

This course will provide a series of instructional ideas that tap into many curriculum areas in support of teaching to a specific content topic. This course also provides a lens for examining traditional lessons and ways to infuse technology to enrich teaching and learning.

EDUC 630. General School Admin & Finance. 3 Credits.

The student will examine the functions, duties and responsibilities of public school administrators in relationship to community expectations, school board policies and accreditation standards. School funding sources, the Montana foundation program and the fiscal responsibilities of public school administrators are addressed.

EDUC 633. Supervision of Instruction. 2 Credits.

This course is designed to enable selected graduate degree candidates to be recommended for a Class III supervisor's endorsement. Competencies in diagnosing, designing, implementing, and evaluating instructional programs and personnel will be developed.

EDUC 636. Foundtns of Early Childhood Ed. 2 Credits.

Study of the historical and philosophical aspects of early childhood education, teaching specific subject to pre-school and primary children.

EDUC 638. Eval & Assess of Pre-Schl Child. 2 Credits.

An in-depth study of formal and informal methods of assessment of the pre-school child's development and methods for early intervention.

EDUC 640. School Law. 3 Credits.

School law is designed to provide those students who are seeking a graduate degree or supervisor's endorsement with a basic background in legal principles and school law. This course meets the requirement for a Class III supervisor's endorsement in Montana.

EDUC 643. Child & Family Counseling. 3 Credits.**EDUC 648. Advanced Learning Theory. 3 Credits.**

This course will look at developing knowledge of learning theory and skills necessary to create classrooms where theory is applied to empower students as learners. The course will develop an understanding of learning theory; the ways in which application can transform teaching and learning practices; and how you can adapt your practices to apply learning theory to your goals and the context of your classroom. Prerequisites: Admission to graduate program or permission of instructor.

EDUC 660. Developmntl & Remedial Reading. 3 Credits.**EDUC 661. Sprvsn & Tchng Lang Arts Elem. 3 Credits.****EDUC 662. Advanced Strategies in Reading. 3 Credits.****EDUC 663. Supervision & Tchng Elem Math. 3 Credits.****EDUC 670. K-12 Curriculum. 3 Credits.**

This course focuses on the broad spectrum of content in the elementary school. Students will investigate the organization of the elementary school in respect to grade divisions, the middle school concept, and evaluation of the curriculum. Content will also include an investigation of curriculum trends, instructional materials, and research relevant to a modern elementary school.

EDUC 671. Instrctnl Mtrls for Elem Child. 3 Credits.**EDUC 672. K-12 Sch Admin & Supervision. 3 Credits.**

This course will provide an exploration of the philosophy, goals, objectives, organizational structure, current research, key issues, and problems associated with the elementary and secondary school. Topics include administrative and supervisory duties regarding supervision of students, staff, student teachers, faculty, home/school public relations, public community relations, and leadership styles.

EDUC 673. Mgmt of Learning Technologies. 3 Credits.

This course is a hands-and-minds-on inquiry into the strategic processes and practical requirements necessary for the development and maintenance of technologies within schools of the 21st Century. Students will develop both strategic scenarios and management plans particular to a specific educational setting of their own choosing. Particular attention will be paid to ensuring that all students are capable of meeting and exceeding the technology management standards outlined by the International Society for Technology in Education.

EDUC 678. Tchng Through Lrng Channels. 3 Credits.

Teaching Through Learning Channels is designed to give educators information about how each person learns based on current brain research and to train them to create and deliver lessons that work through these natural channels of learning.

EDUC 680. Internship. 2-6 Credits.

An MSU-Northern directed practical experience through a responsible appointment wherein the student is provided the opportunity to acquire professional experience in a program directly related to his/her field of specialization. May be repeated. A limit of 12 credits may be applied to your program. Each credit requires 100 hours of professional experience. Co-requisite: EDUC 681.

EDUC 681. K-12 Principal Intrnshp Sem. 1 Credit.

An investigation into topics of current concern and interest to students working toward their K-12 Principal endorsement. Pre-requisites: Master's Degree, Completion of all endorsement coursework, 3 years teaching experience, 2 letters of recommendation from peers, 1 letter of recommendation from school superintendent/school board allowing student to enroll in EDUC 680. Co-Requisite: EDUC 680.

EDUC 690. Special Topics. 1-12 Credits.

EDUC 692. Independent Study. 1-12 Credits.

EDUC 698. Graduate Research. 3,6 Credits.

EDUC 1391. Special Topic Con Ed. 12 Credits.

EDUC 1591. Spec Topic Con Ed. 1-12 Credits.

EDUC 1690. Con Ed. 1-12 Credits.

Educational Psychology (EDPY)

EDPY 190. Special Topics. 1-12 Credits.

EDPY 199. Independent Study. 1-12 Credits.

EDPY 290. Special Topics. 1-12 Credits.

EDPY 299. Independent Study. 1-12 Credits.

EDPY 390. Special Topics. 1-12 Credits.

EDPY 392. Independent Study. 1-12 Credits.

EDPY 399. Independent Study. 1-12 Credits.

EDPY 490. Special Topics. 1-12 Credits.

EDPY 492. Independent Study. 1-12 Credits.

EDPY 525. Learning Disabilities. 3 Credits.

In this course the student will examine learning disabilities by studying the following: Theory of etiology, assessment, and teaching strategies utilized to remediate the disabilities. The course will also focus on other related topics such as the various types of assessment reports, the planning of individualized educational programs, the different systems for delivering special educational services, and future issues in the field of learning disabilities. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDPY 550. Educ & Psyc Exceptl Child. 3 Credits.

In this course candidates will examine and survey the various categories of exceptionality in light of Public Law 94-142 and subsequent federal legislation, including the issues of Individual Education Plan, Least Restrictive Environment, and confidentiality. Those categories candidates will study include Learning Disabilities and Attention Deficit Hyperactivity disorder, Communication Disorders, Emotional and Behavioral Disorders, Autism Spectrum Disorders, Developmental Disabilities and Lower-Incidence Disabilities. Candidates will study these categories with the format of definition, history, prevalence, causes, characteristics, interventions, curriculum implications, mainstreaming procedures, assessments. Complimentary to the in-class teaching and learning, candidates will participate in a 20-hour field practicum experience to aid in their theory-into-practice curriculum studies. If this class is taken at the 500 level, it is a graduate course and expectations for candidate performance are at the advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

EDPY 590. Special Topics. 1-12 Credits.

EDPY 599. Independent Study. 1-12 Credits.

EDPY 604. Applied Classroom Psychology. 3 Credits.

This course will examine the theories of learning and the principles of psychology as a way of enhancing the understanding of student cognitive/psychological functioning.

EDPY 690. Special Topics. 1-12 Credits.

EDPY 699. Independent Study. 1-12 Credits.

Electrical Engineering (EELE)

EELE 101. Intro to Electrical Fund. 2 Credits.

This is an introductory course, in lecture + lab format, in electrical fundamentals including Kirchhoff's Laws, power and energy in resistive circuits, use of meters and oscilloscopes, time-varying signals in electric circuits, inductors and capacitors, series and parallel resonance circuits, and digital circuits. The primary objective of this course is to introduce students, in a hands-on setting, to the proper use of basic electrical instruments, including multi-meters, DC power supplies, function generators, and oscilloscopes in the measurement, testing, construction, and analysis of basic electrical and electronic components, circuits, and devices.

EELE 261. Intro to Logic Circuits. 5 Credits.

A course designed for electronic majors covering digital system basics. Topics covered include: number systems and codes, logic gates, Boolean algebra, digital IC's, multi-vibrators, combinatorial logic, registers and counters, memories, and microprocessor fundamentals. Course Fee: \$10.00
Formerly EET 207.

EELE 292. Independent Study. 1-12 Credits.

Electrical Technology (ELEC)

ELEC 101. Electrical Fundamentals I. 3 Credits.

This course will introduce the student to the various electrical properties and the equipment which produces those properties. Basic circuitry will be examined, utilizing algebraic skills to perform the calculations. Course Fee: \$25.00.

ELEC 102. Electrical Fundamentals II. 3 Credits.

This course will introduce the student to the alternating current. The electrical properties and their affects on the circuit will be examined. Basic trigonometric skills will be utilized to perform calculations for analyzing various electrical circuits. Prerequisites: ELEC 106. Course Fee: \$50.00.

ELEC 103. Electric Code Study/Codeology. 3 Credits.

This course is a preliminary study of the National Electrical Code (NEC). Wiring design and protection, wiring methods and materials, and equipment for general use are covered. Interaction and personal communications with Authorities Having Jurisdiction (i.e., inspectors, engineers, architects, employers, etc.) as well as customers and owners will be addressed. Course Fee: \$15.00.

ELEC 106. Electrical Formulas & Calc. 3 Credits.

This course covers the basic formulas needed to determine electrical values in typical electrical installations including power, current, and voltage. Basic methods of calculation for both DC and AC quantities will be discussed and demonstrated as well as the use of modern calculators and computer software to determine necessary values.

ELEC 111. Electric Meters & Motors. 3 Credits.

This course is a practical hands-on course using ammeters, voltmeters, watt meters, and multi-meters in testing and troubleshooting electric motors, components and wiring systems. This course includes a study of single and three phase AC motors, their construction features and operating characteristics. This lecture/lab class emphasizes electric motor terminology, identification of motor types, enclosures, mounts, motor selection, connections, maintenance, testing and troubleshooting. Students are also introduced to motor loads, protection, controls, and devices used to connect motors to their loads such as pulleys, V-belts, gear boxes and couplings. Course Fee: \$35.00.

ELEC 133. Basic Wiring. 5 Credits.

This course covers the basic formulas needed to determine electrical values in typical electrical installations including power, current, and voltage. Basic methods of calculation for both DC and AC quantities will be discussed and demonstrated as well as the use of modern calculators. Labs shall include wiring of Residential and Commercial applications as prescribed within the 2011 NEC. Prerequisite ELEC 101/102.

ELEC 137. Electrical Drafting. 2 Credits.

This course studies techniques of communicating through the use of mechanical drawings, electrical drawings, heating ventilation and air conditioning drawings. Basic blueprint reading and sketching are included as well as symbols and scales.

ELEC 139. Electric Code Study-Residential. 3 Credits.

This course is an introductory study of National Electrical Code requirements for residential wiring, including protective ground circuits, service entry and electrical safety requirements for routine residential electrical installations. Course Fee: \$40.00.

ELEC 190. Special Topic. 12 Credits.**ELEC 192. Independent Study. 1-12 Credits.****ELEC 201. Alternating Current Theory. 3 Credits.**

This course is a study of three phase alternating current circuits and single and three-phase transformers and machines. The theory and operation of three phase wye and delta circuits and the relationship of voltage, current and power in these circuits. The use of phasor algebra in the solution of alternating current problems is stressed as are the characteristics and use of electrical instruments such as voltmeters, ammeters, ohmmeters, and watt meters. Students learn the theory and operation of transformers with single and three phase connections and are introduced to alternating current machines. Prerequisite: ELEC 102.

ELEC 204. Electric Planning & Estimating. 3 Credits.

This course is an applied course in the planning and cost estimation of electrical installations and rehabs for both commercial and residential applications. The course will use current catalog and electrical supply information to determine rough cost estimates based on blue print or electrical drawings, as well as using customer requirements to determine the plan and cost estimates for new and old work.

ELEC 205. Electrical Design & Lighting. 3 Credits.

This course is a class discussion course dealing with electrical material and equipment sizing, layout and application, applicable wiring codes, regulations and rules, and characteristics of common electrical distribution systems as used in industrial plants and commercial building locations. Included is a study of short circuit current, current limiting and coordination, power factor correction and electrical rates. This course includes the study of modern illumination principles, calculation procedures and equipment for lighting installations. Also included are discussions of building construction, heat loss calculations and electric heating equipment selection.

ELEC 211. AC Measurements. 3 Credits.

This lecture/lab course consists of a series of experiments to investigate the characteristics of single-phase and three-phase electrical circuits. The connections and testing of transformers in both single-phase and three-phase configurations are stressed. Students also learn the operation of three phase motors from conventional sources and phase converts, with an operation of three phase motors from conventional sources and phase converts, with an emphasis on efficiency, operating characteristics and connections. Co-requisite: ELEC 201.

ELEC 230. Industrial Electrical Wiring. 3 Credits.

This course covers construction plans for industrial sites and details regarding unit substations, feeder bus systems, panelboards, trolley busways, wire tables and sizing, signaling systems, motors and controllers, motor installations, power factor, lightning protection, ventilation and exhaust systems, programmable logic controllers, fiber optics, hazardous locations, and harmonics.

ELEC 233. Commercial Wiring Lab. 3 Credits.

This course is an extension of ELEC 133 with lectures emphasizing commercial wiring methods. Students will perform laboratory work consisting of actual installation of various raceways, as well as connecting of special equipment used in commercial and industrial applications, all in accordance with the National Electrical Code. Prerequisite: ELEC 133. Course Fee: \$50.00.

ELEC 236. Conduit/Rcwys & Code Calc Lab. 3 Credits.

This course includes laboratory work dealing with Code application relating to conduit bending as well as National Electrical Code calculations for wire and cable installation. Students will perform lab work consisting of actual installation of conduit, wire and cable. Course Fee: \$75.00.

ELEC 239. Grounding&Bonding Fund. 3 Credits.

This course is a combination lecture/lab series of grounding theory as well as characteristics of grounded and non-grounded systems. Labs include proper grounding practices, various grounding applications, tools and materials usage and methods of compressions and exothermic application and installations. Course Fee: \$25.00.

ELEC 241. Electric Motor Controls. 3 Credits.

This course is a lecture and laboratory class oriented to the study of electromechanical control system concepts. Experiments are designed to illustrate the principles, applications, connection and installation procedures of electrical controllers. Special emphasis is placed on the analysis and development of control circuits.

ELEC 247. Medium and High Voltage. 3 Credits.

This course is a lecture/lab course which covers medium and high voltage electrical theory, conductors, insulators, over current devices, testing, termination, safety precautions and safety equipment. Course Fee: \$65.00.

ELEC 250. Programmable Logic Controllers. 3 Credits.

This course covers an introduction to a variety of programmable logic controllers (PLCs). The applications, operations, and programming of PLC's will be covered with an emphasis on programming. Computers and manual methods will be used to program PLCs.

ELEC 290. Special Topic. 12 Credits.**ELEC 299. Independent Study. 1-12 Credits.****ELEC 392. Independent Study. 1-12 Credits.**

Electronics Engineering Tech (EET)

EET 101. AC/DC Electronics I. 3 Credits.

This is a lecture/lab course that provides the foundation for major and minor courses in the Engineering Technology: Electronics Engineering Technology program. Topics include basic electrical and electronic concepts, circuit testing, troubleshooting, and the use of test equipment. Course Fee: \$10.00.

EET 103. AC/DC Electronics II. 3 Credits.

This lecture/lab course provides an introduction to solid state devices. Topics covered include PN diode characteristics, rectifier circuits, bipolar transistors, field-effect transistors, and amplifier circuits. Prerequisite: EET 101 or equivalent. Course Fee: \$10.00.

EET 110. Electronics Survey I. 3 Credits.

An introduction to basic concepts and terminology of electronics for the non-electronics major. Topics start with electricity and continue through every day commercial and home applications. Course Fee: \$10.00.

EET 192. Independent Study. 1-12 Credits.**EET 199. Independent Study. 1-12 Credits.****EET 204. Electronic Fundamentals II. 4 Credits.**

A study of field-effect transistors and circuits, thyristors and circuits, frequency effects on amplifier circuits, and the fundamentals of the operational amplifier and applications circuits. Course Fee: \$6.00.

EET 205. Communications Fundamentals. 4 Credits.

Study of electronic telecommunications systems including radio communications, amplitude modulation and sideband systems and application circuits, frequency and phase modulation systems and circuits. Prerequisites: EET 101 and EET 103. Course Fee: \$9.00.

EET 206. Electronic Equip Design/Fab. 4 Credits.

A hands-on course focusing on the construction of electronics equipment. The course will include the principles of circuit and chassis fabrication of packaging for electronic equipment, the techniques of layout, construction, finishing, assembly, wiring and harnessing, and the proper use of tools and hardware. The student will be introduced to several different types of shop tools and hand tools. Printed circuit board layout and design using computer aided design software will be included. A number of direct and photographic circuit board fabrication techniques will be presented. A project is used by each student to develop skills for each process. Prerequisite: DRFT 156. Course Fee: \$25.00.

EET 210. Embedded Controller I. 3 Credits.

This course is an introduction to the microcontroller using the BASIC STAMP and various PIC and other controller products to develop a small digital system. The course includes programming, interfacing, power, and packaging of a stand-alone digital device. Prerequisite: CSCI 110.

EET 220. Electrical Power & Distribution. 3 Credits.

This course covers an introduction to the generation of electrical power and moving that power through a local transmission system to a substation where a customer will purchase the generated power. Safely working with components of a high voltage transmission system will also be covered.

EET 230. Electrical Power & Distribution II. 3 Credits.

This course is a continuation of the Electrical Power and Distribution I course. It covers the generation of electrical power and moving that power through a local transmission system to a substation where a customer will purchase the generated power.

EET 240. Electronic Drive Systems. 3 Credits.

This is an advanced course in electronic drive systems used in industrial applications. Electronic control of Direct-Current and Alternating Current motors, transmission and solid-state controllers, and electronic control of power generation equipment will be discussed.

EET 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

EET 299. Independent Study. 1-12 Credits.**EET 391. Special Topics. 1-12 Credits.****EET 392. Independent Study. 1-12 Credits.****EET 490. Special Topics. 1-12 Credits.****EET 492. Independent Study. 1-12 Credits.****EET 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in agricultural business, agricultural production, or government agencies related to agriculture. Prerequisites: Junior standing and approval of minor advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

EET 590. Special Topics. 1-12 Credits.

Energy (NRGY)

NRGY 101. Intro to Sustainable Energy. 3 Credits.

This course provides an overview of sustainable energies including solar, wind, hydro, biomass, geothermal and other emerging technologies. Students will learn the basic principles of each new technology. Students will also investigate renewable resources and their associated technologies. Formerly SET 101.

NRGY 110. Fundmtl Hydraul/Pneu Systems. 3 Credits.

This course is an introduction to hydrostatic systems used to control blade pitch and other mechanical actions on commercial wind generation equipment. Hydraulics will include hydraulics mathematics and formulas used in industrial hydraulic equipment, symbols and schematics of hydraulic systems, measurement of quantities used in maintaining hydraulic systems, typical components used in hydraulic systems and maintenance which must be performed on a routine basis in a hydraulic system. Specific safety requirements for hydraulic equipment and installations will be emphasized. Formerly SET 110.

NRGY 120. Industrial Safety and Rigging. 3 Credits.

This course provides an overview of safe industrial practices and basic rigging techniques. Formerly SET 120.

NRGY 130. Fundmtl of Mechanical Systems. 3 Credits.

This course covers energy industry mechanical systems at the component level. Topics covered include repairing a basic mechanical system, familiarity with basic tooling, and understanding gears and rotational relationships. Formerly SET 130.

NRGY 210. Wind Technician Safety. 4 Credits.

This course builds on the safety topics covered in the Industrial Safety and Rigging course and focuses on safety requirements and techniques common in wind energy technician jobs. Formerly SET 210.

NRGY 220. Wind Turbine Equipment. 3 Credits.

This course introduces common wind turbine components and equipment. The mechanical systems that make up the subsystems of wind turbines will be covered in addition to structural characteristics and aerodynamic principles. Formerly SET 220.

NRGY 230. Wind Turb Operations & Maint. 3 Credits.

This course exposes students to real-world scenarios that may be encountered in the workplace. Practice of installation, operation, maintenance, troubleshooting, and repair of wind turbine electro-mechanical systems are all included in this course. Formerly SET 230.

NRGY 1391. Special Topics. 12 Credits.

Eng Tech: Civil & Construction (ETCC)

ETCC 173. Architectural Const & Material. 3 Credits.

Introduction to construction materials and methods. Building systems and construction details. Emphasis is placed on selection of materials and methods. Laboratory section performs site investigations observing materials and their properties. Course Fee: \$12.00 Formerly CET 173.

ETCC 302. Soils & Foundations. 4 Credits.

Engineering properties of soil. Laboratory testing to determine soil characteristics. Shallow foundations and retaining structures. Prerequisite: CET 232. Course Fee: \$25.00 CET 315.

ETCC 307. Structural Analysis. 3 Credits.

Loads on building according to Uniform Building Code (UBC). Internal forces and deformations of statically determinate trusses and frames. Influence lines and Live loads. Introduction to matrix-displacement method of structural analysis. Using software for structural analysis. Prerequisite: CET 232. Formerly CET 307.

ETCC 361. Design/Details Steel Building. 4 Credits.

Design of steel members according to American Institute of Steel Construction Code. Both calculations and construction details are emphasized. Prerequisite: CET 232. Course Fee: \$10.00 Formerly CET 361.

