2010 - 2011 Student Calendar

July 1 – August 13 ..... Fall Semester Fee Payment
July 16 ..... Fall Orientation
July 22..... Fall Evening Orientation
July 31..... Fall Orienation
August 6..... Fall Orienation
August 19..... Bookstore Open
August 26..... Fall Semester Classes Begin
September 6..... Labor Day – College Closed
September 9..... Bookstore – Last Day for Returns
September 16..... Last Day to Add Classes
October 18..... First–Half Semester Classes End
October 19..... Second-Half Semester Classes Begin
October 21 & 22..... MEA/MFT Conference - No Classes - College Open
November 2 ..... Election Day - College Closed
November 11..... Veterans Day – College Closed
November 24..... Thanksgiving Break – College Open
November 25 & 26 ..... Thanksgiving Break – College Closed
November 29..... Last Day to Withdraw from Classes
November 17 – January 7 ..... Spring Semester Fee Payment
December 15 – 17..... Bookstore Buyback
December 17..... Last Day of Fall Semester Classes
December 20 – January 10..... Bookstore Closed
December 20 – January 17..... Semester Break
December 24..... Christmas Day Observed – College Closed
December 31 ..... New Year's Day Observed – College Closed
January 11..... Bookstore Opens
January 14..... Spring Orientation
January 17..... MLK Day – College Closed
January 18..... Spring Semester Classes Begin
February 1 ..... Bookstore – Last Day for Returns
February 7 ..... Last Day Add Classes
February 21..... Presidents Day – College Closed
March 10..... First–Half Semester Classes End
March 11 ..... Second–Half Semester Classes Begin
March 21 – 25 ..... Spring Break – No Classes, College Open
April 18 ..... Last Day to Withdraw from Classes
May 4 – 6..... Bookstore Buyback
May 6..... Last Day of Spring Semester Classes
May 7..... Graduation

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Dean's Welcome

May I personally extend a warm welcome to you from The University of Montana – Helena College of Technology, one of Montana's premier centers of higher education since 1939. We are excited that you have expressed an interest in our College and that you are considering what the future might hold for you through the completion of one of our 34 degrees or certificates.

From my own personal experience I know that selecting a college and educational program can at times seem like an overwhelming venture. The staff and faculty at UM-Helena have developed a wide range of academic and student support services to help you succeed and would be happy to personally guide you through your educational endeavors. They can also help you identify potential scholarships, financial aid, and work study opportunities.

UM-Helena is a vibrant center of higher education committed to educational excellence and your personal success. Responding to the educational needs of our community, the College has recently completed a $10 million dollar facilities renovation and expansion project, providing additional opportunities for academic program development and diversification, the ability to expand our program scheduling, and the capacity to accommodate the needs of Montana's growing workforce. As a comprehensive technical college, we are focused on achieving our mission to succeed in meeting the needs of our community through the creation of a responsible and accessible learning environment.

I believe you will find UM-Helena to be an exciting place to explore a variety of career opportunities, prepare to transfer to a four year college, develop a diverse range of technical skills, or simply take a class for personal enrichment. Our carefully designed degrees, certificates, and personal interest courses will prepare you for the challenging world in which we live and for any new horizons you may face in the future.

I am convinced The University of Montana – Helena College of Technology will prove to be an excellent choice for you. May I extend a personal invitation to explore the many academic programs, activities, and services that UM-Helena has to offer.

Your future begins right now . . . are you ready?

Sincerely,

Daniel J. Bingham, PhD, Dean/CEO

General Information

Mission Statement

The University of Montana - Helena College of Technology promotes lifelong educational goals of learners, supports workforce development needs of employers, and fosters community involvement by providing a substantive, responsible, and accessible learning environment.

Core Value Statements

Learning
We uphold the principles of lifelong learning for our community of students, faculty, and staff.

Success
We promote the success of our community in meeting individual and common goals.

Community
We foster our connections with partners in business, industry, government, local communities, and fellow educators.

Access
We provide access to higher education, employment opportunities, continuing education, and personal and career development.

Growth
We encourage growth and progress of our community members, curricula, facilities, and resources.

Service
We serve our students, College, partners, and communities.

Vision Statement

The University of Montana - Helena College of Technology will be recognized as a responsive regional center of technical and academic education, as a partner in economic and community development, and as a diverse and accessible community of learners. UM-Helena will promote excellence in education; maintain fiscal and operational integrity; and cultivate an environment of fellowship, inclusiveness, and respect.

The University of Montana – Helena Strategic Plan

Student Success
Direction: UM-Helena develops and offers instructional programs and student services that help students succeed in reaching their goals.

Priorities for action:

- Assist students in balancing life and school demands
- Provide transition services for students from application through graduation
- Develop and evaluate quality educational programs
- Increase access to student resource areas for the varying student populations

Connect with the Community
Direction: UM-Helena builds connections with a broad range of groups to respond to the diverse needs of the community we serve.

Priorities for action:

- Work collaboratively with business and industry, local and state governments, community organizations, and educational partners to accomplish common goals for statewide economic development
- Create communication avenues with the surrounding community
- Fully develop internships and service learning opportunities for students
- Identify and incorporate community interests/ business and industry needs in future planning
- Foster faculty, staff, and student involvement in community organizations and events

Create Access
Direction: UM-Helena makes access to higher education possible for the communities we serve.

Priorities for action:

- Develop alternative delivery methods for courses and degree obtainment including distance learning, evening and weekend offerings, and collaboration with other educational institutions to enhance access to higher education
- Lessen the financial burden of higher education through the development and marketing of scholarship opportunities
- Improve access and services to people with disabilities

Develop Resources
Direction: UM-Helena proactively develops its fiscal, capital, technological, and human resources to ensure the effective, efficient management of quality programs and services.

Priorities for action:

- Improve technological infrastructure and services including electronic mail, wireless networks, and computers
- Develop criteria for managing enrollment to sustain the quality of our programs and services, including marketing and development
- Develop staffing and salary structure plans
- Expand the college's fiscal resource base through grants, private funding, and entrepreneurial activities that support college priorities
- Develop public/private partnerships and corporate sponsorship and in-kind donations
- Promote legislative awareness and support
- Support the excellence and growth of College faculty and staff members through professional development programs

General Information

Accreditation, Certification, and Approval

The University of Montana – Helena College of Technology is accredited by the Northwest Commission on Colleges and Universities, 8060 16th Ave NE, Suite 100, Redmond, WA 98052-3981. The NWCCU is an institutional accrediting body recognized by the Council for Higher Education and the U.S. Department of Education.

In addition, the Automotive Technology program is certified by the National Automotive Technicians Education Foundation (NATEF), the Aviation Maintenance Technology program is approved by the Federal Aviation Administration, and the Practical and Registered Nursing programs are approved by the Montana State Board of Nursing.

All educational programs offered at UM-Helena are approved by the Montana Board of Regents, United States Department of Education, United States Bureau of Indian Affairs, The United States Department of Veteran's Affairs, and the Montana Department of Vocational Rehabilitation Services.

History of UM-Helena

1939
The University of Montana – Helena College of Technology (UM-Helena), formerly the Helena College of Technology and the Helena Vocational-Technical Center, was founded in 1939 when the Office of Public Instruction designated five training centers for Montana. The Helena Center was the only one to accept the challenge.

1940s - 1960s
During World War II, thousands of war production workers were trained for shipyards, aircraft factories, and Air Force bases, as well as for other large and small production enterprises. At the same time, preflight training was conducted for students at Carroll College under a Navy training contract. Following World War II, courses were updated for veterans from all over Montana, as well as for local high school students. The curriculum was expanded to include auto mechanics, machine shop, welding, and electronics, in addition to the aviation program. During the mid-1950s, diesel mechanics, building trades, and pilot training were added. Additional programs were added during the 1960s, such as practical nursing, agricultural mechanics, data processing, and other business and office courses.

1967
A new building was completed at 1115 North Roberts Street. The building was named the Donaldson Building, in honor of the late Gene Donaldson, a long-time education supporter. The campus encompassed nearly 108,000 square feet of classroom, shop, and other instructional-related space.

1969
The Montana State Legislature reaffirmed the state designation of five vocational training centers established by statutory law.

1973
The Montana Legislature authorized a major renovation project at the airport (original) facility.

1989
The Montana Legislature authorized the transfer of governance of the state's five Vocational-Technical Centers (in Billings, Butte, Great Falls, Helena, and Missoula) to the Montana Board of Regents of Higher Education. This transfer ended joint governance by the local school districts and the state Office of Public Instruction.

1994
The Montana Board of Regents of Higher Education restructured the Montana University System, which resulted in the Helena Vocational-Technical Center becoming affiliated with The University of Montana. The institution was renamed the Helena College of Technology of The University of Montana.

1996
Construction of the Student Center was completed. Located at the Donaldson Campus, the facility included food service, a bookstore, and a lounge area. The project was initiated by the Student Senate.

2007 - Current
A $10 million expansion and renovation project was completed at the Airport and Donaldson Campuses. The expansion adds 21% more space to the Donaldson Campus including a new library, lecture hall, science labs, student services facilities, and a multi-purpose room for continuing education and academic instruction. As part of the expansion the Montana Arts Council commissioned Helena artist Richard Swanson to complete a sculpture entitled "Soar" near the new main entrance. Renovations of the existing space are completed, increasing classroom space and providing facilities for the Nursing and Fire and Rescue programs. The Airport Campus is expanded by 24% to include a new facility for the Automotive Technology program and additional space for the Machine Tool program. The Construction Technology program is relocated to the Airport campus. The Montana Legislature approved funding for a further $5.1 million expansion of the Airport Campus to provide more space for the Welding Technology program. Construction is anticipated to begin in the Spring of 2010.

General Information

History of Helena, Montana

Helena, Montana's state capital and the state's third territorial capital, became known as the "Queen City of the Rockies" with the boom brought on by the 1864 gold strike. In 1864, a group known as the "Four Georgians" (consisting of John Cowan, Daniel Jackson Miller, John Crab, and Reginald - or Robert - Stanley), stumbled upon gold in what is now Helena's main street. The claim was staked and named "Last Chance Gulch." The "Four Georgians" worked the gulch until 1867, at which time they went back East.

Once the news spread about the gold discovery, Helena became a boom town seemingly overnight. In only a few short years, several hundred businesses opened up shop in Helena, and more than 3,000 people called Helena home. Also, many previous mining strikes in other areas of Montana began to play out. As a result, many miners in these areas gravitated toward Helena.

As the gulch began to fill up with people, the miners decided they needed to come up with a name for the town. The name "Helena" was not immediately bestowed upon the town. The "Four Georgians" originally named it Crabtown after John Crab, one of the founders. However, many of the miners from Minnesota began to call the town Saint Helena, after a town in Minnesota. The name was eventually shortened to Helena, its current name.

Montana became a United States territory in 1864. In 1875, Helena became the capital of Montana Territory. When Montana became a state, the fight for the location of the state capital pitted "Copper King" Marcus Daly of Anaconda against rival William A. Clark, who supported Helena. Helena won, and ground was broken in October 1898 for the new capitol. Helena continues to serve as the seat of Montana's state government and politics.

In 1883, the Northern Pacific Railroad arrived in Helena and further fueled the town's growth. With establishment of the territorial capital in Helena, the town slowly began its transition from a typical mining town, which prevented the town's collapse when gold ran out in Last Chance Gulch.

By 1888, an estimated 50 millionaires made Helena their home. Last Chance Gulch produced an estimated $3.6 billion (in today's dollars) in gold over a 20-year period. Helena continued to prosper despite the depletion of gold. The town's central location in Montana, coupled with its designation as the state capital, continued to bring in new people and roads. Helena also functioned as a distribution point (due to the transportation hub of roads and railroads that developed) for outlying mining towns and other nearby resource extraction industries. Agriculture in the valley also helped sustain Helena's growth.

The downtown area of the capital city is situated in a steep gulch, with parts of the city perched on surrounding hillsides. This picturesque setting opens up into a wide valley to the north. On the upper eastside sits Montana's state capitol. Helena's glorious past is celebrated today with the spectacular 19th-century mansions, historic Last Chance Gulch businesses, and restored pioneer dwellings.

Program Entry Information

Program	Length of Training	Semester of Entry	Degree Type *
Accounting and Business Technology			
Accounting Technology	4 Semesters	Fall and Spring	A.A.S.
Bookkeeping	2 Semesters	Fall and Spring	C.A.S.
Small Business Entrepreneurship Technology	2 Semesters	Fall and Spring	C.A.S.
Small Business Management Technology	4 Semesters	Fall and Spring	A.A.S.
Automotive Technology	4 Semesters	Fall and Spring	A.A.S.
Aviation Maintenance Technology	4 Semesters	Fall and Spring	A.A.S.
Computer Technology			
Computer Assistant	2 Semesters	Fall and Spring	C.A.S.
Network Administration	4 Semesters	Fall and Spring	A.A.S.
Programming	4 Semesters	Fall and Spring	A.A.S.
Webmaster	4 Semesters	Fall and Spring	A.A.S.
Construction Technology	4 Semesters	Fall	A.A.S.
Carpentry	2 Semesters	Fall	C.A.S.
Interior Space Planning and Design	2 Semesters	Fall	C.A.S.
Diesel Technology	4 Semesters	Fall and Spring	A.A.S.
Electronics Technology ***(not currently accepting students)***			
Fire and Rescue	4 Semesters	Fall	A.A.S.
General Transfer	4 Semesters	Fall, Spring, and Summer	A.A., A.S.
Metals Technology	4 Semesters	Fall	A.A.S.
Machine Tool Technology	4 Semesters	Fall	A.A.S
Machine Tool Certificate	2 Semesters	Fall	C.A.S.
Office Technology			
Medical Assisting	2 Semesters	Fall and Spring	C.A.S.
Computer Skills Specialist	2 Semesters	Fall and Spring	C.A.S.
Legal Support Specialist	2 Semesters	Fall and Spring	C.A.S.
Medical Administrative Specialist	4 Semesters	Fall and Spring	A.A.S.
Administrative Office Mgmt Specialist	4 Semesters	Fall and Spring	A.A.S.
Nursing			
Practical Nursing	3 Semesters	Fall and Spring	A.A.S.
Registered Nursing	2 Semesters	Fall	A.S.R.N
Water Resources	4 Semesters	Fall and Spring	A.A.S.
Water Quantity	4 Semesters	Fall and Spring	A.A.S.
Water Quality	4 Semesters	Fall and Spring	A.A.S.
Welding Technology	4 Semesters	Fall	A.A.S.
Welding Certificate	2 Semesters	Fall	C.A.S.

Entry into any program of study is subject to sufficient enrollment.

** (A.A.) Associate of Arts and (A.S.) Associate of Science Degrees; (A.A.S.) Associate of Applied Science Degree; (A.S.R.N) Associate of Science in Registered Nursing: (C.A.S.) Certificate of Applied Science*

Learning Opportunities for High School Students

High school students seeking an early start on earning college credit have a number of opportunities at UM-Helena through Dual Credit courses, On Campus Experience, and Tech Prep. College Level Examination Program (CLEP) and Advanced Placement (AP) credits are also accepted.

Dual Credit Courses
UM-Helena provides dual credit courses for high school students through interlocal agreements across the region with the following districts and high schools: Broadwater County, Drummond, Granite County, Helena School District, Jefferson County, and Three Forks. Dual credit allows students to enroll in courses at their high schools that satisfy diploma requirements and provide college credits applicable towards degree and certificate programs at UM-Helena.

- Dual credit courses are provided at a reduced cost for tuition and fees.
- Earned credits are accepted by the high school and UM-Helena.
- Earned credits can be transferable to other colleges and universities.
- Course availability varies by high school location.
- Certain eligibility requirements apply and students must satisfy all course prerequisites and placement requirements. (See Admission Requirements on page 10)

Students interested in dual credit courses should contact their high school counselors and the Registrar's Office at UM-Helena, 406-444-6800 or 800-241-4882.

On Campus Experience
The On Campus Experience Program allows area high school students the opportunity to experience the college environment by taking classes at UM-Helena. Eligible students can start working on a degree or certificate program offered by the college or earn transferable credits towards a four-year degree from the Montana University System.

- Courses are open based upon seat availability one week prior to the beginning of each semester.
- Students pay only the cost for fees, books, and supplies. Tuition is free.
- Students may register for up six credits per semester and must satisfy any course prerequisites or placement requirements.
- Students must be 16 years of age, in their junior or senior year, and must provide proof of high school enrollment or participation in a home schooling program.
- Students must submit a non-degree application and a $30 nonrefundable application fee and meet with an advisor to register for courses.
- Students and their parents are encouraged to attend the On Campus Experience Orientation normally scheduled in the evening, prior to the start of each semester.

Students interested in participating in the On Campus Experience Program should contact Enrollment Services at 406-444-6826 or 800-241-4882 x6826. Course registration opens one week prior to the beginning of each semester. High school students meeting enrollment eligibility requirements are welcome to register earlier for up to six course credits each semester by submitting a non-degree application; however, no tuition waiver will be granted.

Career Pathways and Tech Prep
The University of Montana-Helena College of Technology is the former member of the Central Montana Tech Prep Consortium and presently an active participant in the development of Big Sky Pathways. In conjunction with these efforts high schools and colleges have partnered to create agreements that provide college credits for certain high school classes related to business and office technology, allied health technology, trades technology, human services, hospitality services, and commercial and graphic arts.

As the statewide efforts in developing and implementing Big Sky Pathways continue, UM-Helena will continue to honor existing Tech Prep agreements, as well as new agreements developed through the Pathways. Students should check with their high school counselor for approved Tech Prep classes or contact Admissions and New Student Services at 406-444-6823 or 800-241-4882 x6823.

Continuing Education

Lifelong Learning – Indulge Your Passion

The needs of our communities are very important. Whether you're a student, working professional, stay-at-home parent, non-native English speaker, preschooler, baby boomer, or just looking to learn something new, UM-Helena Continuing Education has something for you.

Our programs, both personal and professional, are developed and delivered in response to the educational needs of the people and the businesses in the communities we serve, and we look to you for input into our planning process.

We invite you to indulge your passion for learning through an ever-changing array of short courses in:

- Art, crafts, interior design, exploring nature, Dutch oven cooking, Asian cooking
- Global positioning system (GPS), digital photography, knife building, welding
- Grant writing, stress management, computer software, Certified Nursing Assistant (CNA), basic wildland firefighting, small business classes and more

Learn about something you missed out on in college or pursue a long-held interest as part of a relaxed, engaged learning community.

Classes are all offered on an ongoing and continuous basis. They range in length from one hour to 30+ hours in duration and may be eligible for college credit or continuing education units. For a listing of current course offerings, view our website at www.umhelena.edu and click on Continuing Education and view the Continuing Education classes. To register for classes you may print the registration form from our website and mail it in, call Continuing Education at 439-1659, or call our main registration number, 444-6800.

Tour this season's exciting offerings, choose your favorite, and join our learning community, or share your knowledge and expertise as a part-time instructor. Now is the time to indulge your passion for learning! For more information on classes, whether you want to take a class or teach a class, or to offer suggestions, please contact Mary Lannert, Director of Continuing Education at 406-439-1659 or lannertm@umhelena.edu.

Access to Success

A Dropout Recovery/Reengagement Initiative

In an effort to improve options for those severely at-risk or who have completely dropped out of high school, the Helena School District began an exciting new initiative in the spring of 2008. Bringing together school district personnel, College personnel, and community members to identify the needs of the community was the first step in creating a new pathway called Access to Success. This pathway will serve as a model dropout recovery/reengagement program in the Helena community.

Access to Success is a high school diploma completion program with an emphasis on starting a professional certificate or degree in a high wage, high skill, and high demand career area while also completing high school requirements. All coursework is provided in an adult learning environment. The program is housed on The University of Montana – Helena campus. Eligibility is limited to those between the ages of 16-21 who meet minimum reading levels, who are not currently enrolled in high school and do not already have a high school diploma. Those not meeting eligibility requirements will be referred to other skill-building programs within the district.

In Access to Success, students have the opportunity to pursue their education in an adult learning environment, while also given the chance to obtain credits that count as dual credit towards their high school diploma and professional certificate or degree. For students meeting the entry level course placement requirements, the option for dual credit will be provided at no cost to the student. The program is funded through a combination of local adult education monies and in-kind match, which includes free tuition and classroom and office space provided by the two-year College.

Students begin Access to Success as part of a small cohort group. Maintaining small class sizes is essential to creating a supportive environment. All students begin by taking a course titled "Strategies for Success" while concurrently taking courses required for their high school diploma or career path. Each student will be supported through individual case management and small class size. Students also have access to all the support services provided on the UM-Helena campus.

This is an exciting program that we feel has great potential. It is our hope that this opportunity will open new doors for those in need within our community.

For more information:

Kari Schlemmer, Case Manager for Access to Success
406-444-6849
Kari.schlemmer@umhelena.edu

UM-Helena (Room 004)
1115 N. Roberts Street
Helena, MT 59601

Your Helena Public Schools
…a great place to learn

Admission Requirements and Procedures

Admissions and New Student Services

Admissions and New Student Services provides assistance to new and re-admitting students. Prospective students in search of an application, class schedule, information about courses and programs of study, admissions guidance, or who want to check the status of a submitted application may contact Admissions and New Student Services at 406-444-6826 or 800-241-4882, ext. 6826. Admissions and New Student Services is located in the Enrollment Services Center (Rm 101) near the main entrance to the Donaldson Campus.

Application Process

Open admission allows any student who might benefit from a UM-Helena education the opportunity to enroll in classes. Applications for admission are accepted and processed in the order they are received. The deadline for priority admission consideration is one month prior to the start of each semester and complete applications are due by the last business day before the start of each semester. Students are encouraged to apply early, as financial aid is offered and programs are filled on a first-come, first-served basis. Acceptance for admission to the college does not guarantee acceptance or placement in any particular program. Prospective students should review the Program Offerings section of the catalog for specific program requirements.

First-Time Admission

Students who plan to earn a degree or certificate, or enroll in seven or more credits in any one semester, and have completed no more than 11 college credits need to submit the following information:

1. A completed and signed application for admission.
2. A $30 nonrefundable application fee.
3. Proof of immunization if born after December 31, 1956; proof of age if born before January 1, 1957. (See Immunization section, next page.)
4. Official high school transcripts received from an accredited high school with a graduation date posted, a copy of GED scores, or COMPASS test scores demonstrating ability to benefit. To demonstrate ability to benefit, a student must achieve the minimum placement scores necessary to determine college readiness and qualify for Financial Aid. Home schooled and non-accredited high school graduates may be required to provide GED scores or to meet ability to benefit requirements. Questions regarding ability to benefit should be directed to Admissions and New Student Services.
5. Official college transcripts, if applicable.

Transfer Admission

Students who plan to earn a degree or certificate, or enroll in seven or more credits in any one semester, and who have completed twelve or more college credits with a cumulative grade point average of 2.0 on a 4.0 scale, need to submit the following information:

1. A completed and signed application for admission.
2. A $30 nonrefundable application fee.
3. Proof of immunization if born after December 31, 1956; proof of age if born before January 1, 1957. (See Immunization section, next page.)
4. Official college transcripts from all college(s) previously attended.

Non-Degree Admission

Non-Degree admission is designed for students seeking personal enrichment who do not plan to earn a degree or certificate, do not seek financial aid, and who enroll in six credits or fewer in any one semester. The following information needs to be submitted:

1. A completed and signed Non-Degree Registration Form.
2. A $30 nonrefundable application fee.
3. Demonstrated completion of any prerequisites or necessary placement testing.

Readmission

Students who have previously attended UM-Helena as degree-seeking students must reapply for admission if they have been absent from the college for one or more academic semester (excluding summer). Readmitted students must follow current catalog requirements upon return. The procedure for readmission to UM-Helena is as follows:

1. Submit a completed and signed Application for Readmission.
2. Submit official transcripts from all college(s) attended since last attending UM-Helena, if applicable.
3. If readmission follows academic suspension from UM-Helena, applicants must submit an academic plan with their application for readmission. Readmission is conditional upon approval of the academic plan by the Office of the Academic Affairs.

Application Fee

A $30 nonrefundable application fee is required of all first-time applicants to The University of Montana campuses, including The University of Montana , The University of Montana College of Technology, Montana Tech, Montana Tech College of Technology, The University of Montana - Western, and The University of Montana – Helena College of Technology. If a student does not enroll within one calendar year of application fee payment, the application fee expires.

Admission Requirements and Procedures

Orientation
Orientation is held for all new students before the beginning of each semester. College policies, procedures, regulations, and financial aid information are explained to students. Orientation information is mailed to all accepted students approximately three weeks prior to the orientation session. All degree-seeking students, new and readmitting, are charged a $15 orientation fee.

Immunization
All students enrolling in seven or more credits are subject to the following requirements in accordance with Montana state law (ARM 37.114.711).

1. Students born in 1957 or later must provide evidence that they have received two measles and two rubella immunizations, with dose one administered at 12 months of age or later and dose two administered at least 28 days after dose one. No measles vaccination before 1967 is valid. No rubella vaccination before 1969 is valid. As an alternative, students may supply a laboratory report from a CLIA approved laboratory indicating that the student is immune to measles and/or rubella.
2. Under ARM 37.114.711, a student may be conditionally enrolled for an initial term if they have not received the second dose of measles and/or rubella vaccine provided they receive the second dose at least 28 days after the first dose and before the beginning of the succeeding school term.
3. A student may be exempt from the above requirements for medical reasons (ARM 37.114.715) providing the student supplies a statement from a physician (MD or DO) holding a license to practice in the United States or Canada stating: a) The specific immunization that is contraindicated; b) The time period the immunization is contraindicated; and c) The reasons for the contraindication.
4. A student may be exempt from the above requirements for religious reasons providing the student supplies a notarized statement that immunizations are contrary to the student's religious beliefs. This notarized statement must be submitted annually by any student claiming a religious exemption (ARM 37.114.716).

Early Admission
Students who are simultaneously enrolled in high school or are non-high school graduates prior to the time their high school class has graduated may be accepted for admission to UM-Helena. Eligibility is limited to students who can demonstrate the academic preparation and maturity necessary to succeed in a college environment and is based upon the college providing educational opportunities that are not available to students in a high school setting. In addition to meeting the first-time student admission requirements, students must also provide a letter of support from a high school principal or counselor.

Placement Assessment
Students must submit COMPASS test scores to assist with placement. A writing sample may be required from students to assist with placement into the appropriate writing course. ACT and SAT scores, the Montana University Writing Assessment (MUSWA), and transferable college credits will also be considered for math and English placement in accordance with Board of Regents policies. Placement testing results demonstrating a need for developmental coursework preparatory to program requirements may require lengthening a student's program of study. Placement test scores older than three years from the time of enrollment are not accepted. Placement testing results are not used to determine a student's admission status to UM-Helena except as necessary to determine ability to benefit. There is a $15 fee for COMPASS testing. Please call 800-241-4882, ext. 2766 or 406-444-2766 to schedule a COMPASS test session.

Residency Requirements
The Montana University System classifies applicants for admission and current students as either in-state or out-of-state for fee purposes. In general, a person must meet the requirements listed below to qualify for in-state status:

1. A person must be physically present in Montana 12 or more consecutive months without an absence in excess of a total of 30 days. One must demonstrate by appropriate actions during the twelve-month period the intent to make Montana one's permanent home. The required twelve-month period does not begin until specific actions are taken to change legal ties to Montana.

2. An individual must be at least 51% financially self-sufficient during the entire twelve-month period, and that person must not be claimed as an exemption under federal income tax regulations by someone filing an out-of-state federal tax return.

3. A person must have filed a Montana income tax return or have had Montana income tax withheld as required by state tax laws during the twelve-month period.

4. If a person drives a motor vehicle in Montana, he or she must obtain a Montana operator's license within the required legal time limit.

5. If a person owns or operates a motor vehicle in Montana, he or she must license the vehicle in Montana within the required legal time limit.

6. An individual must register to vote in Montana if he or she expects to exercise the right to vote.

7. If an individual chooses to attend any unit of the Montana University System during the twelve-month period of continuous physical presence, he or she must limit enrollment to a maximum of six credits per semester.

There are additional regulations concerning married persons and others with special circumstances. The basic rules for making the classification are found in the *Student Guide to Montana's Residency Policy*, which can be obtained from Admissions and New Student Services. Contact Admissions and New Student Services at 406-444-6823, or 800-241-4882, ext. 6823.

Western Undergraduate Exchange (WUE)
Students who are residents of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming may be eligible to participate in the Western Undergraduate Exchange (WUE) program. If selected, students pay reduced fees which are approximately one and one-half times current resident fees. WUE application materials will be sent to students from participating states. Contact Admissions and New Student Services with WUE-related questions. Admissions and New Student Services will award available WUE waivers on a first-come first-served basis to qualifying applicants. This award extends to the completion of a student's program or two years, whichever comes first, provided the student: 1) maintains a 2.5 cumulative grade point average; 2) does not change his or her program of study; 3) completes a minimum of 12 credits each semester of enrollment; and 4) does not change his or her state of legal residence. Students who change any of these conditions stated above may lose the WUE award. Appeals will be considered on a case by case basis and should be directed to the Assistant Dean of Student Services.

CLEP/AP/CBE Credit
Students may be awarded credits by examination through the following three options:

CLEP (College Level Examination Program)
Required scores on the respective CLEP exams will warrant full course credit in the equivalent UM-Helena course. Official results must be sent directly from the CLEP Testing Center to Admissions and New Student Services.

AP (Advanced Placement)
A score of 3, 4, or 5 on an AP exam for any equivalent UM-Helena course will warrant the award of full course credit. Official results must be sent directly from the AP testing center to Admissions and New Student Services.

Credit By Exam
Students may receive credit through nationally recognized professional licenses or certificates gained through examinations. Students must be able to provide the original certification document and examples of the curriculum for the certification. The student must verify the certification through his or her advisor and the Registrar's Office. If curriculum and certification can not be verified, the student may be able to show competencies through the challenge process. Students should refer to the Challenge Policy for more information.

A student will receive a grade of "EC" for any credits awarded through CLEP/AP/CBE. The total credits awarded for CLEP/AP/CBE for a student cannot exceed 25% of the credits required for his or her degree.

Transfer of Credit
Students who have previously attended a regionally accredited technical school, college, or university may be eligible to receive transfer credits. Upon receipt of an official transcript, UM-Helena will cooperate with students to make a fair decision with regard to their transfer credits. Students should be aware of the following transfer credit guidelines:

- Courses must be college level, defined as those courses that are applicable toward a certificate, an associate of applied science, associate of arts, associate of science, or baccalaureate degree at their respective institution. In all cases, such courses shall not include remedial or developmental courses.

- Montana Board of Regents Policy 301.5.2 guarantees that coursework completed in the last five years will be reviewed for possible use in a student's specific program of study, and coursework completed in the last fifteen years will be reviewed for possible use to satisfy general education requirements or as elective coursework. The guarantee provides only that courses falling into the relevant time periods will be analyzed for possible use in a student's degree program. It does not guarantee that the courses will be automatically accepted. Further, the policy allows individual Montana University System campuses discretion with regard to consideration of outdated coursework; however, since it is a discretionary decision, it cannot be challenged. The provisions of this policy also govern the evaluation of "outdated" classes that have been completed at UM-Helena. Students with outdated coursework are encouraged to contact Admissions and New Student Services or the appropriate academic department.

- Courses must have been completed with a letter grade of C- or better, *or* a Pass from a Pass/No Pass grading method *only* if the course would apply to the student's intended program of study. (Students should refer to the Academic Information section for limits on pass/no pass credits.)

- All programs of study require that one-half of the academic credit hours be earned at UM-Helena.

- Courses accepted for transfer credit will appear on a student's transcript. The credits will be calculated into the total credits earned, but grades earned for accepted transfer credits will not be included in the grade point average (GPA).

- Completion of a student's admission file by the priority deadline, which is one month prior to the first day of classes of the term for which a student has applied, will facilitate the processing of evaluation of transcripts for transfer credit.

Students will be notified in writing of the admission decision, the total number of credits accepted for transfer to UM-Helena, and the transferability of general education and/or elective credits within ten working days of the receipt of a completed transfer application on or before the priority deadline. Students seeking transfer of credits to satisfy degree and/or certificate requirements must have their official transcripts reviewed by faculty from the appropriate academic program. Students completing their transfer application before the priority deadline will be notified of the transferability of credits towards specific degree and/or certificate requirements no later than the last day to add classes for the intended term of entry.

Students who complete their transfer application after the priority deadline will receive a complete evaluation of their credits for transfer and be notified of the results prior to registration for the following academic term.

Students wishing to appeal decisions made regarding their transfer credits must submit a signed written request to the admissions office. Appeals with regard to the transferability of credits to satisfy degree and/or certificate requirements will be reviewed by the appropriate program faculty and the academic dean as needed. Appeals with regard to the transferability of general education and/or elective credits will also be reviewed by the appropriate faculty and the academic dean as needed. Students who have submitted their appeal in a timely manner will receive a response and final decision prior to registration for the following academic term.

Students wishing to transfer UM-Helena credits to another college or university should contact the admissions office at the receiving institution for information and policies concerning the evaluation and acceptance of transfer credits.

Students with questions or who need further information about transfer policies should contact Admissions and New Student Services at 406-444-6826 or 800-241-4882 x6826.

Montana University System Transfer Initiative
To help students with planning their transfer within the Montana University System, a transfer initiative was implemented in 2007. The initiative incorporates common course name and numbering to make the transition from institution to institution easier for students. For more information see the MUS Common Course Numbering Transfer Guide online at www.mus.edu. Students wishing to transfer UM-Helena credits to another college or university should contact the admissions office at the receiving institution for information and policies concerning the evaluation and acceptance of transfer credits.

Policy of Nondiscrimination
The University of Montana - Helena College of Technology is committed to providing all persons an equal opportunity for education, employment, and participation in activities as provided by law. It is unlawful:

1. To exclude, expel, limit, or otherwise discriminate against an individual seeking admission as a student or an individual enrolled as a student in the terms, conditions, or privileges of the institution because of race, creed, religion, sex, marital status, color, age, physical handicap, national origin, or mental handicap, unless based on reasonable grounds;

2. To make or use a written or oral inquiry or form of application for admission that elicits or attempts to elicit information or to make or keep a record concerning the race, color, sex, marital status, age, creed, religion, physical or mental handicap, or national origin of an applicant for admission;

3. To print, publish, or cause to be printed or published a catalog or other notice or advertisement indicating a limitation, specification, or discrimination based on the race, color, creed, religion, age, physical or mental handicap, sex, marital status, or national origin of an applicant for admission; or,

4. To announce or follow a policy of denial or limitation of educational opportunities of a group of its members through a quota or otherwise, because of race, color, sex, marital status, age, creed, religion, physical or mental handicap, or national origin.

In addition, this facility may not be used in the furtherance of any discriminatory practice, nor become a party to an agreement, arrangement, or plan which has the effect of sanctioning discriminatory practices. Racial or sexual harassment of students or faculty is unlawful.

This policy is in compliance with the requirements of Titles VI and VII of the Civil Rights Act of 1964 as amended, Title IX of the Educational Amendments of 1972, Titles VII and VIII of the Public Health Act, the Rehabilitation Act of 1973, the Americans with Disabilities Act, the Montana Human Rights Act and the Montana Governmental Code of Fair Practices. UM-Helena is an equal opportunity/affirmative action employer. The catalog, advertisements, and recruitment material will present programs and information in a way to discourage sexual stereotyping.

UM-Helena shall ensure that the non-discrimination policy, as it affects applicants and students, is published and disseminated. Students who have disabilities should contact Disability Services if accommodations are needed or if obstacles are encountered at UM-Helena. Students should follow the complaint procedure outlined in the UM-Helena Student Handbook if they believe this policy of nondiscrimination is not being followed.

2010 – 2011 FEE SCHEDULE

All fees are subject to Board of Regents approval

The Board of Regents had not reviewed this schedule prior to the print date of this catalog – fees are subject to change without notice. Final approved schedules will be available in the Business Services and online on the Commissioner of Higher Education's website. Tuition and fees are based on credit hours and are paid by the student each semester. Different fee schedules are applied for students with WUE residency. Contact Business Services for more information. The $30.00 registration fee is nonrefundable.

Crs	Reg Fee	Tuition	Bldg Maint Fee*	Comp Tech Fees**	Equip Fee	Aca Fac Fee	Stud Gov	Library Fee	SU Bldg Fee	Res Total	NR Bldg Fee	NR Inc Fee	Non Res Total
1	30.00	98.25	3.75	8.00	3.80	2.00	15.00	1.50	5.20	167.50	3.40	217.25	388.15
2	30.00	196.50	7.50	16.00	7.60	4.00	15.00	3.00	10.40	290.00	6.80	434.50	731.30
3	30.00	294.75	11.25	24.00	11.40	6.00	15.00	4.50	15.60	412.50	10.20	651.75	1074.45
4	30.00	393.00	15.00	32.00	15.20	8.00	15.00	6.00	20.80	535.00	13.60	869.00	1417.60
5	30.00	491.25	18.75	40.00	19.00	10.00	15.00	7.50	26.00	657.50	17.00	1086.25	1760.75
6	30.00	589.50	22.50	48.00	22.80	12.00	15.00	9.00	31.20	780.00	20.40	1303.50	2103.90
7	30.00	687.75	26.25	56.00	26.60	14.00	15.00	10.50	36.40	902.50	23.80	1520.75	2447.05
8	30.00	786.00	30.00	64.00	30.40	16.00	15.00	12.00	41.60	1025.00	27.20	1738.00	2790.50
9	30.00	884.25	33.75	72.00	34.20	18.00	15.00	13.50	46.80	1147.50	30.60	1955.25	3133.35
10	30.00	982.50	37.50	80.00	38.00	20.00	15.00	15.00	52.00	1270.00	34.00	2172.50	3476.50
11	30.00	1080.75	41.25	88.00	41.80	22.00	15.00	16.50	57.20	1392.50	37.40	2389.75	3819.65
12	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	62.40	1515.00	40.80	2607.00	4162.80
13	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	67.60	1520.20	40.80	2607.00	4168.00
14	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	72.80	1525.40	40.80	2607.00	4173.20
15	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	78.00	1530.60	40.80	2607.00	4178.40
16	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	83.20	1535.80	40.80	2607.00	4183.60
17	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	88.40	1541.00	40.80	2607.00	4188.80
18	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
19	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
20	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
21	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
22	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
23	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
24	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00
25	30.00	1179.00	45.00	96.00	45.60	24.00	15.00	18.00	93.60	1546.20	40.80	2607.00	4194.00

** Includes Access Fee of $1.25 and Building Fee of $2.50 per credit*
*** Includes Computer Fee of $3.85 and Technology Fee of $4.15 per credit*

Students will be charged a $25 per credit fee associated with courses provided by online delivery.

Students enrolled in four or more credits each semester are required to have and maintain medical insurance while attending UM-Helena. Cost of this insurance is $796 per semester.

All new students are charged a $12.50 Identification Card fee, and all new degree-seeking students are charged a $15.00 Orientation fee in addition to the above schedule.

Additional fees may be charged for students registered in some programs and/or courses. See Business Services for information.

Expenses

Books and Supplies
Books and supplies are purchased on a semester basis. Students should budget approximately $200 - $750 per semester depending on program of study. Textbooks and supplies are available at the bookstore located on the Donaldson Campus at 1115 North Roberts Street. Tools are required by each student entering Automotive, Aviation Maintenance, Carpentry and Construction, Machine Tool, Diesel, and Welding Technology programs. Students should refer to tool section of catalog.

Deferred Fee Payment Plan
A deferred fee payment plan is authorized providing that 1) at least one-third of total fees are paid at the time the deferred fee payment plan is initiated, 2) an additional one-third is paid within the first 30 days of the semester and 3) the full amount is paid within 60 days of the beginning of the semester. Tuition and mandatory fees less any financial aid are eligible for deferral. Execution of a promissory note with the terms and conditions of the deferment will be required. This plan is not available for the summer semester or to any person with an outstanding debt to the College. The Deferred Payment Agreement must be renewed in Business Services at the beginning of each semester.

Students participating in this plan will be assessed an administrative charge of $30 each semester. Failure to make scheduled payments will result in a student being ineligible for future deferment and may result in cancellation of a student's enrollment with no refund of payments already collected. A $15 fee will be assessed each time a scheduled payment is late.

Non-Payment
Any person who owes the College any fees, fines, or other charges will not be permitted to receive a transcript, diploma, certificate, or academic record; to register or attend classes; or to access any College facilities or services until the debt has been paid or satisfactorily adjusted through Business Services. Interest may be charged at the rate of 10% on the balance due from the day after the due date until the full amount has been paid, and any attorney's fees or other costs or charges necessary for the collection of the amount owed may be added to the balance due.