ETCC 375. Applied Mechanics of Fluids. 3 Credits.

Introduction to fluids, fluid properties, hydrostatic forces, fluid flow, pipeline systems, open channels, and fluid machinery. Prerequisite: CET 232. Course Fee: \$10.00 Formerly CET 375.

ETCC 385. Highway Design & Construction. 4 Credits.

Intended as a first course in highway engineering. It is inclusive of surveying topics pertinent to the design and layout of highways. The transportation engineering profession, geometry, pavement selection, highway soil mechanics and characteristics of the vehicle, driver, pedestrian, and the road will be discussed. A semester design project based on fieldwork will be completed as part of the laboratory section. Prerequisite: CET 181 or consent of instructor. Course Fee: \$25.00 Formerly CET 385.

ETCC 391. Special Topics. 1-12 Credits.**ETCC 392. Independent Study. 1-12 Credits.****ETCC 411. Reinforced Concrete Dsgn/Details. 4 Credits.**

Design of reinforced concrete members according to American Concrete Institution (ACI) code. Both calculations and details of reinforcing steel are emphasized. Prerequisite: CET 232. Course Fee: \$15.00 Formerly CET 411.

ETCC 489. Senior Project I. 1 Credit.

This course is the proposal phase for a program faculty-approved technical project. Emphasis is placed on library research, design, specification, cost analysis, and project management. The student will submit a formal written report and give a public explanation of the project. This course meets part of the general education requirements for a capstone course. Prerequisites: Senior standing and advisor consent. Course Fee: \$2.00 Formerly IET 480. Course Fees: \$2.15

ETCC 492. Special Topics. 1-12 Credits.**ETCC 499. Capstone: Senior Project II. 2 Credits.**

This course is the implementation phase for a program faculty-approved technical project. Emphasis is placed on construction, design, testing, and formal presentation. The student will submit a formal written report and give a public explanation and demonstration of the project. The student will furnish all necessary materials. This course completes the general education requirements for a capstone course. Prerequisites: Senior standing and advisor consent, ETCC 489. Formerly IET 481.

Engineering: General (EGEN)

EGEN 203. Applied Mechanics. 3 Credits.

Applied mechanics with analytical and graphical application of physical principles to engineering related problems. Newton's Laws of motion, vectors, equilibrium, friction, properties of areas and solids, trusses, beams, and fluid pressures. Introduction to dynamics of particles and strength of materials. Co-requisites: PHSX 205, and M 112 or higher. Course Fee: \$10.00 Formerly CET 221.

EGEN 208. Applied Strength of Materials. 3 Credits.

Mechanics of materials and material properties. Study of stresses, strains, and deformation in different materials. Beam deflections, buckling, torsion, and mechanics of structural elements are introduced. Prerequisite: CET 221. Course Fee: \$10.00 Formerly CET 232.

EGEN 325. Engineering Economic Analysis. 3 Credits.

The role of engineering economy in the decision making process. Cash flow and interest. Taxes and after-tax economy studies. Measure of worth and economic risk analysis. Prerequisite: Instructor approval. Formerly CET 305.

EGEN 488. Fund of Engineering Exam. 1 Credit.

English (ENGL)

ENGL 111. Written Communication I. 3 Credits.**ENGL 218. Journalism. 3 Credits.**

Analysis of the print news media, including introduction to reporting and writing the news and to newspaper production; practice in writing news, editorials, and features.

ENGL 291. Special Topics. 12 Credits.**ENGL 313. Methods of Teaching English. 3 Credits.**

This course is a study of the theories and methods of teaching English, including study of the theories and methods of teaching creative writing and composition. Theory and practice concentrates on teaching English at the middle school and senior high school level. Students will be required to complete a field experience in English at the middle or senior high level while enrolled in this course. The maximum hours of field experience required during the term will be 45 hours. Prerequisites: Level I Admission to Teacher Education, EDU 380 and EDU 383. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

ENGL 318. Feature Writing. 3 Credits.**ENGL 328. Media Literacy. 3 Credits.**

This course begins the study of how mass media through education, socialization, and indoctrination, influence a student's understanding of the world. Students will be introduced to concepts, ideas and methods for thoughtful evaluation of the media culture so prevalent in today's world. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

ENGL 349. Montana Literature. 3 Credits.**ENGL 350. Indian Law. 3 Credits.****ENGL 360. Survey of Dramatic Literature. 3 Credits.**

A study of representative plays from Greek, Roman, Medieval, Renaissance, Restoration periods; the 18th, 19th, and 20th centuries, with attention to the cultural and historical factors contributing to the development of these works. Analysis of significant ideas, themes, and production techniques.

ENGL 368. Writing for Grants. 3 Credits.

Guided practice in writing of grant proposals to private foundations or public agencies, with particular attention to the researching of funding sources, program planning, and the appropriate conventions of technical and business writing associated with proposals and progress reports.

ENGL 391. Spec Topic. 1-12 Credits.**ENGL 392. Independent Study. 1-12 Credits.****ENGL 510. Lit for Children/Adolescents. 3 Credits.**

A study of the literature designed for and available to the pre-adult audience, from pre-school materials for reading preparation and reading aloud, through elementary school literature, to literature for the adolescent audience of the the middle school and secondary school levels. Includes poetry, fairy tales, myths, epics, fables, informational and nonfiction works, biographies, popular fiction, and fantasy literature.

ENGL 513. Methods of Teaching English. 3 Credits.

This course is a study of the theories and methods of teaching English, including study of the theories and methods of teaching creative writing and composition. Theory and practice concentrates on teaching English at the middle school and senior high school level. Students will be required to complete a field experience in English at the middle or senior high level while enrolled in this course. The maximum hours of field experience required during the term will be 45 hours. Prerequisites: Level I Admission to Teacher Education, EDUC 500 and EDUC 576. Graduate credit requirements are described in the course syllabus. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

ENGL 528. Media Literacy. 3 Credits.

This course begins the study of how mass media through education, socialization, and indoctrination, influence a student's understanding of the world. Students will be introduced to concepts, ideas and methods for thoughtful evaluation of the media culture so prevalent in today's world. This is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

ENGL 531. Literature by & about Nat Am. 3 Credits.

ENGL 540. English Language. 3 Credits.

This course is designed to provide students with an overview of linguistic systems, such as phonetics, phonemics and semantics, and an intensive study of the structure of American English. It also engages students with methods of employing these materials in their own classrooms. Because this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

ENGL 549. Montana Literature. 3 Credits.

ENGL 591. Special Topic. 1-12 Credits.

ENGL 599. Independent Study. 1-12 Credits.

Environmental Science (ENSC)

ENSC 245. Soils. 4 Credits.

This course is a study of soil as a natural and extremely valuable resource. Course topics include soil properties, soil classification, soil water, soil organisms, soil nutrients, and soil formation. Emphasis is placed on soil conservation and the proper management of our soil resources. Various laboratory exercises will be performed to analyze soil and its physical and chemical properties. This course does meet laboratory science requirement. Formerly AG 204.

Fossil (FOSL)

FOSL 210. Introduction to Paleontology. 3 Credits.

FOSL 225. Ancient Sedimentary Envrmnts. 3 Credits.

FOSL 235. Dinosaurs. 3 Credits.

FOSL 241. Field Excavation I. 4 Credits.

FOSL 242. Field Excavation II. 4 Credits.

FOSL 261. Fossil Prep & Conservation I. 4 Credits.

FOSL 262. Fossil Prep & Conservation II. 4 Credits.

French (FREN)

FREN 105. Elementary French. 4 Credits.

Introduction to French, emphasizing conversational ability but including reading comprehension and written expression. Extensive use of spoken French in the classroom, small group practice sessions, and individual conferences with the instructor. Students desiring further French study may register for additional credits of French 105. Two semesters of French 105 (8 credits) constitute the first-year University French sequence. Students with prior French study should consult the instructor for placement. No prerequisite for the first semester.

FREN 199. Independent Study. 1-12 Credits.

FREN 205. Intermediate French. 4 Credits.

Continued and progressive development of the skills acquired in Elementary French and special emphasis on conversational ability, vocabulary building, and the grammar necessary for correct oral and written expression. Extensive pronunciation practice to develop proper syllable division, stress, linking, and intonation. Students desiring further study may register for additional credits of FREN 205. Two semesters of FREN 205 (8 credits) constitute the second-year University French sequence. Prerequisites: Two semesters of elementary French (8 credits) or the equivalent and permission of the instructor.

FREN 299. Independent Study. 1-12 Credits.

FREN 305. Adv Composition & Conversation. 4 Credits.

Freshman Seminar (FRSH)

FRSH 100. Freshman Seminar. 1 Credit.

The freshman seminar course is designed to provide students with an early introduction to the expectations and challenges of University life, to the procedural, geographic and academic maps for the University, and to the learning strategies and life skills necessary for success. The freshman seminar provides opportunities for students to interact with faculty and administrators as well as peers. Programming includes social events and activities to integrate the student into the University environment.

FRSH 190. Freshmen Seminar. 1 Credit.

General Science (GSCI)

GSCI 390. Special Topic. 1-12 Credits.

GSCI 412. Environmental Problems. 3 Credits.

Review of major environmental problems facing civilization with the thought that the general awareness of these problems by the citizenry provides an important educational commitment. Such evaluations will be made in the context of basic ecological concepts and principles and will involve integration of various scientific and non-scientific disciplines. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

GSCI 499. Independent Study. 1-12 Credits.

GSCI 512. Environmental Problems. 3 Credits.

GSCI 590. Special Topic. 1-12 Credits.

GSCI 599. Independent Study. 3 Credits.

GSCI 602. Hist & Philosophy of Science. 3 Credits.

GSCI 621. Integrated Life Science. 3 Credits.

GSCI 622. Integrated Physical Science. 3 Credits.

GSCI 631. Intgrtd Sci Pncpls for Tchrs. 3 Credits.

GSCI 693. Assessment Seminar. 2 Credits.

GSCI 698. Graduate Research. 3,6 Credits.

GSCI 699. Ind Study. 1-12 Credits.

GSCI 1590. Con Ed. 1-12 Credits.

Geography (GEOG)

GEOG 119. World Regional Geography. 3 Credits.

An introduction to the geography of the major regions of the world, the human communities of those regions, and their relationships to geographic locations, physical environment, population, economic resources, and international politics.

Geography (GPHY)

GPHY 111. Intro to Physical Geography. 4 Credits.

This course introduces basic concepts of geology, astronomy, meteorology, and physical geography including identification of rocks, minerals, and common geological formations. The course includes both lecture and laboratory hours. This course meets the laboratory science requirement. Course Fee: \$5.00 Formerly ESCI 115.

Course Fees: \$5.35

GPHY 192. Independant Study. 1-12 Credits.

Geology (GEO)

GEO 101. Intro to Physical Geology. 4 Credits.

Introductory geology emphasizing the physical constitution of the Earth's interior and surface. Co-requisite: GEO 102. This course does meet the laboratory science requirement. Course Fee: \$5.00 Formerly ESCI 204.

GEO 102. Intro to Physical Geology Lab. 0 Credits.

Laboratory for GEO 101. Co-requisite: GEO 101 Formerly ESCI 204.

Course Fees: \$5.35

GEO 191. Special Topics. 1-12 Credits.

GEO 192. Independent Study. 1-12 Credits.

GEO 206. Dinosaur Paleobiology. 4 Credits.

This course covers the history of dinosaur paleontology, and the evolution, classification, and life history strategies of the major groups of dinosaurs. Basic concepts of geology, plate tectonics and identifying characteristics of ancient Mesozoic environments will also be covered. Lab exercises include local field trips and lab identification of Montana dinosaur fossils. Application of the scientific method is emphasized throughout the course. Dinosaur discoveries from various parts of the world will be discussed, but this course will focus on the abundant and significant dinosaur finds from Montana and the surrounding region. Prerequisite: one college-level science course or consent of instructor. Formerly ESCI 205.

GEO 211. Earth History and Evolution. 4 Credits.

Introductory geology emphasizing the evolution of the Earth and life through geological time. GEO 101 and GEO 102 is recommended. Co-requisite: GEO 212. This course does meet the laboratory science requirement. Course Fee: \$5.00 Formerly ESCI 206.

GEO 212. Earth History & Evolution Lab. 0 Credits.

Laboratory for GEO 211. Co-requisite: GEO 211 Formerly ESCI 206.
Course Fees: \$5.35

GEO 291. Special Topics. 1-12 Credits.**GEO 292. Independent Study. 1-12 Credits.****GEO 298. Cooperative Education. 1-12 Credits.****GEO 314. Intro to Paleontology. 3 Credits.**

This course will provide an introduction to paleontology and the various procedures in the field with special emphasis on Montana and Alberta Fossils. Prerequisite: one college level science course or consent of instructor. This course does meet the laboratory science requirement. Course Fee: \$5.00 Formerly ESCI 310.
Course Fees: \$10.75

GEO 328. General Hydrology. 3 Credits.

An overview of the water cycle with special emphasis on flowing and standing water systems. Offered alternate years. This course does not meet the laboratory science requirement. Formerly ESCI 315.

GEO 391. Special Topics. 1-12 Credits.**GEO 392. Independent Study. 1-12 Credits.****GEO 398. Cooperative Education. 1-12 Credits.**

German (GER)

GER 105. Elementary German. 4 Credits.

Introduction to German, emphasizing conversational ability but paying appropriate attention to reading comprehension and correct written expression. Extensive use of spoken German in the classroom, small group practice sessions, and individual conferences with the instructor. Students desiring further German study may register for additional credits of German. Two semesters of German 105 (8 credits) constitute the first-year University German sequence. Students with prior German study should consult the instructor for placement. No prerequisite for the first semester.

GER 299. Ind Study. 1-12 Credits.

Graphic Design (GDSN)

GDSN 220. Illustration I. 3 Credits.

Studio exercise in observational and imaginative drawing and painting. A variety of media and expressive, narrative, and descriptive techniques are explored in the creation of artwork for commercial reproduction. Prerequisite: ART 120.

GDSN 231. Graphic Design Applications. 3 Credits.

This course is an introduction to software applications used by today's graphic design industry. A workbook-guided approach is employed and the course is self-paced. Photoshop, Illustrator, and QuarkXpress are covered in the course. This course is prerequisite to GDSN 320, GDSN 350 and GDSN 450.

GDSN 240. Electronic Design I. 3 Credits.

This course is an introduction to software applications used by today's graphic design industry for electronic media. the course will focus on site architecture, design, and software implementation. Flash MX, Adobe Photoshop/ImageReady, and Dreamweaver are covered in the course. This course is a prerequisite to GDSN 340 and GDSN 450. Prerequisite: GDSN 231.

GDSN 250. Graphic Design I. 3 Credits.

Lecture/Studio course incorporating visual design concepts and techniques in problem-solving of commercial graphic arts assignments. Emphasis on individual creativity in realistic problem-solving situations. Prerequisite: Art 150.

GDSN 279. Cooperative Education. 1-12 Credits.**GDSN 290. Special Topics. 1-12 Credits.****GDSN 292. Independent Study. 12 Credits.****GDSN 299. Independent Study. 1-12 Credits.****GDSN 320. Illustration II. 3 Credits.**

This course covers illustration based in current imaging software with the goal of developing individual methods and style. Prerequisites: GDSN 220 and GDSN 231. Course Fee: \$10.00.
Course Fees: \$10.75

GDSN 340. Electronic Design II. 3 Credits.

This course covers web site design using page creation application and image editing applications. Additionally, animation and multimedia will be incorporated into the design process. Prerequisite: GDSN 240.

GDSN 350. Graphic Design II. 3 Credits.

Lecture/Studio course utilizing visual design concepts and principles in problem-solving of realistic commercial graphic arts assignments. The computer is incorporated as the primary tool for generating images, typography and composition. Prerequisites: CAPP 120, GDSN 220, GDSN 231 or permission of instructor. Course Fee: \$15.00.

Course Fees: \$15.75

GDSN 390. Special Topics. 1-12 Credits.**GDSN 392. Independent Study. 6 Credits.****GDSN 450. Graphic Design III. 4 Credits.**

Lecture/studio course utilizing visual design concepts and principles in problem-solving of realistic commercial graphic arts assignments. The computer is incorporated as the primary tool for generating images, typography, and composition. A portfolio will be constructed and presented at the conclusion of the course. Prerequisites: GDSN 231, GDSN 240, GDSN 250, GDSN 350, GDSN 320. Course Fee: \$25.00.

Course Fees: \$26.50

GDSN 479. Cooperative Education. 1-12 Credits.**GDSN 491. Special Topic. 1-12 Credits.****GDSN 492. Independent Study. 1-12 Credits.****GDSN 498. Cooperative Education. 1-12 Credits.****GDSN 499. Ind Study. 1-12 Credits.****GDSN 590. Special Topics. 1-12 Credits.**

Health & Physical Educ Activit (HPEA)

HPEA 190. Special Topic. 1-12 Credits.**HPEA 199. Ind Study. 1-12 Credits.****HPEA 391. Special Topic. 12 Credits.**

Health & Physical Education (HPE)

HPE 190. Special Topic. 1-12 Credits.**HPE 199. Independent Study. 1-12 Credits.****HPE 234. First Aid and CPR. 2 Credits.**

A course designed to provide the student with the latest approved first aid and CPR procedures. Course Fee: \$12.00.

Course Fees: \$12.75

HPE 250. Life Guard Training. 2 Credits.

This course includes the American Red Cross requirements for Life Guard Training and additional lifesaving techniques. Prerequisite skills include: Tread water for 2 minutes using legs only. Swim 500 meters continuously using each of the 4 basic strokes and retrieve a submerged 10 lb. object from seven feet. Course Fee: \$25.00.

HPE 251. Water Safety Instruction. 2 Credits.

This course includes the American Red Cross requirements for Water Safety Instruction and additional teaching and administrative techniques. Prerequisite skills include: Swim 50 yards using each of four basic strokes. Swim 10 meters of butterfly, perform a standing front dive, and perform a throwing assist with buoy. Course Fee: \$7.00.

HPE 290. Spec Topic. 1-12 Credits.**HPE 292. Independent Study. 1-12 Credits.****HPE 299. Independent Study. 1-12 Credits.****HPE 362. Biomechanics & Movement Ed. 4 Credits.**

An exploration of movement beginning with developmental movements, progressing through the evaluation and correction of body mechanics. Students will develop an understanding of the principles of lever systems and muscle forces through applied anatomy. Application of theory to teaching and coaching at all developmental levels will be emphasized. Prerequisite: BIOH 104 or BIOH 201.

HPE 391. Special Topic. 1-12 Credits.**HPE 392. Independent Study. 1-12 Credits.****HPE 423. Marriage & Family Relationship. 3 Credits.**

An in-depth study and discussion of courtship, love, marriage, problem solving, and family relationships. Human relations and values clarification are emphasized through the group process.

HPE 430. Hlth Promotion Implmntn/Asmnt. 3 Credits.

An important component of health promotion is program design and implementation as well as assessment of programs. This course is designed to provide introductory knowledge in these important professional areas.

HPE 490. Special Topic. 1-12 Credits.**HPE 500. Phys Educ in the Elem Schools. 3 Credits.**

This is an exploration of teaching skills and strategies for elementary physical education. Topics covered include selection, practice and application of games and activities to aid in developing skills, fitness, and attitudes and appreciation for physical activity by the elementary school age child (K-6). Personal and education values for the teacher candidate will be incorporated throughout. Curriculum development and selections is also discussed. Prerequisite: Admission to Teacher Education, EDUC 300 and HPE 376. Students taking this as a 500 level course should expect to be required to do additional coursework to demonstrate advanced knowledge required to fulfill graduate level coursework. In addition, students will be graded more stringently reflecting the graduate level expectations.

HPE 506. Adaptive Physical Education. 2 Credits.

This course is a study of the diverse and complex nature of disabilities and the role of physical education for the handicapped. Organizing and administering programs for students with special needs, selection of methods used in assessment and evaluation, lesson development, implementation and evaluation are covered. A 20-hour field experience is required, working with individuals with developmental and physical handicaps. Prerequisites: Admission to Teacher Education, EDU 380 and HPE 376. Students taking this as a 500 level course should expect to be required to do additional coursework to demonstrate advanced knowledge required to fulfill graduate level coursework. In addition, students will be graded more stringently reflecting the graduate level expectations.

HPE 544. Coaching Wrestling. 2 Credits.**HPE 568. Safety Education. 2 Credits.****HPE 576. Tests & Measurements in HPE. 2 Credits.****HPE 591. Special Topic. 1-12 Credits.****HPE 592. Independent Study. 1-12 Credits.****HPE 1390. Con Ed. 1-12 Credits.**

Health (HTH)

HTH 101. Opport in Health Professions. 2 Credits.

Designed to acquaint the prospective physical education teacher with broad concepts of health, physical education, and recreation including the historical development of modern programs, philosophies, and their application to physical education. Formerly HPE 233.

HTH 110. Personal Health and Wellness. 3 Credits.

This course is an introduction to the basic and new concepts of health. Topics included will be nutrition, physical fitness, stress management, substance abuse, HIV/AIDS, safety and risk management, as well as wellness components of emotional, physical, social, intellectual, and spiritual health. This course is required for all pre-education majors to fulfill OPI certification requirements, and is a program requirement for Health Promotion majors and minors. It is also appropriate for pre-nursing majors and those interested in taking a proactive approach to their lives and health. Formerly HPE 235.

HTH 192. Independent Study. 1-12 Credits.**HTH 205. Drug Issues for Education. 2 Credits.**

Introductory information for prospective teachers on the nature and effects of drug and alcohol abuse, social and personal needs of users, rehabilitation techniques, and legal regulations of drug possession and use. Formerly HPE 386.

HTH 291. Special Topics. 12 Credits.**HTH 292. Independent Study. 1-12 Credits.****HTH 325. Etiology of Disease. 3 Credits.**

Understanding the cause, progression, treatment and outcome of disease is central to the health education process. This course will provide students with the basic knowledge of diseases caused by genetic anomalies, congenital abnormalities, autoimmune disorders, metabolic disorders, cancers, infectious diseases and diseases of lifestyle.

HTH 368. Safety Education. 2 Credits.

Study of the basic principles of safety education and their application to the schools.

HTH 374. Current Issues in Health. 3 Credits.**HTH 378. Sex Education. 3 Credits.**

A study of the biological and behavioral values as it concerns human sexuality. Formerly HPE 378.

HTH 391. Special Topics. 3 Credits.

Study of current health issues that affect present populations; the environment, drug and alcohol, AIDS, diseases of lifestyle, healthcare and insurance, and birth control. To include prevention and/or control, solution, and implications.

HTH 490. Undergraduate Research. 1-12 Credits.**HTH 492. Independent Study. 1-12 Credits.****HTH 498. Cooperative Education. 1-12 Credits.****HTH 499. Senior Thesis. 1-12 Credits.**

Health Enhancement (HEE)

HEE 300. PE in the Elementary School. 3 Credits.

This is an exploration of teaching skills and strategies for elementary physical education. Topics covered include selection, practice and application of games and activities to aid in developing skills, fitness, and attitudes and appreciation for physical activity by the elementary school age child (K-6). Personal and education values for the teacher candidate will be incorporated throughout. Curriculum development and selections is also discussed. Prerequisite: Admission to Teacher Education, EDU 380 and HPE 376. If this class is taken at the 500 level, it is a graduate course. Students taking this as a 500 level course should expect to be required to do additional coursework to demonstrate advanced knowledge required to fulfill graduate level coursework. In addition, students will be graded more stringently reflecting the graduate level expectations. Formerly HPE 300.

HEE 303. Methods Lifetime Fit Act. 3 Credits.

This course is designed to give students exposure to a variety of fitness, sport and game activities that are utilized in the middle and high school health promotion programs of many Montana schools to promote lifetime fitness activities. Emphasis is placed on skills development, skills progression, and evaluation of motor performance as well as lifetime enjoyment. Safety and organization of units and curriculum are also discussed. Course Fee: \$10.00. Formerly HPE 330.

Course Fees: \$10.75

HEE 310. Methods of Adapted HE. 2 Credits.

This course is a study of the diverse and complex nature of disabilities and the role of physical education for the handicapped. Organizing and administering programs for students with special needs, selection of methods used in assessment and evaluation, lesson development, implementation and evaluation are covered. A 20-hour field experience is required, working with individuals with developmental and physical handicaps. Prerequisites: Admission to Teacher Education, EDU 380 and HPE 376. If students take this class at the 500 level, it is a graduate course. Students taking this as a 500 level course should expect to be required to do additional coursework to demonstrate advanced knowledge required to fulfill graduate level coursework. In addition, students will be graded more stringently reflecting the graduate level expectations. Formerly HPE 306.

HEE 340. Methods of Health Education. 3 Credits.

As health educators try to influence behavior change through cognitive education, methods to achieve this are unique. This course is designed to expose teacher education candidates to those techniques. This course will cover, extensively, the Health Enhancement Curriculum Model and Health Enhancement Curriculum Standards released by OPI to familiarize students with the requirements of all K-12 teachers in the State of Montana. National health education curriculum standards as well as ethics in health education will also be addressed. Co-requisite: EDUC 339. Pre-requisite: Admission to Teacher Education, EDU 380 and HPE 376. Course Fee: \$10.00 Formerly HPE 305.

Course Fees: \$10.75

HEE 376. Assessment in Health Education. 3 Credits.

This course is designed for candidates to learn the various ways to administer, analyze, interpret and utilize various tests in health and physical education. Basic statistical manipulation/analysis and test construction will be covered as well as test validity/reliability issues. Alternative and authentic testing issues will also be addressed. Prerequisites: M 121/145, junior standing, Admission to Teacher Education for HPE majors/minors. Only offered Fall Semesters. Co-requisite: EDU 380 for HPE majors. Formerly HPE 376.

HEE 392. Independent Study. 1-12 Credits.**HEE 395. Field Experience in PE. 1 Credit.**

This course is a field experience in health and physical education. Candidates who have opportunities for work/volunteer experiences in health and physical education/health promotion outside of their coursework may register for this course to reflect these experiences. This course may be repeated for credit up to a total of three credits. Candidates working with children may be required to complete a background check; all candidates should have professional liability insurance. Prerequisite: Consent of instructor. Formerly HPE 359.

HEE 435. Curr Planning in HE. 3 Credits.

Health and Physical Educators must be able to organize and administer a K-12 Health Enhancement program, including budget development, risk and safety management, program and personnel evaluation, equipment purchasing and storage, policy/procedure development, record keeping, and facility design, management and utilization. Formerly HPE 325.

HEE 490. Undergraduate Research. 1-12 Credits.

HEE 492. Independent Study. 1-12 Credits.

HEE 498. Cooperative Education. 1-12 Credits.

HEE 499. Senior Thesis. 1-12 Credits.

History (HIST)

HIST 101. The History of Railroading. 3 Credits.

HIST 302. Ante-bellum America-Reconst. 3 Credits.

An examination of the economic, social, political, and cultural conditions that from 1828 through 1877 led to economic disaster, massive expansion, the Civil War, the abolition of slavery, and Reconstruction.

HIST 303. Pplst/Prog Era thru Depression. 3 Credits.

An examination of the period between the official end of Reconstruction (1877) and the outbreak of World War II (1941), the most dynamic period of American development and disaster, concentrating on social economic, and cultural changes.

HIST 330. History of Mexico. 3 Credits.

A thematic and geographical overview of the region from 1900 to the present. Includes and introduction to the physiography, climate, peoples and history of the region. Highlights current topics of importance including authoritarianism; economic integration; drug smuggling; guerillas and terrorism; population growth and immigration among others.

HIST 346. Bus & Econ Hist of U.S.. 3 Credits.

Students will study the growth and development of the U.S. Economy and business transformation from colonial times to the mid-20th century. The central organizing focus concerns the economic, cultural, and constitutional incentive structures in America that have motivated entrepreneurship and efficient resource use. A background in basic economics or business theory is useful but not required.

HIST 354. Hist of Technology & Trans. 3 Credits.

HIST 374. History of Ideas in West Civ. 3 Credits.

This course offers a survey of the development of ideas from the ancient Hebrew and Greco-Roman cultures through the Middle Ages, Renaissance, Scientific Revolution, and Enlightenment to the Modern Era. Students will read, discuss, and write about primary sources authored by such thinkers as Aristotle, Cicero, Locke, Adam Smith, Burke, Wollstonecraft, Toqueville, Comte, Darwin, Marx, Spencer, Mill, Nietzsche, Freud, Rocco, and Sartre, and will explore concepts such as Humanism, Liberalism, Positivism, Socialism, Fascism, and Existentialism.

HIST 391. Spec Topic. 1-12 Credits.

HIST 392. Independent Study. 1-12 Credits.

HIST 590. Spec Topic. 1-12 Credits.

HIST 599. Ind. Study. 1-12 Credits.

History: American (HSTA)

HSTA 101. American History I. 3 Credits.

A general survey of the fundamental political, social, economic, cultural, and diplomatic developments that have contributed to the formation of American civilization from the colonial period to 1877. Formerly HIST 131.

HSTA 102. American History II. 3 Credits.

A general survey of the fundamental political, social, economic, cultural, and diplomatic developments that have contributed to the formation of American civilization from 1877 to the present. Formerly HIST 132.

HSTA 191. Special Topics. 1-12 Credits.

HSTA 192. Independent Study. 1-12 Credits.

HSTA 255. Montana History. 3 Credits.

A study of the major political, social, cultural, and economic developments that have contributed to the formation of Montana and to Montana's place within the region, the nation, and the world, from prehistoric times to the present. Formerly HIST 216.

HSTA 291. Special Topics. 1-12 Credits.

HSTA 292. Independent Study. 1-12 Credits.

HSTA 311. Early America. 3 Credits.

An examination of the political, economic, social, and cultural conditions of America from 1600 through 1828, concentrating on the factors that led the American Revolution and the establishment of the nation as a democratic republic. Formerly HIST 301.

HSTA 322. Am History: WWII to Present. 3 Credits.

Study of the period between the outbreak of World War II (1941) and the present, concentrating on that war, the Korean conflict, the Cold War, Vietnam, the nuclear age, the space age, and the effects of those major events and developments on domestic politics, culture, and the American economy. Formerly HIST 305.

HSTA 391. Special Topics. 1-12 Credits.**HSTA 392. Independent Study. 1-12 Credits.****HSTA 450. History of American Indians. 3 Credits.**

History of American Indians from Pre-Columbian times to the present, with special emphasis on demographic shifts caused by encroaching European and American westward expansion, and relationships between Native Americans and immigrants. Formerly HIST 364.

HSTA 464. Trans-Mississippi West. 3 Credits.

This course covers the history of the Trans-Mississippi West from the Spanish era to the present. This class covers the development and impact of the American West on the life of the nation and the interactions of ethnic groups that inhabit the West. Indeed, as much as it is possible, we will attempt to cover the human actions and interactions in the West, which have fundamentally shaped the region's history as well as the history of the United State as a whole. More than that, this is a history of a frontier where a number of cultures met, clashed and evolved, making the American West the unique region it is. Prerequisite: Course is restricted to students with 24 or more semester credits earned.

HSTA 491. Special Topics. 1-12 Credits.**HSTA 492. Independent Study. 1-12 Credits.****HSTA 499. Sen Capstone: Hist Methodology. 3 Credits.**

Students will examine and analyze the work of historians as examples of the technique and procedure of writing history. Capstone course for Broadfield Social Science majors. Prerequisite: Senior standing. Formerly HIST 449.

HSTA 591. Special Topic. 1-12 Credits.

History: World (HSTR)

HSTR 101. Western Civilization I. 3 Credits.

This course is a survey of the various civilizations of the world from their ancient origins to 1500. European, Asian, American and African societies will be examined, compared and contrasted at the various stages of their development throughout this period. The course deals with the encounters and interactions among the various civilizations, and examines the political, social, economic, cultural ideological, and technological developments that have shaped the world. Formerly HIST 141.

HSTR 102. Western Civilization II. 3 Credits.

This course is a survey of the various world civilizations from 1500 to the present. The civilizations of Europe, Asia, America and Africa will be examined, compared and contrasted at the various stages of their development throughout this period. The course deals with the encounters and interactions among the various civilizations, and examines the political, social, economic, cultural, ideological and technological developments that have shaped the civilizations of the world. Formerly HIST 142.

HSTR 191. Special Topics. 1-12 Credits.**HSTR 192. Independent Study. 1-12 Credits.****HSTR 291. Special Topics. 1-12 Credits.****HSTR 292. Independent Study. 1-12 Credits.****HSTR 324. 20th Century Europe. 3 Credits.**

This course provides an analysis of 20th Century Europe with emphasis on political history. 20th Century was an era of major changes for Europeans. These changes include end of the colonial era and major empires, fall of several long-standing royal houses, rise and fall of Communism, Fascism and Nazism, and two world wars which permanently shifted the power structure of the world. Finally, the last decades of the century saw another dramatic, this time peaceful, transformation in the form of the creation of European Union, a continental unity never before attempted. Prerequisite: Course is restricted to students with 24 or more semester credits earned.

HSTR 336. Modern Latin America. 3 Credits.

An introduction to the region's history since independence. Includes a geographical, historical and cultural overview. Will highlight important topics in the social; cultural; political and economic development of modern Latin American countries; special emphasis on period since 1900.

HSTR 391. Special Topics. 1-12 Credits.**HSTR 392. Independent Study. 1-12 Credits.****HSTR 491. Special Topics. 1-12 Credits.****HSTR 492. Independent Study. 1-12 Credits.****HSTR 499. Sen Capstone: Hist Methodology. 3 Credits.**

Students will examine and analyze the work of historians as examples of the technique and procedure of writing history. Capstone course for Broadfield Social Science majors. Prerequisite: Senior standing. Formerly HIST 449.

Honors (HON)

HON 111. Honors Written Comm I. 3 Credits.

HON 112. Honor Written Communication II. 3 Credits.

HON 113. Honors College Algebra. 3 Credits.

This course surveys a wide variety of topics including: properties and theorems of the real and complex number systems, the function concept including inverse functions, graphing techniques, linear, quadratic, polynomial, exponential and logarithmic functions, solving systems of equations in two or more variables using matrices, determinants and matrix algebra. The requirements of MATH 112, as determined by the mathematics faculty. The course will have a focus beyond the standard MATH 112. That focus will be developed by the instructor and approved by the Honors Committee. Prerequisite: ACT scores 23-24, or university placement examination or the consent of instructor and acceptance in Honors sequence.

HON 115. Honors Written Communication I. 3 Credits.

HON 212. Honors Written Comm II. 3 Credits.

Humanities (HUM)

HUM 279. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

HUM 291. Special Topic. 1-12 Credits.

HUM 299. Independent Study. 1-12 Credits.

HUM 391. Special Topic. 1-12 Credits.

HUM 392. Independent Study. 1-12 Credits.

HUM 479. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University Program of study. Prerequisites: Cooperative Education 279 or Junior standing and approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

HUM 499. Independent Study. 1-12 Credits.

HUM 591. Special Topic. 1-12 Credits.

Industrial & Engineering Tech (IET)

IET 499. Ind. Study. 1-12 Credits.

Industrial Technology (IT)

IT 100. Introduction to Technology. 3 Credits.

This course is a survey course designed to familiarize students with the educational requirements, talents, and responsibilities for careers related to industrial and engineering technology. The content of this course should provide the framework for materials to be presented in future math, science, industrial, and engineering technology courses. Course Fee: \$10.00.

IT 111. Industrial Safety/Waste Mgmt. 2 Credits.

A course designed to familiarize the student with proper safety practices and procedures. Course content will include protective clothing, handling of hazardous materials, OSHA regulations, workman's compensation, and first aid. Also, safe practices in using hand and power tools, scaffolds and ladders, chains and cables, compressed gasses, proper storage of tools and chemicals, and handling of hazardous waste will also be addressed. Course Fee: \$5.00.

Course Fees: \$6.10

IT 115. Construction Tech Fndmntls. 3 Credits.

This course introduces basic concepts in safety, construction math, hand and power tools, blueprint reading, and basic rigging. This course covers safety in the operation of a variety of hand and power tools. It includes reading simple construction-related blueprints as well as overhead crane hand signals. Thermal and moisture protection using common insulating and vapor systems will be covered.

IT 130. Construction Technology. 3 Credits.

This course provides a study of contemporary principles and practices used in the construction industry with emphasis on the techniques used for interior and exterior building construction. Civil construction is also covered. Activities may include construction of a scale model or a community construction project. Course Fee: \$50.00.

IT 191. Special Topic. 1-12 Credits.

IT 199. Independent Study. 1-12 Credits.

IT 210. Energy/Power Technology. 3 Credits.

IT 291. Special Topic. 12 Credits.

IT 299. Independent Study. 1-12 Credits.

IT 391. Special Topic. 1-12 Credits.

IT 399. Independent Study. 1-12 Credits.

IT 498. Cooperative Education. 1-12 Credits.

IT 499. Independent Study. 1-12 Credits.

IT 591. Special Topic. 1-12 Credits.

Info Sys Engr Tech (ISET)

ISET 279. Cooperative Education. 1-12 Credits.

ISET 390. Special Topic. 1-12 Credits.

ISET 399. Independent Study. 1-12 Credits.

ISET 490. Special Topic. 1-12 Credits.

Information Technology Systems (ITS)

ITS 298. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only. Formerly CIS 279.

ITS 310. Digital Systems. 3 Credits.

This course involves an introduction to programmable logic devices and an in-depth study of a selected micro controller system. Course Fee: \$15.00 Formerly CIS 305 or ISET 305.

Course Fees: \$15.75

ITS 360. Business Telecom & Networking. 3 Credits.

This course is an overview of network and communications using the internet and LAN, WAN and MAN configurations. This class will stress TCP/IP in relation to the OSI model. Hubs, switches, and NIC's will be configured and tested. Students will be required to perform both out-of class and in-class homework using Windows NT, Windows 2000 and Unix computers. Students will be required to install and set-up software on a network. Some work will be performed in teams. Prerequisite: CAPP 120 or higher, CSCI 111, CSCI 201. Formerly CIS 360 or ISET 360.

ITS 391. Special Topics. 1-12 Credits.

ITS 392. Independent Study. 1-12 Credits.

ITS 498. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in education, business, government, or community service agencies related to the University program of study. Prerequisites: Junior standing and approval of advisor, Dean of the College of Technical Science, and cooperative education coordinator. Pass/Fail only. Formerly CIS 479 or ISET 479.

Interdisciplinary Studies (IDST)

IDST 401. Interdisciplinary Seminar. 3 Credits.

Kinesiology (KIN)

KIN 320. Exercise Physiology. 3 Credits.

The study of the effects of various exercises on the systems of the body, with implications for the improvement of health, physical fitness, and athletics. Applications of theory to actual situations. Prerequisites: BIOH 104 or BIOH 201. Course Fee: \$30.00 Formerly HPE 358.

Course Fees: \$31.50

KIN 327. Kinesiology & Biomechanics. 3 Credits.

Kinesiology is the study of human movement: the action of muscles and muscle systems, the application of force to levers, and the evaluation of movement for improved performance and reduced risk of injury. These concepts are applied to teaching and coaching at all developmental levels through classroom experiences. Prerequisites: BIOH 104 or BIOH 201, M 121 or higher. Formerly HPE 357.

KIN 391. Special Topic. 1-12 Credits.**KIN 392. Independent Study. 1-12 Credits.****KIN 415. Adv Exercise Test & Prescrip. 3 Credits.**

This course will prepare students for certification through the National Council of Strength and Fitness as a Certified Personal Trainer. The course outcomes are to develop individuals with the knowledge and aptitude for the fitness industry. Upon successful completion of this course students will be able to demonstrate, evaluate, and apply all practical disciplines of a Certified Personal Trainer and will be qualified to sit for the Personal Trainer exam. Prerequisite: an anatomy and physiology course or consent of the instructor. Formerly HPE 416.

KIN 440. Sport Psychology. 3 Credits.

A study of psychological and sociological implications of sports participation. Formerly HPE 448.

KIN 490. Undergraduate Research. 1-12 Credits.**KIN 491. Special Topic. 1-12 Credits.****KIN 492. Independent Study. 1-12 Credits.****KIN 499. Senior Thesis. 1-12 Credits.**

Liberal Studies & Humanities (LSH)

LSH 201. Intro to Humanities The Art of. 3 Credits.

A survey of the humanistic disciplines: literature, philosophy, music, art, architecture, and theater designed to help students identify those qualities that make each discipline unique and to discover commonalities among these disciplines. Formerly HUM 201.

LSH 292. Independent Study. 12 Credits.**LSH 298. Cooperative Education. 1-12 Credits.****LSH 498. Cooperative Education. 1-12 Credits.**

Linguistics (LING)

LING 340. English Language. 3 Credits.

This course is designed to provide students with an overview of linguistic systems, such as phonetics, phonemics and semantics, and an intensive study of the structure of American English. It also engages students with methods of employing these materials in their own classrooms. Formerly ENGL 340 If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

LING 392. Independent Study. 1-12 Credits.

Literature (LIT)

LIT 110. Intro to Lit. 3 Credits.

Study of three of the major literary forms (fiction, poetry, and drama), including examples of each from several periods. Selections will include works by and about minorities and women. Formerly ENGL 114.

LIT 191. Special Topics. 1-12 Credits.**LIT 192. Independent Study. 1-12 Credits.****LIT 210. American Lit I. 3 Credits.**

A survey of American Literature from the colonial period to 1870. Formerly ENGL 201.

LIT 211. American Lit II. 3 Credits.

A survey of American literature from 1870 to the present. Formerly ENGL 202.