Payment of Tuition and Fees
After registration, all students receive a schedule bill. Students are encouraged to review the corresponding Class Schedule for each semester's tuition and fee payment policies and deadlines. Dates and policies are subject to change each semester.

If the bill indicates an amount due, a student must enclose a check or provide credit card information (VISA or MasterCard accepted), including the verification number from the signature line on the back of the card.

Students must finalize their payment by signing and returning their bill by the appropriate date, even if your bill reflects a balance of zero or you have an approved third party payment.

All students must sign and return a schedule bill.

Tuition Refunds
Tuition refunds are made through Business Services subsequent to a student's withdrawal from a course(s). Refunds of fees are authorized according to the following procedures only if the student officially withdraws from the College and/or drops courses in the required manner:

1. The $30 registration fee and the $30 application fee are non-refundable.
2. Class days are determined by the College calendar of instructional days, not by the student's class schedule.
3. Refunds for withdrawal or dropping a class for courses for summer semester are computed on a pro-rated basis.

Withdrawal from school applies only to students dropping all courses: (Registration and Application Fees are non refundable.)

- 100% of all remaining tuition and fees are refunded before the first class day of the semester or half semester in which the course begins.
- 90% of all remaining fees will be refunded to the end of the 5th day of the semester or half semester in which the course begins.
- 75% of all remaining fees will be refunded to the end of the 10th instructional day of the semester or half semester in which the course begins.
- 50% of all remaining fees will be refunded to the end of the 15th instructional day of the semester or half semester in which the course begins.
- Beginning the 16th instructional day of the semester or half semester in which the course begins, no refunds will be made.

Course drop/adds apply to students making course schedule changes but remaining in attendance at the College:

1. An individual course dropped will be refunded at 100% for the first 15 days of the semester or half semester in which the course begins.
2. Beginning the 16th instructional day of the semester or half semester in which the course begins, no refunds will be made.
3. A processing fee of $10 will be assessed to drop a course after the 15th day of the course or to add a course after the 5th day of the course.

Acceptable Use of Electronic Resources

As an institution of higher education, UM-Helena endeavors to develop resources and provide services that meet its students' educational needs. It is within this context that the College provides students with access to computers, along with access to a wide variety of online material.

Students may find some of the material available online to be inaccurate, incomplete, or outdated; they may find other material sexually explicit or offensive. The University of Montana - Helena College of Technology does not guide, monitor, or censor students' computer research. The College does, however, restrict the use of computers, computer files, or network resources in the following ways:

1. Students are prohibited from violating copyright law and from engaging in theft or file theft with regard to College computers.
2. Students may not use College computers to violate others' privacy, to harass or intimidate others, to send abusive or patently offensive and unwanted material to others, or to interfere with the work of others. As students distribute or make material available to others, they need to be aware of people's sensitivities toward information or graphics that may seem offensive.
3. Students may not deliberately crash, or otherwise impair workstations or computer systems at the College, modify files without authorization, damage files, alter data, introduce viruses, penetrate or harm operating systems, resell bandwidth, or engage in any other illegal acts promulgated from or targeting the College's computers.
4. Students are prohibited from concealing or misrepresenting their names or affiliations to mask irresponsible, offensive, or illegal behavior.
5. Students are prohibited from sharing their UM-Helena network username and password with other students or family members.

Misuse of computer or network resources may constitute trespass, disruptive behavior, or sexual harassment and will not be tolerated by UM-Helena. Failure to comply with these guidelines may result in loss of electronic access, expulsion from a course or the College, and/or legal prosecution.

Associated Students of UM-Helena (ASUM-Helena)

UM-Helena has an active, dynamic, and involved student organization called the Associated Students of The University of Montana - Helena College of Technology (ASUM-Helena). The goals of ASUM-Helena are to help provide the students with a quality educational environment, provide a forum for student expression, promote the general welfare of the college, and establish student activities. ASUM-Helena sponsors social activities throughout the year, including barbecues, student contests and competitions, holiday parties, and awareness/fundraising events on behalf of various community service organizations. The organization also uses its funds for the promotion of future projects, clubs, and scholarships.

ASUM-Helena is comprised of student representatives from each academic program and all officially recognized student organizations. Representatives are elected by student vote in the fall. Student representatives serve as the main communication link between ASUM-Helena and the student body. Representatives bring student suggestions to the organization and keep students informed about student government, school activities, and important campus issues.

Family Education Rights and Privacy Act (FERPA)

The College interprets and develops procedures for implementation of the Family Educational Rights and Privacy Act (FERPA) of 1974 and Montana Statutes specifically as they apply to the University of Montana–Helena for affording students certain rights with respect to their education records.

Definition of a Student Education Record

Education records do not include an instructor's or staff's personal notes on a student which are in the sole possession of the maker, employment records (except work-study records), records created or maintained by a physician, psychiatrist, psychologist, or other recognized professionals, library records, and alumni records.

Rights Afforded to Students under FERPA

Students have specific rights concerning their education record:

1. The right to inspect and review their education record.
2. The right to request amendment of the student's education records to ensure they are not inaccurate, misleading, or in violation of the student's privacy or other rights.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosures without consent.
4. The right to file complaints with the Family Policy Compliance Office concerning alleged failures of UM-Helena to comply with the requirements of FERPA. Written complaints should be directed to:

   The Family Policy Compliance Office
   U.S. Department of Education
   400 Maryland Ave, SW
   Washington, D.C. 20202-5920
   Email: ferpa@ed.gov

Disclosures Made without Student's Consent

UM-Helena may disclose student information under the following circumstances in accordance with FERPA:

- To employees with a legitimate educational interest. Legitimate educational interest is defined as needing the records to carry out employee responsibilities.
- To authorized representatives of the United States Comptroller General, Attorney General, Secretary of Education, or state and local educational authorities.

- In connection with the application or receipt of financial aid when the information is necessary to determine eligibility, amount of the aid, determine the conditions of the aid, and enforce the conditions of the aid.
- To another institution where a student seeks to enroll or is enrolled.
- To state and local juvenile justice systems or their officials.
- To organizations conducting educational studies.
- To contractors, consultants, or volunteers providing the institution services.
- To accrediting organizations carrying out their accrediting functions.
- In compliance with a judicial order or lawfully issued subpoena.
- To appropriate parties in an emergency if the information will help assist in resolving the emergency.
- To victims of an alleged perpetrator of a crime, disciplinary records maintained by colleges concerning the alleged crime.
- In connection with a disciplinary proceeding at the college.
- To parents of a student under 21 in connection with alcohol or controlled substances violations at the college.
- If designated as directory information (and the student has not opted out).

Directory Information

The University of Montana-Helena College of Technology has defined the following as directory information and may release it to the public without notifying the student:

- Name
- Address
- Telephone Number
- Date and place of birth
- Major Field of Study
- Enrollment Status (full-time, part-time)
- Participation in officially recognized activities
- Dates of Attendance
- Degrees and academic awards (e.g. dean's list, honor roll, graduation honors)
- Most recent educational agency/institution attended
- College assigned student email address
- Photographic, video, or electronic images

Students may request that directory information not be released without their consent. Requests for non-disclosure need to be made through the Registrar's Office. They are in effect the date the student makes the request and will only be revoked if the student requests it in writing. Students should be aware that if they choose this option, UM-Helena will not provide enrollment or graduation verifications without the student's written consent.

Disclosure to Parents

In accordance with Montana Statute §20-25-515, MCA UM-Helena will not give out information to parents unless the student has provided written permission. If students would like to provide access to their parents, they need to sign a Release of Information Form at the Registrar's Office.

Disclosure of Records to Students

UM-Helena requires students to present their picture identification for all transactions. Any student wishing to receive information over the phone will need to fill out a Release of Information Form at the Registrar's Office. Students will be required to know a password and their student identification number to receive information over the phone.

Disclosure to Potential Employers

UM-Helena discloses graduation dates and dates of attendance as part of its directory information. Students interested in a specific job reference from a faculty member, including performance in courses, must complete the Student Release for Job Referral/Reference form with the appropriate faculty member.

Access to Records

Students may access their records by providing a written request to the office where the records are held. The office will make arrangements to provide access to the records within 45 days of the request. Students may not have access to the following records:

- Financial information submitted by parents.
- Confidential letters and statements of recommendation, which the student has waived the right to review.
- Education Records containing information about another student, however the student will have access to the parts of the record that only concern the student requesting the information.

Fees for Copies of Records

There is a $3 fee for official academic transcripts. A copy of all other records are provided free of charge.

Right of UM-Helena to Refuse Copies of Records

UM-Helena reserves the right to refuse students copies of their student records, including their transcript, if the student has an outstanding financial obligation to the school or an unresolved disciplinary action against the student.

Compliance

Students should address questions, concerns, or problems concerning this policy to the Registrar's Office, Donaldson Campus, 1115 North Roberts, Helena, MT 59601.

Food Service

The UM-Helena food service is located in the Student Center at the Donaldson Campus and provides breakfast and lunch menus, beverages and snacks, Monday through Friday when class is in session during the academic year. Daily specials and a limited selection of vegetarian options are available. Menus and daily specials can be found on the UM-Helena website as in the UM-Helena News, the campus' weekly electronic bulletin. The food service accepts cash, credit cards and checks made payable to UM-Helena for the amount of purchase only. Vending machines are located in the Student Center at the Donaldson Campus and in the Student Lounge and in the hallway adjacent to Room 108 at the Airport Campus.

Health Insurance

Students enrolled in four or more credits each semester are required to have and maintain medical insurance while attending UM-Helena. The college makes coverage available for students through the Montana University System Student Insurance Plan (MUSSIP) provided by Blue Cross Blue Shield of Montana (BCBSMT). The insurance plan is available to all students taking a minimum of four credits. The insurance plan provides major medical and prescription coverage including but not limited to hospitalizations, outpatient surgery, and emergency services. The plan does not cover vision, dental, routine exams or contraceptive management. High school students participating in dual enrollment programs are not eligible for the insurance plan.

The student insurance plan is elected or waived during registration for the fall and spring semesters and students must purchase or refuse the coverage each semester by the 15th day of instruction. Students having major medical insurance coverage may waive the student insurance plan. Coverage begins on the first day of the semester provided that payment is made as required within the enrollment period. Students who elect coverage and then withdraw for nonmedical reasons or drop below 4 credits before the 15th day of instruction will receive a full refund of the premium cost for that semester. There are no refunds after the 15th day of instruction. Students who withdraw or drop below 4 credits after the 15th day of instruction will be fully charged for and covered by the student insurance plan for the duration of the policy period applicable to each semester. Students will not be allowed to enroll in the student insurance plan after the 15th class day unless proof is furnished that the student was dropped from their other insurance coverage during the 30 days immediately preceding the date of the request to join the student insurance plan. In such cases, the premium will not be prorated, and the cost will be the same as the beginning of the semester. For more information visit www.umhelena.edu, consult the UM-Helena Student Handbook or contact the Assistant Dean of Student Services at 406-444-6880.

Housing Resources

UM-Helena is a non-residential campus. Apartment rentals in the Helena area average $400 - $800 per one/two bedroom apartment. The College's housing brochure offers some tips on finding housing as well as helpful contact information for newspapers, apartment finders, housing complexes, and child care. A Housing Bulletin Board is also maintained in Enrollment Services at the Donaldson Campus. Students are encouraged to consult the classified advertising section of the Helena Independent Record which can be accessed online at www.helenair.com.

Library

The library, located on the Donaldson Campus, provides resources and access to information in support of the College's programs. A variety of media formats and access is offered to complement instruction and encourage learning in all program areas, as well as to provide reading and listening materials for enjoyment and lifelong learning.

The library houses over 9,000 titles, two daily newspapers and many magazines reflecting the diversity of programs at the College. The virtual library website (http://umhelena.edu/library) provides online access to articles from additional periodicals (magazines, journals, newspapers), reference sources, and audiobooks. All electronic resources are available from home or other off-campus locations.

In addition to the collection, the library provides computers/printers with Internet access, group and quiet study areas, a photocopier, and a reference section. Professional library staff are available for individual assistance or group instruction.

The library has reciprocal borrowing agreements with local libraries and access to libraries throughout Montana and other states via the Montana Library Network and WorldCat, a nationwide database of library collections. Free interlibrary loan is available on request.

Montana Campus Compact

UM-Helena is a member in good standing of The Montana Campus Compact. Through this affiliation, UM-Helena has shown its commitment to civic engagement by students, faculty, and staff.

The Montana Campus Compact is a coalition of college and university presidents, chancellors, and deans committed to fostering the values and skills of citizenship in Montana students through active involvement in civic engagement activities. To meet this goal, The Montana Campus Compact works to:

- Award student scholarships, faculty grants, and resources to member campuses to support civic engagement activities;
- Organize conferences, forums, and workshops to develop civic engagement initiatives;
- Foster partnerships between campus, business, community, and government leaders;

- Provide timely research and service related to its member campuses; and,
- Assist in state legislation promoting public and community service.

Students interested in finding out more about Campus Compact opportunities at UM-Helena should contact Alan Thompson, Career Services Coordinator, at 406-444-0835 or 800-241-4882 x0835.

Parking
Permits are required in all UM-Helena parking areas. Permits are obtained by application from the Cashier's Office at the Donaldson Campus for a $10 fee and are valid for each academic year. Temporary permits good for one day are also available from the Cashier's Office. Parking permits must be displayed so that they are clearly visible from the outside of the vehicle. Citations for unpermitted vehicles are $10, and in the event a vehicle is towed the owner will be responsible for a minimum $75 impoundment fee. Violation of handicapped parking laws will be applied to the fullest extent of the law.

Parts and Supplies (Airport Campus)
Mechanical parts and technical supplies necessary for trades programs are available from the parts department located in Room 105 at the Airport Campus. All parts and materials for assigned projects must be ordered through the parts department. Invoices will be posted to the work order at a 20% mark-up above the cost to the college. Personal work done by students must also have assigned work orders; however the college is not liable for any personal work performed by students.

Personal Property Responsibility
Each student is responsible for his or her own personal property brought on campus, and students are encouraged to provide adequate security for their possessions. Any theft or damage to personal property should be reported to campus security personnel.

Student Handbook
The UM-Helena Student Handbook is intended to provide students with basic information about services as well as policies and procedures related to student rights, responsibilities, and conduct as members of the campus community. The handbook is published each academic year and includes a weekly calendar planner. Student handbooks can be obtained at orientation programs or from Enrollment Services, the Access Center, or the college bookstore, and is also available online at the college website, www.umhelena.edu.

Student Information Change
Students may change their address and phone number through the online student information system "Course Choice" on the UM-Helena College of Technology website. Students may also make the change by completing "Name and Address Form" at the Registrar's Office.

Student Name Change
A student who needs to update his or her name needs to complete the "Name and Address Form" at the Registrar's Office. Valid proof of the name change will need to be presented at the time the form is completed. Examples of proof include marriage certificate or an updated Social Security Card.

Student Records and Transcripts
Student records are only released with a written request from the student. The request must include the student's signature, dates of attendance, student ID or SSN, and information on where the transcript should be sent. There is a $3 fee for official transcripts. Requests for transcripts may be sent to UM-Helena College of Technology with a check, money order, or credit card, to the following address:

Registrar's Office
1115 North Roberts
Helena, MT 59601

Transcripts may also be ordered online through the UM-Helena website at www.umhelena.edu.

Students attending UM-Helena College of Technology after 2000 can access their unofficial transcripts through our website by clicking on "My UMH" and logging into a secure area.

Transcripts/Diplomas are withheld if a student owes a debt to the College.

Student Code Of Conduct
The Student Conduct Code embodies the ideals of academic integrity, honesty, and responsible citizenship. It governs all academic work and student behavior at UM-Helena College of Technology. The principles and policies that make up the Code set forth the standards of acceptable student conduct, disciplinary sanctions, and procedures to be followed in adjudicating charges of both academic and non-academic misconduct. For information regarding student rights and responsibilities, conduct code, and due process, please refer to the current UM-Helena Student handbook or contact the Assistant Dean of Student Services at 406-444-6880.

Student ACCESS Center Services

Advising and Academic Assistance

The ACCESS Center provides academic and personal support to enable students to succeed in college. The center provides services including academic placement testing, advising, and counseling referrals. Academic advising available in the center includes college transition, course choice options, program choice options, transfer information, career planning, and academic success strategies. All new students are advised through the First Semester Advising system, which provides in-depth academic counseling. The Access Center also houses the Learning Center where tutors are available to students. Students do not need appointments to work with tutors. For appointments for any other services offered in the ACCESS Center, students can call 406-444-2766. Walk-ins are welcome.

Career Services

The Career Services Office helps students gain skills and information to secure employment. The office provides workshops and individual counseling assisting students with exploring career choices, resume writing, and interviewing. Placement after graduation is not guaranteed and is influenced by the economy, occupational demand, student aptitudes, and academic records. Students interested in obtaining assistance with employment should contact the Career Services Office at 406-444-0835. More information can be found on the Career Services page of the College's website: http://umhelena.edu/current/career/default.aspx.

Counseling

Short-term personal support is available to students who are experiencing difficulties that may be interfering with their educational progress. The emphasis is on clarifying choices, handling difficult situations, and accessing community resources. Appointments with a licensed counselor can be made through the ACCESS Center.

Disability Services

Services for students with disabilities are provided at UM-Helena under the guidelines of Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Access to the College's programs and facilities is provided for all qualified students, and discrimination based on disability against any student is specifically prohibited under these laws. Services are housed in the ACCESS Center on the Donaldson Campus, and students are encouraged to contact the Director of Disability Services as early as possible to plan for possible accommodations. It is the student's choice to disclose any disability as well as his or her responsibility to request accommodations. Certain persons with disabilities may qualify for educational assistance through Montana Vocational Rehabilitation and should contact that office at 406-444-1710 for more information. All documentation related to the UM-Helena student's disability is kept in separate and confidential files in the office of Disability Services. More information can be found on the Disability Services page of the College's website: http://umhelena.edu/current/disability/default.aspx.

Learning Center

The Learning Center supports all academic programs at the College. Students will find a computer lab for their use that includes various software applications and printing capability, peer and faculty tutors who offer free tutoring in most academic areas of the College, and specialized testing services for students with disabilities. All instruction is designed to meet the specific learning needs of each student. Study skills and other student-based workshops can be offered through the Learning Center for faculty upon request. The Learning Center is housed in the ACCESS Center and is staffed by tutors in the fall and spring semesters as well as during summer sessions subject to availability and funding.

Academic Information

Academic Integrity
The University of Montana - Helena College of Technology expects its students to adhere to a high standard of academic integrity. It is a violation of academic integrity to present the ideas, designs, or works of another person as one's own efforts or to permit another person to do so. The following guidelines are intended to clarify these issues for students, faculty, and administration.

The College will regard the following acts as violations of academic integrity constituting academic dishonesty:

Plagiarism - A student will be considered in violation of academic integrity if he or she submits an assignment, whether written, oral, graphic, or computer-generated, which consists wholly or partially of the words, work, or ideas of another individual without giving the original author proper credit.

Copying - A student will be considered in violation of academic integrity if he or she uses crib notes, cheat sheets, books, or any other material or electronic device as aids in an examination or any other graded exercise, unless the instructor of the class has given permission to use such materials**.** Collaboration with another student on an examination or other graded exercise, unless the instructor has given permission, also constitutes copying.

Contributing to Academic Dishonesty - A student will be considered in violation of academic integrity if he or she willfully assists another student in an act of academic dishonesty.

Academic dishonesty will not be tolerated. Academic sanctions for a first violation are at the discretion of the instructor and range from a failing grade for the particular instance to a failing grade in the course in which academic dishonesty occurs. When a faculty member assigns a failing course grade on the basis of academic dishonesty, he or she shall assign a grade of "FX." The student may petition the Registrar's Office by letter to remove only the "X" portion of the grade after successfully completing an Ethics course with a grade of "B" or better from any accredited college within three academic years of the original failure. Retaking the failed course does not remove the "F" or "FX" designation from the transcript. A student may not represent the College in any official manner nor hold a student government office with an "FX" grade.

Faculty must report all violations of academic integrity to the student involved, the appropriate Department Chair(s), and to the Associate Dean/Academic Affairs; in cases of repeated offenses, the Associate Dean/Academic Affairs will recommend disciplinary sanctions that may result in expulsion from the College. Students retain their right to due process and may refer to the Student Handbook or the Assistant Dean of Student Services regarding any academic or disciplinary sanctions.

Associate of Applied Science Degree
The University of Montana - Helena College of Technology offers the Associate of Applied Science (A.A.S.) degree in Accounting Technology, Automotive Technology, Aviation Maintenance Technology, Computer Technology, Construction Technology, Diesel Technology, Electronics Technology, Fire and Rescue, Metals Technology, Nursing, Office Technology, Water Resources, and Welding Technology. The A.A.S. degree is awarded to any student satisfactorily completing a program as established by the College. The A.A.S. degree is not designed for transfer; however, graduates may be accepted into baccalaureate programs offered at several four-year institutions. A passing grade of "C-" or better in required courses and a 2.0 (2.5 for Nursing) minimum cumulative grade point average (GPA) are required for a degree to be awarded. Courses numbered below 100 are not applied toward program completion requirements. Students seeking more than one program must inform the Registrar's Office and/or the Financial Aid Office. Students will be required to use the catalog in use at the time the program is declared unless a Request to Graduate from Alternate Catalog form is completed and approved. Students entering after a one-semester time lapse (excluding summer) or longer will re-enroll under the current catalog.

Associate of Arts and Associate of Science Degrees
The general Associate of Arts (A.A.) and the Associate of Science (A.S.) degrees are general transfer degrees, indicating the student has completed a course of study equivalent to the first two years toward a bachelor's degree. This degree does not officially include a major or minor course of study; however, the student must select one of several options. The student must meet the requirements as outlined under the Program Offerings section of this catalog to receive the A.A. or A.S. degree. The student must earn a minimum grade of "C-" in each course and maintain a 2.25 (2.5 for Nursing) cumulative GPA in the degree program for a degree to be awarded. Courses numbered below 100 are not applied toward program completion requirements. Students will be required to use the catalog in use at the time the program is declared unless a Request to Graduate from Alternate Catalog form is completed and approved. Students entering after a one-semester time lapse (excluding summer) or longer will re-enroll under the current catalog.

The UM-Helena general education core transfers as a unit and satisfies the lower division component of the general education requirements at all institutions of the Montana University System.

The Registered Nursing Program is a two-semester associate degree program that prepares graduates to function as members and leaders of the health care teams in various health care environments. A current, unencumbered LPN license is required. Please see the Nursing Department Program page for specific requirements.

Certificate of Applied Science
The Certificate of Applied Science is awarded to any student satisfactorily completing a program as established by the College. Passing grades in required courses (a "C-" or better) and a 2.0 cumulative grade point average (GPA) are necessary before a certificate will be awarded. Courses numbered below 100 are not applied toward program completion requirements. Students seeking certification in more than one program must inform and receive approval from the Registrar's Office. Students will be required to use the catalog in use at the time the program is declared unless a Request to Graduate from Alternate Catalog form is completed and approved. Students entering after a one-semester time lapse (excluding summer) or longer will re-enroll under the current catalog.

Attendance
Since good attendance promotes good scholarship, students are expected to attend all class meetings and complete all assignments for courses in which they are enrolled. The attendance policy of the College is as follows:

1. Guidelines used to determine the extent that attendance will affect grades are implemented at the instructor's discretion and will be stated at the beginning of each course orally and in writing.
2. Excessive absenteeism and/or tardiness may adversely affect a student's grade.

Instructors may establish attendance policies to conform to the educational goals and requirements of their courses. Such policies will ordinarily be set out in the course syllabus which will describe the procedures for giving timely notice of absences, explain how work missed may be made up, and stipulate any penalty to be assessed for absences.

Audit
With the consent of the instructor, a student may enroll in a course for no-credit (audit). Auditing students pay the same fee as students enrolled for credit. Auditors are not expected to complete course work as students who are enrolled for credit, nor will they take tests. Audit enrollments will not count toward financial aid or degree completion requirements. Students must inform the Registrar's Office within the first 15 instructional days of the course.

Course Substitutions
Students are required to complete all program courses in order to be awarded their degree or certificate. UM-Helena does allow course substitutions when there is a compelling reason to do so. A course substitution must uphold the integrity of the degree. For more information on the procedure for substituting a course, students should see the Registrar's Office or their faculty advisor.

Challenging a Course for Credit
A student who has completed course work through experiential learning or non-accredited learning experiences has the option of earning college credit by challenging designated courses. The challenge must be completed within the first 10 instructional days if the course can be challenged. It is important to note that not all courses can be challenged. The instructor will determine if the student's previous course work and/or experience supports the challenge request. The request must be approved by the Department Chair or a full-time faculty member and then validated through the Registrar's Office. The exam must be completed with a grade of "B" or better in order to receive credits for the course. A grade of "CH" will be placed on the student's transcripts with successful completion of the examination. The grade received for the challenge does not affect the student's GPA. A student receiving a grade of "F," "NP," or "W" in a class at the College may not subsequently challenge the course. A student must register and pay tuition for any course being challenged. A student can not challenge more than 25% of the credits required for his or her degree.

Dean's List
To qualify for the Dean's List, the student must earn a semester GPA of 3.5 or higher while earning 12 or more semester credits. (P/NP class credits are not included as earned credits for purposes of determining Dean's List standing.) Grades of "D," "F," or "NP" are not allowed. The student and his or her hometown newspaper will receive written notification of the award, and it will appear on his or her transcript for that term.

Drop/Add Classes
Students registered for fall or spring semesters and attending classes may drop or add classes during the first 15 instructional days of the semester. The student must initiate the drop/add process which can be done online for the first five days for adding classes and for the first 15 days for dropping classes. After the online drop/add window has passed, a drop/add form must be completed and returned to the cashier along with a $10 processing fee. If a student drops a class AFTER the first 15 days and prior to three weeks before the end of the course, a "W" (withdraw) will be given. Students cannot drop a class during the last three weeks of the semester and will receive a letter grade from the instructor based on coursework completed. Drop/adds are not used to withdraw completely from the College. Drop/adds for summer semester courses are computed on the same ratio stated above for hours attended to total course hours; the course schedule outlines summer deadlines.

Evening/Saturday Classes

A variety of late afternoon and evening classes are offered based upon the needs of the community and UM-Helena students. These classes are available after 5 p.m., Monday through Thursday, and 9 a.m. to 4 p.m. on Saturdays. Applicants interested in classes may contact Admissions and New Student Services.

General Education

Basic academic skills, interpersonal skills, technological skills, and critical thinking skills are vitally important to the success of the individual worker and the workplace that he or she enters.

To receive a Certificate of Applied Science in a technical program, students need to demonstrate competence in basic skills in mathematics, communication, and computer technology related to effective performance on the job. They must also demonstrate an understanding of the human relationships and attitudes that affect the quality of life and productivity in the workplace. To receive an Associate of Applied Science degree, students must go beyond competence in basic skills and knowledge. A.A.S.-level general education courses focus on critically selecting, applying, adapting, and/or synthesizing a range of skills and perspectives in response to the varied expectations and changing conditions of the modern workplace.

UM-Helena also offers a sizable component of general education coursework, which emphasizes critical and creative thinking and expression; scientific inquiry; mathematical analysis; historical, sociological, psychological, and artistic perspectives. Through studies in the major areas of knowledge, general education provides students with the broad educational background that is excellent preparation for careers, further education, citizenship, and lifelong learning in a rapidly changing world.

General education coursework is required for both the Associate of Arts and the Associate of Science degrees, but the College encourages all students to challenge their abilities and broaden their perspectives by taking general education courses to meet the related instruction and elective requirements of their technical programs.

Grades and Grade Point Averages (GPA)

Student evaluation is reported at the end of each semester. Students may access their final grades online through "My UMH." A student's level of academic performance is determined through the calculation of a grade point average (GPA). The grade-point average is determined by dividing total grade points earned by the number of credits carried. Students may access their grades and GPA through "My UMH" on the UM-Helena website. The meaning of each grade and its value in grade points is as follows:

Grade	Quality of Work	Grade Points
A	Excellent	4.00
A-		3.67
B+		3.33
B	Above Average	3.00
B-		2.67
C+		2.33
C	Average	2.00*
C-		1.67*
D+		1.33
D	Passing	1.00
D-		0.67
F	Failing	0
FX	Failing (Academic Dishonesty)	0
AUD	Audit	N/A
EC	Credit by Exam (AP/CLEP)	N/A
I	Incomplete	N/A
MG	Missing Grade	N/A
NP	No Pass	N/A
CH	Challenge/Pass	N/A
P	Pass	N/A
TP	Tech Prep	N/A
TR	Transfer Course	N/A
R	Retake	N/A
SL	Service Learning	N/A
W	Withdraw	N/A

The use of the + and - grading system is up to the discretion of the individual instructor.

***Students must:**

(1) earn a minimum grade of "C-" in each class used to meet the prerequisites or requirements for a major, minor, option or certificate ***and***

(2) maintain either:

a) a minimum 2.00 cumulative GPA (for students seeking Associate of Applied Science Degrees) ***or***

b) a minimum 2.25 GPA (for students seeking Associates of Arts or Associate of Science Degrees) ***or***

c) a minimum 2.5 GPA (for students seeking an Associate of Applied Science or an Associate of Science in Nursing)

Graduation

In accordance with Montana Board of Regents Policy 301.5.3 § 1A ¶ 3, students must earn a "C-" or higher in all classes that are used to satisfy the prerequisites or requirements for a major, minor, option, or certificate. Although credit is earned for a "D" grade, that course will not count towards graduation.

In the semester before a student plans to graduate, a student must meet with his or her advisor and submit an Application for Certificate or Degree to the Registrar's Office. The Registrar has final authority on the approval of graduation applications.

Students neglecting to submit an Application for Certificate or Degree will not be awarded a certificate or degree. Any student applying for a certificate or degree must pay a $25 fee. If applying for more than one certificate or degree, a fee is required for each application. Certificates and diplomas will be withheld if a student owes a debt to the College.

Students will be awarded a certificate or degree upon satisfactory completion of the program requirements. Half of the coursework required for the degree must be completed at UM-Helena College of Technology.

A graduation ceremony is held every May. Fall and spring graduates of the corresponding year are invited to attend the ceremony. Summer graduates, with no more than six credits to complete, may attend the corresponding spring graduation. Caps, gowns, and announcements are available through the Bookstore.

Catalog Governing Graduation

A student's governing catalog is the UM-Helena College of Technology catalog in effect at the time of initial enrollment as a degree seeking student as long as the student has been continually enrolled. A student may also elect to graduate from any subsequent catalog. If a student is absent for one or more semesters, the catalog in effect at the time of readmission governs the student's graduation requirements. Students must complete all program requirements within six years of enrolling. Students who have not completed requirements in six years will be advised into the catalog in use at the time of graduation.

In case of changes in the program UM-Helena reserves the right to determine appropriate substitutions. If a program is eliminated, UM-Helena will determine an appropriate phase out process for current students.

Graduation Honors

Academic honors awards are acknowledged for A.A., A.S., and A.A.S. degrees at spring graduation. Calculation for these honors is the cumulative GPA at the end of the semester prior to graduation. Students with a cumulative GPA of 3.5 - 3.99 at the end of the semester prior to graduation receive the Honors Academic Award. Students with a cumulative GPA of 4.0 at the end of the semester prior to graduation receive the Highest Honors Academic Award.

Incomplete

An incomplete ("I") grade may be given with the approval of the Registrar's Office when, in the opinion of the instructor, there is a reasonable probability that students can complete the course without retaking it and without instructor participation. The incomplete grade is not an option to be exercised at the discretion of the student and is given only in cases of extreme personal hardship or unusual academic situations. Eligibility for an incomplete is determined within the following guidelines:

1. An incomplete may be assigned to a student when he or she has been in attendance and doing passing work up to three weeks before the end of the course, and for reasons beyond his or her control, he or she has been unable to complete the requirements on time. Negligence, indifference, or excessive absences are not acceptable reasons.
2. The instructor will set the conditions for completion of the coursework. When these conditions have been met, the instructor will assign a grade based upon an evaluation of the total work done by the student in the course.
3. An incomplete ("I") which is not made up during the next regularly scheduled semester will automatically convert to a grade of "F."

Outdated Coursework

In accordance with Board of Regents policy 301.5.2, UM-Helena College of Technology uses the following guidelines for evaluating previous coursework taken at UM-Helena College of Technology:

- Courses specific to a program of study are guaranteed for evaluation within five years.
- Courses used for general education requirements are guaranteed for evaluation within 15 years.
- Courses used for elective credits are guaranteed for evaluation within 15 years.

Coursework that falls outside of the stated periods is not guaranteed for evaluation/graduation. It is the discretion of the individual program to review coursework older than the above guidelines. Students who have outdated coursework are encouraged to speak with their faculty advisor.

Pass/No Pass

Student Option: Students who might venture into courses where they may otherwise hesitate because of uncertainty regarding their aptitude or preparation may enroll in certain courses on a pass/no pass basis. An instructor may indicate that a particular course is not available under the pass/no pass option.

No more than six pass/no pass credits may be counted toward program completion. The pass/no pass option does not extend to courses required by the student's program or program option, except at the discretion of the departments concerned. Courses numbered below 100 are not calculated in the pass/no pass limit or toward program completion.

The grades of pass/no pass are not formally defined in terms of their relationship to the traditional grades of A, B, C, D, F; a "P" is given for work considered to be passing and therefore deserving credit, and an "NP" for work not passed. "P" and "NP" grades do not affect grade point average.

Election of the pass/no pass option must be indicated at registration time on the registration form. After registration, but prior to the end of the 15th day of instruction, a student may change the grading option from pass/no pass to traditional (A - F) grading, or vice versa, by submitting a drop/add form.

The College cautions students that many schools and some employers do not recognize non-traditional grades (i.e., those other than A, B, C, D, F) or may discriminate against students who use the pass/no pass option.

Faculty Option: A department may elect to offer an entire class on a pass/no pass basis. This method of grading is used in courses where more precise grading is inappropriate.

Repeating a Course

Students may retake a course to improve their grade by registering and paying tuition and fees for the course. They must submit a Request to Change Grade for Repeated Courses to the Registrar's Office upon completion of the course. The letter grade for the repeated course will be posted to the student's transcript and the previous grade will be replaced with an "R" to indicate that the course was retaken. A grade of "R" is not calculated into GPA.

A student's academic standing (Dean's list, probation, suspension, etc.) cannot be retroactively changed by retaking classes.

Scholastic Requirements

Academic Probation: Students will be placed on academic probation, or continued probation, at the end of any term (including Summer Session) if their cumulative GPA drops below or remains below 2.00.

Students on academic/continued probation should contact their advisor, ACCESS Center personnel and/or any other Student Services official or faculty member who might provide guidance, advice, or academic assistance. The Student Handbook contains a list of services available to enrolled students at UM-Helena.

An "Academic Probation" notation will be posted to a student's permanent UM-Helena academic record.

Students placed on academic probation must show satisfactory academic progress - i.e. earn a 2.00 term GPA - during their next term of enrollment (including Summer) or face academic suspension. Students who raise their cumulative GPA to the minimum 2.00 will be removed from "probationary status" and in most cases enrollment restrictions will be lifted.

Students placed on academic probation will be notified of their status in writing within a reasonable time following the end of the term. Notification will explain enrollment limitations and conditions and warn students of consequences if they fail to improve their scholastic performance during future terms of enrollment.

Academic Suspension: Students will be academically suspended at the end of any semester if they were placed on academic probation in their last semester of attendance and they failed to earn a term GPA of 2.00.

Students placed on academic suspension status may not enroll at UM-Helena during the next semester (fall or spring, whichever applies) nor Summer Session if a student is suspended at the end of Spring Semester. That is, a student who has been academically suspended from UM-Helena for the first time must "sit out" one regular semester, plus Summer Session if a student is suspended at the end of Spring Semester.

An "Academic Suspension" notation is posted to a student's permanent UM-Helena academic record.

Students who are suspended for academic reasons will be informed of their status in writing as soon as possible following the end of the term. Any/all future enrollments (future class schedules that exist in UM-Helena's computer system through pre-registration prior to the end of the term in question) of academically suspended students will be canceled. Written notification of academic suspension will explain options available to the suspended student.

Readmission Following Suspension: Students who are suspended for academic reasons must apply for readmission to UM-Helena.

Students who seek readmission after "Sitting Out" the required suspension period must submit:

1. a properly completed Application for Readmission form;
2. a carefully prepared plan that indicates how the suspended student will improve his or her academic performance if re-admitted, and will include a statement of the student's education and career goals; and
3. any other documents that might be required by other UM-Helena offices.

Withdrawal

Withdrawal from the College is the student's responsibility. In order to withdraw from all classes, a student must meet with a representative of the ACCESS Center and complete the withdrawal form. The form must be completed, signed by the student, and collected by the ACCESS Center. If a student withdraws from the College after the first 15 instructional days and prior to three weeks before the end of the course, a "W" (withdrawn) will be assigned. During the last three weeks of the semester, a student may not officially withdraw and will receive a letter grade from the instructor based on an evaluation of the total work done by the student in the course. Withdrawal from a course in which the student has received an "FX" for academic dishonesty is not permitted.

It is important to note that a complete withdrawal cannot be done online.

Financial Aid

Financial aid administered by the Financial Aid Office at the University of Montana-Helena College of Technology is based on an evaluation of academic accomplishments, financial need, and availability of resources. Students may qualify for UM-Helena scholarships, awards and grants or federally sponsored grants, work, and loans. Information about eligibility, applying for and accepting aid, and types of aid are outlined in this section. Some general points:

- Scholarships are awarded for each academic year.
- Awards are usually made in the spring for the following academic year.
- UM-Helena does not discriminate on the basis of race, sex, color, creed, or national or ethic origin in the administration of its scholarship program.
- All scholarships administered by the College are divided evenly between fall and spring semesters.
- Scholarships are not awarded during the summer session.
- Recipients of selected awards must inform the donor and/or Financial Aid Office of their acceptance.

The following is an example of how financial aid is determined.

The cost of attendance is determined by the College in February of each year for the following academic year. The cost of attendance for a full-time student includes the following factors. The dollar amounts are for this example only.

Tuition and Fixed Fees	$ 3,000
Room and Board Allowance	$ 7,000
Personal Expense*Allowance	$ 3,000
Total Cost of Attendance	$15,000

*The estimate includes allowances for books, supplies, transportation, and personal expenses.

If the student has applied for federal aid, UM-Helena accesses the estimated family contribution (EFC) information electronically from the federal processor. If UM-Helena is not indicated on the FAFSA as a school that should receive the Student Aid Report (SAR), the student must submit a copy of the SAR to the Financial Aid Office or contact the federal processor and request that UM-Helena be added. The College's code is 007570.

UM-Helena subtracts the EFC amount from the cost of attendance. The resulting amount is financial need as per federal eligibility guidelines.

The calculation is as follows:

Financial Aid Cost of Attendance	$15,000
Less: Calculated EFC (assume $2,000)	$ 2,000
Calculated Financial Need	$13,000

Financial aid packages are developed using information available at the time of packaging and may be revised if enrollment status and/or financial status change.

Eligibility Requirements for Federal Aid

- Accepted to UM-Helena as a degree seeking student.
- Completed the Free Application for Federal Student Aid (FAFSA) and submitted as soon as possible after the first business day in January. The information should be sent to UM-Helena, Title IV Code 007570. A FAFSA must be completed each year the student applies for financial aid.
  Note: Submitting a FAFSA ensures that a student will be considered for all financial assistance from UM-Helena and the federal government. However, submitting a FAFSA is not mandatory.
- The student should review the Student Aid Report (SAR) sent by the processing center and submit necessary corrections to the Financial Aid Office.

Financial Aid Notification

Students who have been accepted for admission for whom the College has received results of the FAFSA on or before March 1st will receive need-based financial aid packages on or about May 1st. The packages will contain all financial aid awards offered by and through UM-Helena with directions as to how to accept and receive the awards. After May 1st, students will receive financial aid packages as they are admitted to the College and the results of the FAFSA become available.

Approximately 30% of all FAFSA applicants are selected for a process called verification by the Department of Education. In this process, UM-Helena will be comparing information from the FAFSA with signed copies of the student (and/or parent's/spouse's) federal tax forms, W-2 forms, or other financial documents. The law requires the college verify this information before awarding federal financial aid. If there are differences between the FAFSA information and supplied financial documents, UM-Helena will make corrections electronically and notify the student in writing.