LIT 223. British Lit I. 3 Credits.

A survey of English literature from the Old English Period to 1700. Formerly ENGL 221.

LIT 224. British Lit II. 3 Credits.

A survey of British literature of the eighteenth, nineteenth, and twentieth centuries. Readings include works by the Augustans, the Romantics, the Victorians, the moderns, and the contemporary writers of Great Britain. Formerly ENGL 222.

LIT 230. World Lit Survey. 3 Credits.

A historical and thematic study of world literature in translation that may include Babylonian, Hebrew, Indian, Chinese, Persian, and other literature. Formerly ENGL 214.

LIT 291. Special Topics. 1-12 Credits.**LIT 292. Independent Study. 1-12 Credits.****LIT 298. Internship/Extrnshp/Coop Edu. 1-12 Credits.****LIT 300. Literary Criticism. 3 Credits.**

A study of the theories and methods of literary analysis from ancient times to the present, as represented in the works of selected literary theorists and critics. Formerly ENGL 402.

LIT 305. Lit by & About Native Amer. 3 Credits.

A critical examination of a representative number of major works written by non-Native Americans about Native Americans and major works by Native Americans. Topics include stereotyping, segregation, prejudice, and the roles of Native Americans in American society. Readings include mythology, poetry, essays, novels, and non-fiction. Formerly ENGL 331.

LIT 309. Popular Genres. 3 Credits.

An historical and critical approach to popular genres within the discipline that have been defined as including topics of significant aesthetic and sociological value outside the traditional canons of mainstream tradition. Material to be considered will be determined by the instructor and may include such genres as fantasy literature, science fiction, detective fiction, Gothic literature, movies, popular culture, and so on. May be repeated for credit. Formerly ENGL 309.

LIT 327. Shakespeare. 3 Credits.

Introduction to the poetic and dramatic works of Shakespeare. Reading and analysis of representative plays from the comedies, histories, and tragedies and critical assessment of Shakespeare's historical importance in literature and culture from the 16th century to the present. Formerly ENGL 385.

LIT 363. Modern Poetry. 3 Credits.

A study of the major trends and significant theories in poetry from 1800 to 1945; the Romantic period, the Victorian period, American Poetry and the Modern period. Formerly ENGL 330.

LIT 382. Lit for Children/Adolescents. 3 Credits.

A study of the literature designed for and available to the pre-adult audience, from pre-school materials for reading preparation and reading aloud, through elementary school literature, to literature for the adolescent audience of the middle school and secondary school levels. Includes poetry, fairy tales, myths, epics, fables, informational and nonfiction works, biographies, popular fiction, and fantasy literature. Formerly ENGL 310.

LIT 391. Special Topics. 1-12 Credits.**LIT 392. Independent Study. 1-12 Credits.****LIT 435. Development of the Novel. 3 Credits.**

A study of the development of the novel in England, Europe, and the United States from the eighteenth century to the present. Formerly ENGL 435.

LIT 463. Studies in Contemporary Lit. 3 Credits.

A study of the development of the forms and themes of poetry and fiction in the period since World War II. Formerly ENGL 401.

LIT 491. Special Topics. 1-12 Credits.**LIT 492. Independent Study. 1-12 Credits.****LIT 494. Seminar: Major Author/s. 3 Credits.**

An intensive study of the works of one or more major English or American writers or literary genres from the periods of literary history. The writer or writers to be studied may vary at the discretion of the instructor. Prerequisite: Junior standing. May be repeated for credit. Formerly ENGL 409.

LIT 498. Internship/Extrnshp/Coop Edu. 1-12 Credits.

Lrng Experience Assmt Prgrm (LEAP)

LEAP 289. Lrng Experience Assmnt Program. 1 Credit.

Students will develop a portfolio documenting their work and life experiences for evaluation for possible college credit which may be used to meet degree requirements. Detailed policies and procedures governing the LEAP program may be found in the university policies and procedures manual at <http://www.msun.edu>.

LEAP 299. Independent Study. 3 Credits.

Manufacturing (MFGT)

MFGT 210. CAD/CAM I. 3 Credits.

A course in the principles and application of CAD/CAM and CNC technology. Students will solve problems associated with coordinate geometry, database exchange, G and M codes.

MFGT 252. CNC Machining. 3 Credits.**MFGT 279. Cooperative Education. 1-12 Credits.**

A planned supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

MFGT 391. Special Topic. 1-12 Credits.**MFGT 392. Independent Study. 1-12 Credits.****MFGT 399. Ind Study. 1-12 Credits.****MFGT 479. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

MFGT 491. Special Topic. 1-12 Credits.**MFGT 499. Ind Study. 1-12 Credits.****MFGT 599. Independent Study. 1-12 Credits.**

Mathematics (M)

M 091. Special Topic. 1-12 Credits.**M 095. Intermediate Algebra. 3 Credits.**

This course is for students not ready for college level mathematics and covers the pre-algebra through intermediate algebra mathematics skills needed for college level mathematics courses. The course is delivered in a lab setting allowing students to progress at their own level with the aid of an on-site instructor. The class is organized into three distinct levels of Arithmetic, Beginning Algebra, and Intermediate Algebra with the student required to complete each segment in sequence. Arithmetic topics include concepts and topics of the real number system: including numeric operations, decimals, exponents, radicals, integers, ratios, proportions, fractions, factors, prime numbers, and numeric story problem applications. Beginning Algebra topics include: Power numbers, radicals, logarithms, rational expressions, linear properties, graphs, ordered pairs, relations, polynomial factoring, functions, solutions to linear and systems of two equations. Intermediate Algebra topics include determinants, complex distance and slope, relating data to equation type, application formulas, and application story problems. This course may be repeated as necessary. Formerly MATH 093.

M 105. Contemporary Mathematics. 4 Credits.

This course is designed to meet the general education mathematics requirement for the liberal arts major. It surveys some of the important ideas and practical applications in mathematics and uses a variety of mathematical skills and technology to solve real problems. Topics include problem solving, financial math, mathematical modeling (linear and quadratic), and elementary statistics.

M 109. Col Alg with Sci Applications. 3 Credits.**M 111. Technical Mathematics. 3 Credits.**

This course is intended for AAS-degree students enrolled in vocational programs who are not planning to transfer to other degree programs or institutions. This course is a basic mathematics course for developing mathematics skills through introductory algebra as they relate to technical programs. This course includes measurement systems, use of measuring tools, as well as development of area and volume concepts with respect to technical applications. Formerly MAAS 106 or MATH 106.

M 112. Trigonometry & Complex Numbers. 2 Credits.

This course presents analytic trigonometry fundamental concepts including: trigonometric and circular functions, solutions of triangles with law of sines/cosines, solutions of trigonometric equations, identities, graphs, inverse functions, and vector principles. Prerequisite: ACT score 25-26 or M 121. Formerly MATH 125.

M 121. College Algebra. 4 Credits.

This course surveys a wide variety of topics including: properties and theorems of the real and complex number systems, the function concept including inverse functions, graphing techniques, linear, quadratic, polynomial, exponential and logarithmic functions, solving systems of equations in two or more variables using matrices and matrix algebra. The development of problem-solving skills is emphasized. Formerly MATH 112.

M 130. Math for Elementary Teachers I. 3 Credits.

The topics included in this course are directly related to elementary mathematics education. The specific number topics included in this course include: numeral system, problem solving, set theory foundation of the real number system, arithmetic algorithms, statistics, probability, and algebra notations. The specific geometry topics include: plane and solid shape classification and properties, congruence, similarity, symmetry, trigonometry, measurement, and transformations. Prerequisite: M 095 or ACT score of 20 or higher or university placement examination. Course Fee: \$5.00. Formerly MATH 120.

M 131. Math for Elementary Teacher II. 3 Credits.

Topics relative to elementary mathematics education including algebra, statistics, and number theory. Focuses primarily on geometric concepts. Prerequisite: M 130. Course Fee: \$5.00 Formerly MATH 121.

M 145. Math for the Liberal Arts. 4 Credits.

This course surveys a wide variety of topics including sets and logic, mathematical patterns, number systems, number theory, algebra, geometry, probability, and statistics. The development of problem-solving skills is emphasized. Prerequisite: M111 or M 095, ACT scores 20 to 22, or university placement examination. Formerly MATH 110.

M 151. Precalculus. 4 Credits.

The topics included in this course are: trigonometric and circular functions, solutions of triangles with the law of sines/cosines, trigonometric equations, identities, graphs, inverse functions, vectors; mathematical induction, complex numbers, sequences and series, linear equations, conics, polar coordinates, and parametric equations. Prerequisite: ACT scores 25-26 or university placement examination. Formerly MATH 130.

M 162. Applied Calculus. 3 Credits.

The topics included in this course are: differentiation and integration with positive reinforcement of concepts in algebra, trigonometry and analytic geometry. Prerequisite: ACT scores 25-26 or M 121 or M 151 or university placement examination. Formerly MATH 133.

M 171. Calculus I. 5 Credits.

Developing the concepts of calculus and analytic geometry including rates of change, limits, derivatives and anti-derivatives, concepts of integration, and the application of integration. Prerequisite: M 151 or both M 121 and M 112. Formerly MATH 220.

M 172. Calculus II. 5 Credits.

Further development of the concepts of integration and applications, work with infinite series, plane curves, and parametric vectors and vector valued functions, and partial differentiation. Prerequisite: M 171. Formerly MATH 221.

M 191. Special Topics. 1-12 Credits.**M 192. Independent Study. 1-12 Credits.****M 273. Multivariable Calculus. 5 Credits.**

Introduction to the calculus of variables including partial derivatives, extremes, tangent planes, multiple integrals, and applications and vector analysis. Prerequisite: M 172. Formerly MATH 323.

M 291. Special Topics. 1-12 Credits.**M 292. Independent Study. 1-12 Credits.****M 298. Cooperative Education. 1-12 Credits.****M 301. Math Technology for Teachers. 3 Credits.**

Use of computers in the classroom focusing on software systems in current use in University and public school situations. The software systems studied are used primarily in science and mathematics but are also adapted for use in developing communication skills. Formerly MATH 320.

M 311. Ordinary Diff Equations/System. 3 Credits.

Ordinary differential equations and Laplace Transforms. Prerequisite: M 172. Formerly MATH 326.

M 326. Number Theory. 3 Credits.

Selected topics from real number theory and congruencies. Prerequisite: M 172 Formerly MATH 335.

M 327. Methods for Teaching Sec Math. 3 Credits.

Theories and techniques of teaching secondary mathematics. Investigation of methodology of content presentation and practice teaching techniques. Major developments in mathematics curriculum. Formerly MATH 317.

M 329. Modern Geometry. 3 Credits.

Study of Euclidean Geometry, selected topics from non-Euclidean Geometry. Prerequisite: M 172. Formerly MATH 334.

M 333. Linear Algebra. 3 Credits.

Study of Vector spaces and linear transformations which act on vector spaces, focusing on linear transformations and their matrix representations. Prerequisite: M 172. Formerly MATH 310.

M 351. Algebraic Structures I. 3 Credits.

Introduction to mathematical groups, rings, fields, and polynomial rings. Prerequisite: M 172. Formerly MATH 330.

M 391. Special Topics. 1-12 Credits.**M 392. Independent Study. 1-12 Credits.****M 440. Numerical Analysis. 3 Credits.**

An introduction to numerical analysis which including error analysis, real roots of equations, numerical integration, and numerical solutions of ordinary differential equations. Prerequisites: M 311 and one higher-level computer programming language course. Formerly MATH 410.

M 491. Special Topics. 1-12 Credits.**M 492. Independent Study. 1-12 Credits.**

Mathematics (MATH)

MATH 090. Special Topics. 6 Credits.

MATH 137. Calculus for Technology I. 3 Credits.

MATH 138. Calculus for Technology II. 3 Credits.

MATH 199. Independent Study. 1-12 Credits.

MATH 279. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

MATH 299. Ind Study. 1-12 Credits.

MATH 390. Special Topic. 1-12 Credits.

MATH 399. Independent Study. 1-12 Credits.

MATH 430. Seminar in Mathematics. 3 Credits.

MATH 479. Cooperative Education. 1-12 Credits.

Metals & Machining Tech (MCH)

MCH 158. Metal Fabrication. 3 Credits.

A study of equipment, metals, and procedures used to design, fabricate, and finish welded projects. Students combine skills of drafting, welding, and problem solving in developing functional projects. Prerequisites: WLDG 110 and 111 or consent of instructor. Course Fee: \$20.00 Formerly METL 185. Course Fees: \$21.50

MCH 200. Machining. 3 Credits.

An introduction to machining. The student will become familiar with basic theory and operations performed on various manual and automated machine tools. Instruction includes the selection of speeds and feeds and the identification and conditioning of associated cutting tools. Course Fee: \$15.00 Formerly METL 155. Course Fees: \$31.00

MCH 250. Manuf Processes and Materials. 3 Credits.

An introduction to the fundamentals of manufacturing. Capabilities, typical applications, advantages, and limitations of material and process selection for manufacturing. Course Fee: \$10.00 Formerly MFGT 200. Course Fees: \$10.75

MCH 255. Foundry and Patternmaking. 2 Credits.

This course is designed to explore accepted industrial foundry techniques. Laboratory learning experience and individually directed research will emphasize pattern design and construction, various mold-making processes, and other industrial manufacturing processes. Course Fee: \$15.00 Formerly METL 255. Course Fees: \$15.75

MCH 298. Cooperative Education. 1-12 Credits.

MCH 351. CAD/CAM Applications. 3 Credits.

A course in the principles and application of CAD/CAM and CNC technology. Students will solve problems associated with coordinate geometry, database exchange, G and M codes. Prerequisites: DRFT 156 and METL 155. Course Fee: \$10.00 Formerly MFGT 341. Course Fees: \$10.75

MCH 352. CAD/CAM II. 3 Credits.

A continuation in the study of G and M codes from MFGT 341 with emphasis in 3-dimensional CAD/CAM tool path definition. Students will use 3-dimensional models to create sweep surfaces, ruled surfaces, projected surfaces, surface revolutions, and Coons surfaces. Prerequisite: MFGT 341. Course Fee: \$10.00 Formerly MFGT 342. Course Fees: \$10.75

MCH 391. Special Topic. 1-12 Credits.

MCH 392. Independent Study. 1-12 Credits.

MCH 457. Quality Assurance. 3 Credits.

Industrial methods of insuring quality in manufacturing through application of codes and standards, sampling techniques, control charts and implementation of a documentable quality assurance program. Prerequisite: M 121 or higher. Formerly MFGT 427.

MCH 498. Cooperative Education. 1-12 Credits.

Metals Technology (METL)

METL 190. Special Topic. 1-12 Credits.

METL 199. Ind Study. 1-12 Credits.

METL 390. Special Topic. 1-12 Credits.

METL 479. Cooperative Education. 1-12 Credits.

METL 499. Independent Study. 3 Credits.

METL 590. Special Topic. 1-12 Credits.

METL 1390. Con Ed. 1-12 Credits.

METL 1590. Con Ed. 1-12 Credits.

Montana Administration of Sch (MAS)

MAS 104. Student Activity Programs. 1 Credit.

Student Activity Programs is a one (1) credit workshop covering school activities. This workshop will cover topics such as school policy for activities, extracurricular fund accounting, handling the money, bookkeeping responsibilities, and reporting functions. One of the guidebooks for this seminar is the Student Activities Fund Manual published by the Montana Association of School Business Officials.

MAS 105. Pupil Transportation. 1 Credit.

Pupil Transportation is a one (1)-credit workshop that addresses school bus policies and transportation. The course covers the basic rules as defined in Montana Code 20-10. The course presents the definition of terms as provided in the Code as well as bus requirements, driver requirements, penalties, bus contracts, duties of various entities, service areas, mileage, and reimbursement.

MAS 106. Food Services. 1 Credit.

Food Services is a one (1)-credit workshop to acquaint students with the fundamental laws relating to a school food service. The workshop will cover definitions, administration, record keeping, Federal Funding and the Food Services Fund.

MAS 107. School Safety. 1 Credit.

School Safety is a one (1) credit workshop designed to present the basic topics of a safety program for a school. It discusses the idea of an accident free, safe work/school environment for all people involved in school activities. It presents the topics of policy, management, awareness, hazard recognition, and reporting.

MAS 108. Retirement System. 1 Credit.

This one (1) credit workshop is a quick overview of the Montana Public Employees Retirement System. The course uses the Montana Public Employees Retirement System Handbook as a guide for the course. Supplemental information and updates will be presented in the course as well. Topic headings as provided in the handbook provide the basis for class activities. The handbook is published by the Public Employees Retirement Board.

MAS 130. Public Sector Ethics. 3 Credits.

This course examines the values in the public sector that lead to organizational ethics. The clarification of values, value consensus, and value compliance are some of the topics covered in the course. The course uses various examples from all levels of government to emphasize value principles. The presentation is from the viewpoint of the individual administrator and draws on both the cultural standpoint and the functional standpoint.

MAS 268. School Law I. 3 Credits.

This course teaches the legal requirements for schools as outlined in Section 20 of the Montana Code. The course brings awareness to the student of the legal forces affecting today's schools. This understanding will allow the student to grasp many of the daily issues that influence decision making in the school. The major headings for the laws are: General Provisions, State Boards and Commissions, Elected Officials, Teachers, Superintendents, and Principals, Pupils, School Districts, and School Instruction and Special programs.

MAS 269. School Law II. 3 Credits.

School Law II is an introductory course on school financing as presented in Montana Code 20-9. It is intended to bring a rudimentary understanding of the major topics in school finance to those who may be responsible for handling the paperwork required for state reporting. The course covers topics such as: budgets, bonds, special purpose funds, grants, special levies, fund accounting and the administration of the above topics.

Music (MUS)

MUS 199. Independent Study. 1-12 Credits.

MUS 299. Independent Study. 1-12 Credits.

Music (MUSI)

MUSI 103. Fundamentals of Musical Creatn. 3 Credits.

Basic theory providing background in the rudiments of music reading and notation. Includes note and rhythmic reading, scales, intervals and triads. No prior music experience is required. Formerly MUS 110.

MUSI 105. Orchestra Ensemble. 1 Credit.

This course is designed for students who wish to further their experience in music by participating in an orchestra ensemble. The repertoire will be determined by the orchestra director in conjunction with other community events. The student may repeat the class up to three times for credit. Prerequisite: Ability to play an instrument and read music, consent of the instructor. Students are responsible for providing their own instrument.

MUSI 147. Choral Ens: MSUN. 1 Credit.

Designed for students who wish to further their experience in music by participating in group or ensemble singing. Repertoire will be based on interests and abilities of the group members. May be repeated up to three times for credit. Prerequisite: consent of instructor. Formerly MUS 210.

MUSI 191. Special Topic. 1-12 Credits.

MUSI 195. Applied Music I. 1 Credit.

Designed for students who wish to begin or further their experience in vocal or instrumental music. Lessons in piano, voice, or various instruments may be offered privately or in small groups. May be repeated up to three times for credit. Prerequisite: consent of the instructor. Course Fee: \$10.00 Formerly MUS 225.

Course Fees: \$10.75

MUSI 201. Introduction to Music History. 3 Credits.

A survey of the fundamental elements of the music of Western civilization. Examination of the history of music and musical styles from the Middle Ages through the Romantic period. Formerly MUS 101.

MUSI 303. Music History of 20th Century. 3 Credits.

A survey of the composers, styles, techniques, trends, and technologies that have shaped the serious music of the 20th century. Prerequisite: MUSI 201 or consent of the instructor. Formerly MUS 301.

Nat Resource Sci & Mgmt (NRSM)

NRSM 260. Rangeland Management. 4 Credits.

A study of the ecology and physiology of forage and range plants. Response of vegetation to grazing, climate and other environmental forces are explored. Range utilization, plant identification and stocking rate exercises are components of this class. Both range and pasture crops are discussed. Prerequisite: AG 102 or BIOO 220 Formerly AG 254.

NRSM 261. Rangeland Management Lab. 0 Credits.

Native American Studies (NAS)

NAS 192. Independent Study. 1-12 Credits.

NAS 291. Special Topic. 1-12 Credits.

NAS 299. Independent Study. 1-12 Credits.

NAS 391. Spec Topic. 1-12 Credits.

NAS 392. Independent Study. 1-12 Credits.

NAS 499. Independent Study. 12 Credits.

NAS 531. Literature by & about Nat Am. 3 Credits.

Native American Studies (NASL)

NASL 191. Special Topics. 1-12 Credits.

NASL 192. Independent Study. 1-12 Credits.

NASL 291. Special Topics. 1-12 Credits.

NASL 292. Independent Study. 1-12 Credits.

NASL 391. Special topics. 1-12 Credits.

NASL 392. Independent Study. 1-12 Credits.

Native American Studies (NASX)

NASX 105. Intro Native Amer Studies. 3 Credits.