Verification must be completed no later than 14 days prior to the end of the first semester of enrollment. A student's failure to complete verification will result in the cancellation of all federal and institutional need-based aid. In addition:

- No federal aid will be released until verification is completed.
- Students employed under the federal or state work-study programs cannot work more than 14 consecutive days from the beginning of the semester without completing verification.

In some cases, the Financial Aid Office will re-evaluate financial aid awards based on special circumstances. If a student or student's family have special needs or have recently experienced unusual financial circumstances, they should contact the Financial Aid Office to obtain a Special Circumstance form.

Financial Aid

Accepting Financial Aid
- An Initial Notification Letter (INL) with estimated financial aid will be mailed to accepted students beginning May 1 or after UM-Helena receives FAFSA information.
- The student should acknowledge acceptance of the financial aid by accepting and returning to UM-Helena the financial aid notification and other required paperwork.
- Financial aid, except for work awards and book vouchers, will be credited directly to the student's account at the beginning of each semester.

Student Responsibilities
Upon acceptance and receipt of financial assistance of any kind, it becomes the student's responsibility to notify the Financial Aid Office in writing of changes in financial and/or enrollment status. A change in enrollment and/or financial status may result in revision of financial aid awards. Changes include:

- Change in the number of enrolled credits;
- Change in name, address, or telephone number;
- Change in financial status, including any additional scholarships, grants, or other benefits received; and
- Withdrawal from the college. Students who withdraw from UM-Helena during a semester may be responsible for repayment of all or a portion of any financial aid received for the semester. Return of federal fund procedures is federally regulated. Students should contact the Financial Aid Office for additional information.

UM-Helena Scholarships and Awards
Below is a partial list of scholarships provided for UM-Helena students. A complete and up-to-date list can be found on the UM-Helena website. Some scholarships are offered by the College and others are offered by community organizations, business firms, endowment funds, etc. For more information, students should contact the Financial Aid Office.

- American Business Women's Scholarship
- Campus Compact
- Everett D Potter Scholarship
- Harold Hamm Award
- Home Builder's Association
- Last Chance Kiwanis Scholarship
- Lula Mae Clay Nursing Scholarship
- Montana Broadcaster's Scholarship
- Montana Food Distributors Association and Coors Inc
- Morrison Aviation Scholarship
- Perry Mathews Scholarships
- Peter Nelson Scholarships
- Seigal Service Scholarship
- Soroptomist Training Awards Program
- Soroptomist Vocational Technical Scholarships
- Student Senate Scholarships

Private Scholarships
Many private organizations provide financial assistance to UM- Helena students. Scholarship information may be obtained by contacting civic, professional, religious, or other community organizations in addition to high school guidance offices and the internet. Listing of web resources is available in the Financial Aid Office. One such website is www.fastweb.com. Private scholarships are generally applied one-half to each successive semester after the funds are received.

Tuition Waivers
The Montana Board of Regents has authorized the waiver of either full or partial tuition fees for certain categories of students. These categories include:

- Native American
- Montana Veterans
- War Orphans
- Dependents of Prisoners of War
- Senior Citizens
- Surviving Dependents of Montana Firefighters or Peace Officers
- Faculty and Staff
- MUS Employee Dependent
- MUS High School Honors

Applications for fee waivers are made prior to and must be completed within 14 days of the start of the semester in which the student expects the fee waiver. More information and applications are available in the Financial Aid Office.

Vocational Rehabilitation
Certain persons with an employment disability may qualify for education assistance through the Rehabilitative/Visual Services Division, Montana Department of Social and Rehabilitation Services. Students should contact that office at 406-444-1710 for more information.

Note: This information must be included on the Financial Aid Initial Notification Letter and will be included in a student's eligibility for Title IV aid.

Veterans Education Benefits
Veterans may be eligible to receive benefits under various chapters of the GI Bill:

- Chapter 30 – New GI Bill provides benefits for those who first entered active duty after July 1, 1985.
- Chapter 34 – The old GI Bill is available to veterans who entered active duty before July 1, 1985.
- Chapter 35 – Vocational Rehabilitation is for veterans who have a service-connected disability. Contact the Veterans Administration, Fort Harrison, MT 59636, or call toll-free 800-827-1000 to apply.
- Chapter 1606 – Guard/ Reserve members need to contact their Education Officer to determine eligibility.

Applications for Montgomery GI Bill educational benefits may be obtained online at www.gibill.va.gov or from the Veterans Benefits Coordinator, located in the UM-Helena ACCESS Center at 406-444-2766.

The Veterans Administration expects veterans to make satisfactory academic progress and pursue a final objective. All veterans and eligible persons receiving benefits are required to report promptly when they drop or add courses, or withdraw completely.

Veterans receiving federal financial aid must report their benefit information to the Financial Aid Office via the Initial Notification Letter or by calling 406-444-6883.

A Veterans Tuition Waiver may be available for veterans who have exhausted their benefits. Students should contact the Financial Aid Office for further information.

Higher Education Assistance (HEA) and Tribal Grants
Native American students may be eligible for need-based grants from the HEA or the student's tribe. For more information, students should contact the Tribal Educational Specialist.

Note: All benefit information must be reported to the Financial Aid Office.

Federal Financial Aid
Students should complete the FAFSA after January 1 and request that your Student Aid Report be sent to UM-Helena, Title IV Code 007570. It takes approximately 4 to 6 weeks for a paper FAFSA application to be processed. Applications submitted via the internet take considerably less time (www.fafsa.gov). Students (and parents, if applicable) must have a Personal Identification Number (PIN) to sign the FAFSA electronically (www.pin.ed.gov). Students must re-apply for federal aid each year. Delays in receiving financial aid are often the result of late or incomplete submission of the FAFSA.

Except for the Federal PLUS (Parent) Loan, eligibility for the following indicated federal financial aid resources depends on submission of the FAFSA. The Student Aid Report (SAR), resulting from the FAFSA, provides an expected family contribution (EFC), which is used to determine eligibility for federal need-based financial aid.

1. Federal Pell Grants are awarded to students with exceptional financial need.
   Note: Pell grants are available to all students who are eligible; however, the following grants are awarded on a priority base only.
2. Federal Supplemental Education Opportunity Grant (FSEOG) funds are limited and are available to students with exceptional financial need who have received a Federal Pell Grant.
3. Montana Higher Education Grant (MHEG) funds are limited and are a state-sponsored grant available to Montana residents enrolled at least half-time and who have exceptional financial need.
4. Baker Grant funds are limited and are a state-sponsored grant available to Montana residents enrolled full-time who have a minimum of $2,575 in earned income, and have an EFC between 0 and 6,550.
5. Work-study employment opportunities are available through the need-based Federal Work Study (FWS) as well as the need-based and non-need based State Work Study (SWS) programs. Limited funds are awarded on a first-come, first-served basis, in accordance with College policy. Awards are usually between ten and 15 hours per week.
6. Loan monies at federally regulated interest rates are available to students and their parents. Federal loans, except the Federal PLUS (Parent) Loan, are awarded on a need and non-need basis as documented through the FAFSA.
   a. Federal Stafford Loan – available to students on either a need (subsidized) or non-need (unsubsidized) basis. Subsidized loans do not require payment of interest by the student so long as the student is attending college at least half-time. The federal government subsidizes the interest burden. Unsubsidized loans require payment or capitalization of interest upon disbursement. Interest rates are set annually in accordance with federal regulations.
   b. Federal PLUS (Parent) Loan – for parents of dependent students who want to borrow to help pay for their student's education. Interest rates are set annually in accordance with federal regulations.

College-Related Federal Tax Provisions
UM-Helena students and families may be eligible for selected education-related tax provisions of the Federal Taxpayer Relief Act of 1997, including:

1. Hope Scholarship Tax Credit provides a maximum $1,500 per year tax credit (non-refundable) for each eligible taxpayer for the first two years of college.
2. Lifetime Learning Tax Credit provides a maximum $2,000 per year tax credit (non-refundable) per family for years of eligible undergraduate or graduate/professional study after the first two years of college.
3. Student Loan Interest Deduction provides a non-refundable deduction (not credit) of interest on qualified education loans used to finance qualified education expenses. The maximum deduction each taxpayer is permitted to take is $2,500.

4. IRA withdrawals eliminate the 10% penalty for early withdrawal of tax-deductible amounts placed in Individual Retirement Accounts (IRA) used to pay qualified educational expenses.
5. IRA contributions provide a new education IRA for tax years beginning after December 31, 1997.

Note: Students are advised that there are numerous eligibility requirements and other specifics contained in the tax provisions and should contact their tax advisor before making decisions.

Financial Aid Satisfactory Academic Progress Policy

Requirement and Purpose
Federal regulations require that students make satisfactory progress towards attainment of a degree, diploma or certificate objective in order to participate in federal student assistance programs. UM-Helena interprets federal intent of the satisfactory progress regulations as a means to prevent abuse of federal student assistance programs as opposed to placing limitations on students.

UM-Helena's financial aid satisfactory academic progress policy is provided to ensure compliance with federal regulations and to prevent abuse of federal student assistance programs while supporting students' efforts to attain educational objectives.

Indicators of Progress
Financial aid satisfactory academic progress (SAP) is measured "qualitatively" and "quantitatively".

Quality of work is measured by cumulative grade point average (GPA) resulting from work done at UM-Helena.

Quantity of work is measured against a maximum time frame in which the student must complete the educational objective. The quantitative measurement requires designation of a minimum amount of work a student must successfully complete (credit hours earned) by the end of designated periods of enrollment (full-time equivalent semesters). The quantitative measure is cumulative for all periods of enrollment and for all schools attended, including periods of enrollment in which students did not receive federal student financial assistance.

Students Subject to SAP Measurements
Students currently enrolled and re-admits are subject to SAP measurements. In most instances, a financial aid package will be provided before grades are posted. If SAP standards have not been met, the financial aid package is voided, pending appeal.

New students, including transfer students, while subject to SAP, are not measured for satisfactory progress until grades have been posted for the first year of attendance at the College.

Measurement Standards of SAP
Qualitative Measurement – A student must possess a cumulative GPA of 2.0 or higher.

A student must meet the above qualitative standard in addition to the quantitative standards discussed below.

Quantitative Measurement – A student must earn at least 70% of the credit hours attempted, in addition to meeting the above qualitative standards, in order to be eligible for UM-Helena need-based and federal student financial assistance programs.

Audit and non-credit remedial work are not considered in the measurement of SAP. Remedial and repeated course work for which a student received credit multiple times is treated as any other course work. Incompletes are considered as credits attempted when considering maximum time frames. Transfer credits are also considered when determining maximum time frames. If a student withdrew from a class or classes, the student is considered to have attempted those classes, even though the student did not realize any earned credits from registering for the classes. Withdrawal from classes has a negative impact on SAP measurement.

Student Notification of SAP Decisions
The Financial Aid Office will, in most instances, measure SAP after developing a financial aid package for a student. In this case, the student will be notified in writing if he or she has not met SAP standards and that the financial aid package is cancelled. At the same time, the student will be notified of the appeal process (described below).

Exceptions/Appeals
A student who is notified of failure to meet SAP standards may appeal the conclusion reached by the Financial Aid Office and/or request that he or she be granted an exception to the policy. The student must proceed with the following process to appeal a SAP ruling:

Students must respond in writing to the notification of failure to meet SAP standards. The response must be directed to the Director of Financial Aid at UM-Helena. The response must be typed and describe in specific terms, along with supporting documentation as appropriate, why the College should grant an exception to its established SAP policy. As a minimum, the response must include the following:

A personal statement, plus supporting documentation as appropriate, explaining the circumstances that have led to failure to meet established SAP standards. The statement should also include an academic plan outlining how the student expects to meet the SAP standards, as well as the time frame in which the student expects to be back in compliance with such standards.

The Financial Aid Director and designated representatives will review the student's response and will make a decision on the appeal. Two actions may result on the appeal:

1. The Financial Aid Director may approve the appeal. If such is the case, the student will receive written notice of the approval along with conditions to be met in the future, if appropriate.
2. The Financial Aid Director may deny the appeal. The Financial Aid Director is the final authority regarding SAP decisions. The student will be notified, in writing, of action on the appeal in a timely manner.

Requalification for Federal Student Financial Assistance and UM-Helena Need-Based Assistance Programs After Failing to Meet SAP Standards
A student who is disqualified from participation in college need-based and federal student financial assistance programs may regain eligibility by satisfying the established SAP standards. This can be done by attending college without the financial assistance offered by the applicable financial aid. If a student is deemed not to be making satisfactory progress, but later meets the standards, his or her eligibility for aid is reinstated. A student may be paid for the payment period in which he or she regains satisfactory progress, but may not be paid for any payment periods in which the student did not meet the standards.

Return of Federal Title IV Funds Policy

Purpose
The purposes and intent of this policy are to provide guidance as to how UM-Helena will calculate the amount of Federal Title IV funds to be returned for a student who has withdrawn from all classes, inform interested parties of the methods and procedures used to calculate the amount, provide a fair and equitable policy, and provide a policy that conforms to federal regulations and the intent of those regulations.

This policy governs the return of Federal Title IV funds disbursed for a student who completely withdraws from a term, payment period, or period of enrollment. It does not apply to a student who has dropped some classes but remains enrolled in other classes at or through UM-Helena. The general assumption is that a student earns aid based on the period of time he or she remained enrolled.

The Process – General
1. The student meets with an ACCESS Center advisor to discuss withdrawal and to fill out a withdrawal form. The ACCESS Center gives the withdrawal form to the Registrar.
2. The Registrar gives a copy of the completed withdrawal form to the Financial Aid Office.
3. The Financial Aid Office calculates the amount of funds to be returned.
4. The Financial Aid Office notifies the student and the Business Office of funds that UM-Helena must return and the amount the student must return.
5. The Financial Aid Office returns its share of unearned Federal Title IV funds within 30 days after it determines that the student withdrawal process is complete. The student must repay his/her share either by (1) paying loans in accordance with the terms and conditions of the promissory note or (2) repaying grants directly or under a payment arrangement through the College.

Note: in addition to calculating a return of Federal Title IV funds for students who notify UM-Helena of withdrawal, the College must also make the calculation for students who do not "officially" withdraw. The Financial Aid Office reviews final semester grades to determine students with all "F" grades followed by attempts to determine if the student withdrew from all classes. If so, the last date of attendance is obtained. To facilitate the process, the Registrar has requested faculty to indicate last date of attendance for all students awarded an "F" grade.

The Details
Earned aid – During the first 60% of the period, a student "earns" Federal Title IV funds in direct proportion to the length of time he or she remains enrolled. That is, the percentage of time during the period that the student remained enrolled is the percentage of disbursable aid for that period that the student earned. A student who remains enrolled beyond the 60% point earns all aid for the period.

Note that institutional costs play no role in determining the amount of Federal Title IV funds to be retained or returned. Also, aid is "disbursable" if the student could have received it at the point of withdrawal.

Unearned aid – The amount of disbursed Title IV aid that exceeds the amount of Title IV aid earned under the required formula. Unearned Federal Title IV funds, other than Federal Work Study, must be returned.

Percentage of period enrolled – The number of days the student remained enrolled divided by the number of days in the period. Calendar days are used, but breaks of at least five days are excluded from both the numerator and denominator. The number of days used to determine the enrolled percentage normally includes weekends; however, scheduled breaks are measured from the first day of the break to the next day that classes are held.

Repayment of unearned aid – The responsibility to repay unearned aid is shared by the institution and the student in proportion to the aid each is assumed to possess.

The institution's share is the lesser of:

- The total amount of unearned aid; or
- Institutional charges multiplied by the percentage of aid that was unearned.

The formula assumes that Federal Title IV funds are directly disbursed to a student only after all institutional charges have been covered, and that Title IV funds are the first resource applied to institutional charges. Institutional charges comprise the amounts that had been assessed prior to the student's withdrawal, not a reduced amount that might result from an institution's refund policy.
The institution's share is allocated among Title IV programs, in an order specified by statute, before the student's share.

After the student's share is fully allocated among the Title IV programs, any amount owed to a grant program is reduced by half. Students return their share of unearned aid attributable to a loan under the terms and conditions of the promissory note.

Timeframe for Returning Funds
The institution must return its share of unearned Federal Title IV funds no later than 30 days after it determines that the student withdrew.

The student must repay his or her share either by (1) paying loans in accordance with the terms and conditions of the promissory notes or (2) repaying grants directly or under a payment arrangement through the College or the Department of Education.

Late Disbursements
A student who earned more aid than was disbursed prior to withdrawal is owed a late disbursement. Only the difference between earned aid and aid already disbursed may be late disbursed. Thus, conditions under which unearned aid must be returned and conditions under which a late disbursement is required are mutually exclusive.

The institution may credit late disbursements towards unpaid institutional charges. Authorizations for current year charges remain valid for late disbursements; authorizations for prior year charges become invalid.

Any portion of a late disbursement not credited to the student's account must be offered as a cash disbursement to the student (or parent in the case of a Federal PLUS Loan).

Withdrawal Date (Unofficial Withdrawal)
For students who withdraw without notifying the institution, the institution must determine the student's withdrawal date within 30 days after the expiration of the earlier date of the:
- Payment period or period of enrollment;
- Academic year in which the student withdrew; or
- Educational program from which the student withdrew.

The withdrawal date for unofficial withdrawals is the midpoint of the applicable period, except:
- If the student left without notification because of circumstances beyond his/her control, the institution may determine a withdrawal date related to the circumstances. The Director of Financial Aid is responsible for making this determination along with the Registrar and the Academic Dean.
- The institution may, at its option, use the student's last date of attendance at a documented "academically-related activity" in lieu of any other withdrawal date. "Academically-related activities" include activities confirmed by an employee of the institution, to include exams, tutorials, academic advisement, turning in a class assignment, and attending a study group assigned by the institution. Eating at institution-provided food services, and participating in off-campus study groups not assigned by the institution are not "academically-related activities."

Withdrawal Date (Official Withdrawal)
The withdrawal date for official withdrawals (student notified the institution that he or she was withdrawing) is the date the student began the institution's withdrawal process or officially notified the institution of intent to withdraw, except the institution may, at its option, use the student's last date of attendance at a documented "academically-related activity" in lieu of any other withdrawal date. "Academically-related activities" include activities confirmed by an employee of the institution, to include exams, tutorials, academic advisement, turning in a class assignment, and attending a study group assigned by the institution. Eating at institution-provided food services, and participating in off-campus study groups not assigned by the institution are not "academically-related activities."

The withdrawal date for a student who officially withdrew is the later of:

- The withdrawal; or
- The date of the student's notification to the institution.

For a student who unofficially withdrew (withdrew without notifying the institution), this date is the date that the institution becomes aware that the student ceased attendance. The "date of institution's determination that a student withdrew" is used for the following purposes:

- It provides the dividing date between disbursed aid and late disbursements; and
- It starts the clock for the period of time within which the institution must return federal funds.

Drug Related Convictions
A federal or state drug conviction can disqualify a student for federal student aid. Convictions only count if they were for an offense that occurred during a period of enrollment for which the student was receiving financial aid. A conviction that was reversed, set aside, or removed from the student's record does not count, nor does one received when the student was a juvenile, unless he or she was tried as an adult.

The information below illustrates the period of ineligibility for financial aid on whether the conviction was for sale or possession and whether the student had previous offenses. (A conviction for sale of drugs includes convictions for conspiring to sell drugs.)

For a drug possession conviction, eligibility is suspended:
One year from date of conviction for 1st offense
Two years from date of conviction for 2nd offense
Indefinite period for 3+ offenses
For a drug sale conviction, eligibility is suspended:
Two years from date of conviction for 1st offense
Indefinite period for 2nd offense

If the student was convicted of both possessing and selling illegal drugs, and the periods of ineligibility are different, the student will be ineligible for the longer period.

Regaining Eligibility After a Drug Conviction
A student regains eligibility the day after the period of ineligibility ends or when he or she successfully completes a qualified drug rehabilitation program. Further drug convictions will make him or her ineligible again.

Students denied eligibility for an indefinite period can regain it only after successfully completing a rehabilitation program as described below.

Standards for a Qualified Drug Rehabilitation Program
A qualified drug rehabilitation program must include at least two unannounced drug tests and must satisfy at least one of the following requirements:

- Be qualified to receive funds directly or indirectly from a federal, state, or local government program.
- Be qualified to receive payment directly or indirectly from a federally or state-licensed insurance company.
- Be administered or recognized by a federal, state, or local government agency or court.
- Be administered or recognized by a federally or state-licensed hospital, health clinic, or medical doctor.

Incarcerated Students
A student is considered to be incarcerated if he or she is serving a criminal sentence in a federal, state, or local penitentiary, prison, jail, reformatory, work farm, or similar correctional institution. A student is not considered to be incarcerated if he or she is in a half-way house or home detention or is sentenced to serve only weekends.

Incarcerated students are not eligible to receive federal student loans but are eligible for federal work study and federal supplemental educational opportunity grants (FSEOG). They are also eligible for Pell grants if not incarcerated in a federal or state penal institution.

Program Offerings

ASSOCIATE OF ARTS DEGREE
4 Semesters, General Transfer
Emphases in Accounting, Business, English, Fine Arts, General Science, History, Mathematics, Social Sciences, and Mental Health Direct Care

ASSOCIATE OF SCIENCE DEGREE
4 Semesters, General Transfer
Emphases in Accounting, Business, and Computers

ASSOCIATE OF SCIENCE REGISTERED NURSING DEGREE
2 Semesters, Leading to Registered Nursing
Completion Program for Licensed Practical Nurses

ASSOCIATE OF APPLIED SCIENCE DEGREES
4 Semesters

Accounting and Business Technology
Accounting Technology
Small Business Management Technology
Automotive Technology
Aviation Maintenance Technology
Computer Technology
Network Administration
Programming
Webmaster
Construction Technology
Diesel Technology
Electronics Technology*
Fire and Rescue
Machine Tool Technology
Metals Technology
Practical Nursing
Office Technology
Admn Office Management Specialist
Medical Administrative Specialist
Water Resources
Water Quantity
Water Quality
Welding Technology

CERTIFICATES OF APPLIED SCIENCE

Bookkeeping	2 Semesters
Carpentry	2 Semesters
Computer Assistant	2 Semesters
Computer Skills Specialist	2 Semesters
Interior Space Planning and Design	2 Semesters
Legal Support Specialist	2 Semesters
Machine Tool Technology	2 Semesters
Medical Assisting	2 Semesters
Office Assistant	2 Semesters
Small Business Entrepreneurship Technology	2 Semesters
Welding Technology	2 Semesters

****Electronics Technology is on moratorium and is not currently accepting new students.***

Associate of Arts and Associate of Science

The Associate of Arts (A.A.) and Associate of Science (A.S.) degrees are general transfer degrees. Completion of either program indicates the student has completed a course of study equivalent to the first two years of a bachelor's degree. Associate of Arts and Associate of Science degrees do not officially include a major or minor course of study; nevertheless, students do complete a 22 credit program of study option for either an A.A. or A.S. degree. (For specific information on the Associate of Science degree in nursing, please see the Nursing Programs pages).

Students may also accumulate credits to transfer to another college or university. Completion of the UM-Helena general education core requirements (31+ credits) satisfies the general core requirements of the Montana University System. All Montana University System institutions will accept the UM-Helena general education core to satisfy their lower division general education requirements.

Students with Disabilities: Many General Education courses lend themselves well to field trips as an enhancement to the course's curriculum; some science and fine arts courses routinely take advantage of field trip opportunities, both planned and unplanned. At the instructor's discretion, field trip activities may be graded assignments; however, the College and the instructor must provide reasonable accommodation to any student with a documented disability that prevents or hinders the student's full participation. Students with disabilities are advised to consult with the instructor and with Disability Services in the ACCESS Center for appropriate arrangements and/or accommodation prior to the field trip activity.

Faculty Advisors: Mike Cronin, Joella Foust, John Hartman, Kim Haughee, Michelle Holt, Steve Lewis, Nathan Munn, Viktor Shchuchinov, and Joyce Walborn

Length of Program: 4 Semesters

Type of Program: Associate of Arts, Associate of Science
Semester of Entry: Fall, Spring, and Summer

Minimum Requirements for A.A. and A.S.

Completion of 60 semester credit hours, 15 credits of which are at the 200 level.
Completion of 36 credits in General Education, 22 Credits in a Program of Study, and 2 credits in a Capstone Project.
An overall GPA of 2.25 upon completion of the degree.
A grade of "C-" or higher in each course in the program of study.

NOTES:

* Indicates second half of science sequence required for A.S. degree (see below under "Additional General Education Requirements for Degree-Seeking Students")
"C" Indicates the course may be taken for capstone credits
"D" Indicates the course meets the core diversity requirement (see requirement "F" below)

I. General Education Core (31+ credits)

The General Education Core of the UM-Helena College of Technology provides students with the broad foundation of knowledge essential for success at the associate and baccalaureate levels.

All students are prepared for independent, abstract, and critical thinking; responding creatively to problems; applying quantitative and mathematical knowledge; finding information; and communicating both orally and in written forms. This is done to engender life-long learning skills, a foundation of knowledge in a variety of disciplines, and a broadened perspective on our interdependent, changing global community.

A: Natural Sciences/Mathematics (10+ credits)

Math and Sciences Outcomes

- Understand and demonstrate methods used to gather, test, and interpret scientific data
- Understand basic principles that explain the natural world
- Solve quantitative problems and interpret solutions
- Use inductive and deductive scientific reasoning to solve novel problems

To complete the science/math requirement, students must include one natural science with lab and one of these math courses: M115, M121, M122, M145 (A.A. only), M171, M172, or STAT216.

Course Number	Course Title	Credits
❑ ASTR110	Introduction to Astronomy	3
❑ ASTR111	Introduction to Astronomy Lab	1
❑ BIOB160	Principles of Living Systems	3
❑ BIOB161	Principles of Living Systems Lab	1

Course Number	Course Title	Credits	
❑ BIOB170	Principles of Biological Diversity	3	*
❑ BIOB171	Principles of Biological Diversity Lab	1	
❑ BIOL107	Basic Anatomy and Physiology I with Lab	4	
❑ BIOL207	Anatomy and Physiology I with Lab	4	
❑ BIOL208	Anatomy and Physiology II with Lab	4	*
❑ BIOM250	Microbiology for Health Sciences	3	(C)
❑ BIOM251	Microbiology for Health Sciences Lab	1	(C)
❑ CHMY121	General and Inorganic Chemistry	3	
❑ CHMY122	General and Inorganic Chemistry Lab	1	
❑ CHMY123	Organic and Biological Chemistry	3	*
❑ CHMY124	Organic and Biological Chemistry Lab	1	
❑ CHMY141	College Chemistry I	3	
❑ CHMY142	College Chemistry I lab	1	
❑ CHMY143	College Chemistry II	3	
❑ CHMY144	College Chemistry II lab	1	
❑ EVSC120	Introduction to Water Resources	3	
❑ EVSC130	Introduction to Environmental Studies	3	(D)
❑ EVSC140	Introduction to Geographic Information Systems (GIS)	3	
❑ EVSC230	Nature and Society	3	(C, D)
❑ EVSC240	Geographic Information Systems (GIS)	3	
❑ GEO101	Physical Geology with Lab	4	
❑ M115	Probability and Linear Mathematics	3	
❑ M121	College Algebra	3	*
❑ M122	College Trigonometry	3	
❑ M145	Math for the Liberal Arts	3	
❑ M171	Calculus I	4	
❑ M172	Calculus II	4	
❑ NUTR112	Nutrition	3	
❑ PHSX205	College Physics I	3	
❑ PHSX206	College Physics I Lab	1	
❑ PHSX207	College Physics II	3	
❑ PHSX208	College Physics II Lab	1	
❑ STAT216	Introduction to Statistics	3	(C)

B: Written Communication (6 credits)

Written/Oral Communications Outcomes

- Demonstrate mastery of engaging, clear, and coherent structures for presenting ideas in a variety of expository and argumentative models
- Develop ideas logically, clearly, convincingly, and ethically
- Control the effect of voice in achieving specific communication purposes with specific audiences.
- Control the conventions of language
- Understand and apply research skills necessary for academic study
- Employ analysis, synthesis, and evaluation in both writing and reading
- Exercise proficiency, confidence, and self-reliance in the application of academic activities

❑ WRIT101	College Writing I	3	
❑ WRIT201	College Writing II	3	

C: Oral Communication (3 credits)

❑ COMM131	Introduction to Public Speaking	3	

D: Social and Psychological Sciences (6+ credits)

Social and Psychological Science Outcomes

- Have an awareness of major perspectives in social and individual behavior
- Be able to apply social science theories to multicultural perspectives
- Understand how historical experiences influence current theories
- Be able to apply critical thinking skills
- Be able to recognize and practice ethial research techniques

	Course Number	Course Title	Credits	
❑	ANTH101	Introduction to Anthropology	3	(D)
❑	ANTH103	Introduction to Archaeology	3	(D)
❑	ANTH150	Introduction to Latin American Studies	3	(D)
❑	ANTH225	Native American Culture	3	(C, D)
❑	ECNS201	Principles of Microeconomics	3	(C)
❑	ECNS202	Principles of Macroeconomics	3	(C)
❑	PSYX100	Introduction to Psychology	3	
❑	PSYX120	Research Methods I	3	
❑	PSYX161	Fundamentals of Organizational Psychology	3	
❑	PSYX182	Stress Management	3	
❑	PSYX230	Developmental Psychology	3	(C)
❑	PSYX240	Fundamentals of Abnormal Psychology	3	(C)
❑	PSYX244	Introduction to Marriage and Family	3	(C, D)
❑	PSYX260	Fundamentals of Social Psychology	3	(C, D)
❑	SOCI101	Introduction to Sociology	3	
❑	SOCI201	Social Problems	3	(C, D)
❑	SOCI235	Aging and Society	3	(C, D)

E: Humanities/Fine Arts (6+ credits)

Humanities and Fine Arts Outcomes

- Identify a variety of artistic styles, movements, schools of thought/expression, and cultures
- Analyze, interpret, and evaluate a range of human expressions and values using critical strategies
- Engage in imaginative expression
- Appreciate a diversity of world-views or perspectives

❑	ARTS101	Art Appreciation	3	
❑	ARTS140	Art Fundamentals	3	
❑	ARTS212	Basic Drawing	3	
❑	ARTS240	Basic Painting	3	
❑	COMM132	Interpersonal Communication	1	
❑	COMM133	Small Group Communication	1	
❑	COMM201	Introduction to Public Relations	3	
❑	ENG222	Introduction to Creative Writing	3	(C)
❑	LIT110	Introduction to Literature	3	
❑	LIT212	American Literature Survey	3	(C)
❑	LIT213	Montana Literature	3	(C)
❑	LIT223	British Literature I	3	(C)
❑	LIT224	British Literature II	3	(C)
❑	LIT227	Introduction to Shakespeare	3	(C)
❑	LIT228	Introduction to Irish Literature	3	(C)
❑	LIT230	World Literature Survey	3	(C, D)
❑	LIT250	The Novel	3	(C)
❑	LIT291	Special Topics	3	(C)
❑	HSTA101	American History I	3	
❑	HSTA102	American History II	3	
❑	HSTA160	Introduction to the American West	3	
❑	HSTA215	Post-WW II America	3	(C)
❑	HSTA255	Montana History	3	(C)
❑	SPNS101	Elementary Spanish I	4	(D)
❑	SPNS102	Elementary Spanish II	4	(D)
❑	PHL110	Problems of Good and Evil	3	
❑	PHL215	Introduction to Consciousness Studies	3	(C)
❑	THTR101	Introduction to Theater	3	
❑	THTR120	Introduction to Acting I	3	
❑	WRIT121T	Introduction to Technical Writing	3	

F: Diversity Requirement

Diversity Component Outcomes

- Students will appreciate diversity across cultures and be able to reflect upon their own cultural values and systems.
- Students will understand and be able to analyze the complex political, social, and economic relationships within and among cultures.
- Students will appreciate the creative works, values, and ways of life and/or history of a cultural group outside of their own culture.

Within their core of 31+ credits, students must take at least three credits in courses that explore cultural diversity. Such courses are marked "D." Courses labeled "D" can be counted **twice,** once for diversity AND once for the core requirement or program of study.

II. Additional General Education Requirements for Degree-Seeking Students (5+ credits)

A: A.A. Degree (5+ credits in social science/humanities)

Students seeking an A.A. degree must complete an additional 5+ credits in humanities/social science—these additional credits must include one foreign language course.

B: A.S. Degree (5+ credits in math/science)

Students seeking an A.S. degree must complete an additional 5+ credits in math/science. Students must complete the second half of one of the science sequences noted above (*).

III. Program of Study Options (22 credits)

A: Associate of Arts -- Transfer

1. Students must complete 22 credits in one of the following areas (Math may be combined with either General Science, Social and Psychological Science, or Humanities/Fine Arts):

   Accounting, Business, Humanities/Fine Arts, General Science, Social and Psychological Sciences

2. Mental Health Direct Care

- ❑ BIOL107 Basic Anatomy and Physiology I with Lab 4
- ❑ CAPP131 Basic MS Office 3
- ❑ PSYX100 Introduction to Psychology 3
- ❑ PSYX230 Developmental Psychology 3
- ❑ PSYX240 Fundamentals of Abnormal Psychology 3
- ❑ PSYX120 Research Methods I or PSYX260 Fundamentals of Social Psychology 3
- ❑ PSYX161 Fundamentals of Organizational Psychology 3

B. Associate of Science – Transfer

1. Students must complete 22 credits in General Science (Math may be combined).

   Students planning to transfer are advised to work closely with the receiving four-year institution to ensure the applicability of UM-Helena courses to their intended program of study.

2. Computer Technology ~ *Students may pursue a Bachelors of Science in Computer Science at Carroll College.* *Please see page 73 for details.*

a: Programming Option - REQUIRED

- ❑ CSCI100 Introduction to Programming 3
- ❑ CSCI110 Programming with Visual Basic I 3
- ❑ CSCI111 Programming with Java I 4
- ❑ CSCI240 Databases and SQL 4

Choose THREE of the following courses:

- ❑ CT253 Developing Web Applications 3
- ❑ CSCI221 Systems Analysis and Design 3
- ❑ CT262 Web Databases 4
- ❑ CSCI241 PL/SQL 4

- ❑ CSCI206 .NET Applications....3
- ❑ CSCI242 Enterprise Applications....4

b: Webmaster Option - REQUIRED

- ❑ CSCI100 Introduction to Programming....3
- ❑ CT115 Web Pages....3
- ❑ CSCI111 Programming with Java I....4
- ❑ CSCI240 Databases and SQL....4

Choose THREE of the following courses:

- ❑ CSCI121 Programming with Java II....4
- ❑ CSCI210 Web Programming....3
- ❑ CT253 Developing Web Applications....3
- ❑ CT262 Web Databases....4

c: Network Administration Option - REQUIRED

- ❑ CSCI100 Introduction to Programming....3
- ❑ CSCI115 Programming with Perl....3
- ❑ ITS212 Network Operating System - Server Admin....4
- ❑ ITS150 CCNA 1: Exploration....4
- ❑ ITS224 Introduction to Linux....3

Choose TWO of the following courses:

- ❑ CSCI240 Databases with SQL....4
- ❑ ITS152 CCNA 2: Exploration....3
- ❑ ITS250 CCNA 3: Exploration....3

3. Environmental Science

- ❑ EVSC120 Introduction to Water Resources....3
- ❑ EVSC130 Introduction to Environmental Science....3
- ❑ EVSC140 Introduction to Geographic Information Systems (GIS)....3
- ❑ EVSC230 Nature and Society....3
- ❑ EVSC240 Geographic Information Systems (GIS)....3
- ❑ GEO101 Introduction to Physical Geology....3
- ❑ GEO102 Introduction to Physical Geology Lab....1
- ❑ Math - Trigonometry, Statistics, or Linear Math....3

C: Associate of Science OR Associate of Arts

4-year degree in Business available at UM-Helena through partnership with Montana Tech.
Please see pages 74 - 77 for details.

1. Accounting Technology

- ❑ ACTG101 Accounting Procedures I....4
- ❑ ACTG102 Accounting Procedures II....4
- ❑ ACTG201 Principles of Financial Accounting....3
- ❑ ACTG202 Principles of Managerial Accounting....3
- ❑ BUS105 Introduction to Business....3

Choose TWO of the following courses:

- ❑ ACTG211 Income Tax Fundamentals....3
- ❑ ACTG180 Payroll Accounting....3
- ❑ ACTG205 Computerized Accounting....3
- ❑ ACTG215 Foundations of Governmental and Not for Profit Accounting....3

2. Business Technology

- ❑ ACTG101 Accounting Procedures I....4
- ❑ ACTG201 Principles of Financial Accounting....3
- ❑ ACTG202 Principles of Managerial Accounting....3
- ❑ BUS105 Introduction to Business....3

- ❑ BUS210 Marketing 3
- ❑ BUS260 Management 3

Choose ONE of the following courses:

- ❑ BUS205 Business Ethics 3
- ❑ BUS246 Business Law I 3
- ❑ BUS247 Business Law II 3
- ❑ BUS231 Foundations of Public Administration 3
- ❑ BUS265 Finance 3

IV. Capstone (2 credits)

A.A. and A.S. degree-seeking students complete their degrees with a capstone course that synthesizes their educational experiences across the curriculum from within their Program of Study. Capstones for Programs of Study in Business, Accounting, Computer Technology, and Mental Health Direct Care have specific capstone courses: BUS270, ACTG265, CSCI299, and GEN275.

Capstones for Programs of Study in Humanities/Fine Arts, General Science, Math, and Social Sciences are designated in this Catalog as GEN265 for the A.S. degree and GEN270 for the A.A. degree. Students in these programs enroll in GEN265 or GEN270; however, their projects are attached to a particular capstone-designated course in which they must be enrolled and through which they collaborate with the instructor for their capstone projects. Courses eligible for capstone credits are indicated in this section of the catalog by a "C".

Students must officially declare a Program of Study before enrolling in any capstone, and the course must qualify within that Program of Study. Students undertake capstone projects during their sophomore year and are encouraged to do so during their final semester when appropriate. In the case of a dual Program of Study, students should take a capstone from the predominant program.

- ❑ ACTG265 Accounting Portfolio (for Accounting program of study) 2
- ❑ BUS270 Business Plan (for Business program of study) 2
- ❑ GEN265 A.S. Capstone 2
- ❑ GEN270 A.A. Capstone 2
- ❑ GEN275 Mental Health Direct Care 2

Accounting and Business Technology

The Accounting and Business Technology program area prepares students to enter the business world – as bookkeepers, as accountants, or as entrepreneurs. Graduates of the Accounting track learn skills readying them to be accounting technicians with private, government, or not for profit agencies. Graduates of the Business track gain knowledge as associates in business or entrepreneurs of their own ventures. Students choosing either option may transfer their A.A.S. degree toward earning a Bachelor of Applied Science in business through other Montana higher education institutions.

Requirements for all Accounting and Business certificates and degrees: Students must fufill their math requirements in at least M108T Business Math or M121 College Algebra and their English requirements in at least WRIT121T Introduction to Technical Writing or WRIT101 College Writing I. Students who do not place into these classes will be required to take additional English and mathematics courses at the beginning of their program.

Computer Competence: Students must have a computer competency equal to CAPP131 (basic Windows, Internet, Word and Excel) to be determined through placement testing at enrollment. Students who do not meet these requirements will be required to take CAPP131 at the beginning of their program, and the credits may be used to meet the elective requirements in later semesters.

Faculty Advisors: George Sonnenberg and Barbara Yahvah

BOOKKEEPING

The Accounting track emphasizes accounting procedures with other business, communication, and computer courses to complement the needs of today's employers. Students successfully completing the Certificate of Applied Science – Bookkeeping program will be able to maintain accounting records in journals, ledgers, and other accounting forms, both manual and computerized. In addition to those skills, students completing the Associate of Applied Science – Accounting Technology program will have a general knowledge of financial statement presentation, non-profit accounting, managerial accounting, payroll procedures, and income tax preparation. The Associate of Applied Science – Accounting Technology further emphasizes critical thinking, problem-solving, and communication skills for students with instruction in business law, economics, ethics, finance, and a capstone experience.

Length of Option: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall and Spring

First Semester

Course Number	Course Title	Credits
❑ ACTG101	Accounting Procedures I	4
❑ BUS105	Introduction to Business	3
❑ *Math Requirement*		3
	❑ M108T Business Math (3) ***or***	
	❑ M121College Algebra (3) (transferable)	
❑ *English Requirement*		3
	❑ WRIT121T Introduction to Technical Writing (3) ***or***	
	❑ WRIT101 College Writing (3) (transferable)	
❑ TASK113	Keyboarding and Document Processing ***or***	3
	❑ CAPP154 MS Word (3)	
	Total Credits	**16**

Second Semester

❑ ACTG102	Accounting Procedures II	4
❑ ACTG205	Computerized Accounting	3
❑ HR110T	Career Development and Human Relations ***or***	3
	❑ SOCI101 Introduction to Sociology (3) (transferable) ***or***	
	❑ PSYX100 Introduction to Psychology (3) (transferable)	
❑ BUS205	Business Ethics	3
❑ CAPP156	MS Excel	3
❑ *Electives*		2
	Total Credits	**18** **(34)**

Accounting and Business Technology

Accounting

The Accounting track emphasizes accounting procedures with other business, communication, and computer courses to complement the needs of today's employers. Students successfully completing the Certificate of Applied Science – Bookkeeping program will be able to maintain accounting records in journals, ledgers, and other accounting forms, both manual and computerized. In addition to those skills, students completing the Associate of Applied Science – Accounting Technology program will have a general knowledge of financial statement presentation, non-profit accounting, managerial accounting, payroll procedures, and income tax preparation. The Associate of Applied Science – Accounting Technology further emphasizes critical thinking, problem-solving, and communication skills for students with instruction in business law, economics, ethics, finance, and a capstone experience.

Length of Option: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

	Course Number	Course Title	Credits
❑	ACTG101	Accounting Procedures I	4
❑	BUS105	Introduction to Business	3
❑	*Math Requirement*		3
		❑ M108T Business Math (3) ***or***	
		❑ M121College Algebra (3) (transferable)	
❑	*English Requirement*		3
		❑ WRIT121T Introduction to Technical Writing (3) ***or***	
		❑ WRIT101 College Writing (3) (transferable)	
❑	TASK113	Keyboarding and Document Processing ***or***	3
		❑ CAPP154 MS Word (3)	
		Total Credits	**16**

Second Semester

❑	ACTG102	Accounting Procedures II	4
❑	ACTG205	Computerized Accounting	3
❑	HR110T	Career Development and Human Relations ***or***	3
		❑ SOCI101 Introduction to Sociology (3) (transferable) ***or***	
		❑ PSYX100 Introduction to Psychology (3) (transferable)	
❑	BUS205	Business Ethics	3
❑	CAPP156	MS Excel	3
❑	*Electives*		2
		Total Credits	**18** **(34)**

Third Semester

❑	ACTG211	Income Tax Fundamentals	3
❑	ACTG180	Payroll Accounting	3
❑	ACTG201	Principles of Financial Accounting	3
❑	ECNS203	Principles of Micro and Macro Economics ***or***	3
		❑ ECNS201 Microeconomics (3) (transferable) ***or***	
		❑ ECNS202 Macroeconomics (3) (transferable)	
❑	*Communications Electives*		3
		❑ COMM131 Introduction to Public Speaking (3) (transferable) ***or***	
		❑ COMM201 Introduction to Public Relations (3) (transferable)	
❑	CAPP266	Advanced MS Excel Applications	3
		Total Credits	**18**

Fourth Semester

❑	ACTG202	Principles of Managerial Accounting	3
❑	ACTG298	Internship ***or***	2
		❑ ACTG292 Independent Study (1-3) ***or***	
		❑ ACTG230 Intro to Statewide Accounting, Budgeting, and Human Resource System (SABHRS)	
❑	ACTG215	Foundations of Governmental and Not for Profit Accounting	3
❑	ACTG265	Accounting Portfolio	2
❑	BUS246	Business Law I ***or***	3
		❑ BUS247 Business Law II (3)	
❑	*Electives*		3
		Total Credits	**16 (68)**

4-year degree in Business available at UM-Helena through partnership with Montana Tech. Please see page 74 - 77 for details.

Small Business Entrepreneurship

The Business track emphasizes general business courses to provide students with a broad background for the business environment. The Small Business Entrepreneurship Certificate of Applied Science features courses in entrepreneurship, accounting, computer applications, and general education. The Associate of Applied Science – Small Business Management Technology degree further offers management, marketing, ethics, and finance courses. The two options will provide educational opportunities for students to develop the necessary skills to manage their own businesses.

Length of Option: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall and Spring

First Semester

Course Number	Course Title	Credits
❑ ACTG101	Accounting Procedures I	4
❑ BUS105	Introduction to Business	3
❑ *Math Requirement*		3
	❑ M108T Business Math (3) ***or***	
	❑ M121College Algebra (3) (transferable)	
❑ *English Requirement*		3
	❑ WRIT121T Introduction to Technical Writing (3) ***or***	
	❑ WRIT101 College Writing (3) (transferable)	
❑ TASK113	Keyboarding and Document Processing ***or***	3
	❑ CAPP154 MS Word (3)	
	Total Credits	**16**

Second Semester

❑ ACTG205	Computerized Accounting	3
❑ BUS200	Small Business Entrepreneurship	2
❑ HR110T	Career Development and Human Relations ***or***	3
	❑ SOCI101 Introduction to Sociology (3) (transferable) ***or***	
	❑ PSYX100 Introduction to Psychology (3) (transferable)	
❑ BUS205	Business Ethics	3
❑ CAPP156	MS Excel	3
❑ *Electives*		4
	Total Credits	**18 (34)**

Small Business Management

The Business track emphasizes general business courses to provide students with a broad background for the business environment. The Small Business Entrepreneurship Certificate of Applied Science features courses in entrepreneurship, accounting, computer applications, and general education. The Associate of Applied Science – Small Business Management Technology degree further offers management, marketing, ethics, and finance courses. The two options will provide educational opportunities for students to develop the necessary skills to manage their own businesses.

Length of Option: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

Course Number	Course Title	Credits
❑ ACTG101	Accounting Procedures I	4
❑ BUS105	Introduction to Business	3
❑ *Math Requirement*		3
	❑ M108T Business Math (3) ***or***	
	❑ M121 College Algebra (3) (transferable)	
❑ *English Requirement*		3
	❑ WRIT121T Introduction to Technical Writing (3) ***or***	
	❑ WRIT101 College Writing (3) (transferable)	
❑ TASK113	Keyboarding and Document Processing ***or***	3
	❑ CAPP154 MS Word (3)	
	Total Credits	**16**

Second Semester

❑ ACTG205	Computerized Accounting	3
❑ BUS200	Small Business Entrepreneurship	2
❑ HR110T	Career Development and Human Relations ***or***	3
	❑ SOCI101 Introduction to Sociology (3) (transferable) ***or***	
	❑ PSYX100 Introduction to Psychology (3) (transferable)	
❑ BUS205	Business Ethics	3
❑ CAPP156	MS Excel	3
❑ *Electives*		4
	Total Credits	**18 (34)**

Third Semester

❑ ACTG180	Payroll Accounting	3
❑ BUS210	Marketing	3
❑ ECNS203	Principles of Micro and Macro Economics *or*	3
	❑ ECNS201 Microeconomics (3) (transferable) ***or***	
	❑ ECNS202 Macroeconomics (3) (transferable)	
❑ BUS261	Human Resource Management *or*	3
	❑ BUS263 Legal Issues in Human Resources (3) ***or***	
	❑ BUS298 Internship (1-3)	
	❑ BUS292 Independent Study (1-3)	
❑ BUS265	Finance	3
❑ *Communications Electives*		3
	❑ WRIT121T Introduction to Technical Writing *or*	
	❑ COMM131 Introduction to Public Speaking (3) (transferable) ***or***	
	❑ COMM201 Introduction to Public Relations (3) (transferable)	
	Total Credits	**18**

Fourth Semester

❑ BUS246	Business Law I ***or***	3
	❑ BUS247 Business Law II (3)	
❑ BUS260	Management	3
❑ BUS231	Foundations of Public Administration	3
❑ BUS270	Business Plan	2
❑ CAPP153	MS PowerPoint	2
❑ *Electives*		3
	Total Credits	**16 (68)**

4-year degree in Business available at UM-Helena through partnership with Montana Tech. Please see 74 - 77 for details.

Evening – After Hours Degree Program
Small Business Management

The Evening – After Hours Degree Program Small Business Management option emphasizes general business courses to provide students with a broad background for the business environment while completing courses at the student's own pace. The Associate of Applied Science – Small Business Management Technology degree further offers management, marketing, ethics, and finance courses. The option will provide educational opportunities for students to develop the necessary skills to manage their own businesses. Evening - After Hours Degree program courses are offered beginning at 4:00 p.m., weekends beginning at 9:00 a.m. or online. Students build their futures at UM-Helena through individualized instruction developing practical problem-solving skills, strengthening their positions in the job market and for educational advancement toward earning a bachelor degree.

Length of Option: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

Course Number	Course Title	Credits		Availability
❑ ACTG101	Accounting Procedures I	4		Fall, Spring
❑ BUS105	Introduction to Business	3		Fall, Spring, Online
❑ *Math Requirement*		3		
	❑ M108T Business Math (3) ***or***			Online
	❑ M121College Algebra (3) (transferable)			Fall
❑ *English Requirement*		3		
	❑ WRIT121T Introduction to Technical Writing (3) ***or***			Online
	❑ WRIT101 College Writing (3) (transferable)			Fall, Spring, Online
❑ TASK113	Keyboarding and Document Processing or	3		Fall, Spring, Online
	❑ CAPP154 MS Word (3)			Fall, Spring, Online
	Total Credits	**16**		

Second Semester

❑ ACTG205	Computerized Accounting	3		Even Fall
❑ BUS200	Small Business Entrepreneurship	2		Online
❑ HR110T	Career Development and Human Relations ***or***	3		Online
	❑ SOCI101 Introduction to Sociology (3) (transferable) ***or***			Spring
	❑ PSYX100 Introduction to Psychology (3) (transferable)			Online
❑ BUS205	Business Ethics	3		Fall
❑ CAPP156	MS Excel	3		Fall, Spring, Online
❑ *Electives*		4		Fall, Spring, Online
	Total Credits	**18**	**(34)**	

Third Semester

❑ ACTG180	Payroll Accounting	3		Spring
❑ BUS210	Marketing	3		Even Spring
❑ ECNS203	Principles of Micro and Macro Economics ***or***	3		Odd Spring
	❑ ECNS201 Microeconomics (3) (transferable) ***or***			Fall
	❑ ECNS202 Macroeconomics (3) (transferable)			Spring
❑ BUS261	Human Resource Management ***or***	3		Fall
	❑ BUS263 Legal Issues in Human Resources (3) ***or***			Spring
	❑ BUS298 Internship (1-3) ***or***			TBA
	❑ BUS292 Independent Study (1-3)			TBA
❑ BUS265	Finance	3		Even Spring
❑ *Communications Electives*		3		
	❑ COMM131 Introduction to Public Speaking (3) (transferable) ***or***			Fall
	❑ COMM201 Introduction to Public Relations (3) (transferable)			Spring
	Total Credits	**18**		

Fourth Semester

❑ BUS246	Business Law I ***or***	3		Fall
	❑ BUS247 Business Law II (3)			Spring
❑ BUS260	Management	3		Odd Fall
❑ BUS231	Foundations of Public Administration	3		Even Fall
❑ BUS270	Business Plan	2		TBA
❑ CAPP153	MS PowerPoint	2		Fall, Spring, Online
❑ *Elective*		3		Fall, Spring, Online
	Total Credits	**16**	**(68)**	

Bookkeeping Specialist

Bookkeeping Specialist is designed for a student who has an earned degree or work experience in communications, business, or a related field. Upon successful completion of the course requirements for the Bookkeeping Specialist, the student receives a focus of study that is preparation for the national certification exam to become a *Certified Bookkeeper* (CB):

Type of Program: Focus of Study
Semester of Entry: Fall and Spring

	Course Number	Course Title	Credits
❑	CAPP156	MS Excel	3
❑	ACTG101	Accounting Procedures I	4
❑	ACTG102	Accounting Procedures II	4
❑	ACTG211	Income Tax Fundamentals (fall only)	3
❑	ACTG180	Payroll Accounting	3
❑	ACTG205	Computerized Accounting	3
		Total Credits	**20**

Human Resource Specialist

The Human Resource Specialist is designed for a student who has an earned degree or work experience in communications, business, or a related field. Upon successful completion of the course requirements for the Human Resource Specialist, the student receives a focus of study in human resource management.

Type of Program: Focus of Study
Semester of Entry: Fall and Spring

	Course Number	Course Title	Credits
❑	ACTG101	Accounting Procedures I	4
❑	ACTG180	Payroll Accounting	3
❑	BUS105	Introduction to Business	3
❑	BUS205	Business Ethics	3
❑	BUS261	Human Resource Management (fall only)	3
❑	BUS263	Legal Issues in Human Resources (spring only)	3
		Total Credits	**19**

Automotive Technology

The Automotive Technology **C**urriculum consists of eight areas of study as defined by the National Institute for Automotive Service Excellence (ASE) and is certified by the National Automotive Technicians Education Foundation (NATEF). This non-profit corporation is dedicated to improving the quality of automotive service and repair as well as assisting in training and program development throughout the nation. The eight content areas of study, along with the College's general education requirements, are structured into four groups with all eight areas of study being offered during a two-year period. Successful completion of this program will enable students to enter the automotive job market.

Upon admission to the Automotive Program, students are **required** to purchase a tool set as outlined in the tool section of this catalog. Students are also required to purchase school-approved coveralls and red rags for use in the shops and are responsible for a cleaning fee each semester.

Faculty Advisors: Dave Jones and Steve Schlauch
Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

	Course Number	Course Title	Credits
❑	AUTO105	Manual Drive Trains and Axles	7
❑	AUTO109	Electrical/Electronic Systems I	8
❑	M111T	Technical Mathematics	3
		Total Credits	**18**

Second Semester

❑	AUTO110	Engine Repair	6
❑	AUTO113	Electrical/Electronic Systems II	4
❑	AUTO130	Heating and Air Conditioning	5
❑	CAPP131	Basic MS Office	3
		Total Credits	**18 (36)**

Third Semester

❑	AUTO216	Engine Performance I	8
❑	AUTO221	Brakes and Chassis	6
❑	WRIT121T	Introduction to Technical Writing	3
		Total Credits	**17**

Fourth Semester

❑	AUTO260	Applied Lab Experience and Light Repair	4
❑	AUTO231	Engine Performance II	5
❑	AUTO225	Automatic Transmissions / Transaxles and Lab	7
❑	HR110T	Career Development and Human Relations	3
		Total Credits	**19 (72)**

Upon successful graduation in the Automotive Technology Program at UM-Helena, a 4-year B.S. degree in Automotive Technology is available through a partnership at Montana State University-Northern.

Aviation Maintenance Technology

The Aviation Maintenance Technology program provides students with the basic skills common to all mechanics as well as the specialized requirements unique to aircraft maintenance. A partial listing of the special skills a student will learn can be found in the course curriculum printed below.

Satisfactory completion of the program prepares and qualifies students for the Federal Aviation Administration's tests to obtain an Airframe and Powerplant Mechanic license. Completion of the program will also give the student the necessary job skills to gain employment in the aircraft industry. The Aviation Maintenance Technology program is approved and licensed by the FAA and requires four semesters of study to complete the course.

Students will need professional tools to gain employment upon graduation; therefore, they are required to purchase a tool set as outlined in the tool section. Students are required to purchase school-approved coveralls and red rags for use in the shops and are responsible for a cleaning fee each semester.

Faculty Advisor: Tod Dumas and Karl Kruger
Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

	Course Number	Course Title	Credits
❑	AVIA100	Introduction to Aviation Maintenance / Mathematics / Basic Physics	2
❑	AVIA105	Basic Electricity	2
❑	AVIA110	Aircraft Drawings / Weight and Balance	2
❑	AVIA115	Materials and Processes / Fluid Lines and Fittings / Cleaning and Corrosion Control	3
❑	AVIA120	Ground Operation and Servicing	2
❑	AVIA125	Maintenance Publications / Forms and Records / Mechanic Privileges and Limitations	2
❑	AVIA130	Basic Aerodynamics	2
❑	AVIA135	Assembly and Rigging / Airframe Inspection	3
❑	M111T	Technical Mathematics	3
		Total Credits	**21**

Second Semester

❑	AVIA140	Sheet Metal	3
❑	AVIA145	Composites and Plastics	3
❑	AVIA150	Wood Structures	2
❑	AVIA155	Aircraft Covering / Aircraft Finishes	2
❑	AVIA160	Welding	3
❑	AVIA165	Hydraulic and Pneumatic Power Systems	3
❑	AVIA170	Aircraft Landing Gear Systems / Position and Warning Systems	2
❑	CAPP131	Basic MS Office	3
		Total Credits	**21** **(42)**

Third Semester

❑	AVIA205	Aircraft Electrical Systems	2
❑	AVIA210	Aircraft Fuel Systems / Fire Protection Systems / Ice and Rain Control Systems	3
❑	AVIA215	Cabin Atmosphere Control Systems	2
❑	AVIA220	Aircraft Instrument Systems / Communication and Navigation Systems	3
❑	AVIA225	Development of Aircraft Powerplants	2
❑	AVIA230	Reciprocating Engines and Systems	6
❑	WRIT121T	Introduction to Technical Writing	3
		Total Credits	**21**

Fourth Semester

❑	AVIA235	Turbine Engines and Systems	6
❑	AVIA240	Engine Instrument Systems	2
❑	AVIA245	Engine Electrical Systems / Auxiliary Power Unit	2
❑	AVIA250	Engine Fire Protection Systems	2
❑	AVIA255	Propellers and Unducted Fans	6
❑	HR110T	Career Development and Human Relations	3
		Total Credits	**21** **(84)**

Computer Technology

Computer Technology is designed to teach students the basic knowledge and skills necessary to solve technical and business oriented problems using computer development tools and to build and maintain computer systems and networks. Students will experience a variety of course work using Web development, workstation, and server-based computer systems. Courses are organized to provide a mix of lecture and hands-on experiences. Typical classes cover personal computer applications and languages including Oracle, Visual Basic.NET, Java, SQL, PL/SQL, C#, ASP.NET, JSP, PHP, Perl, XML, and Java Script. Operating systems used are Windows 7, Windows 2008 Server, Cisco IOS, and Linux.

Completion of the first year's curriculum in Network Administration, Programming, or Webmaster leads to a certificate in Computer Assistant. The two-year curriculum leads to an Associate of Applied Science degree with options in Network Administration, Programming, or Webmaster. Graduates in Network Administration have worked toward Cisco's CCNA and Microsoft's MSCE certification and are marketable as network managers. Graduates in Programming are employable in large organizations, typically with Oracle, Java, or Microsoft-based systems and have worked toward several Oracle and Microsoft certifications. Graduates with the Webmaster option are marketable as webmasters and web developers and have worked toward Java and Microsoft certification. Note also that there are options in the A.A. and A.S. degrees that emphasize transfer to 4-year programs.

Students are required to take the classes and credits shown below from a selected option: Network Administration, Programming, or Webmaster. Elective credits are entirely up to the student and may be any 100 level or higher course as shown in the course schedule. Common choices include other computer classes, electronics classes, Microsoft Office classes, or business and accounting classes.

Faculty Advisors: Emmett Coon, Shaun Scott, and Bryon Steinwand

Requirements for all programs: Students must fulfill their math requirements in at least M121 College Algebra and their English requirements in at least WRIT121T Introduction to Technical Writing. *Students must have a computer competency equal to CAPP100 Short Courses: Computer Literacy and CAPP131 Basic MS Office. These placements are determined through placement testing at enrollment (or previous accredited classes).* Students who do not place into these classes will be required to take them at the beginning of their program, although the credits may be used to meet the Elective requirements in the first semester.

As a graduation requirement students in the UMH Computer Technology A.A.S. program must demonstrate proficiency in the program core and their chosen option area; Networking, Programming, or Webmaster. All Computer Technology A.A.S. students must pass a proficiency test based upon core course objectives, option area course objectives within the students option of choice, program objectives, and corresponding nationally recognized competencies and standards. Self-paced study guides and focused study sessions are available to supplement developing skills and conceptual knowledge necessary to pass the test.

Length of Programs: Computer Assistant - 2 Semesters
Computer Technology - 4 Semesters

Type of Program: Computer Assistant - Certificate of Applied Science
Computer Technology - Associate of Applied Science

Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

Computer Assistant

A one year certificate is earned by completing the courses shown for the first year in any of the three options to total 33 or 34 credits.

Network Administration

Sequence is for fall entry; see your advisor for spring entry sequences.

First Semester * = Requires Successful CT Placement and Basic MS Office Placement

First Semester

Course Number	Course Title	Credits
❑	**Successful Placement ***	
❑	*Electives or*	4
	❑ **Unsuccessful Placement**	
	❑ CAPP100 Short Courses: Computer Literacy and/or	1
	❑ CAPP131 Basic MS Office	3
❑ CSCI100	Introduction to Programming	3
❑ ITS150	CCNA 1: Exploration*	4
❑ WRIT101	College Writing I (transferable) ***or***	3
	❑ WRIT121T Introduction to Technical Writing (3)	
❑ M121	College Algebra (3) (transferable) ***or***	3
	❑ M115 Probability and Linear Mathematics (3)	
	Total Credits	**17**

Second Semester

❑ CSCI115	Programming with Perl	3
❑ CSCI240	Databases and SQL	4
❑ ITS152	CCNA 2: Exploration	3
❑ ITS280	Computer Repair and Maintenance	4
❑ *English or Communications Elective*		3
	❑ COMM131 Introduction to Public Speaking (3) ***or***	
	❑ WRIT101 College Writing I (3) *or higher*	
❑ *Electives*		1
	Total Credits	**18**

Third Semester

❑ BUS105	Introduction to Business	3
❑ CT115	Web Pages	3
❑ CT247	Operating Systems (fall only)	3
❑ ITS250	CCNA 3: Exploration	3
❑ ITS224	Introduction to Linux (fall only)	3
❑ SOCI101	Introduction to Sociology (transferable) ***or***	3
	❑ PSYX100 Introduction to Psychology (3) (transferable) ***or***	
	❑ HR110T Career Development and Human Relations (3)	
	Total Credits	**18**

Fourth Semester

❑ ITS212	Network Operating System - Server Admin (spring only)	4
❑ CSCI212	Web Server Administration (spring only)	3
❑ ITS218	Network Security (spring only)	3
❑ ITS252	CCNA 4: Exploration (spring only)	3
❑ CSCI298	Internship (arrange) ***or***	2
	❑ CSCI299 Thesis/Capstone (prior approval required)	
❑ PHL110	Problems of Good and Evil *or*	3
	❑ BUS205 Business Ethics (3)	
	Total Credits	**18**

(71)

Programming

Sequence is for fall entry; see your advisor for spring entry sequences.

First Semester

Course Number	Course Title	Credits
❑	**Successful Placement ***	
❑	*Electives or*	4
	❑ **Unsuccessful Placement**	
	❑ CAPP100 Short Courses: Computer Literacy and/or	1
	❑ CAPP131 Basic MS Office	3
❑ CSCI100	Introduction to Programming	3
❑ CT115	Web Pages	3
❑ WRIT101	College Writing I (transferable) ***or***	3
	❑ WRIT121T Introduction to Technical Writing (3)	
❑ M121	College Algebra (3) *or* (transferable) ***or***	3
	❑ M115 Probability and Linear Mathematics (3)	
	Total Credits	**16**

Second Semester

❑ CSCI110	Programming with Visual Basic I	3
❑ CSCI240	Databases and SQL	4
❑ ITS280	Computer Repair and Maintenance	4
❑ *English or Communications Elective*		3
	❑ COMM131 Introduction to Public Speaking (3) ***or***	
	❑ WRIT101 College Writing I (3) *or higher*	
❑ SOCI101	Introduction to Sociology (3) (transferable) ***or***	3
	❑ PSYX100 Introduction to Psychology (3) (transferable) ***or***	
	❑ HR110T Career Development and Human Relations (3)	
	Total Credits	**17**

Third Semester

❑ CSCI111	Programming with Java I (fall only)	4
❑ CT253	Developing Web Applications (fall only)	3
❑ CSCI221	Systems Analysis and Design (fall only)	3
❑ CSCI241	PL/SQL (fall only)	4
❑ CSCI206	.NET Applications (fall only)	3
❑ CSCI298	Internship (arrange) ***or***	2
	❑ CSCI299 Thesis/Capstone (prior approval required)	
	Total Credits	**19**

Fourth Semester

❑ CT210	Project Management (spring only)	3
❑ CSCI121	Programming with Java II (spring only)	4
❑ CT262	Web Databases (spring only)	4
❑ CSCI242	Enterprise Applications (spring only)	4
❑ PHL110	Problems of Good and Evil ***or***	3
	❑ BUS205 Business Ethics (3)	
	Total Credits	**18** **(70)**

Webmaster

Sequence is for fall entry; see your advisor for spring entry sequences.

First Semester

Course Number	Course Title	Credits
❑	**Successful Placement ***	
❑	*Electives or*	4
	❑ **Unsuccessful Placement**	
	❑ CAPP100 Short Courses: Computer Literacy and/or	1
	❑ CAPP131 Basic MS Office	3
❑ CSCI100	Introduction to Programming	3
❑ CT115	Web Pages	3
❑ WRIT101	College Writing I (transferable) ***or***	3
	❑ WRIT121T Introduction to Technical Writing (3)	
❑ M121	College Algebra (3) (transferable) ***or***	3
	❑ M115 Probability and Linear Mathematics (3)	
	Total Credits	**16**

Second Semester

❑ CSCI110	Programming with Visual Basic I	3
❑ CSCI240	Databases and SQL	4
❑ ITS280	Computer Repair and Maintenance	4
❑ *English or Communication Elective*		3
	❑ COMM131 Introduction to Public Speaking (3) ***or***	
	❑ WRIT101 College Writing I (3) *or higher*	
❑ SOCI101	Introduction to Sociology (transferable) ***or***	3
	❑ PSYX100 Introduction to Psychology (3) (transferable) ***or***	
	❑ HR110T Career Development and Human Relations (3)	
	Total Credits	**17**

Third Semester

❑ CSCI111	Programming with Java I (fall only)	4
❑ ITS224	Introduction to Linux (fall only) ***or***	3/4
	❑ ITS212 Network Operating System - Server Admin (4) (spring only)	
❑ CSCI210	Web Programming	3
❑ CT253	Developing Web Applications (fall only)	3
❑ CSCI206	.NET Applications (fall only)	3
❑ CSCI298	Internship (arrange) ***or***	2
	❑ CSCI299 Thesis/Capstone (prior approval required)	
	Total Credits	**18/19**

Fourth Semester

❑ CT161	Web Page Graphic Design (spring only)	2
❑ CT181	Client Side Web Development (spring only)	3
❑ CSCI121	Programming with Java II (spring only)	4
❑ CSCI212	Web Server Administration (spring only)	3
❑ CT262	Web Databases (spring only)	4
❑ PHL110	Problems of Good and Evil ***or***	3
	❑ BUS205 Business Ethics (3)	
	Total Credits	**19**

(70/71)

Students may pursue a Bachelors of Science in Computer Science at Carroll College. Please see page 73 for details.

Construction Technology

Construction Technology prepares students with entry level skills for the construction industry. The Certificate of Applied Science, or one-year Carpentry program, includes site layout, framing, floors, walls, and roofs, as well as interior and exterior finishing, and welding. The two-year Associate of Applied Science program adds stationary tools, construction management, construction estimating, light equipment and rigging, and special topics in construction. These classes are taught using a combination of classroom work and hands-on building. Students will need professional tools to gain employment upon graduation; therefore, they are required to purchase a tool set as outlined in the tool section.

Faculty Advisors: Mike Ceartin and Harold Kelly
Semester of Entry: Fall

Carpentry

Length of Program: 2 Semesters
Type of Program: Certificate of Applied Science

First Semester

	Course Number	Course Title	Credits
❑	CSTN100	Fundamentals of Construction Technology	3
❑	CSTN120	Carpentry Basics and Rough-In Framing	5
❑	CSTN160	Construction Concepts and Building Lab	3
❑	CSTN148	Blueprint Reading, Codes and Estimating	3
❑	HR100T	Human Relations	2
❑	M100T	Introduction to Technical Mathematics	1
		Total Credits	**17**

Second Semester

❑	CSTN145	Ext. Finish, Stair, and Metal SF	3	
❑	CSTN137	Insulation and Energy Building Practices	2	
❑	CSTN175	Roofing Applications	3	
❑	CSTN150	Drywall Application and Finishing	3	
❑	CSTN124	Cabinet Installation, Interior/Finish/Paint	2	
❑	CSTN161	Construction Concepts and Building Lab II	3	
❑	WRIT104T	Workplace Communication	2	
❑	CAPP106	Short Courses: Computer Applications	1	
		Total Credits	**19**	**(36)**

Construction Technology

Construction

Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Prerequisites: Enrollment in the second year is dependent on successful completion of the first year or prior faculty approval.

First Semester

	Course Number	Course Title	Credits
❑	CSTN100	Fundamentals of Construction Technology	3
❑	CSTN120	Carpentry Basics and Rough-In Framing	5
❑	CSTN160	Construction Concepts and Building Lab	3
❑	CSTN148	Blueprint Reading, Codes and Estimating	3
❑	M111T	Technical Mathematics	3
		Total Credits	**17**

Second Semester

❑	CSTN145	Ext. Finish, Stair, and Metal SF	3	
❑	CSTN137	Insulation and Energy Building Practices	2	
❑	CSTN175	Roofing Applications	3	
❑	CSTN150	Drywall Application and Finishing	3	
❑	CSTN124	Cabinet Installation, Interior/Finish/Paint	2	
❑	CSTN161	Construction Concepts and Building Lab II	3	
❑	CAPP131	Basic MS Office	3	
		Total Credits	**19**	**(36)**

Third Semester

❑	CSTN200	Light Equipment and Rigging	3	
❑	CSTN230	Advanced Roof, Floor, Wall, and Stair Systems	4	
❑	CSTN235	Stationary Machines and Joinery	2	
❑	CSTN211	Advanced Framing Systems	3	
❑	CSTN295	Practicum: Construction	2	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**17**	

Fourth Semester

❑	CSTN171	Site Prep, Foundations, and Concrete Installation	3	
❑	CSTN270	Foundations of Construction Project Management	2	
❑	CSTN225	Decks and Patios	2	
❑	CSTN260	Construction Concepts and Building Lab III	3	
❑	CSTN236	Advanced Stationary Machines and Joinery	2	
❑	CSTN250	Construction Estimating	3	
❑	WLDG103	Welding Fundamentals for Construction Trades	1	
❑	WRIT121T	Introduction to Technical Writing	3	
		Total Credits	**19**	**(72)**

Interior Space Planning and Design

The Interior Space Planning and Design Certificate Program provides a distinctive curriculum with a career oriented approach. Coursework includes the fundamentals of design, design analysis by the utilization of the design process, space planning, material selection and specifications relating to both residential and commercial design, Computer Aided Drafting (CAD) skills, and codes and regulations. The one-year certificate prepares a graduate to work in interior design CAD positions, merchandising and sales, and as an interior design assistant.

Advisor: Karen Raphael
Length of Program: 2 Semesters
Type of Program: Certificate of Applied Science

First Semester

Course Number	Course Title	Credits
❑ DESN101	Introduction to Interior Design	3
❑ DESN120	Beginning Space Planning and Design	3
❑ DFT150	AutoCAD 2D	3
❑ WRIT121T	Introdution to Technical Writing	3
❑ ARTS212	Basic Drawing	3
	Total Credits	**15**

Second Semester

❑ DESN130	Residential Studio	3
❑ DESN140	Public Studio	3
❑ DFT200	AutoCAD 3D	3
❑ M111T	Technical Mathematics	3
❑ BUS105	Introduction to Business	3
	Total Credits	**15** **(30)**

Computer Aided Drafting

The Computer Aided Drafting (CAD) focus will provide students with a solid foundation in the utilization of CAD as a tool for various drafting technologies. Those students who are exploring the field of Computer Aided Design, or need to develop CAD skills, will find this certificate challenging and beneficial for future applications. Students are able to select Architecture or Technical options. This focus is designed to be completed in correlation with an A.A.S. degree, and it will take 3 semesters to complete the sequence.

Length of Program: 9 Semester Credits
Type of Program: Focus of study

Course Number	Course Title	Credits
❑ DFT150	AutoCAD 2D	3
❑ DFT200	AutoCAD 3D	3
❑ DFT210	Technical Drafting I - CAD 2D *or*	3
	❑ DFT225 Architectural Drafting I - CAD (3)	
	Total Credits	**9**

Diesel Technology

Diesel Technology prepares the student to enter various segments of the diesel repair industry as an entry-level technician. This includes, but is not limited to, the agricultural, the industrial equipment, and the heavy-duty diesel truck repair industry. This program provides comprehensive training in maintenance, diagnosis, and repair of related electrical/electronic systems, mobile hydraulic systems, manual and hydraulic drive trains, brakes, air systems, diesel engines, general maintenance, alignment and undercarriages, HVAC, and transport refrigeration systems as used in equipment common to the diesel repair industry. Major placement areas for the Diesel Technology graduate are agriculture and truck dealerships, truck fleets, construction, mining, oil exploration companies, farms and ranches, and independent truck repair shops.

Students will need professional tools to gain employment upon graduation; therefore, they are required to purchase a tool set as outlined in the tool section. Students are required to purchase school-approved coveralls and red rags for use in the shops and are responsible for a cleaning fee each semester.

Faculty Advisors: Ralph Rinehart and Rick Purcell
Length of Program: 4 Semesters
Type of Programs: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

	Course Number	Course Title	Credits	
❑	DESL122	Hydraulics	5	
❑	DESL110	Diesel Electrical and Electronics I	3	
❑	DESL111	Diesel Electrical and Electronics II	2	
❑	M111T	Technical Mathematics	3	
❑	WLDG101	Welding Fundamentals for Auto Tech/Diesel	1	
❑	WRIT121T	Introduction to Technical Writing	3	
		Total Credits	**17**	

Second Semester

❑	DESL135	Diesel Engine Repair	6	
❑	DESL130	Diesel HVAC and Transport Refrigeration ***or***	7	
		❑ DESL235 Heavy Duty Manual Drive Trains (6) ***and***		
		❑ DESL245 Heavy Duty Hydraulic Drive Trains (3)		
❑	CAPP131	Basic MS Office	3	
		Total Credits	**16/18**	**(33/35)**

Third Semester

❑	DESL200	Diesel Engine Performance	7	
❑	DESL210	Diesel Maintenance Practices	5	
❑	DESL255	Heavy Duty Brakes and Undercarriage	7	
		Total Credits	**19**	

Fourth Semester

❑	DESL235	Heavy Duty Manual Drive Trains ***and***	6	
❑	DESL245	Heavy Duty Hydraulic Drive Trains ***or***	3	
		❑ DESL130 Diesel HVAC and Transport Refrigeration (7)		
❑	DESL265	Applied Lab Experience	8	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**18/20**	**(72)**
	Elective			
❑	MECH205	Small Engines	2	

Fire and Rescue

Students in this program will graduate with an Associate of Applied Science Degree in Fire and Rescue. The program will provide applied entry-level career training for fire fighters and will enhance on-going training for current protective services professionals in Montana and the western states.

All coursework required in the Fire and Rescue program is offered in Helena and Missoula.

Students taking computers, math, writing, and career development on the UM-Missoula College of Technology campus will take the equivalent courses of CAPP120 Introduction to Computers (2 credits); PSYX161 Fundamentals of Organizational Psychology (3 credits) *or* PSYX100 Introduction to Psychology (4 credits); WRIT121 Introduction to Technical Writing (3 credits); and M111T Technical Mathematics (3 credits).

Fire and Rescue courses concentrate on training in fire behavior, extinguishing agents, apparatus, tactics, rescue, and safety. Students will experience live fire situations in training mock-ups and will be able to enter careers in community-based fire departments, industrial fire brigades, airport fire brigades, and wildland fire agencies.

Official acceptance into the Fire and Rescue program is contingent upon successfully completing two physical requirements. The first requirement is passing a physical exam performed by the student's family physician or medical practitioner. The physical form is available through Admissions and New Student Services.

The physical agility test is the second physical requirement. Students must successfully complete the following physical agility test, within a one and one-half hours' time frame, before being allowed to register for Fire and Rescue classes. The required physical agility test will be offered at fall orientation programs. Fire and Rescue applicants will be notified of specific testing and orientation dates.

The physical agility test includes:

- One-mile-run under 10 minutes
- Fifty sit-ups under two minutes
- Twenty-five push-ups under two minutes
- Lift and drag a 175-pound mannequin 50 feet
- Climb a 24 foot ladder

These meet minimum standards as set forth under the guidelines of the National Fire Protection Association Standards 1500, 1582, and 1901.

Additional Costs:

- Student Uniform - Approximately $300
- Personal Protective Equipment - Approximately $250
- Turnout Rental - $210 per academic year; includes bunker pants, coat, and helmet
- Criminal Background Check - Approximately $50

Requirements for FIRE105 Emergency Medical Technician-Basic (EMT):

- Students are required to have their own blood pressure cuff and stethoscope.
- Students are required to have the Hepatitis B vaccine and current (within six months) test for tuberculosis.

Faculty Advisor: Dave Kneebone
Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall
Special Requirements: Successfully Passing Physical Exam, Agility Test, and Criminal Background Check

First Semester

	Course Number	Course Title	Credits
❑	FIRE101	Introduction to Fire Service	3
❑	FIRE103	Fire Fighter Safety	3
❑	FIRE105	EMT-Basic	4
❑	FIRE107	Personal Physical Fitness I	1
❑	FIRE120	Emergency Services Customer Service	2
❑	FIRE121	Incident Command	1
❑	WRIT121T	Introduction to Technical Writing	3
		Total Credits	**17**

Second Semester

	Course Number	Course Title	Credits	
❑	FIRE106	Wildland Fire Fighting	3	
❑	FIRE108	Personal Physical Fitness II	1	
❑	FIRE110	Hazardous Materials	3	
❑	FIRE123	Electronic Communications	1	
❑	FIRE125	Emergency Equipment Maintenance	2	
❑	FIRE130	Fire Apparatus Operation	3	
❑	FIRE140	Fire Fighting Tactics and Strategies	3	
❑	CAPP131	Basic MS Office	3	
		Total Credits	**19**	**(36)**

Third Semester

❑	FIRE202	Instructional Methodologies	2	
❑	FIRE234	Fire Protection Systems	3	
❑	FIRE241	Fire Inspection	3	
❑	FIRE242	Rescue	3	
❑	FIRE260	Fire Investigation	3	
❑	FIRE261	Building Construction	1	
❑	M111T	Technical Mathematics	3	
		Total Credits	**18**	

Fourth Semester

❑	FIRE210	Aircraft Rescue and Fire Fighting Basic Training (ARFF)	2	
❑	FIRE215	Fire Streams	2	
❑	FIRE225	Fire Officer	2	
❑	FIRE232	Basic Wildland Supervision	2	
❑	FIRE250	Fire Ground Operations	2	
❑	FIRE270	Fire Prevention	3	
❑	FIRE288	Capstone	2	
❑	HR110T	Career Development and Human Relations ***or***	3	
		❑ PSYX161 Fundamentals of Organizational Psychology		
		Total Credits	**18**	**(72)**

Machine Tool Technology

Machine Tool Technology is designed to prepare students as entry level machinists in many areas, including aerospace, computer industries, job shop, gun smithing, tool and die making, Computer Numerical Control (CNC) operator, and CNC programmer. Students will study machining processes and procedures using lathes, mills, drill presses, cylindrical grinders, and surface grinders.

The first year students will use a variety of manual machines including engine lathes, horizontal and vertical mills, cylindrical grinders, surface grinders, drill presses, and radial arm drill. Students will work from blueprints and follow exact specifications and apply practical shop math to accomplish the required tasks. Much of the lab time will used for shop and project work.

The second-year CNC portion of machine shop is devoted to the programming and operation of the CNC machine. Students will be prepared to enter the work force as entry level programmers and CAD/CAM technicians. Students will program and operate machining centers and turning centers in the lab. Students will learn the Mastercam programming system, which allows students to design parts on the computer and then manufacture them in the lab. Students will work from blueprints and exact specifications that are used in industry. Lab work will include manual and CNC machine use. These machines will be used for manufacturing fixtures, project work, and production projects.