Interdisciplinary treatment of Native American studies. Provides general background and understanding of American Indian cultures. Formerly NAS 220.

NASX 120. Native American Language I. 3 Credits.

Introduction to one of several Native American languages, concentrating on simple conversations and the relationship of language to culture. The particular language to be studied will vary depending on availability of instruction. Taught by Native speakers, two semester of NASX 120 (six semester credits) will fulfill the Department of Humanities and Social Sciences language requirement. Formerly NAS 105 or NASL 120.

NASX 121. Native American Language II. 3 Credits.

NASX 121 is a continuation of Introduction to Native American Language concentrating on conversations and the relationship of language to culture. The particular language to be studied will vary depending on availability of instruction. Prerequisite: NASX 120. Formerly NAS 106 or NASL 121.

NASX 192. Independent Study. 1-12 Credits.

NASX 232. MT Ind Cltrs/Hstry/Iss. 3 Credits.

This course will deal with several major issues: One, the U.S.-Canada international border cuts between Native territories due to international negotiations in which Natives had no role. How has the border affected, and how does it continue to affect, their lives? Two, the histories and cultures of Montana's seven reservations and twelve Native groups vary and are complicated. The histories of the people and the reservations will be covered. Three, the course will include bringing in elders from the Hi-Line reservations to tell the cultures, traditions and present issues from their perspectives. Formerly NAS 250.

NASX 235. Oral/Written Trads Native Amer. 3 Credits.

A study of the oral traditions of various American Indian cultures, including examination of Indian language families, oral history traditions, oral literature, ritual and spiritual observances, together with English translations of Indian memoirs, autobiographies, and religious works. Formerly NAS 330.

NASX 292. Independent Study. 1-12 Credits.

NASX 304. Native American Beliefs/Philos. 3 Credits.

The sacred customs, traditions and beliefs of Native Americans have been, and are, greatly misunderstood by the mainstream society. The introduction within the boundaries of Native American practices and beliefs will apply to debates of classroom presentations. The class will concentrate on the plains tribes in Montana and Canada, on tribal spiritual leaders and practitioners and on the U.S. Supreme Court decisions. Formerly NAS 230.

NASX 310. Native Cultures of North Amer. 3 Credits.

Background on the extent and diversity of Native American cultural groups in North America, including languages, geographic locations of cultural groups, and the material, spiritual, and artistic cultures of American Indian tribal groups. Formerly NAS 310.

NASX 340. Native American Literature. 3 Credits.

A critical examination of a representative number of major works by non-Native Americans about Native Americans and major works by Native Americans. Topics include stereotyping, segregation, prejudice, and the roles of Native Americans in American society. Readings include mythology, poetry, essays, novels, and non-fiction. Formerly NAS 331 or NASL 331 or LIT 305.

NASX 376. Fed Indian Law & Policy. 3 Credits.

Treats the present applications and procedures of Federal Indian law and its historical development, including Indian treaties, tribal sovereignty, jurisdictional disputes, tribal and state powers of taxation, economic and environmental controls, and real property interests. Formerly NAS 350.

NASX 391. Special Topic. 1-12 Credits.

NASX 392. Independent Study. 12 Credits.

NASX 450. History of American Indians. 3 Credits.

History of American Indians from Pre-Columbian times to the present, with special emphasis on demographic shifts caused by encroaching European and American westward expansion, and relationships between Native Americans and immigrants. Formerly NAS 364.

NASX 491. Special Topics. 1-12 Credits.

NASX 492. Independent Study. 1-12 Credits.

NASX 498. Independent Study. 1-12 Credits.

Natural Sciences (NSCI)

NSCI 110. Survey of the Natural Sciences. 3 Credits.

Introduction to aspects of the Biological, Physical, and Earth Sciences. The biology component emphasizes the structural and functional features of organisms, their classification, and their importance in the environment. The physical science component presents a non-mathematical approach to understanding some of the basic concepts in chemistry and physics. The earth science studies focuses on the interrelationships between geology, paleontology, astronomy, meteorology and oceanography. This course is required for elementary education majors. This course does not meet the laboratory science requirement. Course Fee: \$15.00.

NSCI 111. Survey Natural Science Lab. 1 Credit.

This course is the laboratory course to accompany NSCI 110. the laboratory will introduce students to experiments where they will see demonstrated the fundamental concepts of biology, physical and earth sciences. Course fee:.

NSCI 201. Essence of Science. 3 Credits.**NSCI 301. Essence of Science. 3 Credits.**

This is a lecture course covering the important scientific discoveries from the ancient Greeks to the development of modern molecular biology and the human genome project. The course lectures, readings and discussions will develop how science, the scientific method and resulting technology have led to the ascent of humans to their present state of power. Such an ascent has been made possible through the relationship of mathematics and the physical, chemical and biological sciences. Prerequisite: A college science course, junior standing or consent of the instructor. This course does not meet the laboratory science requirement.

NSCI 390. Spec Top. 1-12 Credits.**NSCI 450. Undergraduate Research I. 3 Credits.**

Provides the opportunity to perform undergraduate research in a particular science area of interest as selected by the student; the research project will be initiated and completed under the counsel and guidance of departmental staff. Prerequisites: Appropriate science background and Junior standing. This course does not meet the laboratory science requirement. Course Fee: \$25.00.

Course Fees: \$40.00

NSCI 451. Undergraduate Research II. 3 Credits.

Serves as a continuation of NSCI 450 and affords the option by which to complete a research endeavor in a selected science area. Prerequisite: NSCI 450. This course does not meet the laboratory science requirement. Course Fee: \$25.00.

Course Fees: \$26.50

NSCI 492. Independent Study. 1-12 Credits.**NSCI 499. Ind Study. 1-12 Credits.****NSCI 550. Undergraduate Research I. 3 Credits.****NSCI 590. Spec Top. 1-12 Credits.****NSCI 599. Independent Study. 1-6 Credits.**

Nursing (NRSG)

NRSG 100. Introduction to Nursing. 1 Credit.

This course introduces the students to the profession of nursing with an exploration of nursing history, professionalism, communication, collaboration and teamwork, ethical/cultural issues, and basic concepts of human behavior. Students will study characteristics of the nursing process, nursing judgement and time management which form the basis for clinical decisions, professional judgement and lifelong learning. Formerly NURS 118.

NRSG 106. Nursing Syntax and Calculation. 3 Credits.

Course designed to be presented via computer assisted instruction and modular teaching methods. The content to be mastered will assist the pre-nursing student to gain the background skills needed to interpret medical terminology. The course will also provide the content necessary for the student to apply mathematical concepts to nursing medication administration. Formerly NURS 101.

NRSG 130. Fundamentals of Nursing. 7 Credits.

This theory and lab course introduces nursing principles and clinical skills that are essential when providing safe, quality patient centered care across health care settings. the use of evidence-based practice and nursing judgment are presented. the course provides for the application of basic nursing skills in the lab setting. Prerequisite: Admission to Nursing Program. Course Fee: \$35.00 Formerly NURS 119.

NRSG 131. Fundamentals of Nursing Lab. 0 Credits.

Lab for NRSG 130 Formerly NURS 119.

NRSG 135. Nursing Pharmacology. 3 Credits.

This course is an introduction to safe, clinical drug therapy and administration. Content areas include groups of therapeutic drugs, prototypes of drug groups, commonly prescribed drugs, drug interactions and use of nursing judgement in prescribed drug therapy regimens. Students examine drug therapy using evidence based practice and clinical decision making. Prerequisite: Admission to Nursing Program. Formerly NURS 140.

NRSG 138. Gerontology for Nursing. 2 Credits.

This course addresses current issues relevant to the nursing care of the aging population. Economic, social and ethical issues and expected age related conditions affecting the aging population are explored. the clinical component provides the opportunity for the student to utilize evidence based principles when providing patient centered care. Prerequisite: Admission to Nursing Program. Course Fee: \$15.00 Formerly NURS 132.

NRSG 139. Gerontology for Nursing Incl. 0 Credits.

Clinical for NRSG 138 Formerly NURS 132.

NRSG 140. Core Concepts of Adult Nursing. 7 Credits.

This theory and practicum course prepares the student to provide safe, quality care to patients experiencing common, well-defined health/illness needs. The focus is on use of evidence based practice and the development of nursing judgment in settings where stable patients are anticipated. Recognition and treatment of rapidly changing patient physical conditions will be introduced. Prerequisites: Successful completion for NRSG 130, NRSG 135, and NRSG 138. Course Fee: \$35.00 Formerly NURS 151.

NRSG 141. Core Adult Nursing Clinical. 0 Credits.

Clinical for NRSG 140 Formerly NURS 151.

NRSG 142. Core Maternal Child Nursing. 3 Credits.

This theory and practicum course prepares the student to provide safe, quality care to patients experiencing common, well-defined health/illness needs of the mother, newborn, child and family unit. The course includes growth and developmental patterns as well as care of the well and sick child. The student will utilize evidence-based practice/nursing judgment when providing safe, patient centered nursing care for the mother, newborn and child in institutional and community based settings. Prerequisites: Successful completion for NRSG 130, NRSG 135, and NRSG 138. Course Fee: \$15.00 Formerly NURS 152.

NRSG 143. Core Maternal Child Nursing Clin. 0 Credits.

Clinical for NRSG 142 Formerly NURS 152.

NRSG 144. Core Mental Health Nursing. 2 Credits.

This theory course explores physiological, sociological, spiritual and environmental factors associated with Mental Health/Illness needs which affect individuals, families, and communities. Focus is on the use of the evidence based practice/nursing judgment and therapeutic communication skills when caring for clients with basic psychiatric disorders. Therapeutic modalities and psychopharmacological management used when providing patient centered care is presented. Prerequisites: Successful completion of NRSG 130, NRSG 135 and NRSG 138. Formerly NURS 153.

NRSG 150. Nursing Success I. 3 Credits.

This two-week elective course is designed to give incoming nursing students basic knowledge of study skills and test taking skills to enhance their success in their first year in the MSU-Northern nursing program. The American Psychological Association (APA) writing format, which is required for all papers written in the nursing program, is introduced. Information is provided on using the Internet for nursing research and how to present appropriate documentation. Formerly NURS 130.

NRSG 151. Nursing Success II. 3 Credits.

This is an elective course for nursing students designed to provide an introduction to improve critical thinking skills, study skills, and test taking abilities. The course also provides the opportunity for students to reinforce nursing skills such as developing nursing care plans through the use of the nursing process and using mathematics in the clinical setting. Prerequisite: Admission to nursing. Formerly NURS 131.

NRSG 191. Special Topics. 1-12 Credits.**NRSG 192. Independent Study. 12 Credits.****NRSG 230. Nursing Pharmacology. 3 Credits.****NRSG 231. Nursing Pharm Lab. 2 Credits.****NRSG 232. Foundations of Nursing. 3 Credits.****NRSG 233. Foundations of Nursing Lab. 3 Credits.****NRSG 240. Core Concepts of Adult Nursing II. 3 Credits.**

This is a theory and practicum course which builds on the role of the nurse as provider of care and emphasizes the manager of care role for groups of individuals. Clinical activities focus on critical thinking and clinical decision making skills in the care of individuals with long term care and rehabilitative needs. Formerly NURS 252.

NRSG 241. Core Concepts Adult Nursing II Clinical. 3 Credits.

This is a theory and practicum course focusing on critical thinking and clinical decision making skills in the care of adults with increasingly complex health/illness needs. The transition to the graduate role integrates the roles of the provider of care, manager of care, and member within the discipline in an acute care setting. Formerly NURS 253.

NRSG 250. LPN to RN Transition. 3 Credits.

This course facilitates transition the LPN student into the ASN Program. the nursing process, professional nursing judgment, and the clinical decision making process are reviewed and discussed. Professional identity and clinical nursing competency is demonstrated. Formerly NURS 212.

NRSG 252. Complex Care Maternal/Child. 3 Credits.

This course prepares the student to provide patient centered care to maternal/child patients experiencing acutely changing conditions in settings where outcome is less predictable. Topics include evidence based care provided to patients during childbirth, high risk pregnancies, obstetrical emergencies, neonatal emergencies and infants, children and family units requiring complex collaborative care. Prerequisites: successful completion of NRSG 140, NRSG 142 and NRSG 144. Formerly NURS 255.

NRSG 253. Complex Care Maternal/Child Clinical. 0 Credits.

Clinical for NRSG 252 Formerly NURS 255.

NRSG 254. Complex Care Mental Health. 2 Credits.

This course explores mental health/illness needs of special populations with emphasis on individuals, families and communities. Focus is placed on evidence-based psychotherapeutic management in the families and communities. Focus is placed on evidence-based psychotherapeutic management in the continuum of care, milieu management and behavioral interventions with clients experiencing acute and chronic psychiatric disorders. This course provides for clinical applications of patient centered mental health nursing care and the use of therapeutic communication in institutional and community based settings. Prerequisites: Successful completion of NRSG 140, NRSG 142, NRSG 144. Formerly NURS 256.

NRSG 255. Complex Care Mental Health Incl. 0 Credits.

Clinical for NRSG 254 Formerly NURS 256.

NRSG 256. Pathophysiology. 3 Credits.

This course introduces the student to the principles and processes of pathophysiology and its effect on individuals and families. Pathophysiology of the most common body systems is discussed. Students will use this knowledge to make clinical nursing judgment decisions and promote safe, evidence based nursing care of clients with alterations in physiology. Prerequisites: Successful completion of NRSG 140, NRSG 142 and NRSG 144 Formerly NURS 258.

NRSG 259. Adult Nursing III. 3 Credits.**NRSG 260. Adult Nursing III Lab. 1 Credit.****NRSG 261. Adult Nursing III Clinical. 2 Credits.****NRSG 262. Complex Care Adult. 4 Credits.**

This theory and clinical course provides the opportunity for the student to utilize evidence based practice/nursing judgement when providing patient centered nursing care to the adult with complex health/illness needs, including those with acute health conditions. Emphasis is on clinical decision-making when providing care for clients and family members with rapidly changing health conditions. Prerequisites: Successful completion of NRSG 252, NRSG 254, NRSG 256 and BIOM 250 Formerly NURS 257.

NRSG 263. Complex Care Adult Incl. 0 Credits.

Clinical for NRSG 262 Formerly NURS 257.

NRSG 265. Advanced Clinical Skills Lab. 1 Credit.

This course prepares the student to practice providing patient-centered care to the individual and family requiring complex nursing interventions. This skills lab allows students to practice advanced nursing skills utilizing evidence-based research while demonstrating nursing judgment. Prerequisites: Successful completion of NRSG 252, NRSG 254, NRSG 256 and BIOM 250. Formerly NURS 261.

NRSG 266. Managing Client Care RN. 2 Credits.

This course addresses the transition of the student nurse to the associate degree registered nurse and includes preparation for the NCLEX-RN. Emphasis is on patient-centered care and the importance of collaboration, teamwork and management when caring for groups of patients in a supervised healthcare environment. A clinical component provides the opportunity to practice leadership skills. Prerequisites: Successful completion of NRSG 252, NRSG 254, NRSG 256 and BIOM 250. Formerly NURS 262.

NRSG 267. Managed Client Care Clinical. 2 Credits.

Clinical for NRSG 266 Formerly NURS 262.

NRSG 291. Special Topic. 1-12 Credits.**NRSG 301. Nursing in the Community. 5 Credits.**

This course will provide the student with an opportunity to apply the nursing process to the care of communities. The course explores concepts in population-focused interdisciplinary care, levels of prevention and levels of practice (individual/family, systems, and communities). Health status indicators for Montana counties and the Healthy People 2020 national health care agenda are researched. Basic concepts of environmental health, emergency preparedness, economics, and epidemiology are discussed. Students explore community coalitions and work groups that interface with vulnerable at risk populations in the community. Formerly NRSG 303.

NRSG 302. Nursing in the Comm Clinical. 1 Credit.

This clinical experience includes community health preceptor based training, a home visit program, and health promotion at several community sites. Formerly NRSG 304.

NRSG 303. Community Nursing. 5 Credits.

Nursing concepts and public health sciences are applied to the health of communities. Health promotion, maintenance, education, disease prevention and coordination of care are investigated. Application is on the individual, family and community as a client. Prerequisite: RN license, NRSG 321 and NRSG 325. Course should be taken at the same time as NRSG 304. Formerly NURS 446.

NRSG 304. Community Nursing Clin. 1 Credit.

This practicum provides an opportunity to apply the community health nursing concepts. Prerequisite: RN license. Course should be taken at the same time as NRSG 303.

NRSG 305. Nursing/Health Care Ethics. 3 Credits.

This course provides students opportunities to explore ethical dimensions and issues related to decision-making in healthcare. Students will be encouraged to critically think and analyze the human perspective impacting healthcare decisions. Theories and bioethical principles from the disciplines of nursing, medicine and humanities will be examined for global concepts, values, beliefs and evidence-based practices which address interprofessional and patient collaboration in the synthesis and complementation of patient-specific healthcare. Formerly NURS 305.

NRSG 320. Nursing/Healthcare Informatics. 3 Credits.

This course is an introduction to informatics focusing on applications relevant to the nursing profession. Emphasis will be placed on the integration of nursing science with computer technology, and information science to support patient care and provide leadership within healthcare systems.

NRSG 321. Theoretical Foundation of Nurs. 3 Credits.

Characteristics of nursing practice as a profession are discussed. Interrelationships of the healthcare delivery system and nursing roles, functions and clinical decision-making are analyzed. Theoretical bases/concepts of nursing practice are examined. Prerequisite: permission of instructor. Formerly 321.

NRSG 322. Health Promotion and Education. 3 Credits.

This course will prepare the student to shift from illness to wellness and health promotion, focusing on disease prevention and education. Course content will include theories of learning, assessment of learning needs, and developing and evaluating teaching strategies. Focus will be on wellness and health promotion interventions and education across the lifespan for all patient populations. Formerly NRSG 362.

NRSG 325. Adv. Health Assessment. 3 Credits.

This course is designed to prepare the learner to develop a nursing database and builds on the education and skills gained during previous course work. Learners will enhance their assessment techniques through learning experiences that focus on the physical, developmental, emotional, psychosocial, cultural, spiritual and functional assessments. The course emphasizes analysis, synthesis and documentation of assessment data as a foundation for providing holistic nursing care. Formerly NURS 322.

NRSG 326. Complex Health Care Needs. 3 Credits.

This course will focus on patient centered nursing care of individuals with multiple comorbidity health and illness needs. The application of evidence based practice concepts from pathophysiological, pharmacological and psychosocial nursing is discussed. The impact of multiple comorbidity illness and injury of individuals and their families is explored. Formerly NURS 322.

NRSG 331. Cultural Diversity in Hlthcare. 3 Credits.

This course presents cultural concepts and its relationship to health/illness of individuals and families. The focus is on how culture influences decision-making of the healthcare professional. This online course meets the Category V general education requirements. Formerly NURS 331.

NRSG 338. Gerontological Nursing. 3 Credits.

Biopsychosocial aspects of aging are explored in this elective course. Health/illness needs of the older adult and the impact of aging on the family and community are evaluated. Focus is on promoting functional ability and quality of life of the older adult. Prerequisite: Permission of the instructor. Formerly NURS 346.

NRSG 343. High Acuity Nursing. 3 Credits.

Focus is on nursing care of clients/families with complex health/illness needs. Pathophysiological and psychosocial concepts are related to nursing roles and critical thinking. Prerequisites: NRSG 321 and NRSG 325. Formerly NURS 344.

NRSG 344. Family Nursing. 3 Credits.

This course focuses on the theories and models of family coping and adaptation by incorporating the concepts into professional nursing care of the family unit. The application of these concepts while caring for families, demonstrate the strengths and weaknesses of the family unit and predict how the family will cope in times of illness and wellness. The impact of genetic nursing on the family will be explored. Formerly NRSG 343/344.

NRSG 350. End of Life Care. 3 Credits.

This elective course is designed to explore the role of nurses in all aspects of end of life care. Focus will be on pain management, symptom management, cultural issues, ethical/legal issues, communication, grief and bereavement as the nurse provides holistic care to the patient and family. Formerly NURS 350.

NRSG 352. Comp Therapies & Alt Healing. 3 Credits.

This course examines the principles, practices, use and outcomes of complementary therapies and alternative healing. It provides an overview of the field, reviews selected systems of alternative healing and focuses on specific healing modalities that are widely used in the general population. Students will learn to use evidence-based criteria to evaluate the risks and benefits of selected complementary therapies. The integration of alternative and conventional health practices will be examined, with ethical and professional issues being explored. Emphasis will be placed on how to facilitate patient's decision-making regarding alternative therapies.

NRSG 355. Health Care System. 1 Credit.

This course introduces the student to the complexities of the healthcare industry. Healthcare economics, ethics, and legal issues are discussed. Managed care and its impact of cost and quality are also presented. Formerly NURS 355.

NRSG 360. Clinical Preceptorship. 2 Credits.