Faculty Advisor: Tom Jungst and Art Warner

Machine Tool Technology

Length of Program: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall

First Semester

	Course Number	Course Title	Credits
❑	M100T	Introduction to Technical Mathematics	1
❑	MACH110	Machine Shop	3
❑	MACH115	Introduction to Engine Lathes	5
❑	MACH120	Introduction to Mills	5
❑	MACH125	Blueprint Reading for the Machinist	2
❑	HR100T	Human Relations	2
		Total Credits	**18**

Second Semester

❑	WRIT104T	Workplace Communications	2	
❑	MACH132	Advanced Lathes	5	
❑	MACH137	Advanced Mills	5	
❑	MACH140	Grinding Applications	2	
❑	MACH245	Metallurgy	1	
❑	MACH250	Shop Practices	2	
❑	CAPP106	Short Courses: Computer Applications	1	
		Total Credits	**18**	**(36)**

Machine Tool Technology

Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall

First Semester

	Course Number	Course Title	Credits	
❑	MACH110	Machine Shop	3	
❑	MACH115	Introduction to Engine Lathes	5	
❑	MACH120	Introduction to Mills	5	
❑	MACH125	Blueprint Reading for the Machinist	2	
❑	M111T	Technical Mathematics	3	
		Total Credits	**18**	

Second Semester

❑	MACH132	Advanced Lathes	5	
❑	MACH137	Advanced Mills	5	
❑	MACH140	Grinding Applications	2	
❑	MACH245	Metallurgy	1	
❑	MACH250	Shop Practices	2	
❑	CAPP131	Basic MS Office	3	
		Total Credits	**18**	**(36)**

Third Semester

❑	MACH210	CNC Turning Operations Level 1	3	
❑	MACH212	CNC Turning Programming and Operation Level 2	3	
❑	MACH220	CNC Milling Operations Level 1	3	
❑	MACH222	CNC Milling Programming and Operations Level 2	3	
❑	MACH205	Tooling and Fixtures used in CNC	2	
❑	WRIT121T	Introduction to Technical Writing	3	
		Total Credits	**17**	

Fourth Semester

❑	MACH218	CNC Turning Programming and Operations Level 3	3	
❑	MACH224	CNC Milling Programming and Operations Level 3	3	
❑	MACH241	CAD/CAM for the CNC Turning Center	5	
❑	MACH242	CAD/CAM for the CNC Machining Center	5	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**19**	**(72)**

Metals Technology

Metals Technology is designed to prepare students as entry-level technicians in many areas, including automotive machining, tool and die making, mold making, job shop machinist, gun smithing, lay-out and inspection welding, new construction welder, and fabrication. Students will study machining processes and procedures, properties of metals, blueprint reading, inspection techniques. Welding skills (including practical, theoretical, and technical training) are taught using oxyacetylene, manual stick electrode, semiautomatic Mig, Tig (Heliarc), dualshield Mig, and various additional processes. Miller Electric has chosen UM-Helena as one of its regional training centers. Therefore, students will receive training on the latest state-of-the-art equipment in Mig, Tig (Heliarc) and Stick Electrode. Students will work from blueprints, follow exact specifications, and apply practical shop math to accomplish the required tasks. Much of the lab time in both areas will be used for shop project work.

An educational background in mechanical drawing, shop math, welding, and mechanical welding is helpful. Students are required to have a basic set of tools upon entrance to the program as outlined in the tool section of this catalog.

Students may begin their instruction in the two-year Metals Technology program, depending upon the space available, in either the machine tool or the welding area.

Faculty Advisors: Tim Harris, Tom Jungst, Seth Slocum, Art Warner, and Glen Zeigler

Metals Technology

Students selecting ***machine tool*** first year follow this sequence of courses.

Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall

First Semester

	Course Number	Course Title	Credits
❑	MACH110	Machine Shop	3
❑	MACH115	Introduction to Engine Lathes	5
❑	MACH120	Introduction to Mills	5
❑	MACH125	Blueprint Reading for the Machinist	2
❑	M111T	Technical Mathematics	3
		Total Credits	**18**

Second Semester

❑	MACH132	Advanced Lathes	5	
❑	MACH137	Advanced Mills	5	
❑	MACH140	Grinding Applications	2	
❑	MACH245	Metallurgy	1	
❑	MACH250	Shop Practices	2	
❑	CAPP131	Basic MS Office	3	
		Total Credits	**18**	**(36)**

Third Semester

❑	WLDG105	Shop Safety	1
❑	WLDG180	Shielded Metal Arc Welding	4
❑	WLDG133	GMAW, FCAW, and GMAW-P	4
❑	WLDG117	Blueprint Reading and Weld Symbols	3
❑	WLDG132	Estimating of Job Materials	3
❑	WRIT121T	Introduction to Technical Writing	3
		Total Credits	**18**

Fourth Semester

❑	WLDG131	Intro to Layout and Pattern Making	3	
❑	WLDG160	Rigging for Welders	1	
❑	WLDG140	Intro Gas Tungsten ARC Welding (GTAW) - Integrated Lab	3	
❑	WLDG155	Design and Fabrication	4	
❑	WLDG151	Shop Practices	4	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**18**	**(72)**

Metals Technology

Students selecting ***welding*** first year follow this sequence of courses.

Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall

First Semester

	Course Number	Course Title	Credits
❑	WLDG105	Shop Safety	1
❑	WLDG180	Shielded Metal Arc Welding	4
❑	WLDG133	GMAW, FCAW, and GMAW-P	4
❑	WLDG117	Blueprint Reading and Weld Symbols	3
❑	WLDG132	Estimating of Job Materials	3
❑	M111	Technical Mathematics	3
		Total Credits	**18**

Second Semester

❑	WLDG131	Intro to Layout and Pattern Making	3	
❑	WLDG160	Rigging for Welders	1	
❑	WLDG140	Intro Gas Tungsten ARC Welding (GTAW) - Integrated Lab	3	
❑	WLDG155	Design and Fabrication	4	
❑	WLDG151	Shop Practices	4	
❑	CAPP131	Basic MS Office	3	
		Total Credits	**18**	**(36)**

Third Semester

❑	MACH110	Machine Shop	3
❑	MACH115	Introduction to Engine Lathes	5
❑	MACH120	Introduction to Mills	5
❑	MACH125	Blueprint Reading for the Machinist	2
❑	WRIT121T	Introduction to Technical Writing	3
		Total Credits	**18**

Fourth Semester

❑	MACH132	Advanced Lathes	5	
❑	MACH137	Advanced Mills	5	
❑	MACH140	Grinding Applications	2	
❑	MACH245	Metallurgy	1	
❑	MACH260	Project Management	2	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**18**	**(72)**

Nursing Programs

The nursing curricula prepare graduates to function as members of the health care team in various health care environments. The curricula focus on preparation for employment and articulation. The nursing programs consist of an Associate of Applied Science in Practical Nursing, and an Associate Degree in Registered Nursing. The nursing program is approved by the Montana State Board of Nursing.

In the Fall of 2010, the statewide curriculum for the PN program will be implemented which means all PN students will be required to have all 8 prerequisite classes completed before being admitted into the clinical portion of the program. PN students will be admitted in both the fall and spring semesters.

The associate of science degree leading to the registered nursing program is currently following the statewide curriculum, continuing as a Fall-Spring sequence program.

Admission to the program also requires completion of the application which can be obtained on the UM-Helena webpage under nursing application, through Admissions & New Student Services Office or the nursing department. Deadlines can be obtained from the nursing department and will be posted on the webpage. A student may apply while enrolled in the prerequisite courses with acceptance to the program to be determined after the current completed semester grades are finalized. A general physical examination is part of the application process.

A student must maintain a "C" or better in each of the courses required and complete each semester prior to progressing to the next semester. After the student is accepted into the nursing program, he or she must provide proof of the following health requirements: tuberculosis testing using the PPD or chest x-ray; Hepatitis B vaccine (a series of three injections); MMR series (those born before 1956 and did not receive the MMR will have to complete a titer); illness or vaccination for Varicella (chicken pox); Tetanus ; current CPR for the Health Care Provider and a criminal background check.

Practical Nursing

The practical nurse uses specialized knowledge and skills which meet the health care needs of people in a variety of settings under the direction of qualified health professions. The curriculum focuses on preparation for employment.
Students learn practical nursing skills through independent study, lectures, simulation demonstrations, and practice in the skills lab. Under instructor supervision, students also provide patient care in a variety of health care settings. The program is approved by the Montana State Board of Nursing

Graduates of the program are eligible to apply for the National Council of Licensing Examination (NCLEX) PN licensure examination from the Montana State Board of Nursing. Upon passing the examination, the graduate becomes a Licensed Practical Nurse, LPN. After licensure, graduates typically find employment in hospitals, nursing homes, physician offices and other health care agencies.

Admission is by application only. The application process includes a Test of Essential Academic Skills (TEAS) pre-entrance exam. Applications are good for current start only; current applications are available through Admissions & New Student Services Office or the nursing department. The application process requires that a student successfully complete the following coursework with a "C" or better:

Associate of Applied Science in Practical Nursing
(New Statewide Curriculum)

Prerequisite Courses
To be completed prior to application to the program. A prerequisite course may be attempted a maximum of two (2) times.

- BIOL207 Anatomy & Physiology I with lab 4
- M121 College Algebra 3
- PSYX100 Introduction to Psychology 3
- WRIT101 College Writing 3
- BIOL208 Anatomy & Physiology II with lab 4
- NUTR112 Nutrition 3
- CHMY121 General & Inorganic Chemistry 3
- CHMY122 General & Inorganic Chemistry Lab.....1
- NRSG100 Introduction to Health Care & Nursing 1

Nursing Programs

Faculty: Candace Pescosolido, MSN; Karmen Williams, MSN; Sheri Marchand-Smith, MSN
Program Director: Sandy Sacry, MSN
Administrative Assistant: Samantha Cooley

Length of Program: Associate of Applied Science in Practical Nursing: 4 semesters, 51/52 credits

Prerequisite Courses
These courses are to be completed prior to application to the program. A prerequisite course may be attempted a maximum of two (2) times. Please see a program advisor for any questions concerning changing to the statewide curriculum.

First Semester - (Pre-nursing requirements)

	Course Number	Course Title	Credits
❑	BIOL207	Anatomy and Physiology I	4
❑	WRIT101	College Writing I	3
❑	M121	College Algebra	3
❑	NUTR112	Nutrition	2 or 3
		Total Credits	**12/13**

Second Semester - (Pre-nursing requirements)

❑	BIOL208	Anatomy and Physiology II	4
❑	PSYX100	Introduction to Psychology	3
❑	NRSG100	Introduction to Nursing	1 or 2
❑	CHMY121	General and Inorganic Chemistry	3
❑	CHMY122	General and Inorganic Chemistry Lab	1
		Total Credits	**12/13**

Third Semester

Admission is by application only. Please check with Admissions & New Student Services or the nursing department for current application information

Students- Please note! Weekly schedule includes labs, clinical and simulations that cannot be reflected on the course catalog schedule. Students should plan for 30-40 hours per week. The nursing department will supply students with a schedule once admission is determined.

	Course Number	Course Title	Credits
❑	NRSG130	Fundamentals of Nursing	4
❑	NRSG131	Fundamentals of Nursing Lab	3
❑	NRSG135	Nursing Pharmacology	3
❑	NRSG138	Gerontology for Nursing	2
		Total Credits	**12**

Fourth Semester

❑	NRSG140	Core Concepts of Adult Nursing	7
❑	NRSG142	Core Concepts of Maternal/Child Nursing	3
❑	NRSG144	Core Concepts of Mental Health Nursing	2
❑	NRSG148	Leadership Issues	2
		Total Credits	**14 (51/52)**

Nursing Programs

Associate Degree Leading To Registered Nursing

The Associate degree program prepares graduates to function as members and leaders of health care teams in various health care environments. The curriculum focuses on preparation for employment. Some of the course work is transferable. Graduates of the program are eligible to apply for the NCLEX-RN licensure examination from the Montana State Board of Nursing. After passing the examination, the graduate becomes a Registered Nurse, RN.

Entry into the ASRN program is by application-only in the spring for fall semester. Applications are available through Admissions & New Student Services or the nursing department. The application process includes a LPN STEP pre-entrance exam and a physical examination. Applications are good for current year only; current applications are available through Admissions & New Student Services or the nursing department. The application process requires that a student have a current, unencumbered LPN licensure (from any state) and/or is a graduate of the statewide curriculum PN program, and has successfully complete the following coursework with a "C" or better:

- BIOL207 Anatomy and Physiology I with lab 4
- BIOL208 Anatomy and Physiology II with lab 4
- WRIT101 College Writing I 3
- CHYM121 General and Inorganic Chemistry 3
- CHYM122 General and Inorganic Chemisty Lab 1
- M121 College Algebra 3
- NUTR112 Nutrition .....2 or 3
- PSYX100 Introduction to Psychology 3
- NRSG100 Introduction to Nursing .....1 or 2

Faculty: Candace Pescosolido, MSN; Karmen Williams, MSN; Sheri Marchand-Smith, MSN
Program Director: Sandy Sacry, MSN
Administrative Assistant: Samantha Cooley

Length of Program: Associate Degree Leading to Registered Nursing: 27 credits, 2 Semesters

Admission is by application only. Please check with Admissions & New Student Services or the nursing department for current application information

Students- Please note! Weekly schedule includes labs, clinical and simulations that cannot be reflected on the course catalog schedule. Students should plan for 30-40 hours per week. The nursing department will supply students with a schedule once admission is determined.

First Semester

	Course Number	Course Title	Credits
❑	NRSG250	LPN to RN Transition	3
❑	NRSG252	Complex Care Needs of Maternal/Child Client	3
❑	NRSG254	Complex Care Needs of Mental Health Client	2
❑	NRSG256	Pathophysiology	3
❑	SOCI101	Introduction to Sociology	3
		Total Credits	**14**

Second Semester

❑	BIOM250	Microbiology for Health Sciences	3
❑	BIOM251	Microbiology for Health Sciences Lab	1
❑	NRSG262	Complex Care Needs - Adult Client	4
❑	NRSG265	Advanced Clinical Skills	1
❑	NRSG266	Managed Client Care	4
		Total Credits	**13 (27)**

Office Technology

The Office Technology two-year program prepares students for careers in a variety of office environments. A core curriculum is offered in office, accounting, and computer skills utilizing advanced office applications and software that are applicable to future employment. The Office Technology program offers two-year degree options in Medical Administrative Specialist and Administrative Office Management Specialist.

One-year Certificates of Applied Science are offered in the areas of Medical Assisting, Computer Skills Specialist, and Legal Support Specialist.

Faculty Advisors: Joan Schneider and Tricia Tyhurst

Computer Competency: Students must have a computer competency equal to CAPP131 Basic MS Office (basic Windows, Internet, Word, and Excel) to be determined through placement testing at enrollment. Students who do not meet these requirements will be required to take CAPP131 Basic MS Office at the beginning of their program, and the credits may be used to meet the elective requirements in later semesters.

Medical Assisting

This one-year Certificate of Applied Science is available for Office Technology students or for students who have completed their first semester in the Nursing program. The first semester includes courses completed in either Office Technology or Nursing programs. The second semester includes Office Technology courses with a medical or office emphasis. This certificate includes a total of 30 credits.

Length of Option: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall and Spring

First Semester

Course Number	Course Title	Credits
❑ WRIT122T	Introduction to Business Writing ***or***	3
	❑ WRIT121T Introduction to Technical Writing (3)	
❑ M108T	Business Math ***or***	3
	❑ M111T Technical Mathematics (3) ***or***	
	❑ M121 College Algebra (3)	
❑ CAPP153	MS PowerPoint ***or***	2
	❑ NRSG100 Introduction to Nursing (1)	
❑ AHMS148	Medical Terminology and the Human Body ***or***	4
	❑ BIOL207 Anatomy and Physiology I (4)	
❑ SOCI101	Introduction to Sociology **or**	3
	❑ PSYX100 Introduction to Psychology (3)	
	Total Credits	**14/15**

Second Semester

❑ CAPP131	Basic MS Office	3
❑ TASK113	Keyboarding and Document Processing	3
❑ AHMS252	Computerized Medical Billing	3
❑ CAPP105	Computer Calculations	1

Choose TWO of the following options:

❑ TASK210	Office Success Strategies (spring only)	3
❑ TASK145	Records Management (spring only)	3
❑ AHMS255	Medical Transcription I (spring only)	3
❑ TASK150	Customer Service Strategies	3
❑ AHMS218	Complete Medical Coding (spring only)	3
	Total Credits	**15/16 (30/31)**

Office Technology

Computer Skills Specialist

The Computer Skills Specialist option is designed to prepare students for computer support positions in order to effectively confront the new diverse and multifaceted challenges prevalent in today's business environment. This option covers current software, customer service, with business communication concepts, while focusing on technological changes in the workplace and information systems at all levels.

Computer Competency: Students must have a computer competency equal to CAPP131 Basic MS Office (basic Windows, Internet, Word, and Excel) to be determined through placement testing at enrollment. Students who do not meet these requirements must take CAPP131 at the beginning of their program, and the credits may be used to meet the elective requirements in later semesters.

Length of Option: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall and Spring

First Semester

Course Number	Course Title	Credits
❑ CAPP154	MS Word	3
❑ TASK113	Keyboarding and Document Processing	3
❑ TASK150	Customer Service Strategies	3
❑ M108T	Business Mathematics	3
❑ WRIT122T	Introduction to Business Writing (fall only)	3
	Total Credits	**15**

Second Semester

❑ CAPP254	Advanced MS Word	3
❑ CAPP138	Basic MS Access	3
❑ CAPP153	MS PowerPoint	2
❑ CAPP156	MS Excel	3
❑ TASK145	Records Management (spring only)	3
❑ CAPP105	Computer Calculations	1
	Total Credits	**15** **(30)**

Legal Support Specialist

The need for qualified legal office personnel in private law firms, state government, insurance companies, and many other offices continues to increase. The Legal Support Specialist Certificate option provides training to ensure employability within a one-year period of time in the areas of English, math, computer applications, human relations, and legal concepts.

Computer Competency: Students must have a computer competency equal to CAPP131, Basic MS Office (basic Windows, Internet, Word, and Excel) to be determined through placement testing at enrollment. Students who do not meet these requirements must take CAPP131 at the beginning of their program.

Length of Option: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall and Spring

First Semester

Course Number	Course Title	Credits
❑ WRIT122T	Introduction to Business Writing	3
❑ M108T	Business Mathematics	3
❑ TASK113	Keyboarding and Document Processing ***or***	3
	❑ CAPP154 MS Word	
❑ OT161	Legal Terminology (fall only)	2
❑ TASK150	Customer Service Strategies	3
	Total Credits	**14**

Second Semester

	Course Number	Course Title	Credits	
❑	CAPP156	MS Excel	3	
❑	CAPP254	Advanced MS Word	3	
❑	TASK210	Office Success Strategies (spring only)	3	
❑	TASK145	Records Management (spring only)	3	
❑	OT165	Introduction to Legal Research (spring only)	2	
❑	OT223	Introduction to Civil Litigation and Montana Courts (spring only)	2	
		Total Credits	**16**	**(30)**

Medical Administrative Specialist

This program prepares the student for employment in hospitals, medical offices, insurance companies, nursing homes, and public health agencies, often leading to careers in office management. The position of an administrative medical assistant requires skills in medical knowledge, computer technology, oral and written communications, and an awareness of effective office procedures. Positive interpersonal relations and teamwork are integrated into classroom activities.

Computer Competency: Students must have a computer competency equal to CAPP131 Basic MS Office (basic Windows, Internet, Word, and Excel), to be determined through placement testing at enrollment. Students who do not meet these requirements will be required to take CAPP131 Basic MS Office at the beginning of their program, and the credits may be used to meet the elective requirements in later semesters.

Length of Option: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring

First Semester

	Course Number	Course Title	Credits
❑	BUS105	Introduction to Business	3
❑	WRIT122T	Introduction to Business Writing (fall only)	3
❑	M108T	Business Mathematics	3
❑	TASK113	Keyboarding and Document Processing	3
❑	AHMS148	Medical Terminology and the Human Body	4
❑	*Elective Credits*		2
		Total Credits	**18**

Second Semester

❑	ACTG101	Accounting Procedures I	4	
❑	WRIT121T	Introduction to Technical Writing	3	
❑	CAPP153	MS PowerPoint	2	
❑	CAPP154	MS Word	3	
❑	TASK210	Office Success Strategies (spring only)	3	
❑	TASK145	Records Management (spring only)	3	
		Total Credits	**18**	**(36)**

Third Semester

❑	CAPP138	Basic MS Access	3
❑	CAPP156	MS Excel	3
❑	CAPP254	Advanced MS Word	3
❑	TASK201	Production Keyboarding (fall only)	2
❑	TASK150	Customer Service Strategies	3
❑	AHMS252	Computerized Medical Billing	3
		Total Credits	**17**

Fourth Semester

Course Number	Course Title	Credits
❑ AHMS255	Medical Transcription I (spring only)	3
❑ TASK299	Integrated Office Capstone (spring only)	3
❑ AHMS218	Complete Medical Coding (spring only)	3
❑ BUS263	Legal Issues in Human Resources	3
❑ SOCI101	Introduction to Sociology (transferable) ***or***	3
	❑ PSYX100 Introduction to Psychology (3) (transferable) ***or***	
	❑ HR110T Career Development and Human Relations (3)	
❑ *Elective Credits*		2
	Total Credits	**17 (70)**

Examples of *elective credits* are courses such as Nutrition, Computerized Accounting, Contemporary Economics, Desktop Publishing, Legal Terminology, Ten-Key Calculation, and others depending on the student's skills, course prerequisites, and course availability.

Administrative Office Management Specialist

The Administrative Office Management Specialist option is designed to prepare students for both administrative management support and information management careers in order to effectively confront the new diverse and multifaceted challenges prevalent in today's business environment. This option covers current office management principles, concepts, and organizational trends, while focusing on technological changes in the workplace and information systems management at all levels.

Computer Competency: Students must have a computer competency equal to CAPP131 Basic MS Office (basic Windows, Internet, Word, and Excel) to be determined through placement testing at enrollment. Students who do not meet these requirements must take CAPP131 Basic MS Office at the beginning of their program, and the credits may be used to meet the elective requirements in later semesters.

Length of Option: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring

First Semester

Course Number	Course Title	Credits
❑ BUS105	Introduction to Business	3
❑ WRIT122T	Introduction to Business Writing (fall only)	3
❑ M108T	Business Mathematics	3
❑ TASK113	Keyboarding and Document Processing	3
❑ TASK150	Customer Service Strategies	3
❑ CAPP153	MS PowerPoint	2
	Total Credits	**17**

Second Semester

❑ WRIT121T	Introduction to Technical Writing	3
❑ CAPP154	MS Word	3
❑ TASK210	Office Success Strategies (spring only)	3
❑ TASK145	Records Management (spring only)	3
❑ OT249	Desktop Publishing	3
❑ *Elective Credits*		3
	Total Credits	**18 (35)**

Third Semester

❑ TASK201	Production Keyboarding (fall only)	2
❑ CAPP138	Basic MS Access	3
❑ CAPP156	MS Excel	3
❑ CAPP254	Advanced MS Word	3
❑ BUS246	Business Law (fall only)	3
❑ BUS261	Human Resource Management (fall only)	3
	Total Credits	**17**

Fourth Semester

Course Number	Course Title	Credits
❑ TASK299	Integrated Office Capstone (spring only)	3
❑ BUS205	Business Ethics	3
❑ BUS260	Management (spring only) ***or***	3
	❑ PSYX161 Fundamentals of Organizational Psychology (3)	
❑ BUS263	Legal Issues in Human Resources (spring only)	3
❑ SOCI101	Introduction to Sociology ***or***	3
	❑ PSYX100 Introduction to Psychology (3) (transferable) ***or***	
	❑ HR110T Career Development and Human Relations (3)	
❑ *Elective Credits*		3
	Total Credits	**18 (70)**

Examples of *elective credits* are courses such as Business Law II, Accounting, Organizational Psychology, Management, Economics, Ten-Key Calculation, Employment Law, and others depending on the student's skills, course prerequisites, and course availability.

Water Resources

The Water Resources Program is designed to prepare students for a variety of careers in water-related fields. This degree will prepare students to enter careers in the water resources industry such as water efficiency technicians and workers or water management specialist and technicians.

The Water Resource Program is a career-technical curriculum offering two Associates of Science degrees: two-year Associate of Applied Science in Water Quantity and a two-year Associate of Applied Science in Water Quality. The design of this program is to offer these courses in an online delivery format. A degree in Water Quantity or Water Quality option will prepare a student to work as a water specialist dealing with a variety of water issues, including evaluation of water use patterns, recommend water efficiency techniques, use of GIS and map interpretation, water collection and analysis, interpretation of water policies, technical report writing, and field methodologies.

The Water Resources Program is delivered primarily online.

Water Quantity Option

Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence.*

First Semester

	Course Number	Course Title	Credits	
❑	EVSC120	Introduction to Water Resources	3	
❑	EVSC130	Introduction to Environmental Science	3	
❑	BIOB160	Principles of Living Systems	3	
❑	BIOB161	Principles of Living Systems Lab	1	
❑	CAPP131	Basic MS Office	3	
❑	M121	College Algebra (or higher)	3	
		Total Credits	**16**	

Second Semester

❑	EVSC135	Maps and Aerial Photo Interpretation	3	
❑	EVSC140	Introduction to Geographic Information Systems (GIS)	3	
❑	EVSC150	Hydrologic Measurements	3	
❑	CHMY121	Introduction to General Chemistry	3	
❑	CHMY122	Introduction to General Chemistry Lab	1	
❑	WRIT121T	Introduction to Technical Writing	3	
		Total Credits	**16**	**(32)**

Summer Semester

❑	GEN288	Internship	6	

Third Semester

❑	EVSC210	Water Rights and Water Policy	3	
❑	EVSC220	Surface Water Hydrology	3	
❑	EVSC215	Ground Water Hydrology	3	
❑	EVSC240	Geographic Information Systems (GIS)	3	
❑	GEO101	Introduction to Physical Geology	3	
❑	GEO102	Introduction to Physical Geology Lab	1	
		Total Credits	**16**	

Fourth Semester

❑	EVSC250	Applied Quantitative Methods in Water Resources	4	
❑	EVSC235	Soils, Weather, and Climate	3	
❑	WRIT210	Scientific Report Writing	3	
❑	EVSC260	Field Methods and Reporting	4	
❑	COMM201	Introduction to Public Relations	3	
		Total Credits	**17**	**(71)**

Water Quality Option

Length of Program: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall and Spring. *The suggested sequence in this catalog is for students entering in the fall semester. Please see your advisor for a suggested spring entry sequence*

First Semester

	Course Number	Course Title	Credits	
❑	EVSC120	Introduction to Water Resources	3	
❑	EVSC130	Introduction to Environmental Science	3	
❑	BIOB160	Principles of Living Systems	3	
❑	BIOB161	Principles of Living Systems Lab	1	
❑	CAPP131	Basic MS Office	3	
❑	M121	College Algebra (or higher)	3	
		Total Credits	**16**	

Second Semester

❑	EVSC 135	Maps and Aerial Photo Interpretation	3	
❑	EVSC140	Introduction to Geographic Information Systems (GIS)	3	
❑	EVSC150	Hydrologic Measurements	3	
❑	CHMY121	Introduction to General Chemistry	3	
❑	CHMY122	Introduction to General Chemistry Lab	1	
❑	WRIT121T	Introduction to Technical Writing	3	
		Total Credits	**16**	**(32)**

Summer Semester

❑	GEN288	Internship	6	

Third Semester

❑	EVSC212	Water Quality	3	
❑	EVSC220	Surface Water Hydrology	3	
❑	EVSC215	Ground Water Hydrology	3	
❑	EVSC211	Environmental Policy and Laws	4	
❑	BIOM250	Microbiology for Health Sciences	3	
❑	BIOM251	Microbiology for Health Sciences Lab	1	
		Total Credits	**17**	

Fourth Semester

❑	EVSC250	Applied Quantitative Methods in Water Resources	4	
❑	EVSC233	Environment and the Economy	3	
❑	WRIT210	Scientific Report Writing	3	
❑	COMM201	Introduction to Public Relations	3	
❑	*Electives*		3	
		Total Credits	**16**	**(71)**

Welding Technology

The primary goal in the first year of the Welding Technology program is to give students the skills and instruction they need to enter the welding industry. With an emphasis on safety, students will receive hands-on, theoretical, and technical training in rigging, job estimation, blueprint reading, and layout and pattern making. In addition, students will receive extensive lab training in a wide variety of welding processes including S.M.A.W. (stick electrode), G.M.A.W. (wire processes), Pulse M.I.G., T.I.G., and Plasma cutting. The focus of the training is to give the students the skills necessary to successfully pass American Welding Society (A.W.S.) certifications. Our certification process is administered by an independent company approved by the American Welding Society. Students will also receive introductory instruction in design and fabrication thus allowing them to perform repairs and fabricate projects.

The second year of the Welding Technology program is designed to teach students how to use their skills performing advanced fabrication and repair work on actual projects. Students will learn advanced fabrication techniques using a wide variety of equipment including shears, bending breaks, forming rolls, punches, drill presses, and track torches. This may include anything from a simple welding repair to refacing a D-9 Cat blade. Students will also receive training in various methods of pipe welding with an opportunity to take the A.W.S. certification test. Second year students will be given instruction in Computer Numerical Control (CNC) burn table programming and operation using Auto-Cad and Shop Data Systems software.

UM-Helena has been designated as one of ten regional training centers in the United States by Miller Electric, the industry leader in welding equipment. Students will receive training on state-of-the-art welding equipment from faculty who attend Miller Electric training schools, providing students with a distinct advantage when entering the work force.

Faculty Advisors: Tim Harris, Seth Slocum, and Glen Zeigler

Welding

Length of Programs: 2 Semesters
Type of Program: Certificate of Applied Science
Semester of Entry: Fall

First Semester

	Course Number	Course Title	Credits
❑	WLDG105	Shop Safety	1
❑	WLDG180	Shielded Metal Arc Welding	4
❑	WLDG133	GMAW, FCAW, and GMAW-P	4
❑	WLDG117	Blueprint Reading and Weld Symbols	3
❑	WLDG132	Estimating of Job Materials	3
❑	M111T	Technical Mathematics	3
		Total Credits	**18**

Second Semester

❑	WLDG131	Intro to Layout and Pattern Making	3	
❑	WLDG160	Rigging for Welders	1	
❑	WLDG140	Intro Gas Tungsten ARC Welding (GTAW) - Integrated Lab	3	
❑	WLDG155	Design and Fabrication	4	
❑	WLDG151	Shop Practices	4	
❑	WRIT104T	Workplace Communications	2	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**20**	**(38)**

Welding Technology

Length of Option: 4 Semesters
Type of Program: Associate of Applied Science
Semester of Entry: Fall

First Semester

	Course Number	Course Title	Credits	
❑	WLDG105	Shop Safety	1	
❑	WLDG180	Shielded Metal Arc Welding	4	
❑	WLDG133	GMAW, FCAW, AND GMAW-P	4	
❑	WLDG117	Blueprint Reading and Weld Symbols	3	
❑	WLDG132	Estimating of Job Materials	3	
❑	M111T	Technical Mathematics	3	
		Total Credits	**18**	

Second Semester

❑	WLDG160	Rigging for Welders	1	
❑	WLDG131	Intro to Layout and Pattern Making	3	
❑	WLDG140	Intro Gas Tungsten ARC Welding (GTAW) - Integrated Lab	3	
❑	WLDG155	Design and Fabrication	4	
❑	WLDG151	Shop Practices	4	
❑	CAPP131	Basic MS Office	3	
		Total Credits	**18**	**(36)**

Third Semester

❑	WLDG217	Advanced Blueprint	2	
❑	WLDG243	Advanced Metal Fabrication I	6	
❑	WLDG225	Structural Fabrication	2	
❑	WLDG230	Field Welding and Processes	2	
❑	WLDG255	CNC Burn Table Programming and Operation	3	
❑	WRIT121T	Introduction to Technical Writing	3	
		Total Credits	**18**	

Fourth Semester

❑	WLDG213	Pipe Welding Lab I	4	
❑	WLDG244	Advanced Metal Fabrication II	6	
❑	WLDG265	MSHA Safety Training	1	
❑	WLDG245	Metal Fabrication Design and Construction	5	
❑	HR110T	Career Development and Human Relations	3	
		Total Credits	**19**	**(73)**

Additional Academic Opportunities at UM-Helena

UM-Helena is pleased to offer our students access to academic programs through partnerships with other institutions from across the state.

Offered on UM-Helena's campus:

Degree	Program	Partnering Institution
B.A.S./B.I.T.	Accounting/Business Technology	Montana Tech
B.S.	Secondary Education - Industrial Technology	UM-Western
A.A.S.	Early Childhood Education	UM-Western

Specific program information follows.

UM-Helena is also proud to announce articulation agreements with the following institutions:

Western Governors University
B.S. in Nursing

MSU-Northern
B.S. in Automotive Technology

Carroll College
Accounting/Business Technology
Computer Technology eligible degree programs:
Associate of Applied Science Computer Technology - Network Administration
Associate of Applied Science Computer Technology - Programming
Associate of Applied Science Computer Technology - Webmaster
Associate of Science Network Administration Option
Associate of Science Programming Option
Associate of Science Webmaster Option

* Bachelor of Applied Science – Business UM - Helena

Contact: Barbara Yahvah, yahvahb@umhelena.edu, 406-444-6822

This articulation agreement applies for the following degrees: (1) All A.A.S. degrees; (2) A.A. in Accounting or Business; (3) A.S. in Accounting Technology, Business Technology, or Computer Technology. Students should see their advisor to plan their transfer into B.A.S.

Any specific UM-Helena course will only be transferred in one the following categories: (1) Block Transfer; (2) General Education Core; or (3) Business Concentration. Classes cannot be counted in more than one category. Students need to see their advisor to maximize the transferability of their classes.

Block Transfer	***UM-HELENA***	***(54 cr.)***	
General Education Core		**(30 cr.)**	
Communications		*6 cr.*	
WRIT101	College Writing I	3	UM-H
WRIT322	Business and Professional Writing	3+	**TECH**
Humanities		*6 cr.*	
Humanities Elective	(History, Literature, Language)	3	UM-H
BUS3636	Business Ethics	3+	**TECH**
Social Sciences		*6 cr.*	
ECNS203	Principles of Micro and Macro Economics	3	UM-H
Social Sciences Elective	(Psychology, Sociology, Anthropology)	3	UM-H
Mathematics		*6cr.*	
M115	Probability and Linear Math	3	UM-H
M171 or STAT216	Calculus I or Statistics	3	UM-H
Physical and Life Science		*6-7 cr.*	
Physical and Life Science Elective	(BIOL, CHMY, GEO, PHYS, SCI)	3	UM-H
Physical and Life Science Elective	(BIOL, GEO, PHYS, SCI w/lab)	4	UM-H
Business Concentration Required for both tracks:		(24 cr.)	
ACTG201	Principles of Financial Accounting	3	UM-H
ACTG202	Principles of Managerial Accounting	3	UM-H
ACTG321	Accounting Information Systems I	3+	**TECH**
BUS210/BUS3316	Marketing	3+	UM-H/**TECH**
BUS246/BUS3416	Business Law I	3+	UM-H/**TECH**
BUS260/BUS3616	Management	3+	UM-H/**TECH**
BUS3516	Business Finance	3+	**TECH**
BUS4936W	Strategic Management	3+	**TECH**

Bachelor of Applied Science - Business

Management Track			**(12 cr.)**
Required			
BUS3646	Human Resource Management	3+	**TECH**
Electives (Choose 3 courses)			
ACTG410	Cost/Mgmt Accounting I	3+	**TECH**
ACTG420	Cost/Mgmt Accounting II	3+	**TECH**
BUS3126	Risk and Insurance	3+	**TECH**
BUS3426	Business Law II	3+	**TECH**
BUS3446	Entrepreneurship	3+	**TECH**
BUS3626	Labor Relations	3+	**TECH**
BUS3656W	Organizational Behavior	3+	**TECH**
BUS3666	Production Management	3+	**TECH**
BUS4326	Marketing Research	3+	**TECH**
BUS4566	Financial Markets and Institutions	3+	**TECH**
BUS3956/3XXX	Special Topics/Other	3+	**TECH**
BUS4956/4XXX	Special Topics/Other	3+	**TECH**

Accounting Track			**(12cr.)**
Required			
ACTG301	Intermediate Accounting I	3+	**TECH**
ACTG302	Intermediate Accounting II	3+	**TECH**
ACTG410	Cost/Mgmt Accounting I	3+	**TECH**
Electives (Choose 3 courses)			
ACTG401	Principles of Fed Taxation/Individuals	3+	**TECH**
ACTG402	Advanced Income Tax	3+	**TECH**
ACTG411	Auditing I	3+	**TECH**
ACTG412	Auditing II	3+	**TECH**
ACTG415	Governmental and Not-for-Profit Accounting I	3+	**TECH**
ACTG420	Cost/Mgmt Accounting II	3+	**TECH**
ACTG436	Advanced Accounting	3+	**TECH**

Any courses that are remedial in nature, such as math courses below College Algebra, will not be counted in the block transfer credit.

+Meets the upper division requirements for a B.A.S. (minimum 39 credits).

Some courses may have pre-requisites or require specific test scores for enrollment. Pre-requisite courses not listed on this agreement may not count towards a student's transfer into the bachelor's degree program.

Minimum Credits for B.A.S. degree in Business 120. Minimum of 39 upper division credits (3XX or 4XX). Minimum of 30 upper division credits, including BUS4936, must be Montana Tech credits.

BUS4936 is the capstone course and should only be attempted during one of the last two semesters in the program.

* Bachelor of Science - Business and Information Technology - UM-Helena

Contact: Barbara Yahvah, yahvahb@umhelena.edu, 406-444-6822

Freshman Year

Fall Semester			
WRIT101	College Writing I	3	UM-H
CAPP131	Basic MS Office	3	UM-H
M115	Probability and Linear Math	3	UM-H
Free Elective		3	UM-H
*Physical and Life Sci.**		3	UM-H
Spring Semester			
BUS105	Introduction to Business	3	UM-H
*Humanities Elective		3	UM-H
CSCI/ITSXXX	Computer Science Elective ***	3	UM-H
M171	Calculus I	3	UM-H
*Phys and Life Sci. Lab**		3-4	UM-H

Sophomore Year

Fall Semester			
ACTG201	Principles of Financial Accounting	3	UM-H
ECNS201	Principles of Microeconomics (SS)	3	UM-H
CSCI110	Programming with Visual Basic I	3	UM-H
CAPP156	MS Excel	3	**TECH**
COMM131	Introduction to Public Speaking	3	UM-H
Spring Semester			
ACTG202	Principles of Managerial Accounting	3	UM-H
ECNS202	Principles of Macroeconomics (SS)	3	UM-H
CAPP158	MS Access	3	**TECH**
STAT216	Introduction to Statistics	3	UM-H
CSCI/ITSXXX	Computer Science Elective ***	3	UM-H

Junior Year

Fall Semester			
BUS246/BUS3416	Business Law I	3+	UM-H/**TECH**
BUS260/BUS3616	Management	3+	UM-H/**TECH**
BUS3446	Entrepreneurship	3+	**TECH**
BUS3516	Business Finance	3+	**TECH**
BUS3656	Organization Behavior	3+	**TECH**
Spring Semester			
ACTG321	Accounting Information System I	3+	**TECH**
BUS210/BUS3316	Marketing	3+	UM-H/**TECH**
BUS3666	Operations and Production Mgmt	3+	**TECH**
BUS3426	Business Law II	3+	**TECH**
WRIT322	Advanced Business Writing	3+	**TECH**

Senior Year

Fall Semester			
BUS4326	Marketing Strategies	3+	T**ECH**
BUS3626	Labor Rel. and the Coll. Barg. Proc	3+	**TECH**
BUS4526	International Business	3+	**TECH**
Upper Div Elect (3000/4000)		3+	**TECH**
Upper Div Elect (3000/4000)		3+	**TECH**
Spring Semester			
BUS3636	Business Ethics	3+	**TECH**
BUS3646	Human Resource Management	3+	**TECH**
BUS4566	Financial Markets and Institutes	3+	**TECH**
BUS4936W	Strategic Management	3+	**TECH**
Upper Div Elect (3000/4000)		3+	**TECH**

*Students must choose electives so that the General Education Core Requirements are satisfied. They should refer to the general education core requirements in previous section.

**Any Biology (BIOL), Chemistry (CHMY), Geology (GEO), Physics (PHYS), or Science (SCI) course.

***Students choose from CSCI 111, 114, 121, 221, 240, 241, 242; CT 161, 181, 210, 247, 253, 262, 266; ITS 212, 224, 250.

+Meets the upper division requirements for a B.S. (minimum 39 credits).

Some courses may have pre-requisites or require specific test scores for enrollment. Pre-requisite courses not listed on this agreement may not count towards a student's transfer into the bachelor's degree program.