This required practicum provides opportunity to explore one or more clinical practice areas. The student develops individual objectives aimed at increasing clinical decision making skills through critical thinking. The student will be under the direction of a BSN nurse, who is competent in the selected clinical area. Prerequisites: RN license, NRSG 321 and NRSG 325. Formerly NURS 349.

NRSG 361. Global Nursing/Healthcare. 3 Credits.

This course will examine the foundations of healthcare policy, the financial structure of healthcare systems, and the regulatory environments that impact nursing practice and patient care. This course will also analyze current and emerging global health priorities, including emerging infectious diseases, poverty, health inequity, health systems reforms, and major global initiatives for disease prevention and health promotion.

NRSG 362. Health Education. 3 Credits.

Principles of teaching/learning and the nurse's role as health educator are analyzed in this required course. Formerly NURS 347.

NRSG 391. Special Topic. 12 Credits.**NRSG 392. Independent Study. 1-12 Credits.****NRSG 420. Nursing Research. 3 Credits.**

Research methods and application to professional nursing practice are investigated. A research paper is developed and presented. Prerequisite: WRIT 101, statistics and/or permission of instructor. Formerly NURS 444.

NRSG 424. Nursing Research & Evidence. 3 Credits.

This course will focus on the research process and the translation of research into clinical practice. Students will explore and evaluate current nursing evidence-based knowledge. Emphasis is placed on gaining competency in accessing and critically reading, evaluation and applying research findings to nursing practice utilizing evidence models. Formerly NRSG 420.

NRSG 452. Case Management in Nursing. 3 Credits.

This course will introduce the process of case management to coordinate nursing and healthcare services and reimbursement for clients. The case management process is followed from the intake interview to termination of client services. In-depth attention will be given to the three phases of case management: assessment, planning, and implementation. Evidence-based practice methods to promote service coordination and collaboration in case management will be explored. Organizational, legal, and ethical issues impacting the care management process will be addressed.

NRSG 463. Leadership & Mng for RN. 5 Credits.

This course focuses on the theory, research and practical application essential to effective nursing leadership and introduces the managing role of the leader within a variety of nursing practice settings. Concepts such as the role of the leader and manager, healthcare organizations, care delivery strategies, managing resources, interpersonal and person skills, and care management that were introduced at the ASN level are further explored in this course. Managerial concepts and leadership skills need to promote high quality nursing care delivery outcomes are examined. Emphasis is placed on combining leadership and management concepts to a complex healthcare system in various clinical settings. Formerly NRSG 485.

NRSG 464. Leadership & Mng RN Clinical. 1 Credit.

This clinical experience part of this course enables the student to further develop leadership abilities, communications, critical thinking skills, and decision-making in the role of nurse leader and manager in a variety of settings. Formerly NRSG 486.

NRSG 485. Nursing Leadership & Mngmnt. 5 Credits.

Principles of leadership, management and organizational concepts are discussed. The nurse's role and function as coordinator of care for individuals and groups within the healthcare system are explored. Prerequisites: NRSG 321 and NRSG 325. Should be taken at the same time as NRSG 386 Formerly NURS 440.

NRSG 486. Nursing Leadership & Mngmnt Clin. 1 Credit.

This practicum provides opportunity to apply leadership and management concepts in a healthcare system. Prerequisite: RN license. Course should be taken at the same time as NRSG 485. Formerly NURS 441.

NRSG 491. Special Topic. 1-12 Credits.**NRSG 492. Independent Study. 12 Credits.**

Nursing (NURS)

NURS 191. Special Topic. 1-12 Credits.**NURS 192. Independent Study. 1-12 Credits.****NURS 250. Adult Health/Illness Needs I. 6 Credits.**

This is a theory and practicum course focused on the care of the patient with medical-surgical health needs. This course builds on previous concepts of provider of care for individuals with health/illness needs in acute care settings. Clinical activities focus on application of these concepts. Prerequisites: NURS 128, NURS 136, and NURS 220.

NURS 251. Maternal-Child Health Needs. 7 Credits.

This is a theory and practicum course. This course introduces the health/illness needs of the childbearing and childrearing families in both acute and community based settings. Clinical activities focus on application of these concepts. Prerequisites: NURS 128, NURS 136, and NURS 220.

NURS 254. Principles of Nursing Practice. 1 Credit.**NURS 279. Cooperative Education. 1-12 Credits.****NURS 390. Spec Topic. 1-12 Credits.****NURS 399. Independent Study. 1-12 Credits.****NURS 479. Cooperative Education. 1-12 Credits.****NURS 490. Special Topic. 1-12 Credits.****NURS 499. Independent Study. 1-12 Credits.**

Nutrition (NUTR)

NUTR 121. Clinical Human Nutrition. 2 Credits.

This course is an introduction to normal and clinical nutrition. The fundamentals of nutrition and nutritional needs throughout the life span will be addressed. The appropriate uses of diet therapy in restoring and maintaining health will also be covered. Formerly NURS 117.

NUTR 291. Special Topics. 2 Credits.

Outdoor Recreation (REC)

REC 236. Intramural Recreational Activi. 3 Credits.

A course designed to teach leadership, basic skills, rules, and techniques for various recreational games. Practical student experiences in directing all phases involved within an ongoing intramural program; scheduling, league organization, publicity, and team point computations. Formerly HPE 236.

REC 307. Community Recreation. 3 Credits.

Study of community recreation programs with regard to their activities, organization, administration, leadership, planning, special problems, and evaluation. Practical student experiences within an ongoing intramural program may also be included. Formerly HPE 307.

REC 388. Outdoor Education. 3 Credits.

Introduction to the concept of outdoor education and its relationship to physical education; includes basic outdoor skills and the safety requirements involved. Offered alternate even years during Fall Semester. Course Fee: \$8.00 Formerly HPE 394.

Course Fees: \$8.60

REC 392. Independent Study. 12 Credits.

Philosophy (PHIL)

PHIL 200. Introduction to Philosophy. 3 Credits.

Introduces the major problems and questions that have concerned philosophic thinkers from classical to modern times. Principal topics include issues of knowledge, truth, personal identity, ethics, justice, freedom, and religious belief, as discussed by such diverse thinkers as Plato, Aristotle, Descartes, Lock, Hume, Kant, Mill, Russell, Sartre, Austin, Rawls, and Rorty.

PHIL 210. Ethics. 3 Credits.

Treats the major thinkers in the development of modern ethical concepts. Principle topics include ethical theories of hedonism, self-realization, empiricism, Stoicism, utilitarianism, voluntarism, existentialism, and linguistic analysis. Ethical works discussed include those of Plato, Aristotle, Epictetus, Aquinas, Eckhart, Machiavelli, Hobbes, Spinoza, Hume, Kant, Benthan, Mill, Kierkegaard, Nietzsche, Marx, Dewey, Moore, Sartre, Ayer, Firth, Austin, and Rawls.

PHIL 292. Independent Study. 1-12 Credits.

PHIL 299. Independent Study. 1-12 Credits.

PHIL 392. Independent Study. 3 Credits.

PHIL 399. Independent Study. 1-12 Credits.

Philosophy (PHL)

PHL 101. Introduction to Philosophy. 3 Credits.

Introduces the major problems and questions that have concerned philosophic thinkers from classical to modern times. Prinicpal topics include issues of knowledge, truth, personal identity, ethics, jutice, freedom, and religious beliefs, as discussed by such diverse thinkers as Plato, Aristotle, Descartes, Lock, Hume, Kant, Mill, Russell, Sartre, Austin, Rawls, and Rorty.

PHL 192. Independent Study. 12 Credits.

PHL 392. Independent Study. 3 Credits.

Physical Science (PHYS)

PHYS 199. Independent Study. 1-12 Credits.

PHYS 399. Independent Study. 1-12 Credits.

PHYS 599. Independent Study. 1-12 Credits.

Physics (PHSX)

PHSX 105. Fund of Physical Science. 3 Credits.

This is an introductory course primarily for non-science majors and students lacking high school physics and chemistry. The course includes principles of chemistry and physics. A non-algebra approach is used to study mechanics, heat, atomic structure, chemical combinations, electricity, and fundamentals of earth science. This course does meet the laboratory science requirement. Co-requisite: PSHX 106. Course Fee: \$10.00 Formerly PHYS 114.

PHSX 106. Fund of Physical Science Lab. 0 Credits.

Lab for PHSX 105 Formerly PHYS 114.

PHSX 205. College Physics I. 3 Credits.

This is a general physics course covering measurement and experimental error, kinematics, dynamics, work and energy, momentum, rotational motion, properties of solids and fluids, thermal physics, properties of ideal gases, kinetic theory, and thermodynamics. Prerequisites: M 112 and M 121 or equivalent. M 112 may be taken concurrently with PHSX 205, but it is highly recommended that it be taken prior to enrollment in PHSX 205. Co-requisite: PHSX 206. Course Fee: \$10.00 Formerly PHYS 231.

PHSX 206. College Physics I Laboratory. 1,2 Credit.

This laboratory course will include experiments related to work and mechanical energy, properties of sound and properties of thermodynamics. Corequisite: Enrollment in PHSX 205. This course taken in conjunction with the lecture portion of the course (PHSX 205) meets the laboratory science requirement. Formerly PHYS 234.

Course Fees: \$5.35

PHSX 207. College Physics II. 3 Credits.

A general physics course covering properties of periodic motion, properties of waves, properties of light, geometric optics, optical instruments, wave optics and electric charge, electric field, electric potential, capacitance, electric current, resistance, magnetism, electromagnetic induction, alternating-current circuits, relativity and atomic structure. Prerequisites: PHSX 205, M 112, M 121. Corequisite: PHSX 208. Course Fee: \$10.00 Formerly PHYS 234.

PHSX 208. College Physics II Laboratory. 1,2 Credit.

This laboratory course will include experiments related to light, electricity and atomic structure. Co-requisite: PHSX 207. This course taken in conjunction with the lecture portion of the course (PHSX 207) meets the laboratory science requirement. Formerly PHYS 235.

Course Fees: \$5.35

PHSX 292. Independent Study. 1-12 Credits.

Plumbing (PLMB)

PLMB 199. Independent Study. 1-12 Credits.

PLMB 399. Independent Study. 1-12 Credits.

Plumbing (PLUM)

PLUM 100. Intro to the Plumbing Trades. 4 Credits.

This course covers tools in the plumbing trade and how to use them: tools powered by electricity, batteries, and pressurized air, such as drills, saws, grinders, sanders, slings, hardware, hoists, rigging operations, critical safety issues, and accepted rigging techniques and practices. Formerly PLMB 100.

PLUM 110. Intro to Plumbing and Drawing. 1 Credit.

This course introduces the history of plumbing from ancient times to current plumbing training programs, and also covers professional practices, career opportunities, and some basic safety. This course reviews the blueprints that are included in a building's plans and then moves on to specific plumbing drawings, such as isometric and oblique pictorial drawings, orthographic drawings, and schematic drawings. It also covers drawings of fixtures, assembly drawings, and cutaway drawings. This course includes an application of plumbing math. Formerly PLMB 110.

PLUM 120. Intro to Piping Systems. 3 Credits.

This course describes the various types of plastic piping and fittings, what each is used for, and the measuring, cutting, and joining techniques for each type; hangers and supports used with plastic pipe, various types of copper tubing and fittings, measuring, cutting, and joining techniques, two types of cast-iron pipe (hub and no-hub). This course also describes carbon steel pipe; an overview of the drain, waste, and vent (DWV) systems; basics of traps, drains, vents, DWV fittings, and clean outs and an overview of the water distribution system. Formerly PLMB 120.

PLUM 125. Intro to Plumbing Fixtures. 2 Credits.

This course covers the various types of fixtures that plumbers install, including sinks and lavatories, bathtubs and showers, water closets and urinals, garbage disposals and dishwashers, and laundry trays and mop basins. Formerly PLMB 125.

PLUM 170. Plumbing Codes. 2 Credits.

This course is a study of the State of Montana plumbing code as it regulates environmental sanitation for the protection of public health. It also includes a study of the materials and installation methods that require a minimum of service and maintenance. Formerly PLMB 170.

PLUM 191. Special Topics. 12 Credits.**PLUM 200. Pipe Fitting Tools & Motor Eq. 3 Credits.**

This course covers general hand tool safety and procedures for identifying, selecting, inspecting, using, and caring for pipe vises and stands, pipe wrenches, levels, pipe fabrication tools, and pipe bending and flaring tools. Formerly PLMB 200.

PLUM 206. Applied Water Hydraulics. 3 Credits.

Applied hydraulics including study of water and wastewater collection and distribution, maintenance, and safety. Includes lecture and laboratory hours, but the hours are not the kind of experience that satisfies the laboratory science requirement. This course does not meet the laboratory science requirement. Formerly TSCI 206.

PLUM 210. Advanced Blueprint Reading. 2 Credits.

This course introduces plot plans, structural drawings, elevation drawings, as-built drawings, equipment arrangement drawings, isometric drawings, spool sheets, and detail sheets in the plumbing industry. Formerly PLMB 210.

PLUM 230. Hngers, Supports, & Fld Testing. 2 Credits.

This course describes pipe hangers and supports found on the job site and the selection and performance of field tests of plumbing installation. Formerly PLMB 230.

PLUM 240. Distribution Systems. 3 Credits.

Introduction to the topics included on the Montana State Examination. Laboratory experience in basic mechanical and plumbing skills, identification, selection, operation, maintenance and repair of hardware and piping systems, and safety procedures commonly used by water or wastewater treatment plants. The laboratory procedures are not the kinds of experiences that satisfy the laboratory science requirement. This course does not meet the laboratory science requirement. Formerly TSCI 205.

PLUM 250. Special Piping. 3 Credits.

This course explains how to assemble flared and compression joints using copper tubing and the installation of hydronic piping. Formerly PLMB 250.

PLUM 260. Intro to Cntrl Circuit Trblsht. 2 Credits.

This course covers the operation, testing, and adjustment of conventional and electronic thermostats as well as the operation of common electrical and electronic circuits used to control HVAC systems. Formerly PLMB 260.

PLUM 270. Hydronic Heating & Cooling Sys. 2 Credits.

This course covers operating principles, piping systems, and preventive maintenance pertaining to the servicing of boilers, chillers, chilled water systems, absorption systems, steam systems, and system traps. Formerly PLMB 270.

PLUM 280. Energy Management. 1 Credit.

This course explains how computer and microprocessor controls are used to manage zoned HVAC systems in residential and commercial buildings. Formerly PLMB 280.

PLUM 285. System Startup & Shutdown. 1 Credit.

This course covers procedures for the start-up of hot water and steam heating systems and chilled water systems. Emphasis is on start-up after initial equipment installation or after an extended period of shutdown. Formerly PLMB 285.

PLUM 292. Independent Study. 1-12 Credits.**PLUM 298. Cooperative Education. 12 Credits.****PLUM 498. Cooperative Education. 1-12 Credits.**

Political Science (POL)

POL 299. Independent Study. 1-12 Credits.**POL 344. International Relations. 3 Credits.**

A study of the principle forces, movements, ideologies, and instruments of international politics. Prerequisite: Consent of the instructor.

POL 348. Public Choice and Interest. 3 Credits.

This is a study of political economy focusing on what modern public choice and public interest models say about the proper boundaries of the public and private sectors. It analyzes the rent-seeking activities of special interest groups and the relative impacts of altruism and self-interest in explaining political behavior and governmental policies in democratic systems. The material focuses on the nature of public goods, market failures, government regulation, and wealth redistribution, among other topics. Theoretical, historical, and empirical forms of evidence are brought to bear on the issues.

POL 392. Independent Study. 1-12 Credits.**POL 401. Seminar in Political Science. 3 Credits.**

Student participation in the examination of contemporary political ideologies. Contemporary issues in political science, including the structures of political parties, are discussed. Prerequisite: Junior standing.

Political Science (PSCI)

PSCI 191. Special Topics. 1-12 Credits.

PSCI 192. Independent Study. 1-12 Credits.

PSCI 210. Intro to American Government. 3 Credits.

Study of the American federal republic and political system. Focuses on the constitutional structure, limits and operation of the federal government, protection of individual rights, federal-state relations, political processes, and dynamic changes in the government system over time. Formerly POL 134.

PSCI 250. Intro to Political Theory. 3 Credits.

Introduction to modern political ideologies, such as Classical Liberalism, Democratic and Totalitarian Socialism, Conservatism, Fascist Totalitarianism, and Environmentalism. Focuses on the nature of ideological thinking, the logic and internal structures of various ideologies, and their effects in practice. Formerly POL 235.

PSCI 260. Intro to State and Local Govt. 3 Credits.

Introductory study of state and local government, including constitutions, legislatures, supreme courts, governors' administrative agencies in their historic and contemporary settings. County and city governments are included in the scope of this course. Formerly POL 201.

PSCI 291. Special Topics. 1-12 Credits.

PSCI 292. Independent Study. 1-12 Credits.

PSCI 344. International Relations. 3 Credits.

A study of the principal forces, movements, ideologies, and instruments of international policy. Pre-requisite: consent of instructor.

PSCI 391. Special Topics. 1-12 Credits.

PSCI 392. Independent Study. 1-12 Credits.

PSCI 411. Nonprofit Grant Writing. 3 Credits.

Identification of funding needs and priorities, researching grant-giving organizations, identification of potential funding agencies, development of proposals, preparation and submission of grant applications, techniques for approaching grant-giving organizations, responses to decisions made by granting organizations, and management of grants. Prerequisite: CMLD 260 or permission of instructor. Formerly CMSV 310.

PSCI 471. American Constitutional Law. 3 Credits.

A study of the origin and development of the American Constitution including the separation of power, the Executive, Legislative, and Judicial branches of government. Formerly POL 303.

PSCI 491. Special Topics. 1-12 Credits.

PSCI 492. Independent Study. 1-12 Credits.

PSCI 498. Intern/coop education/omnibus. 1-12 Credits.

Power Generation (PGEN)

PGEN 300. Power Generation. 3 Credits.

This course examines the selection and application of alternate energy sources for power generation.

Psychology (PSYC)

PSYC 560. Personality. 3 Credits.

A survey course examining major theories of personality development and change. Particular attention will be paid to the impact of lifestyle upon brain biochemistry, and to the major "trait" approaches to assessing and understanding human personality. The causes, treatment, and prevention of severe shyness will be accorded special attention. Graduate credit requirements are described in the course syllabus.

PSYC 561. Abnormal Psychology. 3 Credits.

This course will survey the psychotic, neurotic, and life adjustment disorder/diseases to which humankind is subject. Each problem area will be analyzed as to its etiology, behavioral symptomology, and viable therapeutic modalities. Emphasis will be placed on the biological underpinnings of behavioral pathology, and upon the ways whereby such underpinnings influence social learning and environmental experiences. Additional emphasis will be placed on classical and operant conditioning as these processes relate to the development of counterproductive, abnormal behavior patterns. The course will also examine the impact of lifestyle (including thinking style) upon brain biochemistry. Finally, the course will examine several of the major theories (and related research) of personality. Graduate credit requirements are described in the course syllabus.

PSYC 590. Special Topics. 3 Credits.

PSYC 592. Ind Study. 1-12 Credits.

Psychology (PSYX)

PSYX 100. Intro to Psychology. 3 Credits.

An introductory survey of the scientific discipline of psychology. Attention will be given to such standard topics as the nature of empirical, scientific research, and the learning process, intelligence, perception, personality, motivation, emotion, cognitive processes, abnormal behavior, human sexuality, psi-phenomena, major systems of psychotherapy, human growth and development, psychobiology and physiology, social psychology, memory, stress, forensic and industrial psychology. Students will be guided towards an appreciation of the six major theoretical perspectives that psychology has to offer. As psychology is intended to describe, predict, understand, and to control behavior, students should emerge from the course with an increased degree of enlightened control over their lives. Formerly PSYC 101.

PSYX 150. Drugs and Society. 3 Credits.

This course will help students become more informed about the factors that may underlie drug use and introduce them to historical and contemporary controversies surrounding drugs and society. There are many issues related to the use of drugs: Why people use them? How they affect people? How society responds to drug use? What can be done to prevent or terminate use? This course will address these topics by considering mind/psychology, body/pharmacology, and environment/sociology.

PSYX 191. Special Topics. 1-12 Credits.

PSYX 192. Independent Study. 1-12 Credits.

PSYX 230. Developmental Psychology. 3 Credits.

Human development is the study of how and why people change over time, as well as how and why they remain the same. Thus this course will provide an overview of what is empirically known about all the periods of life from conception to death of our physical vehicles. We shall examine what is known scientifically about physical, cognitive, and psychosocial development in humans. We shall examine how changes in each one of these major areas impacts change in each of the other two. The relative importance of nature and nurture will be examined for each of the various life stages. The issues of native temperament and physical appearance will be given special emphasis as these areas impact psychosocial and cognitive development. A considerable amount of time will be devoted to what is known about methods of effective/ineffective, successful/unsuccessful parenting. Finally, we shall look at the physical, cognitive, and psychosocial aspects of our final years of life. Formerly PSYC 205 or PSYC 315.

PSYX 238. Adolescent Psychology. 3 Credits.

This course will present the major methods, theories, and themes of adolescent behavior and development (including cognitive development, social development and physical development). This course will help students recognize adolescent themes in everyday life, critique media accounts, analyze research presented in scholarly journals and develop an understanding of the impact of culture on adolescent physical and social development skills.

PSYX 291. Special Topics. 1-12 Credits.

PSYX 292. Independent Study. 1-12 Credits.

PSYX 298. Cooperative Education. 1-12 Credits.

PSYX 338. Health Psychology. 3 Credits.

PSYX 340. Abnormal Psychology. 3 Credits.

This course will survey the psychotic, neurotic, and life adjustment disorder/diseases to which humankind is subject. Each problem area will be analyzed as to its etiology, behavioral symptomology, and viable therapeutic modalities. Emphasis will be placed on the biological underpinnings of behavioral pathology, and upon the ways whereby such underpinnings influence social learning and environmental experiences. Additional emphasis will be placed on classical and operant conditioning as these processes relate to the development of counterproductive, abnormal behavior patterns. The course will also examine the impact of lifestyle (including thinking style) upon brain biochemistry. Finally, the course will examine several of the major theories (and related research) of personality. Graduate credit requirements are described in the course syllabus. Formerly PSYC 461.

PSYX 360. Social Psychology. 3 Credits.

Social Psychologists focus on the theoretical and experimental investigations of social processes. They ask questions like: Why do we tend to conform when faced with social pressures from others? Are we adept at explaining and predicting people's behaviors and attitudes? Are there strategies for improving our interpersonal relationships and reducing our stereotypes and prejudices? This course will help students develop the skills needed to think like a social psychologist. This course will cover social psychology's history and its philosophical perspectives, as well as theories, methodologies, and experimental research. Students will learn how people interpret social situations, how different cultures engage in social interaction, how people think during social engagement, and the role of emotions in our social lives. Finally, this course will help students think more critically about issues in psychology and assist them in implementing what they learn in this course to their own life.

PSYX 361. Industrial Organizational Psych. 3 Credits.

Industrial/Organizational Psychology is an applied science in which the ultimate objective of this discipline is to maximize both employee well-being and organizational effectiveness. This course will introduce students to the many important and interesting topics related to I/O Psychology. Many topics that are thought provoking, interesting and applicable to students' future experiences in the workplace will be covered.

PSYX 362. Multicultural Psychology. 3 Credits.

This course is an introduction to the principles, theories and applications of multicultural psychology. Students will learn the necessary multicultural competencies for effective work with children and adults from diverse backgrounds (i.e. culture, race, ethnicity, class & gender) in multicultural environments (i.e. schools, community organizations & workplaces). Students will also develop an understanding and valuing of diversity, based on the principles of awareness, knowledge, and skills as they relate to the areas of worldview, identity, and acculturation.

PSYX 382. Forensic Psychology. 3 Credits.

The major goal of this course is to provide a broad overview and critical analysis of the field of forensic psychology and the variety of ways that mental illness interacts with the courts. Forensic psychology addresses the application of psychological research, methods, and expertise to issues that comes before the legal system. Some topics include competency to stand trial, criminal responsibility, coerced treatment, mental health courts, drug courts and eyewitness testimony. The discipline of forensic psychology has become extremely popular for students over the past two decades, in part because of TV programs addressing the topic such as: Law & Order, CSI, Crminal Minds, as well as a number high profile cases which captured the national media spotlight. A good understanding of forensic psychology will benefit students entering into a number of professions including: corrections, law enforcement, child/adult protective services, probation, mental health and healthcare fields, forensic sciences, and the legal system.

PSYX 383. Health Psychology. 3 Credits.

This course will provide an overview of the growing field of health psychology, with particular attention to the biological, psychological, and social determinants of health. The course will also provide overviews of major illnesses for which psychologists can and do play a major role and will examine the tools and techniques that clinical psychologists employ in medical settings.

PSYX 385. Psychology of Personality. 3 Credits.

A survey course examining major theories of personality development and change. Particular attention will be paid to the impact of lifestyle upon brain biochemistry, and to the major "trait" approaches to assessing and understanding human personality. The causes, treatment, and prevention of severe shyness will be accorded special attention. Graduate credit requirements are described in the course syllabus. Formerly PSYC 360.

PSYX 391. Special Topics. 1-12 Credits.**PSYX 392. Independent Study. 1-12 Credits.****PSYX 491. Special Topics. 1-12 Credits.****PSYX 492. Independent Study. 1-12 Credits.****PSYX 498. Cooperative Education. 1-12 Credits.****PSYX 592. Independent Study. 1-12 Credits.**

Railroad Maintenance & Opns (RRT)

RRT 199. Independent Study. 1-12 Credits.**RRT 299. Independent Study. 1-12 Credits.**

Small Business Management (SBM)

SBM 392. Special Topic. 1-12 Credits.**SBM 492. Independent Study. 1-12 Credits.**

Social Science (SOSC)

SOSC 201. Introduction to Social Science. 3 Credits.

A systematic and comparative study of the interrelationships among the traditional social sciences (i.e. anthropology, economics, geography, history, political science, psychology and sociology), together with a review of the most important social science individuals and their major works.

SOSC 279. Cooperative Education. 1-12 Credits.

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: two semesters attendance at Montana State University-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

SOSC 299. Independent Study. 1-12 Credits.**SOSC 325. Teaching Hist & Social Science. 3 Credits.**

This course is a study of the theories and practices employed in teaching history and the social sciences on the secondary level. Prerequisites include: A minimum of 15 semester hours in history and the social sciences and Junior standing, Level I Admission to Teacher Education, EDU 380 and EDU 383. Co-requisite: EDUC 339.

SOSC 390. Spec Top. 1-12 Credits.**SOSC 392. Ind Study. 1-12 Credits.****SOSC 479. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to the University program of study. Prerequisites: Cooperative Education 298, or Junior standing and approval of the advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only.

SOSC 590. Spec Top. 1-12 Credits.

Social Work (SW)

SW 423. Addiction Studies. 3 Credits.

This course provides an applied approach to understanding the addictive personality and the process of addiction disorders. Students will focus on various models of addiction as developed by current experts and will examine current research on several disorders including chemical and substance addictions (alcohol, drugs, and food) and other behavioral addictions (gambling, spending, Internet/Gadget addiction, and compulsive productivity, otherwise known as "workaholism"). Specific topics to be covered include the stages and characteristics of addiction, its course, prevalence, and familial patterns and symptoms of addictive disorders and how it affects the criminal justice systems. It will also examine various treatment approaches including effective intervention strategies used within the criminal justice system.

Sociology (SOC)

SOC 102. Social Problems. 3 Credits.

A study of the antecedent causes and consequences of such major social problems as violent crime, drug abuse, alcoholism, family violence, divorce, the population explosion, war, maltreatment of the aged, juvenile vandalism, unplanned pregnancy, sexual deviance, riot behavior, religious cults and zealous fundamentalism, are provided with a sociological perspective. Key sociological theories (e.g., interactionism, functionalism, and conflict) are critically examined. Prerequisite or Co-requisite: SOCI 101.

SOC 255. Sociology of the Family. 3 Credits.

In-depth examination of the roles of the social institutions known as courtship, marriage, family, and divorce and the interrelationship among these and such other social institutions as work education, religion, and the political system.

SOC 390. Special Topics. 12 Credits.

Sociology (SOCI)

SOCI 101. Introduction to Sociology. 3 Credits.

Study of the concepts and principles of group behavior and of the impact which society has upon the programming of the mind and thought processes. Analysis of the components of culture and of the structure of society, as well as social organization and differentiation will also be emphasized. Introduces the essentials of micro sociology and macro sociology. Formerly SOC 101.

SOCI 191. Special Topics. 12 Credits.

SOCI 192. Independent Study. 12 Credits.

SOCI 211. Introduction to Criminology. 3 Credits.

Examination of the various sociological, psychological, and biological theories that purport to explain criminal behavior. Formerly SOC 245.

SOCI 241. Intro to Social Psychology. 3 Credits.

Comprehensive survey of social psychology as an interdisciplinary field of inquiry. Incorporates such standard social psychology topics as socialization, communication and language, perception and beauty, attitude and attitude change, norms, social order and conformity, roles and the ways they shape personality, situational influences on behavior, interpersonal attraction, aggression and conflict, conflict resolution, group behavior and gender roles. Formerly SOC 240.

SOCI 291. Special Topics. 12 Credits.

SOCI 292. Independent Study. 12 Credits.

SOCI 311. Criminology. 3 Credits.

Examination of the various sociological, psychological, and biological theories that purport to explain criminal behavior.

SOCI 315. Race, Gndr, & Ethnic Relations. 3 Credits.

Provide knowledge and understanding of such major minority groups as Native Americans, Chicanos, Puerto Ricans, Cuban Americans, Chinese Americans, Japanese Americans, Jews, and women. Some attention will also be devoted to various nationality groups that suffered severe prejudice and discrimination during earlier decades of American history. Various theoretical and research perspectives pertaining to prejudice and discrimination will be examined. Formerly SOC 315.

SOCI 391. Special Topics. 12 Credits.

SOCI 392. Independent Study. 12 Credits.

SOCI 423. Addictive Behavior. 3 Credits.

This course provides an applied approach to understanding the addictive personality and the process of addiction disorders. Students will focus on various models of addiction as developed by current experts and will examine current research on several disorders including chemical and substance addictions (alcohol, drugs, and food) and other behavioral addictions (gambling, spending, Internet/Gadget addiction, and compulsive productivity, otherwise known as "workaholism"). Specific topics to be covered include the stages and characteristics of addiction, its course, prevalence, and familial patterns and symptoms of addictive disorders and how it affects the criminal justice systems. It will also examine various treatment approaches including effective intervention strategies used within the criminal justice system.

SOCI 433. Addictive Behavior. 3 Credits.

SOCI 491. Special Topics. 12 Credits.

SOCI 492. Independent Study. 12 Credits.

Software Engineering (ESOF)

ESOF 322. Software Engineering. 3 Credits.

This course continues CSCI 221. It entails program implementation, testing, debugging, and documentation of a complete system. It includes project management techniques such as ISO 9000 standards, Visual Basic, Access, ODBC connections and programming logic. Prerequisites: CAPP 120 or higher, CSCI 111, CSCI 110, CAPP 158, and CSCI 221. Formerly CIS 365 or ISET 365.

ESOF 392. Independent Study. 1-12 Credits.

Spanish (SPAN)

SPAN 199. Independent Study. 1-12 Credits.

SPAN 299. Independent Study. 1-12 Credits.

SPAN 399. Ind Study. 1-12 Credits.

Spanish (SPNS)

SPNS 101. Elementary Spanish I. 4 Credits.

Introduction to Spanish, emphasizing conversational ability but paying appropriate attention to reading comprehension and correct written expression. Extensive use of spoken Spanish in the classroom, small group practice sessions, and individual conferences with the instructor. Formerly SPAN 105.

SPNS 102. Elementary Spanish II. 4 Credits.

Elementary Spanish II is a continuation of Elementary Spanish I emphasizing conversational ability but paying appropriate attention to reading comprehension and correct written expression. Extensive use of spoken Spanish in the classroom, small group practice sessions, and individual conferences with the instructor will be features of this course. Prerequisite SPNS 101. Students with prior Spanish study should consult the instructor for placement. Formerly SPAN 106.

SPNS 191. Special Topics. 1-12 Credits.

SPNS 192. Independent Study. 1-12 Credits.

SPNS 291. Special Topics. 1-12 Credits.

SPNS 292. Independent Study. 1-12 Credits.

Special Education (EDSP)

EDSP 304. Ed and Psyc Exceptl Child. 3 Credits.

In this course candidates will examine the various categories of exceptionality (gifted, cognitively delayed, Learning Disabled, visual/hearing/health impaired, physically disabled, and emotionally disturbed) by analysing each category utilizing the following format: history, definition, prevalence, causes, characteristics, assessments, interventions, curriculum implications, mainstreaming and future considerations. Complementary to the in-class teaching and learning, candidates will participate in a 20-hour field practicum experience to aid in their theory-into-practice curriculum studies. Prerequisite: Level I admission to Teacher Education. Formerly EDPY 350.

EDSP 460. Learning Disabilities. 3 Credits.

In this course the student will examine learning disabilities by studying the following: Theory of etiology, assessment, and teaching strategies utilized to remediate the disabilities. The course will also focus on other related topics such as the various types of assessment reports, the planning of individualized educational programs, the different systems for delivering special educational services, and future issues in the field of learning disabilities. Graduate credit requirements are described in the course syllabus. If this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course. Formerly EDPY 425.

EDSP 550. Ed & Psych of Exc Children. 3 Credits.

Statistics (STAT)

STAT 191. Special Topics. 1-12 Credits.

STAT 192. Independent Study. 1-12 Credits.

STAT 216. Introduction to Statistics. 3 Credits.

This course introduces the study of statistics from descriptive statistics through regression analysis, sampling, correlation, and analysis of variance. Topics are investigated as they apply to real world data. Computers and calculators are used extensively. Prerequisite: M 095, ACT score 20-22 or higher, or university placement exam. Formerly MATH 116.

STAT 217. Interm Statistical Concepts. 4 Credits.

Introduction to probability distributions including fundamental principles of descriptive statistics, statistical inference, correlation, regression analysis, and analysis of variance. Prerequisite: M 121. Formerly MATH 140.

STAT 291. Special Topics. 1-12 Credits.

STAT 292. Independent Study. 1-12 Credits.

STAT 391. Special Topics. 1-12 Credits.

STAT 392. Independent Study. 1-12 Credits.

STAT 491. Special Topics. 1-12 Credits.

STAT 492. Independent Study. 1-3 Credits.

Surveying (SRVY)

SRVY 230. Intro to Srvyg for Engineers. 3 Credits.

Students involved with this subject will learn to perform the most common survey work required on a construction project, which is layout, topographical leveling, differential leveling, and transfer of elevations from one benchmark or location to another. Students will learn linear measuring with tapes, and with electronic distance meters. They will also develop the skills in using standard and automatic levels, in measuring distances and angles with EDM, transit, and modern instruments. Fundamental computations will be emphasized. Co-requisite: M 112 or higher. Course Fee: \$25.00 Formerly CET 181.

Sustainable Energy Technology (SET)

SET 191. Special Topic. 1-12 Credits.

SET 192. Independent Study. 1-12 Credits.

SET 1391. Special Topic. 1-12 Credits.

Traffic Education (TED)

TED 452. Traffic Ed & Adolescent Brain. 3 Credits.

This is an introductory course to neuroeducation (or mind/brain education) that incorporates cognitive neuroscience, cognitive psychology, and education, and specifically explores how the adolescent mind/brain functions, and relates these to traffic education. the emphasis will be on developing a practical understanding how the mind/brain system work, and making practical applications of that knowledge in designing traffic education lessons for young drivers.

TED 454. Impaired & Distracted Driving. 2 Credits.

The purpose of this course is to increase teacher candidates' awareness of common contributors to impairment and distraction and their effect on a person's ability to operate a vehicle safely. topics include pharmacology and toxicology of alcohol, signs/symptoms of commonly abused drugs, distractions (such as cell phones, entertainment and climate controls, and passengers), and state of mind, fatigue, and drowsiness. Related statutes, national standards for collecting data from traffic accidents, and field sobriety testing, arrest, prosecution, and adjudication will also be examined.

TED 455. Crash Dynamics. 2 Credits.

The purpose of this course is to increase teacher candidates' understanding of the causes, effects, and dynamics of motor vehicle crashes. Teacher candidates will be introduced to crash scene analysis and reconstruction, including the forces involved and mechanisms of injury to people and vehicles, an analysis of vehicle damage and injury profiles, and applicable statutes. The course requires practical applications of mathematics and physics.

TED 456. Coaching Novice Drivers. 2 Credits.

The purpose of this course is to develop teacher candidates' foundational understanding of theoretical and philosophical principles of coaching, as well as practical coaching skills, as they apply to the driving task. the course emphasizes how specific coaching and training techniques can be used to safely and effectively scaffold novice drivers from a classroom learning context, to a behind-the-wheel learning context, and ultimately to an independent real world driving context. The metacognitive skills required for self-awareness, self-evaluation, and self-development will be stressed.

TED 457. Roadway Safety Tech & Design. 2 Credits.

This course provides teacher candidates with a conceptual overview of the principles of road and highway engineering from a safety perspective. The course is designed to provide a broad, interdisciplinary understanding of the history, laws, institutions, and research methods that guide the approach to road safety (i.e. engineering, highway safety, public health, public policy, research, data and analysis, etc.) The relationship between the design and layout of roads and highways and the characteristics of vehicles, drivers, and pedestrians will be examined.

TED 458. Vehicle Safety Tech & Design. 2 Credits.

This course provides teacher candidates with a conceptual overview of the principles of motor vehicle engineering from a safety perspective. The course is designed to provide a broad, interdisciplinary understanding of the history, laws, institutions, and research methods that guide the approach to vehicle safety (i.e., engineering, highway safety, public health, public policy, research, data and analysis, etc.). The course includes a review of a broad selection of advances in vehicle design, construction, and equipment to minimize the occurrence and consequences of crashes.

TED 459. Adaptive Driver Education. 1 Credit.

This course provides teacher candidates with a general introduction to driving rehabilitation. The course consists of an overview of critical issues related to driving assessment and training for students with a variety of special needs and includes review of adaptive equipment and vehicle modifications. The course is designed to enable teacher candidates to work more effectively as a team member with special education teachers, occupational therapists, and medical experts to assist students with special needs.

TED 461. Methods of Traffic Safety Ed. 3 Credits.

This foundational course for the preparation of teachers in field safety. Teacher candidates will be introduced to the history and philosophy of traffic safety. The emphasis will be on the classroom instruction phase of traffic safety in the high school program, including methods, materials, organization, assessment, and driver task analysis. Teacher candidates will practice delivery of classroom theory lessons to their peers. Corequisite TED 462 Methods of Behind-the-wheel Instruction.

TED 462. Methods of Behind-the-Wheel In. 3 Credits.

This foundational course for the preparation of teachers in the field of traffic safety. The emphasis will be on the behind-the-wheel phase of traffic safety education in the high school program, including methods and application of content knowledge and skills. Teacher candidates will practice behind-the-wheel lessons with their instructor and peers, as well as deliver supervised behind-the-wheel lessons to high school students. Corequisite: TED 461 Methods of Traffic Safety Education.

TED 465. Motor Vehicle Law. 2 Credits.

This course is designed to build teacher candidates' awareness and understanding of Montana's motor vehicle laws and regulations, as well as of the Uniform Vehicle Code. Topics include how laws are made, enacted and enforced, the frequency and severity of violations and their impact on society, the consequences resulting from violations, and how to read and research Montana Code Annotated. The elements and the level of proof needed for arrest and prosecution are also introduced.

TED 468. Safety Education. 2 Credits.

This course is designed to introduce teacher candidates to the basic principles of safety education, including personal safety, public safety, occupational safety, and school safety with a particular emphasis on traffic safety. Topics include unintentional injury prevention, behavior and environmental modification strategies, OSHA standards and guidelines, and the development of safety programs.

TED 592. Independent Study. 1-12 Credits.

Technical Sales & Service (TSS)

TSS 292. Independent Study. 1-12 Credits.**TSS 399. Ind Study. 1-12 Credits.****TSS 408. Technical Sales Seminar. 3 Credits.**

This is a senior level class requiring application of previous course work dealing with marketing and sales. The course will use detailed in-depth analysis of popular case studies. Students will be expected to present legitimate resolutions to chosen case problems as individuals and as members of an analysis team.

TSS 479. Cooperative Education. 1-12 Credits.**TSS 499. Ind Study. 1-12 Credits.**

Technical Science (TSCI)

TSCI 110. Intro to Water & Wastewater. 4 Credits.

Introduction to drinking water and sewerage/wastewater treatment systems. Topics include plant layout, process control, distribution and collection systems, federal and state regulations, facultative lagoons, and industrial treatment processes and laboratory procedures. The laboratory procedures are not the kinds of experiences that satisfy the laboratory science requirement. This course does not meet the laboratory science requirement.

TSCI 111. Env. Health/Safety Water/Waste. 1 Credit.

Provide students with fundamental knowledge of maintaining a safe, healthful work environment, as well as protecting the local community and environment, as well as protecting the local community and environment from potential hazards generated by water and wastewater system activities.

TSCI 112. Wastewater Lagoon Systems. 1 Credit.