Minimum Credits for B.S. degree in Business Information Technology 120. Minimum of 30 upper division credits, including BUS4936, must be Montana Tech credits.

BUS4936 is the capstone course and should only be attempted during one of the last two semesters in the program.

Associate of Applied Science in Early Childhood Education

Offered in partnership with The University of Montana—Western

The Associate of Applied Science degree in Early Childhood Education prepares early childhood practitioners to meet the unique needs of children from birth through age eight and their families in a variety of early childhood settings including child care homes and centers, Head Starts, pre-schools, etc. The program features a lab with each early childhood course, allowing ample opportunity for learning by doing. Students also have many opportunities to interact with peers and professionals in the field.

This degree is conferred by UM-Western, but all courses can be taken at UM-Helena. Courses designated as UM-Western are subject to their policies as outlined in their catalog. General education courses are delivered through UM-Helena and are subject to the policies found in this catalog.

Early childhood courses rotate on a two-year schedule, so it is imperative for interested students to contact an advisor as soon as possible. For more information students should contact the School of Outreach at UM-Western at 866-799-9140 or Admissions and New Student Services at UM-Helena at 800-241-4882.

First Semester (Fall Entry)

UM-Helena Courses:

❑	Social Science	Elective	3 credits
❑	WRIT101	College Writing I	3 credits
❑	CAPP100	Short Courses: Computer Literacy	1 credit
❑	Fine Arts	Elective	3 credits

UM-Western Courses:

❑	ED142/143	Introduction to Early Childhood/Lab	2 credits
❑	ED250/251	Child Growth and Development/Lab	4 credits
		Total:	**16 credits**

Second Semester

UM-Helena Courses:

❑	M121 or higher Math Elective		3-4 credits
❑	Natural Science	Elective	3-4 credits
❑	Health	Elective	3 credits

UM-Western Courses:

❑	ED144/145	Creating an Environment for Learning/Lab	3 credits
❑	ED240/241	Positive Child Discipline/Lab	3 credits
		Total:	**15-17 credits**

Third Semester

❑		Professional Electives**	9 credits

UM-Western Courses:

❑	ED242/243	Meeting the Needs of the Family/Lab	3 credits
❑	ED320/321	EC Curriculum I/Lab	3 credits
		Total:	**15 credits**

Fourth Semester

❑		Professional Electives**	9 credits

UM-Western Courses:

❑	ED344/345	EC Professional/Lab	3 credits
❑	ED324/325	EC Curriculum II/Lab	3 credits
		Total:	**15 credits**

Program Total: 61-63 credits

**Professional Electives - to be decided upon in conjunction with Program Advisor. The electives can be courses in Sociology, Psychology, Health and/or Early Childhood Education. Courses can be taken through either UM-Helena or online through UM-Western.

Bachelor of Science in Secondary Education - Industrial Technology

The University of Montana Western (Dillon, MT) and The University of Montana – Helena College of Technology (Helena, MT) are collaborating to offer the Montana Western Bachelor of Science degree in Secondary Education with a major in Industrial Technology on the UM-Helena campus in Helena. Individuals in Helena and the surrounding communities can take classes through both institutions to complete their educational goal.

Students pursuing the Montana Western IT bachelor's degree in secondary education will take classes from both institutions; some individuals may want to earn an associate degree or certificate in a related technical area (from UM-Helena) while completing requirements for the Montana Western BS degree. UM-Helena will offer general education courses and some technical course requirements. Montana Western will offer industrial technology and professional secondary education coursework in their NCATE accredited teacher education program.

ADMISSION

Students wishing to enroll in this program must be admitted to Montana Western.

New/Prospective Student

Submit the following information to the University of Montana Western.

- ❑ Complete a general/uniform application for admission
- ❑ Submit ALL official* transcript(s) from previously attended colleges and universities
- ❑ Submit proof of immunity against measles and rubella (two immunizations required, at least one month apart)
- ❑ Submit $30 application fee (waived if student has previously attended a unit of The University of Montana)

Current Student

If already attending UM-Helena, submit a Request for Transmittal of Application Materials Form (http://mus.edu/borpol/bor300/301.5.4_Request_form.pdf) to the Registrar's office at UM-Helena. Contact the Montana Western admissions staff to determine if supplemental paper work is needed to transfer your file.
Former Student - Students who stop-out (have been out of school for one semester or more) must re-apply before they can continue in the program. These individuals must complete the "returning student" application.

* "Official" transcripts are those sent directly from the previous college(s) to the Admissions Office.

ADVISING

Gary Frey, Montana Western Industrial Technology course instructor in Helena, will advise all students in the Secondary Education Industrial Technology program with respect to the required IT coursework. There will be periodic visits from other Montana Western personnel to discuss the requirements of the teacher education program.

REGISTRATION

Students will follow the registration procedures specific by each school (outlined below).

Registration for Montana Western Courses

Students should contact Janet Jones in admissions (406 683-7331 or j_jones@hotdawg.umwestern.edu) to enroll at Montana Western. Once admitted, students should work with Gary Frey (406 683-7191 or g_frey@hotdawg.umwestern.edu) to plan their registration schedules.

Registration for the University of Montana – Helena College of Technology

Students should contact Enrollment services and will register using the non-degree student application. Non-degree students at UM-Helena are limited to taking a maximum of six credits each semester; however, UMW IT Technology students will be able register for UM-Helena courses in excess of 6 semester credits as necessary subject to approval from the Registrar.

Please contact the Montana Western admissions office for additional information (406 683-7191)

Course Descriptions

Transferability Inititave

The Montana University System has been undergoing a state-wide curriculum review to improve the transfer processes between its campuses. UM-Helena has been fully engaged in that review. As a result, many of our course prefixes, numbers and even titles have had to change in order to more clearly connect to similar courses at other campuses. The course content is typically not any different, and any course that you took under its old name and number will be considered equivalent to the new name and number. If it is difficult to find information on a course, please contact UM-Helena's Academic Affairs office at 444-1221 or search the Montana University System website for the new course information (mus.edu).

ACTG101 Accounting Procedures I
Credits: 4
Prerequisites: none
Introduction to the basic accounting cycle, accounting transaction analysis, preparation of journal entries, trial balance, worksheets, and financial statements. Accounting for sole proprietorships is emphasized, including special journal accounting procedures.

ACTG102 Accounting Procedures II
Credits: 4
Prerequisite: A "C-" or higher in ACTG101 or consent of instructor
Continuation of accounting transactions, financial statements, and analysis of accounts receivable, notes payable, notes receivable, merchandise inventory, property, plant, equipment, and long-term bonds. Accounting for partnerships and corporations is introduced.

ACTG180 Payroll Accounting
Credits: 3
Prerequisite: A "C-" or higher in ACTG101, and CAPP131 or satisfactory score on placement test and M121 or M108T or consent of instructor
An introduction to payroll accounting emphasizes the process of accounting for payroll by employers and the rights of employees. Topics covered include the historical perspective of payroll accounting, the payroll accounting process from the legal issues surrounding hiring and maintaining records for employees, calculating gross pay, net pay, and payroll taxes, calculating employees' deductions and benefits, recording payroll transactions, procedures for making payroll tax deposits, and completing employment tax reports.

ACTG201 Principles of Financial Accounting
Credits: 3 *Offered Fall Semester*
Prerequisites: A "C-" or higher in ACTG101, ACTG102 and M121 or M108T or consent of instructor
This course emphasizes the understanding of fundamental accounting principles and procedures and will develop the student's accounting problem-solving and critical thinking abilities. Topics covered include the basic structure of analyzing and recording transactions, establishing accounting policy, generally accepted accounting principles, control of cash, receivables and payables, merchandise inventory evaluation methods, recording of property, plant, and equipment transactions, and long-term financing. Sources of equity capital for corporations and financial statements are analyzed.

ACTG202 Principles of Managerial Accounting
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in ACTG101, ACTG102 and M121 or M108T or consent of instructor
This course emphasizes the fundamental concepts for planning, control, and decision making. Topics covered include the basic structure of systems design, planning and control through standard costs, cost variance analysis, cost-volume-profit analysis, operating and capital budgets, and using relevant costs in decision making.

ACTG205 Computerized Accounting
Credits: 3
Prerequisites: A "C-" or higher in ACTG101 and CAPP131 or consent of instructor
This course is an introduction to accounting on microcomputers, which provides a realistic approach to computerized, integrated accounting principles. This course emphasizes set up and maintenance of accounts and transactions used in the general ledger, sales and accounts receivable, purchasing and accounts payable, cash receipts, cash disbursements, job costing, financial statement analysis, payroll setup and processing, budgets, and business analysis.

ACTG211 Income Tax Fundamentals
Credits: 3 *Offered Fall Semester*
Prerequisites: none
A fundamental overview of tax schedules and forms as required by the Federal and State Internal Revenue Services.

ACTG215 Foundations of Governmental and Not for Profit Accounting
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in ACTG101 and ACTG102 or consent of instructor
Accounting for governmental and nonprofit organizations is explored. Topics covered include objectives and principles of accounting for governmental entities, differences between business and government accounting, modified and accrual accounting, transactions for the general fund, special revenue funds, capital projects funds, debt service funds, permanent funds, proprietary funds (enterprise and internal service), and fiduciary funds. The influence of FASB and GASB on reporting for colleges and universities, governmental entities, and other nonprofit organizations is reviewed.

ACTG230 Introduction to Statewide Accounting, Budgeting, and Human Resource System (SABHRS)
Credits: 2 *Offered Spring Semester*
Prerequisite: A "C-" or higher in ACTG101 and CAPP131, or satisfactory score on placement test, or consent of instructor
This course gives students an overview of the accounting system utilized by state agencies. Course includes basic governmental accounting terminology and entry-level, practical applications.

ACTG265 Accounting Portfolio
Credits: 2 *Offered Spring Semester*
Prerequisites: A "C-" or higher in ACTG101, ACTG102, CAPP131, ACTG201 or ACTG202; consent of instructor
This capstone class utilizes accounting research, business knowledge, computer techniques, and communication skills in preparing a professional student portfolio.

ACTG292 Independent Study
Credits: 1-3
Prerequisites: consent of instructor and approval of the Department Chair
This course is designed to meet specific learning needs of students. Typically, such independent study projects focus on learning opportunities not otherwise offered in our college curriculum. The student then initiates a proposal describing, among other things, the number of hours to be spent on the study project, specific learning outcomes, and how evaluation is to be accomplished. The approved proposal will have signatures of the student, Faculty Sponsor, Department Chair, and the Associate Dean.

ACTG298 Internship
Credits: 1-3
Prerequisites: consent of instructor and approval of the Department Chair
Designed for the student who takes the initiative to perform work outside of and in addition to the normal school curriculum. If done properly, it can be a highly rewarding experience and aid the student's transition from school to work.

AHMS148 Medical Terminology and the Human Body
Credits: 4 *Offered Fall Semester*
Prerequisites: none
This is an introductory course for students in the Office Technology – Medical Specialist program. The students learn to recognize that the meaning of complex medical terms can be determined by analyzing simpler components using prefixes, suffixes, and word roots. Correct pronunciation, definition, and spelling of these terms are derived through extensive usage of the textbook, medical dictionary, and computer software exercises. This course will also teach the basic structure and functioning of the systems of the human body including aspects of normal physiology and function, deviations from normal, and maintenance of health. There will also be an introduction to diseases of the body systems in correlation with the terminology.

AHMS218 Complete Medical Coding
Credits: 3 *Offered Spring Semester*
Prerequisites: AHMS148 and NRSG100
Medical Coding is a fundamental skill and requirement for the medical profession. Developing an excellent Coding knowledge base, will allow for future employment and advancement opportunities throughout the medical community. CPT, ICD9, & HCPCS codes will used.

AHMS252 Computerized Medical Billing
Credits: 3
Prerequisites: CAPP154, and AHMS148 or consent of instructor
This course familiarizes the student with the capabilities of a popular medical practice software program used in many facilities locally and nationally. Students learn procedures such as patient scheduling, statement billing, payment reconcilliation, insurance claim processing, procedure posting, HIPPA and introduction to medical records management, insurance company procedures, Medicare procedures, and insurance regulations.

AHMS255 Medical Transcription I
Credits: 3 *Offered Spring Semester*
Prerequisites: AHMS148, CAPP154 or TASK201 or consent of instructor
This course teaches the methods of computerized transcription of medical documents with emphasis on good transcription techniques; competency in medical vocabulary, spelling, punctuation, and formatting; and extensive use of medical terminology and reference materials.

ANTH101 Introduction to Anthropology
Credits: 3 *Offered Fall Semester*
Prerequisites: none
A survey of the various subfields of anthropology, including archaeology, physical anthropology, cultural anthropology, and linguistics.

ANTH103 Introduction to Archaeology
Credits: 3 *Offered Spring Semester*
Prerequisites: none
Archaeology is the study of past human cultures through their material remains. Archaeology uses many different approaches and tools to study and explain how people lived in the distant and not-so-distant past. Artifacts, sites, settlements, and landscapes may be studied to help reveal how people lived, how they saw themselves and their world, what the environment was like, and how these factors interrelated and changed through time. In this class you will gain an overview of what archaeology is, how archaeology is done, and what it can tell us about our world, past, present and perhaps even a glimpse of our future. This course is intended to be an introductory survey of archaeology for undergraduate students, either as an elective or as a foundation for further studies in archaeology.

ANTH150 Introduction to Latin American Studies
Credits: 3 *Offered Occasionally in Fall Semester*
Prerequisites: none
A contemplation of Latin America from a variety of perspectives and disciplines – as anthropologists, geographers, historians, political scientists, and artists, to name a few – in order to better understand its histories, cultures, landscapes, and communities.

ANTH225 Native American Culture
Credits: 3 *Offered Spring Semester*
Prerequisites: none
Study of cultural makeup of Native Americans in Montana and subsequently in the United States. Education, historical, legal, and social aspects will be analyzed for their influence on the modern Indian culture.

ARTS101 Art Appreciation
Credits: 3 *Offered Fall Semester*
Prerequisites: none
An introduction to the visual arts exploring various approaches to understanding art, art philosophy and aesthetics, art history and terminology, visual media, techniques and production, museums and art, cultural, economic and psychological factors underlying the production of visual arts presented by lectures and visuals. Art Appreciation fulfills the general studies requirement for Fine Art/ Humanities and is a transfer course targeted for non-majors.

ARTS140 Art Fundamentals
Credits: 3 *Offered Spring Semester*
Prerequisites: none
This introductory drawing course covers basic principles of drawing and design in art. Major areas of study are space, form, volume, tone, texture, and line, using various drawing materials and techniques.

ARTS212 Basic Drawing
Credits: 3 *Offered Fall Semester*
Prerequisites: none
This course explores the principles of design, as well as application of those principles through a wide variety of hands-on projects.

ARTS240 Basic Painting
Credits: 3 *Offered Spring Semester*
Prerequisite: ARTS140 or consent of the instructor
Practice and principles of painting in traditional media, including watercolor, acrylic, and oil painting. The course emphasis is on acquiring and refining technical skills, composition, and application of color theory. Research in historical and contemporary strategies.

ASTR110 Introduction to Astronomy
Credits: 3 *Offered Spring Semester*
Co-requisites: ASTR111
Prerequisites: none
An introduction to astronomy for the non-science major. Topics include the tools of astronomy, the solar system, stars and stellar evolution, the Milky Way, extragalactic astronomy, cosmology, and life in the universe.

ASTR111 Introduction to Astronomy Lab
Credits: 1 *Offered Spring Semester*
Co-requisites: ASTR110
Prerequisites: none
This is the laboratory portion of Introduction to Astronomy.

AUTO105 Manual Drive Trains and Axles
Credits: 7
Prerequisites: none
This course covers the theory of operation and service procedures related to dry friction clutches, manual transmissions/transaxles, front drive axles, rear drive axles, drivelines, transfer cases, and locking hubs. Students will disassemble, inspect, and reassemble selected power train components.

AUTO109 Electrical/Electronic Systems I
Credits: 8
Prerequisites: none
This course is designed to give Automotive Technology students the basic electrical/electronic foundation needed to build on in other advanced courses requiring electrical and electronic knowledge. The course progresses from electrical/electronic theory, circuits and circuit failure, meters, and components through to starting and charging systems. The lab component of this course is designed to provide the hands-on activities common to automotive applications, electrical and electronic applications. Emphasis will be placed on developing a knowledge and skill base needed to diagnose and repair general automotive electrical system malfunctions.

AUTO110 Engine Repair
Credits: 6
Prerequisites: none
This course covers the theory of operation, diagnosis, and service procedures associated with Automotive engine repair. Students will learn automotive engine theory and will disassemble, assemble and run electronically-controlled, Overhead Cam, Training engines and their related components.

AUTO113 Electrical/Electronic Systems II
Credits: 4
Co/Prerequisites: AUTO109
This course covers theory of operation, diagnosis, and service procedures related to selected electrical and electronically controlled systems. Systems/subjects include vehicle communication networks, supplemental inflatable restraint systems, antitheft systems, cruise control, remote keyless entry, and power accessories.

AUTO130 Heating and Air Conditioning
Credits: 5
Prerequisites: none
This course is designed to provide Automotive Technology students with the knowledge and skills required to understand, service and repair mobile air conditioning systems as used in the automotive industry. The course content includes Heat and Refrigeration Principles, Component Function and Interrelation Concerns and EPA Requirements. The lab component is designed to provide the hands-on activities common to Automotive, Mobile Air Conditioning applications.

AUTO216 Engine Performance I
Credits: 8
Prerequisites: AUTO109, AUTO110, AUTO113
This course covers theory of operation, diagnosis, and service procedures as they relate to engine performance. Subjects studied will include the effects of engine design on performance; federal emissions legislation; fuel composition and characteristics; distributor, distributorless, and coil on plug-type ignition systems; electronic fuel injection; and emission control systems. Students will learn to use industry-accepted test procedures and test equipment to determine the cause of degraded engine performance, driveability complaints, and/or excessive exhaust emissions.

AUTO221 Brakes and Chassis
Credits: 6
Prerequisites: First two semesters in Automotive Technology curriculum
This course focuses on the function, diagnosis, and service practices of current automotive braking, steering and suspension systems. Students will learn about disc and drum brake hydraulic, mechanical, and electrical systems, to include ABS systems. Students will also study current steering and suspension systems, to include 4-wheel alignment, suspension system, and tire service.

AUTO225 Automatic Transmissions/Transaxles
Credits: 7
Prerequisites: AUTO109
This course covers the theory of operation, diagnosis, and service procedures related to hydraulically controlled and computerized automatic transmissions and transaxles. Students will disassemble, rebuild, and reassemble selected transmissions/transaxles.

AUTO231 Engine Performance II
Credits: 5
Prerequisites: AUTO109, AUTO110, AUTO216
This course covers theory of operation, diagnosis, and service procedures related to computerized engine management systems. Systems and subjects covered will include electronic fuel injection, distributorless and coil on plug ignition systems, computer-controlled emission systems, and On Board Diagnostics II. Special emphasis will be given to the development of proper diagnostic skills and the use of state of the art electronic test equipment.

AUTO260 Applied Lab Experience and Light Repair
Credits: 4
Prerequisite: Completion of first year Automotive Program courses
This is a "capstone" experience course for Automotive Technology students in their second year, where they apply their knowledge base acquired in previous courses to additional lab experiences, thereby developing their critical thinking and physical service skills. It is important to note that this is not a "hobby shop" or "rebuild" course and will focus on "quick turn-around" light repair and problem solving. Emphasis will be placed on vehicle service practices, preventative maintenance, component diagnosis and replacement, electrical/electronic systems diagnosis and repair, heating and A/C service, and "under car" service and repair.

AVIA100 Introduction to Aviation Maintenance/Mathematics/ Basic Physics
Credits: 2
Prerequisites: none
This course introduces students to many facets of aviation maintenance and its future. The course will also cover mathematical concepts such as powers and roots, ratio and proportion, and practical applications of plane geometry and algebra, and basic physics, to include mechanical advantage, conversion between forms of energy, vibrations, the gas laws, heat, and pressure.

AVIA105 Basic Electricity
Credits: 2
Prerequisites: none
This course covers the elements of basic electricity and lays the foundation for understanding electrical circuitry concepts, the principles of electrical power generation and distribution, and aircraft electrical systems functions. This course will also describe current flow and analyze circuit operation in both theory and practical applications.

AVIA110 Aircraft Drawings/Weight and Balance
Credits: 2
Prerequisites: none
This course introduces aircraft drawings, which enhance the ability to communicate ideas, to understand and to explain an operation, and to record what has been done to an aircraft using symbols and different types of drawings such as views, and projections used in aircraft maintenance. The course will also introduce weight and balance for safety and efficiency of flight, for maintaining the weight of an aircraft and its center of gravity within its specified limits. The course will cover the theory of aircraft weight and balance, weight and balance information, and the procedures for weighing an aircraft, and how to find the aircraft center of gravity and perform adverse-load center of gravity checks.

AVIA115 Materials and Processes/Fluid Lines and Fittings/ Cleaning and Corrosion Control
Credits: 3
Prerequisites: none
This course provides students the opportunity to inspect aircraft components for wear, identify aircraft hardware and materials, learn the basic theory of heat-treatment processes, nondestructive inspection procedures, and perform dye-penetrant and magnetic particle inspections. The course will also cover fluid lines and fittings, which must be of the correct size and material. The student is introduced to the selection of materials for both rigid and flexible fluid lines and to the proper installation of various types of aircraft fittings on these lines. The student is also taught the proper installation and inspection of high-pressure fluid lines in an aircraft. This course also covers the importance of recognizing and properly treating an aircraft structure that shows evidence of corrosion. This introduces the student to the selection of cleaning materials, with emphasis on their relationship to the type of material being cleaned. It stresses the identification of the various types of corrosion, the evaluation of corrosion damage, the proper way of removing the corrosion deposits, and treatment of the corroded areas.

AVIA120 Ground Operation and Servicing
Credits: 2
Prerequisites: none
This course introduces servicing and ground operations of aircraft and covers the choice and identification of fuels for both reciprocating and turbine engine powered aircraft and the necessary precautions to observe when fueling an aircraft. Since awareness of ground operations and hazards is emphasized in this section, the student is also introduced to "Safety in the Shop and on the Flight Line." This increment also covers the proper procedure for starting reciprocating and turbine engines and the procedures for proper engine run-up, aircraft movement, and tie-down.

AVIA125 Maintenance Publications/Forms and Records/ Mechanic Privileges and Limitations
Credits: 2
Prerequisites: none
This course introduces the importance of understanding the regulations governing aviation maintenance and the information furnished by the aircraft, engine, and component manufacturers, and it emphasizes the importance of the legal aspects of aviation maintenance. The student will learn how to properly describe the work done to an aircraft and must be able to make the proper maintenance record entries, and explain these records and forms step-by-step to what is expected of the mechanic by the aircraft owner and what is allowed by the FAA.

AVIA130 Basic Aerodynamics
Credits: 2
Prerequisites: none
This course introduces knowledge of basic aerodynamics, which deals with the motion of air and the forces acting on bodies moving relative to the air. In the study of aerodynamics, the student learns about why and how an airplane flies. Although aerodynamics is a complex subject, exploring the fundamental principles which govern flight is the main challenge in understanding what makes an airplane fly and begins with learning the four forces of flight, which are lift, weight, thrust, and drag.

AVIA135 Assembly and Rigging/Airframe Inspection
Credits: 3
Prerequisites: none
This course introduces knowledge of the correct assembly and rigging of an aircraft, which is vital to safe and efficient flight. This section explains the relationship between aircraft rigging and the aerodynamics of flight. The course also introduces how to determine the legal airworthiness of an aircraft, its powerplant, and components. The student will learn the inspection aspects from a legal standpoint in which the emphasis is placed on the practical aspects and performance of required inspections.

AVIA140 Sheet Metal
Credits: 3
Prerequisites: none
This course introduces knowledge of sheet metal structures, which is one of the most important types of modern aircraft construction. This section gives students a solid lesson in the types and materials for metallic aircraft structures, a discussion that includes the stresses on aircraft structure, and the strength of various metal materials. The student is taught to install conventional, special rivets and fasteners; hand form, layout, and bend sheet metal; and to inspect and repair sheet metal structures.

AVIA145 Composites and Plastics
Credits: 3
Prerequisites: none
This course introduces knowledge of nonmetallic composite structures, which is the second most important type of modern aircraft construction. This section gives students a solid lesson in the types of composite materials and their manufacture details, a discussion that includes the foundation for the understanding of "Nonmetallic Aircraft Structures" and "Composite Structure Inspection and Repair."

AVIA150 Wood Structures
Credits: 2
Prerequisites: none
This course introduces aircraft wood structures; the student will learn and be able to identify defects and the different kinds of woods suitable for their application, describe the kinds of glues and gluing techniques, and to restore old aircraft that have wood wing spars, ribs, and plywood structures.

AVIA155 Aircraft Covering/Aircraft Finishes
Credits: 2
Prerequisites: none
This course introduces the student to the application and maintenance of fabric covered aircraft. They will learn about how a fabric covering is properly attached to aircraft structures. The student will become familiar with the different types of covering materials that are used to cover an aircraft plus the dope fillers, paints, and rejuvenator finishes used on the fabric.

AVIA160 Welding
Credits: 3
Prerequisites: none
This course introduces the knowledge of welding, which is important because modern structures are so complex and highly stressed that welding is usually a specialized type of repair done under highly controlled conditions. This section concludes the discussion of Metallic Aircraft Structures with a detailed description of the types, tools, materials, and methods of welding for aircraft construction, maintenance, and repair.

AVIA165 Hydraulic and Pneumatic Power Systems
Credits: 3
Prerequisites: none
This course introduces hydraulic and pneumatic power systems, which are used to operate many of the vital systems, such as landing gear retraction, brakes, and powered flight controls. The students will inspect, check, service, troubleshoot, and repair these systems and will learn to work safely with these fluids and their pressurized containers.

AVIA170 Aircraft Landing Gear Systems/Position and Warning Systems
Credits: 2
Prerequisites: none
This course introduces landing gear systems, which are subject to greater stresses than any other airframe system; therefore, the student must completely understand these vital components. This section includes lectures and schematic diagrams of these systems, exploded views of the assemblies, and illustrations of the workings of brake control systems, and the required maintenance. The different systems are covered in three areas: anti-skid brakes and their systems, electrical circuits and landing gear actuation, and warning systems for instruments that indicate and measure movement.

AVIA205 Aircraft Electrical Systems
Credits: 2
Prerequisites: none
This course introduces electricity and airframe electrical systems. Basic electricity is taught along with typical airframe electrical circuits. The student will learn both general diagram symbols and specific electrical systems along with industry-accepted methods of installation and proper testing equipment used.

AVIA210 Aircraft Fuel Systems/Fire Protection Systems/Ice and Rain Control Systems
Credits: 3
Prerequisites: none
This course introduces the complex system of tanks, valves, and pumps of modern aircraft. The student will learn these systems in order to service them efficiently and safely. This section describes the various aircraft fuels and explains the fuel system requirements. This course also introduces fire protection systems, and shows that fire is an ever possible danger in an aircraft, and that the student must be aware of the nature of fire and the appropriate methods and agents for detecting and extinguishing aircraft fires. This section explains how these protection systems work. This course also covers ice and rain control systems.

AVIA215 Cabin Atmosphere Control Systems
Credits: 2
Prerequisites: none
This section covers maintaining an aircraft cabin environment with the proper pressure, temperature, humidity, and air movement, which is more than a matter of comfort; it is also a safety factor. This section backs up its discussion of these systems by starting with an explanation of "Human Needs in Flight" and how the atmosphere, the chemistry of oxygen, and the physics of heat, temperature, and pressure relate to this topic.

AVIA220 Aircraft Instrument Systems/Communication and Navigation Systems
Credits: 3
Prerequisites: none
This course introduces instrument systems that are needed to provide the flight crew with data relating to the operating of the various flight and powerplant systems. This section describes the instruments and the basic operating principles of the systems that run them. The student will learn the installation and maintenance of these systems. Aircraft depend upon electronic navigation and communication equipment. The student will learn his or her responsibility for determining the condition of the installed equipment and its interface with the aircraft itself. The student will also receive a detailed discussion of communication and navigation systems, as well as basic radio theory, to provide an understanding of how these systems should work.

AVIA225 Development of Aircraft Powerplants
Credits: 2
Prerequisites: none
This course will introduce the student to the development of aircraft powerplants from the Wright brothers' first engine, to the modern piston, turbine, and turboprop engines that are used on aircraft and helicopters throughout the world today.

AVIA230 Reciprocating Engines and Systems
Credits: 6
Prerequisites: none
This course introduces aircraft powerplants that are of the reciprocating (piston) type. This section introduces the student to the different types of reciprocating engines, which include the detailed material that covers the step-by-step, hands-on procedures for reciprocating engine inspection, troubleshooting, repair, and overhaul. The course includes the operation of fuel metering components, induction and exhaust systems, heat dissipation, and starter systems.

AVIA235 Turbine Engines and Systems
Credits: 6
Prerequisites: none
This course introduces aircraft powerplants that are of the turbine type. This section introduces the student to the different types of turbine engines, which include the detailed material that covers the step-by-step, hands-on procedures for turbine engine inspection, troubleshooting, and repair. The course includes the operation of fuel metering components, induction and exhaust systems, method of heat dissipation, and starter systems.

AVIA240 Engine Instrument Systems
Credits: 2
Prerequisites: none
A knowledge of the conditions in an aircraft engine allows the flight crew to operate it in the most efficient and safest manner. For this reason, modern aircraft powerplants are equipped with sensors to monitor all of the vital parameters. This section covers all required powerplant instrumentation and also discusses the various types of electronic, digital, and computerized instrumentation of today's aircraft.

AVIA245 Engine Electrical Systems/Auxiliary Power Unit
Credits: 2
Prerequisites: none
In this section the methods of generating and controlling electrical energy are discussed. It includes a refresher of electrical principles as they apply to powerplant operation and of each control system in detail. There is also a lecture on aircraft electrical system installation, to prepare the student for the practical application of electrical system service and maintenance. The student will also learn about the APU (auxiliary power unit) system that is used to provide electricity and compressed air when the aircraft is on the ground and the main engines are not operating.

AVIA250 Engine Fire Protection Systems
Credits: 2
Prerequisites: none
This course introduces how modern aircraft powerplants are protected from fire with effective fire-detection and high-rate-discharge fire-extinguishing systems. These are described in detail so the student understands the practical application necessary in the servicing, inspection, troubleshooting, and repair of these systems.

AVIA255 Propellers and Unducted Fans
Credits: 6
Prerequisites: none
This course introduces all aspects of propeller theory, as a foundation for the understanding of propeller maintenance, repair, and inspection. A propeller is an airfoil, rotated by either a reciprocating or turbine engine. The propeller adds energy to the air passing through it by accelerating it rearward to produce a forward thrust. This course also introduces a new development in aircraft propulsion that is known as an ultra-high bypass (UHB) turbofan, or unducted fan (UDF) engine. A special lecture is devoted to the discussion of this engine.

BIOB160 Principles of Living Systems
Credits: 3
Co-requisites: BIOB161
Prerequisites: none
This first course in the biology sequence is an introduction to the basic concepts and principles of general biology with an emphasis on lab experiences, critical thinking, problem solving, and the scientific method. Areas of study include organic chemistry and biochemistry, cellular biology, cell growth, genetics and genetic engineering, reproduction, cell metabolism, ecology, evolution theory, and classification systems in biology.

BIOB161 Principles of Living Systems Lab
Credits: 1
Co-requisites: BIOB160
Prerequisites: none
This course is the lab accompanying BIOB160.

BIOB170 Principles of Biological Diversity
Credits: 3 *Offered Spring Semester*
Co-requisites: BIOB171
Prerequisites: none; a previous biology course is recommended
The second course in the biology sequence emphasizes study of the principles of biology within specific classifications such as kingoms and species. Areas of study include viruses, bacteria, protests, fungi, plant, invertebrates, vertebrates, and human biology.

BIOB171 Principles of Biological Diversity Lab
Credits: 1 *Offered Spring Semester*
Co-requisites: BIOB170
Prerequisites: none; a previous biology course is recommended
This course is the lab accompanying BIOB170.

BIOL107 Basic Anatomy and Physiology with Lab
Credits: 4 *Offered Spring Semester*
Prerequisites: none
This one-semester course covers the basic anatomy and physiology of the human body. Lecture will concentrate on the physiology (function) of several body systems including the nervous, cardiovascular, respiratory, and urinary systems and how they contribute to homeostasis of the body. Lab will mainly concentrate on the anatomy (form) of bones, muscles, brain and spinal cord, and the heart.

BIOL207 Anatomy and Physiology I with Lab
Credits: 4
Prerequisite: none
The student will learn the general principles of cell and tissue biology that apply to all living systems. Structure and function of the integumentary, skeletal, muscular, nervous, sensory, and endocrine systems will be studied. Homeostasis, control, and integration of the human body will be emphasized.

BIOL208 Anatomy and Physiology II with Lab
Credits: 4
Prerequisite: A "C-" or higher in BIOL207 or consent of instructor
In this second course of a two-semester course series, the student will learn the structure and function of the endocrine, digestive, cardiovascular, lymphatic, respiratory, reproductive, and urinary systems of humans. Principles of integration and homeostasis will be emphasized.

BIOM250 Microbiology for Health Science
Credits: 3 *Offered Spring Semester*
Co-requisites: BIOM251
Prerequisites: BIOL207 or consent of instructor
This course provides a general study of microscopic organisms and their forms, metabolism, reproduction, physiology, classification, relationship to each other, and their effects on humans.

BIOM251 Microbiology for Health Science Lab
Credits: 1 *Offered Spring Semester*
Prerequisites: BIOL207 or consent of instructor
This lab component is designed to reinforce the material covered in BIOM250 by providing students with a practical hands-on opportunity to execute and to observe supplemental exercises in a lab setting. This course can also function as a stand-alone course for students who have completed the lecture component of microbiology previously.

BUS105 Introduction to Business
Credits: 3
Prerequisites: none
This course introduces the nature of business and the trends that change the way business is conducted. Topics covered in this course include the business environment, starting a business, management, ethics, social responsibility, human resources, marketing, and finance.

BUS200 Small Business Entrepreneurship
Credits: 2
Prerequisite: A "C-" or higher in BUS105
This course introduces the student to studying the entrepreneurial mindset to discover opportunities for markets and situations in which a small business can be developed successfully. Topics covered include understanding the nature of small business, seeking entrepreneurial opportunities, developing new ventures, marketing and managing a small business, and exploring the social and legal environment of businesses.

BUS205 Business Ethics
Credits: 3
Prerequisite: A "C-" or higher in BUS105 and WRIT101 or WRIT121T
This course is designed to apply business concepts in studying ethics. The course will help students differentiate between ethical and unethical practices in the business world. Topics covered include basic principles of ethics, social costs, justice and fairness, utilitarianism, free market and rights, ethics in the marketplace, business and external exchanges, and ethics relating to internal constituencies (employee issues).

BUS210 Marketing
Credits: 3 *Offered Fall Semester*
Prerequisite: A "C-" or higher in BUS105 and WRIT101 or WRIT121T
This course introduces the student to making marketing decisions. Topics covered include the marketplace and consumers, marketing plans, market analysis, the marketing mix, and global marketing.

BUS231 Foundations of Public Administration
Credits: 3 *Offered Spring Semester*
Prerequisite: A "C-" or higher in BUS105
This course is designed to introduce the student to management practices and networking opportunities with the public sector. Topics covered include policy-making, management issues, funding procurement, and professional ethics as they relate to local, state, and federal levels of government and not for profit agencies.

BUS246 Business Law I
Credits: 3 *Offered Fall Semester*
Prerequisite: A "C-" or higher in BUS105
This course is an overview of business law, including the judicial system and procedures. Emphasis will be on ethics and law, tort law, contract law, sales and lease laws, negotiable instruments, bankruptcy laws, and legal ramifications for organizational types.

BUS247 Business Law II
Credits: 3 *Offered Spring Semester*
Prerequisite: A "C-" or higher in BUS105
This course is an overview of business law including the judicial system and procedures. Emphasis will be on ethics and law, contract law, warranties and product liability, consumer protection laws, personal property, real property, wills, intestacy, and trusts, business organizations and regulation, and the impact of computers and e-commerce on the law.

BUS260 Management
Credits: 3 *Offered Spring Semester*
Prerequisite: A "C-" or higher in BUS105 and WRIT101 or WRIT121T
Students learn efficient and effective use of resources in achieving organizational goals. Topics include the environment of management, the functions of planning, organizing, leading, and controlling, and decision-making for organizational leaders.

BUS261 Human Resource Management
Credits: 3 *Offered Fall Semester*
Prerequisite: A "C-" or higher in BUS105
This course introduces the student to an overview of the background of human resource management, acquisition of human resources, training and development of employees, compensation of human resources, and labor relations. Topics covered include human resource planning, recruitment, selection and training, equal opportunity and employment laws, job analysis and design, performance management systems, compensation and benefits, and employee/labor relations.

BUS263 Legal Issues in Human Resources
Credits: 3 *Offered Spring Semester*
Prerequisite: A "C-" or higher in BUS105
This course introduces the student to an overview of legal issues in human resource and employment law. Topics covered include employment relationships, hiring, termination, employment discrimination, employment regulation (wage and hour, safety, workers' compensation), and employee evaluation.

BUS265 Finance
Credits: 3 *Offered Fall Semester*
Prerequisites: A "C-" or higher in BUS105, ACTG101, M121 OR M108T
This course is designed to assist students in making effective financial business decisions. Topics include time value of money, cash flow, financial ratio analysis, long-term fininacing/equity decision, working capital management, personal finance and the influence of the economic environment of a business's financial considerations.

BUS270 Business Plan
Credits: 2 *Offered Spring Semester*
Prerequisites: A "C-" or higher in ACTG101, ACTG180, ACTG205, BUS200, BUS210 or BUS260, BUS265 and CAPP131 or satisfactory score on placement test, CAPP156, COMM131 or COMM201, M121 or M108T, WRIT101 or WRIT121T; consent of instructor
This capstone course helps students synthesize the learning process with the production of a business plan for launching of a new small business venture. Students utilize communication skills, computer skills, accounting skills, and management problem-solving techniques toward the development of the culminating project.

BUS292 Independent Study
Credits: 1-3
Prerequisites: Consent of instructor and approval of the Department Chair
This course is designed to meet specific learning needs of students. Typically, such independent study projects focus on learning opportunities not otherwise offered in our college curriculum. The student then initiates a proposal describing, among other things, the number of hours to be spent on the study project, specific learning outcomes, and how evaluation is to be accomplished. The approved proposal will have signatures of the student, Faculty Sponsor, Department Chair, and the Associate Dean.

BUS298 Internship
Credits: 1-3
Prerequisites: Consent of instructor and approval of the Department Chair
Designed for the student who takes the initiative to perform work outside of and in addition to the normal school curriculum. If done properly, it can be a highly rewarding experience and aid the student's transition from school to work.

CAPP100 Short Courses: Computer Literacy
Credits: 1
Prerequisites: none
Introduces the students to computer hardware and software and their uses. It provides basic computer literacy concerning terminology, careers, and social issues related to computer, network, and information technology issues including ethics, crime, and copyright issues.

CAPP105 Computer Calculations
Credits: 1
Prerequisites: none
This course gives the student the opportunity to develop the skills required to operate an electronic calculator efficiently in a business environment. Skills developed in this course include operating a 10-key calculator using touch control, solving mathematical business problems on the calculator, and understanding the special features found on the modern business desk calculator.

CAPP106 Short Courses: Computer Applications
Credits: 1
Prerequisites: none
This course is an overview of the uses of the microcomputer in the technical and health fields. Topics will include the microcomputer operating system and overviews of word processing and spreadsheet applications.

CAPP131 Basic MS Office
Credits: 3
Prerequisites: none
This course provides students with basic computer literacy concerning terminology, careers, and social issues related to computer, network, and information technology including ethics, crime, and copyright issues. Students will explore a computer operating system (Microsoft Windows XP), and Microsoft Office Suite 2007, including Microsoft Word and Excel, Internet, and solutions for real world problems. Through hands-on activities, participants will learn effective uses of a Windows-based computer as a tool to increase productivity and employability.

CAPP138 Basic MS Access
Credits: 3
Prerequisite: CAPP131 or satisfactory score on placement test
This course outlines the role of data management in the business environment. Students learn how to create, edit, and manipulate large amounts of data with Microsoft Access. Topics include basic database design, tables and forms, sorting, and queries. Other topics include building and working with relational databases.

CAPP153 MS Powerpoint
Credits: 2
Prerequisite: CAPP131 or satisfactory score on placement test
PowerPoint is a presentation package that allows the student to produce professional-looking computer presentations. Using MS PowerPoint 2007, students will apply effective design concepts and features to create readable, well-balanced slides to use in a business or educational setting. A variety of appropriate presentation techniques will be discussed and applied.

CAPP154 MS Word
Credits: 3
Prerequisite: CAPP131 or satisfactory score on placement test
The student will learn basic principles of word processing. Emphasis is placed on creating, saving, editing, and formatting documents along with some of the special features of the word processing software. This course uses Microsoft Word 2007.

CAPP156 MS Excel
Credits: 3
Prerequisite: CAPP131 or satisfactory score on placement test
Course serves needs of business people learning spreadsheet accounting. Electronic spreadsheets can be used for a variety of accounting applications, including general ledger, payroll, taxation, budgeting, and forecasting. Spreadsheets are also valuable tools for personal finance.

CAPP254 Advanced MS Word
Credits: 3 *Offered Fall Semester*
Prerequisite: CAPP154 or CAPP131 or TASK113 or consent of instructor
Students are introduced to and will practice advanced applications of MS Word 2007 software. This includes tables, styles, templates, mail merge, graphics, charts, forms, macros, and long documents.

CAPP266 Advanced MS Excel
Credits: 3 *Offered Fall Semester*
Prerequisite: CAPP131 or satisfactory placement test, CAPP156
Course serves needs of business people learning spreadsheet accounting in business with a higher level of skills. Electronic spreadsheets can be used for a variety of accounting applications, including general ledger, payroll, taxation, budgeting, and forecasting. Spreadsheets are also valuable tools for personal finance.

CHMY121 Introduction to General Chemistry
Credits: 3
Co-requisites: CHMY122
Prerequisites: A "C-" or higher in M090 or satisfactory placement test
This course is designed to provide students with a working knowledge of the basic principles of chemistry and the physical world at a microscopic scale. Topics include the atomic model of matter, energy, chemical bonds and reactions, the states of matter, acids and bases, and an introduction to organic chemistry. The course integrates lecture and homework assignments to provide students practical examples of applications of course material to "real world" situations.

CHMY122 Introduction to General Chemistry Lab
Credits: 1
Co-requisites: CHMY121
Prerequisites: A "C-" or higher in M090 or satisfactory placement test
This lab component is designed to reinforce the material covered in CHMY121 by providing students with a practical hands-on opportunity to execute and to observe supplemental exercises in a lab setting.

CHMY123 Introduction to Organic and Biochemistry
Credits: 3 *Offered Spring Semester*
Co-requisites: CHMY124
Prerequisites: A "C-" or higher in CHMY121 and CHMY122 or consent of instructor
This course is designed to expand on the information presented in Introduction to General Chemistry, providing students with a working knowledge of the basics of organic and biologic chemistry. Topics include the basic organic functional groups and their reaction properties, and basic biologic molecules such as carbohydrates, lipids, proteins and enzymes and how these molecules form and function in biologic systems. The course integrates lecture, homework assignments, and lab exercises to provide students practical examples of applications of course material to "real world" situations.

CHMY124 Introduction to Organic and Biological Chemistry Lab
Credits: 1 *Offered Spring Semester*
Co-requisites: CHMY123
Prerequisites: A "C-" or higher in CHMY121 and CHMY122 or consent of instructor
This lab component is designed to reinforce the material covered in CHMY123 by providing students with a practical hands-on opportunity to execute and observe supplemental exercises in a lab setting.

CHMY141 College Chemistry I
Credits: 3 *Offered Fall Semester*
Prerequisites: M121
This is the first semester of a two-semester college chemistry sequence. Topics covered include: atomic structure, chemical reactions, stoichiometry, chemical bonding, the periodic table, and the states of matter. The experimental and mathematical aspects of chemistry are emphasized.

CHMY142 College Chemistry I Lab
Credits: 1 *Offered Fall Semester*
Co-requisites: CHMY141
Prerequisites: M121
This is the lab portion of CHMY141. It is designed to reinforce the material covered in CHMY141.

CHMY143 College Chemistry II
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-"or higher in CHMY141 and M121
This is the second semester of a two-semester college chemistry sequence designed for students entering a science, engineering, or pre-med field of study. Covered topics include solution chemistry; chemical equilibria, kinetics, and thermodynamic; acids and bases; electrochemistry; and nuclear chemistry. Heavy emphasis will be placed the mathematical aspects of chemistry and on making connections to "real-world" applications of chemistry.

CHMY144 College Chemistry II Lab
Credits: 1 *Offered Spring Semester*
Co-requistes: CHMY143
Prerequisites: A "C-"or higher in CHMY141 and M121
This is the lab portion of College Chemistry II. It is designed to reinforce the material learned in CHMY143.

COMM131 Introduction to Public Speaking
Credits: 3
Prerequisites: none
Development of oral communication skills through an emphasis on audience analysis, organization of ideas, and delivery of spoken messages.

COMM132 Interpersonal Communications
Credits: 1 *Offered Occasionally*
Prerequisites: COMM131 or consent of instructor
Interpersonal Communication, or how humans communicate with one another in our personal lives, impacts the function and form of communication in other areas. Through a theoretical study of interpersonal communication, students will gain an understanding of the maintenance and termination of platonic, romantic, and family relationships. In addition, we will explore topics of attraction, initiation, commitment, intimacy, child-parent communication, and destructive behavior.

COMM133 Small Group Communication
Credits: 1 *Offered Occasionally*
Prerequisites: COMM131 or consent of instructor
This course studies group communication processes. Focusing on communication theory, the course will dissect how groups communicate effectively and ineffectively and the impact on day-to-day human relations.

COMM201 Introduction to Public Relations
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in WRIT121T or WRIT101, or consent of instructor
This course introduces students to theory and to practice of public relations, with practical application of public relations, writing, and delivery strategies. Additionally, students will study the media and produce a communications plan.

CSCI100 Introduction to Programming
Credits: 3
Prerequisites: none
This course is an introduction to elementary programming techniques using Pseudo code, flowcharting, and C#. A wide range of programs will be written by the student and run on a computer. Students learn the techniques of looping, functions and sub/routines, arrays, variables and data types, user input/output, file input/output, and appropriate programming practices.

CSCI110 Programming with Visual Basic I
Credits: 3 *Offered Spring Semester*
Prerequisite: CSCI100
This course introduces event-driven computer programming using Visual Basic .NET programming language. Topics include input/output operations, syntax, program structure, data types, arithmetical operations, functions, loops, conditional statements, and other related topics. On-screen components such as command buttons, text boxes, and forms are also discussed. Students will write Windows programs to solve general problems.

CSCI111 Programming with Java I
Credits: 4 *Offered Fall Semester*
Prerequisite: CSCI100
This course offers a thorough introduction to the concepts behind object-oriented software development, including the terminology and methodologies utilizing the Java Programming Language. This course provides the student with the fundamentals of programming with a focus on object-oriented techniques. These skills are needed to work effectively in the area of information technology. The ability to understand the relationship between data and the algorithmic manipulation of data is crucial in IT related fields.

CSCI115 Programming with Perl
Credits: 3 *Offered Spring Semester*
Prerequisite: CSCI100 or consent of instructor
This course will familiarize the student in the use of the Perl scripting language for automating administrative and business operations. Topics include file system management, user administration, directory services, database administration, log files, security, and network monitoring. Students will implement Perl scripts on Windows and Linux platforms.

CSCI121 Programming with Java II
Credits: 4 *Offered Spring Semester*
Prerequisite: CSCI111
This course covers some of the more advanced topics of Java 2 Standard Edition and Java 2 Enterprise Edition. Topics covered include Java integration to databases (JDBC), Object Serialization, Exception handling, Advanced GUI development with Swing components, and multi-threaded applications. This course does NOT cover Servlets, JavaServer Pages, or Enterprise JavaBeans as they are covered in CT262.

CSCI206 .NET Applications
Credits: 3 *Offered Fall Semester*
Co-requisites: CT253
Prerequisites: CSCI240
This course covers advanced desktop and web application features of the .NET framework. Students will learn Exception Handling, Collections, Multithreading, .NET XML Web Services, .NET Remoting, ADO.NET, Stored Procedures, and Object Oriented Programming. Students will use Visual Basic.NET or C# language and Microsoft SQL Server for all projects.

CSCI210 Web Programming
Credits: 3 *Offered Fall Semester*
Prerequisites: CSCI100 and CSCI240
This course provides students with skills necessary to use the PHP scripting language to develop dynamic Web-based applications. Topics of study include the fundamentals of the scripting, using PHP with HTML forms, creating functions, and integrating with MySQL databases.

CSCI212 Web Server Administration
Credits: 3 *Offered Spring Semester*
Prerequisites: ITS224 and ITS280
Explores issues dealing with building and managing a web server. Topics will include web server and network issues, Domain Name System, TCP/IP connectivity, server setup, web site administration, Internet commerce, and security. Students will implement web servers using Apache and IIS.

CSCI221 Systems Analysis and Design
Credits: 3 *Offered Fall Semester*
Prerequisite: CSCI240
This course studies the concepts and skills needed to analyze and design information systems. The primary focus in this course is to prepare the student to understand the systems development life cycle. Special emphasis is placed on business functions, process flows, dataflow diagramming, entity relationship diagramming, and database requirements.

CSCI240 Databases and SQL
Credits: 4
Prerequisite: Successful CT Placement
This course focuses on the concepts of relational databases and includes tables, records and typed fields, primary and foreign keys, and database normalization, and a through coverage of Structured Query Language "SQL". Through a variety of exercises, you will learn how to model a business enterprise using the entity-relationship approach to relational database design. The Oracle database is used for all exercises.

CSCI241 PL/SQL
Credits: 4 *Offered Fall Semester*
Prerequisite: CSCI240
This course focuses on PL/SQL, the programming language extension to SQL, and database interface design using the Oracle Development tools. Students learn the proper PL/SQL coding techniques, which include sequences, triggers, decision statements, looping, and cursors (recordsets). The course also focuses on interface design in forms and reports using the Oracle Development tools.

CSCI242 Enterprise Applications
Credits: 4 *Offered Spring Semester*
Prerequisite: CSCI111, CSCI240
This course is specific to Oracle's Enterprise Development applications. The topics covered are applicable to other enterprise database platforms such as IBM's DB2. Students will get in-depth hands-on experience creating numerous increasingly complex applications using JDeveloper and BPEL Designer. Java topics related to Oracle Applications will include JDBC database connectivity, mid-tier and Java in the Database as stored procedures, SQLJ, Web Services, and SOA.

CSCI292 Independent Study
Credits: 1-3
Prerequisites: Upon instructor approval
This course is designed to meet specific learning needs of students. Typically, such independent study projects focus on learning opportunities not otherwise offered in our college curriculum. The student must seek prior approval of an instructor willing to serve as faculty sponsor. The student then initiates a proposal describing, among other things, the number of hours to be spent on the study project, specific learning outcomes, and how evaluation is to be accomplished. The approved proposal will have signatures of the student, faculty sponsor, department chair, and the Associate Dean.

CSCI298 Internship
Credits: 1-3
Prerequisites: upon instructor approval
Designed for the student who takes the initiative to perform work outside of and in addition to the normal school curriculum. If done properly, it can be a highly rewarding experience and aid the student's transition from school to work.

CSCI299 Thesis/Capstone
Credits: 2
Prerequisites: Instructor approval
This course is a self-directed, integrated, and applied learning opportunity that integrates the coursework, knowledge, and skills gained in Computer Technology coursework. Students will be matched with an organization that needs assistance on an Information Technology project. Students will work with the organization and assigned Computer Technology Faculty to complete the project. Project demonstration and required documentation will be presented at project completion.

CSTN100 Fundamentals of Construction Technology
Credits: 3
Prerequisites: none
Students in attendance will learn the importance that safety has in the Construction industry. Students will learn to identify and follow safe work practices as well as inspection of power equipment, (portable and stationary), and hand tools. Students will also demonstrate the safe and proper use of each tool.

CSTN120 Carpentry Basics and Rough-In Framing
Credits: 5
Prerequisites: CSTN100
This course will introduce the student to the different components used for residential floor systems (joists, rim joist hangers, etc.) wall systems (king studs, timmer studs, headers, wall plates, rough sills, etc.) roof systems (both truss and rafter) and basic stair building, with an emphasis placed on platform framing.

CSTN124 Cabinet Installation, Interior/Finish/Paint
Credits: 2
Prerequisites: CSTN100
This course will include installing interior doors and hardware; interior casing, and base trim installation. Painting, staining, and application of clear finishes will be used to complete surfaces and cabinet installation.

CSTN137 Insulation and Energy Building Practices
Credits: 2
Prerequisites: CSTN100
This course will introduce students to energy efficient building and insulating techniques and practices. The lab component of this class will enable students to install batt insulation as well as loose fill insulation. The lab part of the insulation class will be done in conjunction with CSTN161 Construction Concepts & Building Lab II in which the students will be installing insulation.

CSTN145 Ext. Finish, Stair and Metal SF
Credits: 3
Prerequisites: CSTN100
Students in attendance will learn about the installation of windows, exterior doors, locksets, and hardware. Also covered is the installation of exterior corners, soffit, fascia, cornices, and exterior sidings in conjuction with CSTN161 Construction Concepts & Building Lab II.

CSTN148 Blueprint Reading, Codes and Estimating
Credits: 3
Prerequisites: none
Covers a graphic approach to problems involving residential drawings in orthographic and perspective design. Students will study blueprint symbols and working drawings and develop a residential house plan, and develop a list of materials, time line, and cost breakdown from this working blueprint.

CSTN150 Drywall Application and Finishing
Credits: 3
Prerequisites: CSTN100
Students will learn about the different thickness and types of drywall and where each thickness and types are used and then the student will learn proper taping, the different finishing, and texture techniques.

CSTN160 Construction Concepts and Building Lab
Credits: 3
Prerequisites: CSTN100
This course is intended to be implemented in conjunction with lecture and lab settings for classes CSTN100 and CSTN120 in a controlled lab setting to introduce and let the students practice the building procedures learned, along with the safety skills to be used on one of our building sites.

CSTN161 Construction Concepts and Building Lab II
Credits: 3
Prerequisites: CSTN100
Students in attendance will learn about the installation of insulation, vapor barriers, windows, doors (both interior and exterior), siding soffits, fascia, cornices, proper gypsum board installation, interior finish, painting, staining, and clear coat finish of interior trim boards, and installation of cabinets.

CSTN171 Site Prep, Foundations, and Concrete Installation
Credits: 3
Prerequisites: CSTN100, CSTN160, CSTN161 and CSTN230
This course covers basic site layout, distance measurement, and leveling. Students will be introduced to concrete formulas, foundation and flatwork, as well as handling and placing concrete. The use of manufactured forms will also be covered in this course.

CSTN175 Roofing Applications
Credits: 3
Prerequisites: CSTN100
This course introduces the student to the materials used and the installation techniques of the various roofs. The student will learn about the different types of asphalt, fiberglass, cedar shakes, shingles, and the different styles of metal roofing, delta rib, standing seam, and metal shakes. We will be learning the different methods of sealing up the valleys. The students will be installing fiberglass shingles on a roof with a cricket for practice not only roofing but making a water tight valley using the newer weaving pattern design.

CSTN200 Light Equipment and Rigging
Credits: 3
Prerequisites: none
Students in attendance will be introduced to the basic methods and safety procedures of moving material and equipment on the job site. Students will also learn the basic inspection techniques, knots, and load handling along with the American National Standards Institute hand signals. In addition the student will operate a skid steer, three forklifts each with different capacities, rough terrain forklift (extend-a-boom forklift), and scissor lifts. The student will be given the chance to operate additional equipment if available.

CSTN211 Advanced Framing Systems
Credits: 3
Prerequisites: CSTN100, CSTN160 and CSTN161
Students will expand knowledge of floor, wall, and roof systems by studying and applying techniques reflecting new technologies in both residential and light commercial construction.

CSTN225 Decks and Patios
Credits: 2
Prerequisites: CSTN100
Emphasis will be on designing and identifying the different types of decks and patios. It will introduce students to traditional and new deck materials, different concrete-stamping methods, and types of placers. Several basic fence styles will also be described.

CSTN230 Advanced Roof, Floor, Wall, and Stair Systems
Credits: 4
Prerequisites: CSTN100, CSTN160 and CSTN161
Provides lab/site setting for application of building practices covered in third semester curriculum. Emphasis will be on advanced framing techniques for floor, wall, and roof systems. Building an onsite structure will also provide a setting for practical application of learning outcomes associated with CSTN200 Light Equipment and Rigging and CSTN211 Advanced Framing Systems.

CSTN235 Stationary Machines and Joinery
Credits: 2
Prerequisites: CSTN100
Course CSTN 235 introduces students to the use of stationary machines commonly used in a shop, lab setting. Emphasis will be on safety and general usages and applicable material processing and practices. The student should be able to name, recognize, and build the different components used in building a cabinet.

CSTN236 Advanced Stationary Machine and Joinery
Credits: 2
Prerequisites: CSTN100
This course covers the usage of a multi-pin borer, pocket cutters, European hinge cutter, and drill presses along with advanced dado blade techniques on the table saw. The student will be doing advanced material processing for the different components used in building a cabinet.

CSTN250 Construction Estimating
Credits: 3
Prerequisites: CSTN100, CSTN160 and CSTN161
This class introduces the students to the basic concept of construction estimating for both residential and light commercial construction with emphasis on residential. Students will learn how to use a construction calculator to estimate site-development, concrete costs, and all building materials associated with a construction project.

CSTN260 Construction Concepts and Building Lab III
Credits: 3
Prerequisites: CSTN230
Advanced Structural Concepts and Building Lab IV provides the lab/field setting for the application of the building practices taught during the 4th semester classes. Primary emphasis will be on implementing the practices taught in CSTN171 Site Prep and Concrete and CSTN225 Decks and Patios. Other time may be spent onsite implementing live work components of some 3rd semester classes. The lab/shop settings as well as off-campus and on-campus projects may be used for guided practice, live work, and/or individual student assessment. Upon successful completion of CSTN260, students should be able to perform the student outcomes applicable to class safety, in a suitable time frame allowable in the construction industry.

CSTN270 Foundations of Construction Project Management
Credits: 2
Prerequisites: CSTN100
This course introduces topics such as licensing, code jurisdictions, building inspection, record keeping, time lines, project development, ordering materials, supervision of construction, OSHA, employee rights, safety requirements, subcontractors, construction loans, punch lists, etc.

CSTN295 Practicum: Construction
Credits: 2
Prerequisites: Successful completion of first-year construction program courses
This class provides classroom and lab settings for the application of building practices not covered in the current 1st year's curriculum. These modules were chosen because of current construction trends, advisor recommendations, and student requests. Topics covered in this year's special topics class may include but are not limited to electrical, plumbing, metal stud construction, with a variety of different community based projects.

CSTN298 Construction Internship
Credits: 3
Prerequisites: Successful completion of first-year construction program courses
This course enhances classroom learning with a real-life work experience. The host contractor provides on-the-job training. The student intern will gain valuable work experience and interact with professional construction workers and management personnel.

CT115 Web Pages
Credits: 3
Prerequisites: none
Students will create complex web pages using a text editor and Dreamweaver MX development tools. Students will learn the basic elements of HyperText Markup Language (HTML), Cascading Style Sheets (CSS), Java Script, and EXtensible HyperText Markup Language (XHTML).

CT161 Web Page Graphic Design
Credits: 2 *Offered Spring Semester*
Prerequisite: CT115 or consent of instructor
This course studies professional page layout and graphic design techniques for the Web. Students will learn to critique existing Web sites with an eye toward aesthetics and usability. Students will build effective site layouts based on visual design principles that enhance the site aesthetics. Through professional graphics tools, students will create Web graphics and animation. The impact of different design techniques on site accessibility will be discussed. Students will also learn to effectively use cascading style sheets (CCS) to stylize entire web sites.

CT181 Client Side Web Development
Credits: 3 *Offered Spring Semester*
Prerequisites: CSCI100 and CT115
This course focuses on the concepts of client side web development including AJAX Development covering JavaScript, DOM, XML, and Asynchronous page updates.

CT210 Project Management
Credits: 3 *Offered Spring Semester*
Prerequisite: One year of education or experience in an IT related field or consent of the instructor
This class introduces students to large-scale project management techniques, tools, and methodologies. It also involves a real or simulated case study.

CT230 Introduction to the Large Enterprise System I
Credits: 3
Prerequisites: CAPP100 or placement, CSCI100 or previous programming experience, ITS280 or previous desktop computer administration experience, or consent of instructor
An introductory course designed to provide an overview of enterprise-based computer technology and computer information systems used in the work place. Students gain an understanding of the reasons companies choose mainframe systems, and are introduced to hardware systems architecture, batch processing software, and procedures. Explores integration and application in business and other segments in society. Students will be introduced to the z/OS operating system and the tools and utilities used when developing programs for the z/OS operating system. Topics covered include: the mainframe in business today, including mainframe job roles; capacity, scalability, availability, systems management mainframe interfaces; Job Control Language; mainframe hardware and architecture; and application programming on the mainframe.

CT247 Operating Systems
Credits: 3 *Offered Fall Semester*
Co-requisites: ITS224
Prerequisites: CSCI115
This class examines the fundamental concepts of operating systems and how they function. A hands-on approach will be used in acquiring an overall understanding of the basic tasks performed by operating systems. Topics include basic structure; synchronization and communication mechanisms; implementation of processes, process management and scheduling; memory management; I/O device management, secondary storage, and file systems.

CT253 Developing Web Applications
Credits: 3 *Offered Fall Semester*
Prerequisites: CT115, CSCI110 and CSCI240
This is an introductory course in ASP.NET server-side development. It is imperative that business and government offer accessibility to their customers and clients through interactive web pages. In this course, students will develop a fully-functioning interactive web site simulating an on-line business or government capability. Students will do their work using Microsoft Visual Studio and the Windows IIS web server.

CT262 Web Databases
Credits: 4 *Offered Spring Semester*
Co-requisite: CT253 and CSCI240
Prerequisite: CSCI111
The focus of this class will be on the development of web-based front-ends to databases. Oracle and open source tools will be used to implement web database applications in multi-tier environments. Students will learn Java Servlets, Java Server Pages (JSP), and Enterprise JavaBeans (EJB).

DESL110 Diesel Electrical and Electronics I
Credits: 3
Prerequisites: none
This course is designed to give students basic electrical/electronic knowledge. The course progresses from electrical/electronic theory, circuits and circuit failure, and components of the starting and accessory systems. Emphasis will be placed on developing the knowledge base needed for diagnosing and repairing diesel equipment electrical systems.

DESL111 Diesel Electrical and Electronics II
Credits: 2
Prerequisites: DESL110
This course is designed to give students basic electrical/electronic knowledge. The course is a continuation from Diesel Electrical and Electronics I. Emphasis will be placed on developing the knowledge base needed for charging systems, circuit diagnosing, diesel computer control systems, and repairing diesel equipment electrical systems. It is also designed to provide hands-on activities common to diesel equipment electrical and electronic applications.

DESL122 Hydraulics
Credits: 5
Prerequisites: none
This is an introductory course that will cover the basic theory and understanding of hydraulic principles as related to many components and systems covered in the advanced courses in the Diesel Technology program. In addition to the basic theory, the function of basic systems and components will be discussed. Using school owned hydraulic mock-ups the students will disassemble, inspect and reassemble hydraulic pumps, motors, cylinders, electric and manual control valves. Students will learn how to read schematics and create a functioning hydraulic circuit.

DESL130 Diesel HVAC and Transport Refrigeration
Credits: 7
Prerequisites: none
This course is designed to provide Diesel Technology students with the knowledge and skills required to understand, service and repair mobile air conditioning systems as used in the Diesel industry. The course content includes heat and refrigeration principles as it relates to transport refrigeration. Component Functions and EPA Requirements are covered in this course.

DESL135 Diesel Engine Repair
Credits: 6
Prerequisites: none
This course is designed to provide students with the knowledge and skills required to understand and repair various engine systems as used in the heavy-duty, diesel-powered, on-and-off-road equipment industry. Emphasis will be placed on pre-electronic diesel engines.

DESL200 Diesel Engine Performance
Credits: 7
Prerequisites: none
This is an advanced level course offered to second-year, Diesel Technology students. This course builds upon the knowledge and skills attained in the first-year courses DESL110 and DESL111 Electrical/Electronics, as well as DESL135 Diesel Engine Repair, to solve diesel engine performance problems. Students will be exposed to maintenance, diagnostic and repair experiences involving a variety of systems on diesel-powered equipment. The diesel engine systems included are starting, charging, accessory, lighting, instrumentation, as well as diesel engine mechanical fuel systems, and electronic engine control.

DESL210 Diesel Maintenance Practices
Credits: 5
Prerequisites: none
This is a preventative maintenance course for heavy-duty, diesel powered, on-and-off-road equipment. This course familiarizes the student with routine service, inspection, and adjustment of the following component/systems: engine, power train, hydraulic, pneumatic, electrical, steering, braking, cooling and air intake systems. Lubricants, fuels, and filters will also be included. Students will also be exposed to annual DOT inspection of heavy-duty diesel trucks.

DESL235 Heavy Duty Manual Drive Trains
Credits: 6
Prerequisites: none
This course includes the basic fundamentals of manual drive trains including power flow, ratios, gears, bearings and seals, clutches, transmissions, drive lines, differentials, final drives, power takeoffs and specialty drives that are related to heavy duty, diesel powered, on-and-off-road equipment.

DESL245 Heavy Duty Hydraulic Drive Trains
Credits: 3
Prerequisites: none
This course covers the fundamentals, operation, diagnosis, and repair of hydrostatic and power shift transmissions, torque converters, and torque dividers that are related to heavy-duty, diesel-powered, on-and-off-road equipment.

DESL255 Heavy Duty Brakes and Undercarriage
Credits: 7
Prerequisites: none
This course covers the adjustment, maintenance, troubleshooting, and repair of heavy-duty air-actuated brakes, dual air system valves and circuits, heavy-duty ABS systems, and hydraulic-assisted brakes as used with on-and-off-road diesel powered equipment. This course also includes maintenance, adjustment, and repair of suspension systems as used with tandem axle diesel trucks and off-road equipment. Students will be exposed to alignment of solid I-beam front axles and 5th wheels as related to heavy-duty trucks.

DESL265 Applied Lab Experience
Credits: 8
Prerequisites: 2nd year standing or consent of instructor
This course builds upon the knowledge and skill attained in previous courses. It is intended to match students with live, practical lab experiences involving subject matter previously covered in other courses. When provided with diesel powered equipment in need of maintenance, service, inspection, or repair of any component or system that the student has had previous instruction while in the program, the student will interact with the customer/operator, generate the work order, and in a safe, efficient, and organized manner, set about to perform the proper operations needed to place equipment back into operation and complete documentation to close work order. This will be accomplished to meet customer requests, industry standards, and instructor's satisfactory critique of student performance and productivity with available resources.

DESL287 Independent Study
Credits: 1-3
Prerequisites: Consent of instructor and approval of the Department Chair
This course is designed to meet specific learning needs of students. Typically, such independent study projects focus on learning opportunities not otherwise offered in our college curriculum. The student then initiates a proposal describing, among other things, the number of hours to be spent on the study project, specific learning outcomes, and how evaluation is to be accomplished. The approved proposal will have signatures of the student, Faculty Sponsor, Department Chair, and the Associate Dean.

DESL288 Internship
Credits: 1-3
Prerequisites: consent of instructor and approval of the Department Chair
This course enhances classroom learning with a real life work experience. The host employer provides on-the-job training. The student intern will gain valuable work experience and interact with professional technicians and management personnel. The approved proposal will have signatures of the student, Faculty Sponsor, Department Chair, and the Associate Dean.

DESN101 Introduction to Interior Design
Credits: 3
Prerequisites: none
Design fundamentals as related to the study and practice of Interior Design. Students will be introduced to the career of interior design, the design process, elements and principles of design, and design concept. Other topics include materials, lighting, human factors, space planning, environmental design, and health and safety design issues. Course will include lectures, media presentations, and class discussions.

DESN110 Materials and the Environment
Credits: 3
Prerequisites: DESN101
Introduces textiles and various interior materials and sources that would be selected, specified, installed and maintained in an interior environment. In this course, studies will include research and application of environmentally green products. Students will research the "green" appropriateness of textiles, materials for flooring, walls, ceilings, upholstery, millwork, and cabinetry. Introduces equipment, appliances, and how to measure, specify, and understand correct installation methods and product maintenance.

DESN120 Beginning Space Planning and Design Concepts
Credits: 3
Prerequisites: DESN101 and ARTS212
Students will learn how to plan spaces with graphic tools and techniques to communicate space planning and conceptual design through two-dimensional drawings, schematics, and three-dimensional models. This course introduces fundamental theories and processes for the organization and arrangement of spaces in the interior environment. Students will learn to examine space in terms of human behavior, their activities, and their built environment.

DESN130 Residential Studio
Credits: 3
Prerequisites: A "C-" or higher in DESN101 and DESN120; recommends DESN110 with a "C-" or better
Students apply the problem-solving discipline of the design process and its application to residential design. Students develop concepts to achieve design goals and apply technical skills to their design solutions as they work on a variety of relevant interior design projects. This course focuses on environmental "green" interior materials and products that would be selected and specified in residential spaces. In this course, students will observe professional design environments to develop an awareness of the responsibility to relationships in the workplace. Studio format(6 hours of contact).

DESN140 Public Studio
Credits: 3
Prerequisites: A "C-" or higher in DESN101 and DESN120; recommends DESN110 with a "C-" or better
Students apply the problem-solving discipline of the design process and its application to public design. Students develop concepts to achieve design goals and apply technical skills to their design solutions as they work on a variety of relevant interior design projects, which could include office, medical, and/or retail environments. This course focuses on environmental "green" interior materials and products that would be selected and specified in public studio. In this course, students will learn codes, regulations and laws as they relate to public interiors. Studio Format (6 hours of contact).

DESN160 Lighting the Environment
Credits: 3
Prerequisites: DESN101 and DFT150
Introduces lighting design for interior environments. Students explore human visual perception, properties of natural and artificial light, lighting devices and controls, and visual communication of lighting designs. Discussion regarding energy issues and selection of green products is throughout the course. Includes application to specific design problems.

DESN220 History of Furniture and the Arts
Credits: 3
Prerequisites: none
Course surveys the historical relationship between Western interior architecture, furniture, and decorative arts from antiquity to the 19th century. Style development will be emphasized as it relates to people, social conditions, and political context. Lecture format with media presentations.

DESN225 Modern Furniture and the Arts
Credits: 3
Prerequisites: none
Course surveys the interiors, furniture, and the decorative arts from the Victorian period to the present. Style development will be emphasized as it relates to people, social conditions, political context, and technology. Lecture format with media presentations.

DESN230 Corporate Studio
Credits: 3
Prerequisites: DESN101, DESN110, DESN120, DESN130, DFT150 and DFT225
Students apply the problem-solving discipline of the design process and its application to corporate design. Students develop concepts to achieve design goals and apply technical skills to their design solutions as they work on a variety of office spaces. A portion of this course focuses on environmental "green" interior materials and products that would be selected and specified in a corporate studio. In this course, students will learn codes, regulations, and laws as they relate to office interiors. Students will develop appropriate working drawings for an office space. Studio Format (6 hours of contact)

DESN240 Environmental Studio
Credits: 3
Prerequisites: DESN101, DESN110, DESN120, DESN130, DFT150 and DFT225
Students apply the problem-solving discipline of the design process and its application to design. Students develop concepts to achieve design goals and apply technical skills to their design solutions as they work on a variety of office spaces. This course focuses on environmental "green" interior materials and products that would be selected and specified in various interior spaces. In this course, students will learn to design with materials and methods that support green building concepts. Studio Format (6 hours of contact).

DESN245 Professional Practices
Credits: 3
Prerequisites: Successful completion of at least the first year of the program.
Introduces the concept of the business and professional management of an interior design practice. Topics include resume writing, marketing skills, and creation of a portfolio. Students learn about working with showrooms, personnel in a design firm, and clients. Lecture format.

DESN298 Internship
Credits: 3
Prerequisites: Successful completion of at least the first year of the program.
Provides "real-life" experience in an approved design firm where students are able to apply knowledge and skills learned in their courses. Students work in settings relevant to their future employment plans.

DFT150 AutoCAD 2D
Credits: 3
Prerequisites: none
An introduction to computer-aided design software using a 2D medium with emphasis on features, limitations, and considerations associated with the commands and characters.

DFT200 AutoCAD 3D
Credits: 3
Prerequisite: A "C-" or higher in DFT150 or consent of instructor
This course introduces the power of 3D in computer-aided design software and its application capabilities in the creation of advanced designs.

DFT210 Technical Drafting I - CAD 2D
Credits: 3
Prerequisite: A "C-" or higher in DFT200 or consent of instructor
Application of technical drafting technology using computer-aided drafting as the medium. Auxiliary views, revolutions, dimensioning, tolerancing, fasteners, design, and working drawing shall be covered, utilizing several working drawings.

DFT225 Architectural Drafting I - CAD
Credits: 3
Prerequisite: A "C-" or higher in DFT200 or consent of instructor
Application of construction architectural drawings using the power of CAD as the medium for drafting. This course utilizes working drawings to focus on scale-to-drawing parameters, symbol libraries, dimensioning, and drawing enhancement.

ECNS201 Principles of Microeconomics
Credits: 3 *Offered Fall Semester*
Prerequisites: none
The course studies the market behavior of individuals, households, and businesses focusing on how individual choice influences and is influenced by economic forces. Areas of study include individual decision-making, pricing, supply and demand functions of firms, market structures, impacts of the government sector, and impacts of distribution of income alternatives.

ECNS202 Principles of Macroeconomics
Credits: 3 *Offered Spring Semester*
Prerequisites: none
The course studies the market as a whole focusing on aggregate relationships such as unemployment, inflation, and business cycles. Areas of study include aggregate supply and demand, fiscal policy, money and banking, monetary policy, economic growth, impacts of government budget and deficit financing, and consequences of international trade.

ECNS203 Principles of Micro and Macro Economics
Credits: 3
Prerequisites: none
This course covers the major principles of microeconomics and macroeconomics. Topics covered include scarcity, resource utilization, utility, supply/demand, opportunity cost, production possibilities curve/economic models, market structures, cost/profit, circular flow of money, GDP, unemployment, inflation, fiscal/monetary policy and the relationship of current events to both micro and macro economic concepts.

ENG222 Introduction to Creative Writing
Credits: 3 *Offered Spring Semester*
Prerequisites: none
This course is designed to give students experience with generating and developing original works of poetry and short fiction through two methods: analysis and discussion of works by practicing authors, and drafting and polishing their own work through workshops and writing tanks.

ENG223 Creative Nonfiction
Credits: 3 *Offered Occasionally*
Prerequisites: none
Students will gain confidence and competence in writing through journal writing and then taking those journal entries and creating essays. The journal exercises will be guided exercises, designed to elicit a variety of responses and ideas from the students.

EVSC120 Introduction to Water Resources
Credits: 3
Prerequisites: none
This course provides a basic introduction to the fundamental concepts, techniques, and knowledge required to understand and manage water resources. The course will provide an introduction to a variety of water resource topics, including: water resources terminology, the principles of the hydrologic cycle, water balance techniques, hydrology, hydrogeology, basic computational techniques, historic water information, water law, and water rights overview. Through the use of professional sources, the students will develop a working knowledge of the hydrologic, water quality, legal, economic, political, and social factors that determine water availability, hazards, use, demand, and allocation.

EVSC130 Introduction to Environmental Science
Credits: 3
Prerequisites: none
This course is designed to introduce students to important science-related issues in the world around us. The class will examine environmental issues on global, regional, and local scales. Class discussions and activities will emphasize the basic scientific principles needed to evaluate scientific problems relevant to environmental issues.

EVSC135 Topographic Maps and Aerial Photo Interpretation
Credits: 3
Prerequisites: M121 or higher or consent of instructor
The course will introduce basic principles, techniques, processes, and procedures for quantitative and qualitative interpretation of topographic maps and aerial photographs. The course will entail not only formal explanation of principles and concepts, but also hands-on exercises that focus on various practical applications for effective interpretation of maps and air photos in order to make quality assessments of physical objects or locations of interest. Each student is required to conduct an individual research project, which will consist of problem solving using the analytical skills learned during the semester.

EVSC140 Introduction to Geographic Information Systems (GIS)
Credits: 3
Prerequisite: CAPP131 or higher or consent of instructor
This course teaches the basics of Geographic Information Systems (GIS) and the science and technology behind it. Students will be introduced to the fundamentals of geography and spatial relationships and the concepts and tools used to create, maintain, and display GIS data. The course will consist of online lessons and readings each with approximately 2-4 hours of material.

EVSC150 Hydrologic Measurements
Credits: 3
Prerequisite: M121 or higher and EVSC120 or consent of the instructor
Increasing competition for water has lead to the need for accurate water measurement in order to more efficiently manage the resource. This course is designed to teach the basics of surface and ground water measurement and provide a theoretical understanding of the science. Students will learn the most commonly used measurement and data collection techniques and how to properly analyze the data.

EVSC210 Water Rights and Water Policy
Credits: 3
Prerequisites: none
This course is designed to examine the laws and policies governing water resources along with the historical, social, environmental, and economic forces that shape them. The evolution of water laws and policy up to and through the transformative 1970s to the present will be explored by an examination of water resources and their allocation in several Montana watersheds and California's Mono Basin. The administration of water rights and water quality laws by state and federal agencies in Montana and the West will be studied utilizing recent legal and policy debates and decisions.

EVSC211 Environmental Policy and Laws
Credits: 3
Prerequisites: EVSC130 or consent of instructor
This course is an introduction to the study of environmental politics, policy and laws. It examines the development of environmental policy in the United States while exploring the opposing environmental relationships between science versus belief, rich versus poor, the powerful versus the disenfranchised, and idealism versus practice. Through analysis and case studies, this course provides an overview and assessment of key environmental policy issues, developmental framework of current laws, and their associated implications for environmental issues.

EVSC212 Water Quality
Credits: 3
Prerequisites: EVSC120, M121, CHMY121 and CHMY122 or consent of the instructor
The water quality course provides an understanding and an awareness of the basic principles of water quality. Course content will include water quality parameters, pollution sources and water treatment. This will be related to water regulations, requirements, policies understanding the basics of a water quality plan both locally and regionally, and testing procedures. The water quality course is designed to prepare students for future careers in applied water resource management.

EVSC215 Ground Water Hydrology
Credits: 3
Prerequisites: M121 and EVSC150 or consent of instructor
Ground Water Hydrology presents fundamental concepts and principles of the geology of ground-water occurrence, aquifer types and their hydraulic properties, ground-water flow, well drilling and design technology, aquifer testing analysis methods, and interpretation and assessment of aquifer-testing results and pumping impacts.

EVSC220 Surface Water Hydrology
Credits: 3
Prerequisites: EVSC120 and M121 or consent of instructor
Surface Water Hydrology is designed to provide students with an understanding of basic surface water hydrology and hydrological processes, beginning with conceptual principles to quantitative and qualitative standards and methods. This course involves an in-depth analysis of the hydrologic cycle and principles including precipitation, evapotranspiration, stream flow, and open channel hydraulics, rainfall, interception, infiltration, and groundwater hydrology. This class will prepare students for careers emphasizing surface water resource management.

EVSC230 Nature and Society
Credits: 3
Prerequisites: WRIT101 or WRIT121T
This course is designed to provide students with an understanding of the relationship between human society and the environment and how it has changed through the growth of modern civilization. The course applies the idea that true environmental studies are a mixture of multiple disciplines and not just a science topic. The course is presented to allow students flexibility to draw and present their own conclusions, similar to a philosophy course in the humanities. Students will read from multiple sources, and class discussions will reflect topics of student interest and their applications to modern society.

EVSC235 Soils, Weather and Climate
Credits: 3
Prerequisites: EVSC120 and EVSC130 or consent of instructor
This course provides an overview of regional hydrologic cycles in relationship to climatology, weather and soils. An examination of soil profiles, classification of soils, and water movement in soils in association with an introduction to the water balance, and its relationship to components including evapotranspiration, interception, soil moisture storage, land usage, groundwater storage, and overland flow will be examined.

EVSC240 Geographic Information Systems (GIS)
Credits: 3
Prerequisites: A "C-"or equivalent in EVSC140 or consent of instructor
Geographic Information Systems (GIS) are used for the creation, storage, representation, research, and analysis of spatial information in a digital environment. This course expands on the fundamentals and principles of GIS and cartography learned in the Introduction to Geographic Information Systems course. Students will learn the processes, procedures, and the critical thinking involved with performing geospatial analysis. The course will entail a hands-on lab that focuses on GIS concepts and techniques utilized for data design, analysis, and map creation. Each student is required to conduct his or her own individual research project, which will consist of model building and design for spatial analysis.