Provide students with a basic knowledge of wastewater lagoon systems including: 1) origins of wastewater lagoon treatment; 2) what constitutes wastewater; 3) management of a system; 4) rules and regulations governing operation of a system as well as sampling, testing and monitoring; 5) wastewater collection systems and lagoon structure 6) the biological, chemical and natural physical treatment processes that occur in a system 7) different types of lagoon systems, discharge options, disinfection choices, sludge removal options; and safety and security concerns and how all these issues pertain to operation and maintenance 8) collecting wastewater lagoon samples for testing as well as the importance of monitoring influent and effluent flows and sludge accumulation 9) basic information about common wastewater problems and offer guidance in identifying causes and solutions; and 10) math calculations common to wastewater treatment.

TSCI 113. On-site Wastewater Systems. 1 Credit.

Provide students with fundamental knowledge of 1) proven and experimental on-site wastewater treatment systems including septic tanks, grease tanks, aerobic treatment units, fixed activated sludge treatment, recirculating sand filter, trickling filter, mound system, subsurface drip system, and peat fields. 2) site evaluations and design considerations; 3) on-site sewage disposal laws, regulations, and permitting procedures; 4) inspections and complaint investigations, 5) unacceptable systems, 6) operation and maintenance, 7) public health and environmental considerations; and 8) public relations and public education.

TSCI 114. Sm Public Drink Systems. 1 Credit.

Provide students with a basic knowledge of drinking water treatments systems including 1) the fundamentals of water 2) science concepts related to the treatment of water 3) water hydraulics 4) the common components of a water distribution system 5) safety concerns when working in water treatment and water distribution systems 6) regulatory requirements for water systems in Montana 7) common math calculations used in drinking water systems.

TSCI 115. Industrial Wastewater Systems. 1 Credit.

Provide students with fundamental knowledge of 1) the types of industries, including but not limited to dairy, paper, mining, oil and coal, that produce and must treat wastewater in Montana; 2) the methods used for treating industrial wastewater; 3) the common issues related to most industrial wastewater including chemicals, pH, BOD, COD, solids and others 4) pretreatment of industrial wastewater prior to discharge to a municipal wastewater treatment system 5) rules and regulations related to treatment and discharge of industrial wastewater; and 6) the Montana Department of Environmental Quality's operator certification requirements and exam process.

TSCI 116. Wastewater Coll Systems. 3 Credits.

Provide students with fundamental knowledge of 1) the importance and responsibilities of wastewater collection system operator 2) the need for collection system operation and maintenance 3) the components of and typical layouts of collection systems 4) safety procedures for the construction, inspection and testing of sewers, inspection of manholes, and underground construction and repair 5) rules and regulations related to treatment and discharge of wastewater and 6) the Montana Department of Environmental Quality's operator certification requirements and exam process.

TSCI 117. Pumps/Motor Operation. 1 Credit.

Provide students with introductory concepts of pumps and motors used in water and wastewater industry and general operation, maintenance and troubleshooting of each. Various types of pumps will be discussed including centrifugal, submersible, dose, screw and sludge pumps. Attention will also be given to hydraulic conditions and pump devices for the efficient use of pumps. Tours of the local water and wastewater systems will provide students the opportunity to see the pumps and motors in-line and operational.

TSCI 119. Valves and Hydrants. 1 Credit.**TSCI 191. Special Topics. 12 Credits.****TSCI 208. Water & Wastewater School. 2 Credits.**

This course will introduce students to current topics of importance to the field of water and wastewater operations in addition to having the opportunity to review material in preparation for taking the State of Montana Certification examinations.

TSCI 210. Backflow Prevention. 3 Credits.

Provide students with a basic knowledge of understanding of field testing methods on 4 valves; pressure vacuum breakers, spill resistant vacuum breakers, reduced pressure principle assemblies, and double check assemblies. Students will gain knowledge in hydraulics, backflow and backsiphonage, types of cross connections, and degrees of hazard and state and federal regulations. Completion of this course and the written and practical exams will result in certification by ABPA as a backflow prevention assembly tester.

TSCI 230. Intro to Groundwater Concepts. 3 Credits.

An introduction to the basic concepts governing groundwater including geology, chemistry, contamination, contaminant transport, and remediation techniques. Attention will be focused on the use of groundwater as a source for municipal supply. Includes some laboratory applications. The laboratory procedures are not the kinds of experiences that satisfy the laboratory science requirement. This course does not meet the laboratory science requirement.

TSCI 231. Wastewater Processes. 3 Credits.

An introduction to industrial and municipal wastewater treatment and preliminary, primary, and tertiary treatment processes and methods. Specific topics covered include characteristics of wastewater, sampling and testing procedures for wastewater analysis, sludge treatment and disposal, activated sludge process control, legal aspects of sewage disposal, chlorination records and report keeping, maintenance and operation, and safety. Concurrent enrollment in TSCI 232 is required. Prerequisites: TSCI 110, CHMY 121, and M 121.

TSCI 232. Wastewater Processes Lab. 2 Credits.

Laboratory and on-site activities associated with wastewater treatment and analysis. Concurrent enrollment in TSCI 231 is required. This course is taken in conjunction with the lecture portion of the course (TSCI 231) meets the laboratory science requirement. Course Fee: \$20.00.
Course Fees: \$21.50

TSCI 233. Water Treatment Processes. 3 Credits.

Water treatment processes including collection and distribution, sedimentation, filtration, chlorination, softening, aeration, fluoridation, corrosion and odor control, maintenance water bacteriology and chemistry, and basic hydraulics and electricity. Concurrent enrollment in TSCI 234 is required. Prerequisite: TSCI 231. Course Fee: \$20.00.
Course Fees: \$21.50

TSCI 234. Water Treatment Processes Lab. 2 Credits.

Laboratory and on-site activities associated with water treatment processes and water analysis. Concurrent enrollment in TSCI 233 is required. This course taken in conjunction with the lecture portion of the course (TSCI 233) meets the laboratory science requirement.

TSCI 279. Cooperative Education. 1-12 Credits.**TSCI 291. Special Topics. 12 Credits.****TSCI 292. Independent Study. 1-12 Credits.****TSCI 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government, or community service agencies related to water quality studies. Prerequisites: TSCI 111, two semesters attendance and MSU-Northern, approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement.

TSCI 304. Fuels and Lubricants. 3 Credits.

Petroleum products and their application to the fuel and lubricating requirements of automotive and diesel vehicles. Laboratory tests related to octane, distillation, volatility, viscosity, carbon residue, API degree, and dropping point of greases. Chemical analysis will be made by gas chromatography and infrared. Includes lecture and laboratory hours. This course does meet the laboratory science requirement.

TSCI 320. Environmental Analytical Tech. 2 Credits.

Focuses upon the chemical, physical, and biological analytical techniques that are commonly used in performing environmental health and water quality assessments, and involves extensive field and laboratory work. Offered alternate years. Prerequisite: basic chemistry course. This course does meet the laboratory science requirement. Course Fee: \$15.00.

TSCI 390. Special Topics. 1-12 Credits.**TSCI 391. Special Topics. 12 Credits.****TSCI 399. Independent Study. 1-12 Credits.****TSCI 415. Pollution Prevention. 3 Credits.**

An in-depth examination of the process of systematically developing and implementing a pollution prevention program, focusing on developing an awareness of technology applications which have potentially harmful environmental impacts. Case studies and field experience are included such as Decision Support Systems and Water Quality Models. This course does not meet the laboratory science requirement.

TSCI 420. Applied Water Quality Technolo. 3 Credits.**TSCI 479. Cooperative Education. 1-12 Credits.****TSCI 498. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience extending the student's learning experience in industry, business, government, or community service agencies related to water quality studies. Prerequisites: Cooperative Education 298 or Junior standing and approval of advisor, Dean of the College of Education, Arts and Sciences, Nursing, and cooperative education coordinator. Pass/Fail only. This course does not meet the laboratory science requirement.

TSCI 499. Ind Study. 1-12 Credits.**TSCI 599. Independent Study. 1-12 Credits.**

Technology (TECH)

TECH 199. Independent Study. 1-12 Credits.

Theatre (THTR)

THTR 101. Introduction to Theatre. 3 Credits.

Study of development of theatre and dramatic literature. Reading of plays representative of theatrical styles and genres. Overview of elements of theatrical production. Formerly DRMA 123.

THTR 105. Theatre Workshop I. 3 Credits.

Classroom study, research and practical experience in the technical production aspects of presenting a play, including scenery design and construction, props, lighting, sound, promotion, crew, stage and house management. Includes practicum in technical production and the study of historical and artistic concerns in technical design. (May be repeated once for 3 additional credits.) Course Fee: \$10.00 Formerly DRMA 109.

THTR 120. Introduction to Acting I. 3 Credits.

Study of realistic approach to stage acting. Mastery of basic stage terminology. Improvisation and scene work. Formerly DRMA 220.

THTR 192. Independent Study. 1-12 Credits.**THTR 194. Seminar/Workshop. 1 Credit.**

This course provides experiences in any of the range of activities required to produce and stage a theatrical presentation. The experiences may include, but are not limited to: set design and construction, lighting, costuming, sound, publicity, box office, acting, stage management, and directing. By arrangement with the instructor, each student will undertake an individualized project. The complexity of these projects will reflect the credit level fulfilled. This course may be repeated once for credit. Formerly DRMA 110.

THTR 208. Studies in Drama. 3 Credits.

The intensive study of one or more subjects from dramatic literature and theatre history. Reading will include the works of one or more major dramatists. The subject(s) to be studied, which may include women playwrights, will vary at the discretion of the instructor. May be repeated once for a credit. Formerly DRMA 210.

THTR 230. Intro to Theatre History I. 3 Credits.

A chronological study of the development of the Western theatrical tradition from theories of origins and Greek and Roman theatre, through the development of the modern theatre in Europe and America. Focuses on theatre architecture, production methods, significant dramatists, directors, actors and designers, and the relationship of theatre to society. Formerly DRMA 300.

THTR 339. Drama in Elementary Education. 3 Credits.

A study of approaches to incorporating dramatic activities into elementary and secondary school curricula, including ideas for equipping and operating an educational theatre plant, ways of dealing with extracurricular dramatic activities, and issues surrounding theatrical endeavors related to school programs and the community at large. Formerly DRMA 325.

THTR 375. Directing. 3 Credits.

Study of basic stage directing techniques, the history of directing, and the role of the director in the contemporary theatre. Direction of a one-act play or substantial scene from a full-length play, along with written work and examinations. Prerequisite: Consent of instructor. Formerly DRMA 360.

THTR 395. Practicum. 3 Credits.

Supervised advanced projects in performance and/or production for theatre students. Prerequisite: THTR 105. Formerly DRMA 331.

THTR 498. Cooperative Education. 15 Credits.

Transfer Course (XFER)

XFER 200. Transfer. 1-12 Credits.**XFER 300. Transfer. 1-12 Credits.****XFER 400. Transfer. 1-12 Credits.****XFER 500. Transfer. 1-12 Credits.****XFER 600. Transfer. 1-12 Credits.**

Transitional Studies (TRST)

TRST 102. Study Skills. 1 Credit.

Introduction to methods of approaching basic study skills in University designed for students who feel they need help with basic study habits to be successful. Emphasis is placed on strategies for test taking, memory, time management, textbook mastery, tapping creativity and exploring individual learning styles in order to achieve personal goals.

TRST 103. Transitional Life/Career Expl. 1 Credit.

This course is designed to assist the student in decision making and career development skills. Through interactive coursework and a variety of evaluative mechanisms, the student will explore career options as well as career "fitness" and the academic preparation/expectations necessary to achieve success in a chosen field in order to design an individualized plan of action to meet academic and career goals. The course is designed to be a "first step" to success for the new University student.

TRST 190. Special Topic. 1-12 Credits.**TRST 192. Independent Study. 1-12 Credits.****TRST 199. Independent Study. 1-12 Credits.****TRST 390. Special Topics. 1-12 Credits.**

Vocational Education (VOED)

VOED 390. Special Topics. 1-12 Credits.

VOED 391. Special Topic. 1-12 Credits.

VOED 392. Independent Study. 1-12 Credits.

VOED 399. Independent Study. 1-12 Credits.

VOED 499. Independent Study. 1-12 Credits.

VOED 550. Principles of Industrial Tech. 3 Credits.

An introductory course designed for the industrial technology student to provide a survey and appreciation for the social and economic values of all forms of education in a democratic society. Major areas of inquiry will center around program requirements, historical development, career opportunities, methods of organizing and advising youth groups, and the major academic clusters of the degree, i.e., energy power transportation, production technology, communication technology, and construction technology. Graduate credit requirements are described in the course syllabus. Since this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

VOED 560. Analysis & Prep Lab Management. 3 Credits.

This course will provide the student the opportunity to gain an understanding of the basic industrial materials and design applications that form the foundation of our technological society and environment. The course will also provide the 5-12 technology education teacher with information related to effective planning, organizing and controlling of technology facilities. Graduate credit requirements are described in the course syllabus. Since this class is taken at the 500 level, it is a graduate course and expectations of student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

VOED 570. Methods of Tchng Ind Tech Educ. 3 Credits.

This course is designed to develop skills in teaching industrial technology education. The course will provide a study of the curriculum materials and techniques needed for effective instruction. Prerequisites: Level I Admission to Teacher Education, EDUC 500, EDUC 576, VOED 550 and VOED 560 (VOED may be concurrent). Co-requisite: EDUC 339. Graduate credit requirements are described in the course syllabus. Since this class is taken at the 500 level, it is a graduate course and expectations for student performance are at an advanced level. Evaluation of course requirements is more rigorous than at the lower division section of this course.

VOED 590. Special Topics. 12 Credits.

VOED 605. Coordination of Coop Programs. 2 Credits.

VOED 606. Assess. Techniques in VOED. 3 Credits.

VOED 608. Curriculum Constr. in VOED. 2 Credits.

VOED 613. Research Practicum. 3 Credits.

VOED 618. Survey Techniques in VOED. 2 Credits.

VOED 619. Seminar in Voc Educ. 3 Credits.

VOED 621. Productivity & Organized Labor. 3 Credits.

VOED 622. History & Philosophy in VOED. 3 Credits.

VOED 623. Adm/Sprvsn/Eval Voc Ed Prgs. 3 Credits.

VOED 624. Voc Educ Stdnts Spcl Needs. 3 Credits.

VOED 625. Legislation/Reg Govrng Voc Ed. 2 Credits.

VOED 647. Organizing & Tchng Adlt Educ. 3 Credits.

VOED 648. Planning Voc Educ Programs. 3 Credits.

VOED 680. Supervised Fld Exp Voc Educ. 4 Credits.

Welding (WLDG)

WLDG 110. Welding Theory I. 2 Credits.

An introductory course covering care and use of arc and oxyfuel, and gas metal arc (short circuit) welding equipment, regulators, torches, cylinders, power sources, electrodes, characteristics of operation, welding of steels and special applications. Introduction to techniques of welding mild steel. Mechanical properties of metals and types of joints are also covered. Co-requisite: WLDG 111 Formerly METL 140.

WLDG 111. Welding Theory I Practical. 2 Credits.

An introductory course covering care and use of arc and oxyfuel, and gas metal arc (short circuit) welding equipment, regulators, torches, cylinders, power sources, electrodes, characteristics of operation, welding of steels and special applications. Introduction to techniques of welding mild steel. Mechanical properties of metals and types of joints are also covered. Co-requisite: WLDG 110. Course Fee: \$50.00 Formerly METL 140.
Course Fees: \$110.00

WLDG 114. Mig/Tig Welding. 3 Credits.

Setup and operation of equipment and control of welding variables, types of power sources, and characteristics of operation, shielding gases, filler materials, quality assurance, and weld defects in metal arc welding, gas tungsten arc welding and flux cored arc welding. Course Fee: \$50.00 Formerly METL 154.
Course Fees: \$110.00

WLDG 180. Shielded Metal Arc Welding. 3 Credits.

A continuation of WLDG 110 and 111, additional training in welding horizontal, vertical, and overhead positions of mild steel. Emphasis is placed on alloys and special applications. Prerequisites: WLDG 110 and 111 or consent of instructor. Course Fee: \$50.00 Formerly METL 150.
Course Fees: \$110.00

WLDG 186. Welding Qual Test Prep w/Lab. 3 Credits.

Procedures and development of manual skills necessary to perform welds acceptable under a structural welding code. Prerequisite: WLDG 195 or consent of instructor. Course Fee: \$50.00 Formerly METL 285.
Course Fees: \$110.00

WLDG 192. Independent Study. 12 Credits.**WLDG 195. Practicum: Welding. 3,6 Credits.**

Additional welding practice offered for student enrollment in welding courses. This course may be repeated for credit. It can be repeated for credit for up to a total of 12 credits. Pass/Fail only. Course Fee: \$30.00 or \$60.00 Formerly METL 156.
Course Fees: \$110.00

WLDG 260. Repair & Maintenance Welding. 3 Credits.

Theory and practice in repair and maintenance of commonly used metals using oxygen fuel, shielded metal arc (SMAW), gas metal arc welding (GMAW), and gas tungsten arc (GTAW) welding processes. Students work on practice exercises and "live" projects. Prerequisites: WLDG 110 and 111 or consent of instructor. Course Fee: \$30.00 Formerly METL 260.
Course Fees: \$110.00

WLDG 291. Special Topic. 1-12 Credits.**WLDG 292. Independent Study. 12 Credits.****WLDG 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government or community service agencies related to the program of study. Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

WLDG 353. Metal Sculpture. 3 Credits.

Metal Sculpture is a lecture studio course which is team taught by art and welding faculty. The course examines phases of the creative process from concept to criticism of the finished form. Both abstract and representational sculpture will be examined with emphasis on welded fabrication. Course Fee: \$30.00 Formerly METL 353.

WLDG 356. Welding Certifctn Procdrs II. 3 Credits.

Laboratory applications to be taken following WLDG 186. Prerequisite: WLDG 186. Course Fee: \$50.00 Formerly METL 356.
Course Fees: \$110.00

WLDG 357. Welding Certifctn Procdrs III. 3 Credits.

Laboratory applications to be taken following WLDG 356. Prerequisite: WLDG 356. Course Fee: \$50.00 Formerly METL 357.
Course Fees: \$110.00

WLDG 391. Special Topic. 1-12 Credits.

Writing (WRIT)

WRIT 095. Developmental Writing. 3 Credits.

This course is intended for students who are not fully prepared to meet college writing expectations. Activity requirements may differ from one student to another because of differences in developmental needs. However, all students will be expected to write and revise essays, of varied length, from various prompts. To complete Developmental Writing satisfactorily, students must demonstrate the ability to write a persuasive essay. Placement will be by University System Writing Assessment, ACT or SAT examination. Students who make progress but do not complete all requirements in their first semester will receive a grade of In Progress (IP) and may be repeated as necessary. Formerly ENGL 098.

WRIT 101. College Writing I. 3 Credits.

Emphasizes argumentation and research writing. Students will write at least six essays and a significant research paper including a thorough bibliography. Students will be introduced to library research methods, the avoidance of plagiarism, and formal documentation. Prerequisite: Completion of WRIT 095 or in accordance with Board of Regents Policy 301.16. See page 6 of this catalog. Formerly ENGL 112.

WRIT 104. Workplace Communications. 2 Credits.

This course introduces students to written and oral communication required in the workplace. Emphasis is placed on basic written formats commonly used in workplace environments such as workplace incident summaries, letters, memos, and brief reports. Students also gain experience in writing application letters, resumes, follow-up letters, as well as interviews.

WRIT 108. Elementary Technical Writing. 3 Credits.

This course is intended to meet the needs of Associate of Applied Science (A.A.S.) students and Certificate of Applied Science (C.A.S.) who do not plan to transfer to other degree programs or institutions. Elementary Technical Writing is designed to introduce students to common forms of work related writing, such as memoranda, letters, reports, and proposals. Formerly ENGL 108 Students Please Note: This course may be used to satisfy degree and graduation requirements in Associate of Applied Science (A.A.S.) and Certificate of Applied Science (C.A.S.) degree; however, it cannot be used to satisfy any degree or graduation requirement for an Associate of Arts, Associate of Science, Bachelor of Arts, or Bachelor of Science degree.

WRIT 191. Special Topics. 12 Credits.**WRIT 192. Independent Study. 12 Credits.****WRIT 291. Special Topics. 12 Credits.****WRIT 292. Independent Study. 12 Credits.****WRIT 305. Advanced Essay Writing. 3 Credits.**

Practice in expository writing for advanced students. Prerequisite: WRIT 101. Formerly ENGL 305.

WRIT 338. Public Relations Writing. 3 Credits.

Practice in writing public relations materials such as brochures, background pieces, speeches, newsletters, and press releases. Formerly ENGL 338.

WRIT 350. Technical Editing. 3 Credits.

Guided practice in the writing and editing on documented technical communications, focusing on the composition, revision, and interpersonal communication skills needed by effective writers and editors. Prerequisite: WRIT 101. Formerly ENGL 366.

WRIT 391. Special Topics. 12 Credits.**WRIT 392. Independent Study. 12 Credits.****WRIT 491. Special Topics. 12 Credits.****WRIT 492. Independent Study. 12 Credits.**

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