EVSC250 Applied Quantitative Methods in Water Resources
Credits: 3
Prerequisites: EVSC215 and EVSC220 or consent of instructor
Applied Quantitative Methods in Water Technology expands on the fundamental knowledge taught in Hydrologic Measurements, Surface Water Hydrology, and Groundwater Hydrology. Using the skills and methods required for measuring and analyzing surface water and groundwater, students will make predictions or decisions in water resource applications. The course will emphasize the practical application of knowledge learned in previous courses.

EVSC260 Field Methods and Reporting
Credits: 3
Prerequisites: EVSC215 and EVSC220 or consent of instructor
The Field Methods and Reporting course is designed to provide students with a working knowledge of the scientific principles and protocols used in water resource measurements and field methods. The course will emphasize equipment utilized in water resource measurements and experimental design for water resource studies. Measurement, sampling strategies, and safety practices in the field will be discussed along with field trips to demonstrate application of field methods.

FIRE101 Introduction to Fire Service
Credits: 3
Prerequisites: none
This course will introduce the student to the fire service and covers basic information needed to understand the fire protection career field. Basic terms, facts, and pieces of equipment used by the fire service will be shown and used during this course.

FIRE103 Fire Fighter Safety
Credits: 3
Prerequisites: none
This course will allow the student to learn the reasons for firefighter deaths and injuries. It is designed to allow the student to develop and use safe working practices in fire fighting. The course covers OSHA and NFPA standards relating to firefighter safety, types of protection equipment, and their use and care.

FIRE105 Emergency Medical Technician - Basic
Credits: 4
Prerequisites: Hepatitis B Vaccines, Tuberculosis test (current or within past six months)
This course covers all emergency medical techniques currently considered to be within the responsibilities of the EMT-B providing emergency care with an ambulance service. The course involves classroom, in-hospital observation, and clinical experience. The purpose of the training is to ensure individual competency in each student by the successful completion of each objective.

FIRE106 Wildland Fire Fighting
Credits: 3
Prerequisites: none
This course introduces the methods, equipment, and terminology specific to wildland fire fighting. Students will learn the behavior of wildland fires and federal wildland firefighting procedures and references.

FIRE107 Personal Physical Fitness I
Credits: 1
Prerequisites: none
Emergency personnel must maintain healthy physical conditioning to handle the physical demands of responding to emergency incidents. Students in this course will learn effective workout habits and improve their own body conditioning.

FIRE108 Personal Physical Fitness II
Credits: 1
Prerequisites: none
Emergency personnel must maintain healthy physical conditioning to handle the physical demands of responding to emergency incidents. Students in this course will learn the importance of choosing and maintaining a career-long life-style that includes good nutrition and physical conditioning.

FIRE110 Hazardous Materials
Credits: 3
Prerequisites: none
This course covers a basic introduction to hazardous materials, their definition types, hazards, and characteristics. Students will be introduced to hazardous materials and the first responder's responsibility when responding to a hazardous materials incident.

FIRE120 Emergency Services Customer Service
Credits: 2
Prerequisites: none
This course will familiarize the student with the techniques necessary to establish positive relationships with the community, the fire service, and all other groups that are called upon to mitigate the effects of emergency and disaster situations. The student will become familiar with basic emergency policies dealing with equal employment opportunities, discrimination, and harassment and will develop a professional self-image.

FIRE121 Incident Command
Credits: 1
Prerequisites: none
A firefighting team needs to know who is in charge and how to effectively respond to the incident commander. This course focuses on the vital importance of incident command and commonly accepted practices.

FIRE123 Electronic Communications
Credits: 1
Prerequisites: none
This course covers communication equipment, radio frequencies, and proper communication techniques for emergency situations.

FIRE125 Emergency Equipment Maintenance
Credits: 2
Prerequisites: none
This course provides practical experience with the proper maintenance of all types of emergency equipment. The maintenance of firefighting and medical emergency equipment will be taught along with the basic maintenance of emergency vehicles.

FIRE130 Fire Apparatus Operation
Credits: 3
Prerequisites: none
This course covers the major types of firefighting apparatus such as pumpers, aerial apparatus, aircraft crash vehicles, and other support vehicles. Students will be taught operation and operator maintenance of these specific vehicles.

FIRE140 Fire Fighting Tactics and Strategies
Credits: 3
Prerequisites: none
Basic firefighting tactics and strategy used in all types of fire emergencies are taught in this course. Pre-planning, size-up, and applications of tactics based on the selected strategy are described and simulated for student learning.

FIRE202 Instructional Methodologies
Credits: 2
Prerequisites: none
Students will learn the basics of training other fire fighters at the company, battalion, or department level. Various methods of instruction, testing, and delivery will be discussed and practiced along with utilizing sources of instructional materials and the legal restrictions placed upon them.

FIRE210 Aircraft Rescue and Fire Fighting Basic Training (ARFF)
Credits: 2
Prerequisites: Students must be physically able to secure SCBA's, perform physically demanding tasks, and supply their own NFPA approved clothing.
This course is aimed at providing students with the fundamental knowledge and skills necessary to effectively handle an aircraft emergency in accordance to FAR 139. It will contribute to the student's knowledge of basic fire fighting and rescue principles.

FIRE215 Fire Streams
Credits: 2
Prerequisite: FIRE130
A fire fighter must be capable of understanding and calculating water hydraulics and fire stream flows in order to perform basic fire suppression duties as a member of a team. This course emphasizes the importance of fire streams.

FIRE225 Fire Officer
Credits: 2
Prerequisite: FIRE120
The duties of a fire officer at the company level in the fire service are taught in this course. Students will gain valuable leadership experience while performing the roles and responsibilities of a fire officer.

FIRE232 Basic Wildland Supervision
Credits: 2
Prerequisite: FIRE106
Basic supervision of wildland firefighting crews and equipment is covered in this course, as well as intermediate fire behavior. Effective use of personnel and equipment as well as resource typing will be emphasized.

FIRE234 Fire Protection Systems
Credits: 3
Prerequisites: none
This course covers fire and smoke behavior with emphasis placed on detection, suppression, and the methods of automatic and manual extinguishments. Detection and sprinkler systems will be discussed.

FIRE241 Fire Inspection
Credits: 3
Prerequisites: none
This class focuses on codes, prevention, and inspections. It covers the basic information required to complete a basic fire inspection and serves as an introduction to the codes and regulations that apply to building inspection.

FIRE242 Rescue
Credits: 3
Prerequisites: FIRE101 and FIRE103
Basic rescue techniques, tools, and equipment are covered in this class. Students will participate in auto extrication and high-angle rescue techniques.

FIRE250 Fire Ground Operations
Credits: 2
Prerequisites: FIRE101, FIRE103, FIRE130 and FIRE242
Individuals working together as a functional company unit will prepare for and demonstrate to State Certifications. This class monitors the knowledge and physical ability to perform the tasks required by the certification process.

FIRE260 Fire Investigation
Credits: 3
Prerequisite: Knowledge of fire behavior obtained through successful completion of first year Fire and Rescue program courses.
This course covers basic fire cause determination techniques. Students will learn to find the area of origin, how the fire started, and the basics of arson detection and prosecution.

FIRE261 Building Construction
Credits: 1
Prerequisites: none
Students will learn basic building construction techniques and types as they relate to fire fighter safety, fire behavior, and building behaviors when subjected to fire. The National Fire Academy Building Construction Series will be given special emphasis.

FIRE270 Fire Prevention
Credits: 3
Prerequisites: none
Students are provided fundamental information regarding the history and philosophy of fire prevention. Topics included are the organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, the relationship between fixed fire suppression systems, fire loss mitigation, fire inspections, and fire and life safety public education programs.

FIRE288 Capstone
Credits: 2
Prerequisite: FIRE101
This capstone course is designed to assist the fire fighting student to synthesize prior knowledge gained in the fire fighting curriculum. It also provides the student information regarding the current status of fire fighting. This course is also designed to meet specific learning needs of students in their final semester of course study. There are independent study projects focusing on learning opportunities not otherwise offered in our college curriculum. Among the choices offered to the student, he or she may design projects within this course to target his or her own learning needs. The student must seek prior approval of an instructor willing to serve as a Faculty Sponsor. The student then initiates a proposal describing specific learning outcomes and an evaluation process for the projects. Final grading in the course also depends on the student successfully preparing a comprehensive report and presenting to the sponsoring organization and/or peers.

FIRE289 Fire Service Internship
Credits: 2
Prerequisites: EMT-B Registry, third-semester standing
The student will report for duty with a combat shift of firefighters in an approved uniform with proper personal protective equipment. The student will be assigned to a firefighter mentor who will demonstrate the duties of a firefighter during real working shifts. The student will participate in all activities that the firefighters would be expected to perform during normal working days including physical training, equipment inspections and maintenance, station cleanup, drills, training, fire inspections, and emergency response. The student will not be allowed to perform any offensive firefighting duties that would require entering an IDLH atmosphere. The student will not be allowed to drive the host fire department's apparatus.

GEN265 A.S. Capstone
Credits: 2
Prerequisite: consent of instructor
This capstone is required for an Associate of Science degree. During their final year of their degree, students will work on projects that will allow them to utilize their skills in research, presentation, science knowledge, and communication skills.

GEN270 A.A. Capstone
Credits: 2
Prerequisites: consent of instructor
Capstone credits are required for an Associate of Arts degree. The credits are obtained by doing extra work under the direction of an instructor of a capstone-designated course in which the student is either currently enrolled or has completed in previous semesters. The capstone portion must be a self-directed, integrated, and applied learning opportunity that integrates the coursework, knowledge, skills and experiential learning acquired during the coursework leading to the A.A. degree in such a way that the student can demonstrate a broad mastery of academic and professional abilities. As such, students may expect to draw upon the social, historical, aesthetical, and ethical perspectives germane to this course through an analysis of a critical issue that may be expressed in some combination of project product and writing.

GEN275 Mental Health Direct Care Capstone
Credits: 2
Prerequisites: PSYX100
This course is the Mental Health Direct Care Capstone. It provides the student with two aspects of mental health direct care. First, it is an overview of the mental health system. Included in this are 1) the different professionals within mental health (psychiatrists, psychologists, case managers, psychotherapists), 2) levels of care (from outpatient to hospitalization), 3) political backdrop of mental health care, 4) governmental programs in mental health care (local, state, federal), 5) training in suicide prevention techniques, 6) training in dealing with violent mentally ill patients, and 7) advocacy programs available for mental health issues. Second, it provides an internship at a mental health care facility where students will gain hands-on experience providing direct mental health care.

GEN287 Independent Study
Credits: 1-3
Prerequisites: consent of instructor and approval of the Department Chair
This course is designed to meet specific learning needs of students. Typically, such independent study projects focus on learning opportunities not otherwise offered in our college curriculum. The student then initiates a proposal describing, among other things, the number of hours to be spent on the study project, specific learning outcomes, and how evaluation is to be accomplished. The approved proposal will have signatures of the student, Faculty Sponsor, Department Chair, and the Associate Dean.

GEN288 Internship
Credits: 1-3
Prerequisites: Students must have successfully completed at least two semesters (30 credits) in General Education courses and/or be recommended by a faculty member in order to become eligible for a student intern position.
This course is designed for the student who takes the initiative to perform work outside of and in addition to the normal school curriculum. It is designed to be a highly rewarding workplace experience to give the student exposure to real workplace conditions, with the opportunity to enhance his or her resume and to aid in the student's transition from school to work.

GEO101 Introduction to Physical Geology
Credits: 3 *Offered Spring Semester*
Prerequisites: none
This course is designed as both a general interest and application-based course for understanding natural processes that affect the earth's surface. Topics include geologic history, mountain building, formation of the continents, earthquakes, weathering and erosion, rock and mineral identification, and physical and chemical aspects. It serves as a entry level geology course for those who wish to pursue geology professionally or as a terminal course for those who wish to have a general knowledge of geologic principles.

GEO102 Introduction to Physical Geology Lab
Credits: 1 *Offered Spring Semester*
Prerequisites: none
This is the lab component for Introduction to Physical Geology.

HR100T Human Relations
Credits: 2
Prerequisites: none
Students will survey the human components of successful working environments with an emphasis on awareness of human/workplace needs, self-awareness, and responsibility to relationships in the workplace.

HR101 College Success
Credits: 2
Prerequisites: none
Students will learn to use campus resources effectively, learn to use a variety of study strategies for college work, and explore personal learning styles and temperaments. The course is intended to offer a supportive environment to help students begin college feeling confident in their skills and knowledge of what will be expected of them at this level, and to further clarify their own goals for postsecondary education.

HR110T Career Development and Human Relations
Credits: 3
Prerequisites: none
This course serves as an introduction to the working environment, emphasizing self-awareness and responsibility to relationships, as well as the written and oral interactions necessary to gain employment: resumes, cover letters, applications, and interviews. It is recommended for students in their third or fourth semester.

HSTA101 American History I
Credits: 3 *Offered Fall Semester*
Prerequisites: none
A survey of the political, constitutional and diplomatic history, economic history, and social, intellectual and cultural history of the United States from the first settlement to the Civil War. Emphasizes a substantive understanding of the events, trends, and personalities of U.S. history and the developmental of skills in analysis and communication.

HSTA102 American History II
Credits: 3 *Offered Spring Semester*
Prerequisites: none
A survey of the political, constitutional and diplomatic history, economic history, and social, intellectual and cultural history of the United States from the Civil War to the present day. Emphasizes a substantive understanding of the events, trends, and personalities of U.S. history and the development of skills in analysis and communication.

HSTA160 Introduction to the American West
Credits: 3 *Offered Occasionally*
Prerequisites: none
A survey of the social, economic, political, and environmental history of the United States west of the Mississippi River from prehistory to the Second World War. This course emphasizes the analysis and interpretation of the events, trends, and personalities that characterized the American West and its impact on U.S. History.

HSTA215 Post-WW II America
Credits: 3 *Offered Fall Semester*
Prerequisites: none
A comprehensive overview of United States history from 1945 to the beginning of the Reagan Era in 1980, this course includes reading, lecture/discussions, and audio-visual materials that address key issues that faced the United States in the wake of World War II. Topics include the Cold War and nuclear weapons, Nixon, the civil rights movement, the Korean and Vietnam wars, popular culture, the Baby Boom, television, and the space program.

HSTA255 Montana History
Credits: 3 *Offered Spring Semester*
Prerequisites: none
This course offers a comprehensive study of the social, economic, cultural, and political development of Montana, with an emphasis on critical reading, interpretation, research, and written analysis.

ITS150 CCNA 1: Exploration
Credits: 4
Prerequisite: CAPP131 or equivalent
A fundamentals class, based on the CISCO Network Academy curriculum. It is the first in a four-course series. This class covers: Network terminology, the OSI Network model, standards for network topologies and network wiring, IP addressing, subnet masks, network administration, and network planning. An introduction to the concept of network routers and their role in networking will be discussed. These basic principles are reinforced with hands-on lab work.

ITS152 CCNA 2: Exploration
Credits: 3
Prerequisite: ITS150
Router Technology - this course is the second of four courses in the curriculum designed by CISCO for learning network administration. This course requires a level of experience working with Cisco router commands and will build on those commands learned in ITS-150. The course will cover routing theory and router configuration. Routing protocols: RIP V1 & 2, OSPF, EIGRP and communication protocols will be explored with hands-on lab models to reinforce the lecture concepts. Both live and simulation work allow students the freedom to learn-by-doing.

ITS212 Network Operating System - Server Admin
Credits: 4 *Offered Spring Semester*
Prerequisite: ITS280
Students will install and use their own Windows 2008 Servers to explore server-based operating systems administration techniques. Emphasis will be on security, Active Directory structure, user administration, performance, resource sharing, and network access.

ITS218 Network Security
Credits: 3 *Offered Spring Semester*
Co-requisites: ITS212
Prerequisites: ITS280 and ITS224
This seminar class focuses on network design as relates to network security. Network architecture, security, network administration, documentation, and other networking topics pertinent to today's network administrator are included in this course.

ITS224 Introduction to Linux
Credits: 3 *Offered Fall Semester*
Prerequisites: CSCI100 and ITS280
Students are introduced to accessing a multi-user system. They learn to manage files and directories in a shared environment. Topics include simple user administration, scripts and network access.

ITS250 CCNA 3: Exploration
Credits: 3
Prerequisite: ITS152
LAN switching and wireless technologies are the focus of the third course in the CISCO curriculum leading to CCNA certification. The course explores the roll of switches in the modern networking environment, the Cisco IOS command-line interface used in switch configuration, VLANs, spanning-tree protocol, VLAN trunking protocols and security. Wireless technologies are introduced as well as the placement of routers within a switched network. Students will build on and apply information from ITS-150 and ITS-152. Material is presented with both lecture and hands-on activities, using live and simulation work. Distance learning technologies allow students the freedom to learn - by - doing in the lab and from home via internet connection with simple software. Our extensive equipment inventory and the current configuration allow the student to practice network device configuration and troubleshooting much as they would in a "real world" environment.

ITS252 CCNA 4: Exploration
Credits: 3
Prerequisite: ITS250
Accessing the WAN is the fourth course in the CISCO series leading to the Cisco Certified Networking Associate (CCNA) exam. The curriculum focuses on network design with advanced network management projects. Topics covered include Wide Area Networking (WAN) setup and design, Point to Point Protocol (PPP), ISDN, Frame Relay and Voice over IP (VOIP). This course builds upon the previous three classes and expands knowledge of IP addressing, wildcard masks and security. In addition to the CISCO online curriculum, the course explores DHCP, Network Address Translation (NAT) and Port Address Translation (PAT) concepts with advanced hands-on activities and network configurations. Once again distance learning technologies are used to enable the students to access the equipment from home or other UM-Helena classroom computers. IP phones, POE switches and router interfaces are combined to enlarge the student knowledge base for both CCNA certification testing and workplace application.

ITS280 Computer Repair and Maintenance
Credits: 4
Prerequisites: CAPP100 and CAPP131 or equivalent, or consent of instructor
This course is an in-depth exposure to computer hardware and operating systems with an eye toward the CompTIA A+ certification exam. Students learn: functionality of hardware, computer maintenance, and safety. Hardware/Software component interaction, customer service and networking concepts are discussed and explored with hands-on lab assignements. Students will gain confidence with the components of personal computer systems by learning proper procedures for hardware and software installations, upgrades, and troubleshooting.

LIT110 Introduction to Literature
Credits: 3 *Offered Fall Semester*
Prerequisites: none
Instruction in critical analysis of imaginative literature - fiction, poetry, and drama. Emphasis on articulating strong responses to varied texts.

LIT212 American Literature Survey
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended.
An introduction to American cultural traditions through readings and discussions of representative texts from the Colonial Period to the present. This course presents the richness of American literature-its thematic and stylistic range and its geographical and ethnic diversity.

LIT213 Montana Literature
Credits: 3 *Offered Occasionally*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended.
The course will survey representative writings from modern-day Montana writers. Students will analyze a variety of prose genera and appreciate the different styles, messages, and cultures presented in the works. Emphasis will be placed on themes and their reflection of Montana, the West, and all people, all places, all times.

LIT223 British Literature I
Credits: 3 *Offered Fall Semester*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended
In this survey of representative texts from the Anglo-Saxon period through the Enlightenment, students will explore a range of approaches to the development of British literature.

LIT224 British Literature II
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended
In this survey of representative texts from Romanticism to postmodernism, students will explore a range of approaches to the development of British literature and cultural identity.

LIT227 Introduction to Shakespeare
Credits: 3 *Offered Fall Semester*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended
This course introduces students to the drama of Shakespeare. Students will use critical approaches to read and to analyze representative plays from the tragedies, comedies, histories, and romances.

LIT228 Introduction to Irish Literature
Credits: 3 *Offered Spring Semester - Even Numbered Years*
Prerequisites: none
Students will survey Irish literature in English ranging from the mythological to the modern. The course will explore how a literature with a long history evolves and how it defines and expresses a cultural identity. Texts will include fiction, poetry, plays, videos, and prose.

LIT229 Comparative Literature
Credits: 3
Prerequisites: none
A survey of literature in an international framework. Students explore relationships among cultures through analysis of literary texts from diverse societies and eras.

LIT230 World Literature Survey
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended
World Literature is a survey course of poetry, drama, short stories, and novels in translation that focuses on critical interpretation of the works individually and collectively. Students will explore literary themes, structures, and critical strategies.

LIT250 The Novel
Credits: 3 *Offered Fall Semester*
Prerequisites: none
The course introduces critical analysis of the novel, with an emphasis on articulating strong responses to varied texts.

LIT291 Special Topics Variable
Credits: 3 *Offered Occasionally*
Prerequisites: A "C-" or higher in WRIT095 or satisfactory score on placement test. A "C-" or higher in WRIT101 is recommended
This is an omnibus course, in which students will analyze and interpret selected literature, usually from a specific genre, period, or of a particular author or defined group of authors, depending upon the specific course offering. Specific course offerings may be experimental, intended as one-time only, or intended as part of a catalog of offerings that may be offered or rotated on a periodic basis.

M065 Pre-Algebra
Credits: 3
Prerequisites: none
A review of basic math skills to prepare for M090, M108 or M111. This course focuses on addition, subtraction, multiplication and division of decimals, fractions, and integers; order of operations; ratios, proportions and percentages; solving single variable linear equations; and the Cartesian Coordinate System. Course is offered pass/fail.

M066 Pre-Algebra Lab
Credits: 1
Co-requisites: M065
Prerequisites: none
Students enrolled in M065, co-enroll in this course for additional instruction for M065 curriculum. This course focuses on addition, subtraction, multiplication, and division of decimals, fractions, and integers; order of operations; ratios, proportions and percentages; solving single variable linear equations; and the Cartesian Coordinate System. Course is offered pass/fail.

M090 Introductory Algebra
Credits: 3
Prerequisites: A "pass" in M065 or satisfactory score on placement test
This course serves as an introduction to algebra which includes a review of rational numbers and the order of operations, the study of algebraic expressions, linear equations, linear inequalities, exponents, radicals, polynomials, quadratic equations, and graphs of linear equations and inequalities.

M095 Intermediate Algebra
Credits: 4
Prerequisites: A "C-" or higher in M090 or satisfactory score on placement test
The study of linear equations, systems of linear equations, inequalities, applications and graphing; polynomials; rational expressions and equations; radical expressions and equations; rational exponents; complex numbers; and quadratic equations.

M100T Introduction to Technical Mathematics
Credits: 1
Prerequisites: none
This course reviews basic math skills commonly used in the technical occupations, including fractions, decimals, ratios, and formulas specific to the students' trade areas. Required in all certificate programs and for students whose placement scores indicate a need for preparatory work in mathematics.

M108T Business Mathematics
Credits: 3
Prerequisites: A "pass" in M065 or satisfactory score on placement test
Students in this course will examine the mathematics of business ownership and demonstrate an understanding of business decisions. Topics include ratios and percentages, algebraic equations, marketing, payroll, cash flow, simple and compund interest, insurance, financial statements, depreciation, annuities, and inventory valuation.

M111T Technical Mathematics
Credits: 3
Prerequisites: A "pass" in M065 or satisfactory score on placement test
This course includes fractions, decimals, ratios, proportions, formulas, and word problems. Topics studied are metric and standard American measurement systems, linear equations, developing applied skills in practical geometry, solid figures, and basic trigonometry.

M113 Trigonometry Review
Credits: 1 *Offered Occasionally*
Prerequisites: A "C-" or higher in M121 or satisfactory score on placement test
An abbreviated course in trigonometry designed as a refresher course in trigonometry to prepare students for calculus. Topics include radian and degree angle measures, unit circle trigonometry, triangle trigonometry, graphing of the trigonometric function and identities.

M114T Extended Technical Math
Credits: 4
Prerequisites: A "pass" in M065 or satisfactory score on placement test
This course is equivalent to M 111 as the course combines M 111 Technical Mathematics along with the development of basic arithmetic skills topics. The course also includes fractions, decimals, ratios, proportions, formulas and word problems. Topics studied are metric and standard American measurement systems, linear equations, developing applied skills in practical geometry, solid figures, and basic trigonometry. This course includes 30 hours of lab.

M115 Probability and Linear Mathematics
Credits: 3
Prerequisites: A "C-" or higher in M095 or satisfactory score on placement test
This course is intended to give an overview of topics in finite mathematics together with their applications. Topics covered include linear equations and functions, systems of linear equations and matrices, sets and counting, probability and statistics, and finance.

M121 College Algebra
Credits: 3
Prerequisites: A "C-" or higher in M095 or satisfactory score on placement test
The study of equations and inequalities, functions and graphs, polynomial and rational functions, exponential and logarithmic functions, systems of equations and inequalitites.

M122 College Trigonometry
Credits: 3 *Offered Spring Semester*
Prerequisites: A "C-" or higher in M121 or satisfactory score on placement test
A complete course in trigonometry including trigonometric functions and identities, inverses, polar and Cartesian graphing, Law of Sines and Cosines, vectors, and parametric equations.

M145 Mathematics for the Liberal Arts
Credits: 3
Prerequisites: A "C-" or higher in M095 or satisfactory score on placement test
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 algebra skills to solve real problems. Topics include problem solving, financial math, mathematical modeling (linear and quadratic), and elementary statistics.

M171 Calculus I
Credits: 4 *Offered Fall Semester*
Prerequisites: A "C-" or higher in M122 or satisfactory score on placement test
The subject of this course is single variable calculus. Topics include functions, limits, continuity, differentiation, tangents, implicit differentiation, Mean Value Theorem, integration, Fundamental Theorem of Calculus, logarithmic, exponential functions, and applications of integration.

M172 Calculus II
Credits: 4 *Offered Spring Semester*
Prerequisites: A "C-" or higher in M171 or satisfactory score on placement test
Topics include transcendental functions, applications of integration, techniques of integration, improper integrals, infinite series and convergence test, Power series, Taylor's theorem, polar coordinates, and parametric equations.

MACH110 Machine Shop
Credits: 3
Prerequisites: none
This course includes an emphasis on shop and work area safety. Instruction covers standard shop work, such as measurement, layout, basic hand tools, drills, drill presses, and taps and dies. Use of pedestal grinder will be covered. Work assignments incorporate projects requiring use of the above machines, tooling, and emphasize safety.

MACH115 Introduction to Engine Lathes
Credits: 5
Prerequisites: none
This course covers tool bit grinding, facing, turning, boring, parting off, threading, tapering, knurling, trepanning, between center work, and use of faceplates and steady rests. Engine lathe safety will also be covered. Use and care of precision measuring tools will be included.

MACH120 Introduction to Mills
Credits: 5
Prerequisites: MACH110
The course covers all types of vertical and horizontal milling machines and use of all related mill accessories. Work assignments incorporate projects requiring use of these machines and tooling.

MACH125 Blueprint Reading for the Machinist
Credits: 2
Prerequisites: MACH110
Blueprint reading covers orthographic projection, line identification, auxiliary and sectional views, dimensioning of drawings, common abbreviations, tolerancing, and sketching techniques.

MACH132 Advanced Lathes
Credits: 5
Prerequisites: none
The Advanced Lathe course will use engine lathes to manufacture industrial parts. The use of assorted cutting tools and support tooling, such as form tools, carbide inserts, taper attachments, follower, and steady rests. Close tolerance machining required. Actual customer projects will be incorporated into the course work. Safety concerns for both machines will be reviewed.

MACH137 Advanced Mills
Credits: 5
Prerequisites: none
The Advanced Mills course will utilize the horizontal and vertical mills in the lab. The use and care of rotary tables, indexing heads, end mills, slab mills, gear cutters, carbide cutters, criterion, and line boring will be covered. The various work holding methods, location methods, process planning and operations will be discussed. Safety concerns for both machines will be reviewed. Actual customer projects will be incorporated into the course work.

MACH140 Grinding Applications
Credits: 2
Prerequisites: none
The course covers setup, use, and safety requirements of grinding machines. Hands-on use of machines will be emphasized.

MACH205 Tooling and Fixtures Used in CNC
Credits: 2
Prerequisites: none
Tooling and fixtures used in CNC are discussed in a classroom environment. These topics, for both mill and lathe, will be discussed in order to facilitate the students' ability to select proper work holding devices and cutting tools for various types of machining operations that may be performed. Cutting tool information is one of the most multifaceted areas of study for developing machinists and programmers. Both must be able to discern proper set-ups based on part and tool geometry while providing proper speed and feed data. The use of formulas and reference materials will be studied as a necessary facet of the manufacturing process.

MACH210 CNC Turning Operations Level 1
Credits: 3
Co-requistes: MACH205
Prerequisites: Completion of 1st Semester
This course is an introduction to CNC Turning Centers and the safe operation of common operating procedeures, set-up and maintenance of the machine and control panel, which will be discussed and implemented. The student will become aquainted with the ways in which various companies utilize CNC machine tools and personel while learning methods for the installation of tools, establishing machine, fixture and part zero reference offsets. The students will also be introduced to the methods and reasons behind the modification of these reference offsets and other geometry offsets used to machine parts to demanding geometric tolerances.

MACH212 CNC Turning Programming and Operations Level 2
Credits: 3
Prerequisites: MACH210
This class introduces students to word address programming (G and M code) for CNC Turning Centers. The student will write formatted programs, set-up, and run their programs on the CNC Turning Center. Students will use basic and intermediate "G" codes with coordinates to create common part features such as contours, shoulders, bores, grooves, and chamfers. Students will learn to apply geometry offsets for machining their parts to exacting geometric tolerances. The goal will be to prepare, plan, then write safe, effective, and efficient CNC programs. Students will then use key concepts for part set-up, program verification, editing, and documentation.

MACH218 CNC Turning Programming and Operations Level 3
Credits: 3
Prerequisites: MACH210 and MACH212
This class enhances a student's ability to program, set-up, verify and operate CNC Turning Centers. The student will write well formatted CNC programs, utilizing strategic programming and logic techniques and CAD / CAM generated files, then set-up and run their programs on various CNC Turning Machines. Students will use "canned cycles" and intermediate level "G and M" codes to create common part features such as contours, grooves, bores, holes and threads, with an emphasis placed on Internal Diameter (ID) operations. The goal will be to prepare, plan manufacturing process, then write safe, effective, and efficient CNC programs. Students will then use key concepts for part set-up, program verification, editing, and documentation of process.

MACH220 CNC Milling Operations Level 1
Credits: 3
Co-requisites: MACH205
Prerequisites: Completion of 1st Semester
This course is an introduction to CNC Milling Centers. The common operating procedures, set-up, and maintenance of the machine and control panel will be discussed and implemented. The student will become aquainted with the ways in which various companies utilize CNC machine tools and personel while learning methods for the installation of tools, establishing machine, fixture, and part zero reference offsets. The students will also be introduced to the methods and reasons behind the modification of these reference offsets and other geometry offsets used to machine parts to demanding geometric tolerances.

MACH222 CNC Milling Programming and Operations Level 2
Credits: 3
Prerequisites: MACH220
This class introduces students to word address programming (G and M code) for CNC Machining Centers. The student will write formatted programs, set-up, and run their programs on the CNC Machining Center. Students will use basic and intermediate "G" codes with coordinates to create common part features such as contours, slots, bores, holes and pockets. The goal will be to prepare, plan, then write safe, effective, and efficient CNC programs. Students will then use key concepts for part set-up, program verification, editing, and documentation.

MACH224 CNC Milling Programming and Operations Level 3
Credits: 3
Prerequisites: Completion of 1st Year
Common uses of the CNC Machining Center are discussed and implemented. Canned cycles for pocketing, hole manufacturing, threading, cutter compensation, and other standard controller features will be utilized. Students will learn to use loops, multiple work offset programming techniques, subroutines, and subprograms to shorten and simplify programs. All these programming approaches will be performed on 3 axis and 4 axis machining centers. Students will also learn advanced techniques for making programs run more efficiently.

MACH241 CAD/CAM for the CNC Turning Center
Credits: 5
Co-requisites: MACH218
Prerequisites: Completion of 1st Year
This class introduces students to Mastercam X for Lathe / Turning application. Students will learn to navigate the program's GUI interface for the purpose of 1) creating part geometry as CAD entities; 2) defining cutting tools and machining operations; 3) generating CAM type tool paths; 4) graphically render their machining operations for verification purposes; and 5) post process their work. Students will then have the opportunity to load their programs into a CNC Turning Center and perform all necessary tasks to complete the manufacturing process for their piece part. This class will walk a student through the entire creative process of part design, manufacturing process development, and machining a finished product.

MACH242 CAD/CAM for the CNC Machining Center
Credits: 5
Co-requisites: MACH224
Prerequisites: Completion of 1st Year
This class introduces students to Mastercam X for CNC Milling application. Students will learn to navigate the program's GUI interface for the purpose of 1) creating part geometry as CAD entities; 2) defining cutting tools and machining operations; 3) Generating CAM type tool paths; 4) graphically rendering their machining operations for verification purposes; and 5) post processing their work. Students will then have the opportunity to load their programs into a CNC Milling Center and perform all necessary tasks to complete the manufacturing process for their piece part. This class will walk a student through the entire creative process of part design, manufacturing process development, and machining a finished product.

MACH245 Metallurgy
Credits: 1
Prerequisites: MACH110
The student will learn about types of ferrous and nonferrous metals and their applications. Metal numbering systems and the types of heat-treating will also be covered.

MACH250 Shop Practices
Credits: 2
Prerequisites: MACH110, MACH115, MACH120 and MACH125
This is an on-going semester course during normally scheduled shop hours. It is intended to match spring semester students with live, practical shop experiences involving subject matter previously covered in other courses. Emphasis will be on productivity.

MACH260 Project Management
Credits: 2
Prerequisites: MACH140 and MACH245
During the final semester of course work, the student will work with an assigned advisor from the machine shop. This two-credit course will be the capstone project and will demonstrate a comprehensive knowledge of topics and concepts covered in the Metals Technology program.

MECH205 Small Engines
Credits: 2
Prerequisites: none
This course concentrates on small gasoline engines as used in the Outdoor Power Equipment industry (less than 20 horse power). Emphasis will be on the four major theories of small engines-compression, ignition, carburetion, and governing. Students will disassemble, familiarize, inspect, reassemble, and operate a school-owned small engine.

NRSG100 Introduction to Nursing
Credits: 1; 1 lecture
Prerequisites: none
The intent of this course is to socialize the participant to the roles/functions/expectations of the nurse. This course provides an introduction to nursing history and current views of nursing as a discipline (including various types of nursing occupations and educational requirements). Scholastic expectations required to complete a program of study in nursing are introduced as well as professional expectations of the practicing nurse. The following core concepts related to nursing practice are presented; the caring nature of the nursing profession; the importance of critical thinking/clinical judgment; legal/ethical/cultural issues in nursing; the need to understand human motivation and behavior; and use of the nursing process. Communication in various forms is emphasized.

NRSG130 Fundamentals of Nursing
Credits: 4; 4 lecture
Prerequisites: none
This course introduces learners to the clinical skills essential for the nursing role. It also includes complex concepts and behaviors of nursing roles within the context of the nursing process, holistic care, and health care. The course emphasizes the theoretical and practical concepts of nursing skills required to meet the needs of clients in a variety of settings.

NRSG131 Fundamentals of Nursing Lab
Credits: 3; 3 (90 hrs) lab
Prerequisites: none
This course introduces learners to the clinical skills essential for the nursing role. It also includes complex concepts and behaviors of nursing roles within the context of the nursing process, holistic care, and health care. Emphasis will be on the theoretical and practical concepts of nursing skills required to meet the needs of clients in a variety of settings.

NRSG135 Nursing Pharmacology
Credits: 3; 3 lecture
Prerequisites: none
Through caring, communication, professionalism, critical thinking, and critical judgment, students learn a structured systematic approach to the study of drug therapy. Medications are studied according to drug classes and therapeutic families. Students will learn to apply the nursing process to drug therapy with an emphasis on accessing relevant information to ensure client safety.

NRSG138 Gerontology for Nursing
Credits: 2; 1 lecture, 1 (45 hrs.) clinical
Prerequisites: none
This course introduces the student to the skills and knowledge needed to provide nursing care to aging clients. Topics explored include current trends (including legal and ethical issues) in gerontological nursing, developing stages and transitions associated with aging, expected aging related physiological changes and assessment findings, recognition and management of acute and chronic illnesses that commonly occur in the older adult population, promotion of health for the older adult client, end-of-life issues and care.

NRSG140 Core Concepts of Adult Nursing
Credits: 7; 4 lecture, 3 (135 hrs.) clinical
Prerequisites: none
This course prepares the student to care for clients experiencing common, well- defined health alterations in settings where stable clients are anticipated. Students are introduced to standardized nursing procedures and customary nursing and collaborative therapeutic modalities. The following body systems will be addressed: neurological, cardiac, respiratory, renal/urological, gastrointestinal, musculoskeletal, endocrine, reproductive, integumentary, sensory, and hematological. The topics of pre-operative care, pain, infection/immunity, and cancer will be addressed. Additionally, recognition and emergent treatment of rapidly changing conditions will be introduced.

NRSG142 Core Concepts of Maternal/Child Nursing
Credits: 3; 2 lecture, 1 (45 hrs.) clinical
Prerequisites: none
Emphasizing caring, communication, professionalism, and critical thinking, the course provides information about fetal development and prenatal and postnatal care of the mother and newborn. Role of the nurse in meeting the needs of the family is emphasized. Clinical application of care for the mother and newborn will allow the student to demonstrate acquired knowledge. The course also includes growth and development patterns as well as care of the well and sick child.

NRSG144 Core Concepts of Mental Health Nursing
Credits: 2; 2 lecture
Prerequisites: none
This course will explore physiological, psychological, sociocultural, spiritual, and environmental factors associated with Mental Health/Illness affecting individuals and families. Focus will be placed on basic concepts of psychiatric nursing, therapeutic modalities, as well as psychiatric disorders including psychopharmacological management.

NRSG148 Leadership Issues
Credits: 2; 1 lecture, 1 (45 hrs.) clinical
Prerequisites: none
This capstone course provides the Practical Nursing student information regarding the current status of vocational nursing. This course assists the nursing student in bridging the role between student and employee. Leadership/management skills, healthcare delivery systems, continuing educational needs, licensure requirements, legal issues, and standards of practice are investigated. Personal and professional identity and entry into the job market are explored. There is a forty-five hour clinical/precepted component to provide the student opportunity to apply theoretical knowledge in the long-term setting.

NRSG250 LPN to RN Transition
Credits: 3; 3 lecture
Prerequisite: none
This course will focus on the role transition from LPN to RN in relation to the concepts and principles of holistic nursing care. Focus is on the continuing development of roles and responsibilities of the RN as defined by the scope of practice standards, nursing theory and conceptual models.

NRSG252 Complex Care Needs of Maternal/Child Nursing
Credits: 3; 2 lecture, 1 (45 hrs.) clinical
Prerequisite: Admission to the Associate of Science Registered Nursing Program
This course presents concepts and principles related to the registered nurse providing nursing care for childbearing families and children who experience complex alterations in the functional dimensions of health. Focus is on the use of the nursing process in assessment and application of advanced concepts in the care of the childbearing family, or a child with more complex health care problems from birth through adolescence. The course will explore special needs and complications during the perinatal experience, and altered functioning, special needs and disease processes manifested in children

NRSG254 Complex Care Needs of Mental Health Nursing
Credits: 2; 1 lecture, 1 (45 hrs.) clinical
Prerequisite: none
This course explores physiological, psychological, sociocultural, spiritual and environmental factors associated with Mental Health/Illness affecting individuals and families across the lifespan. Focus will be placed on basic concepts of psychiatric nursing, therapeutic modalities, as well as psychiatric disorders including psychopharmacological management. Through the implementation of the nursing process students will formulate a plan of care for an individual who has been diagnosed and treated for a mental illness.

NRSG256 Pathophysiology
Credits: 3; 3 lecture
Prerequisite: none
This course will introduce the student to the basic principles and processes of Pathophysiology including cellular communication, genes and genetic disease, forms of cellular injury, fluid & electrolyte/acid base balance, immunity, stress coping and illness, and tumor biology. Pathophysiology of the most common alterations according to body system will also be discussed as well as the latest developments in research related to each area.

NRSG262 Complex Care Needs-Adult Client
Credits: 4; 2 lecture, 2 (90 hrs.) clinical
Prerequisites: none
This course prepares the student to provide nursing care to adult clients experiencing acutely changing conditions in settings were outcome is less predictable. Emphasis is placed on the nurse's response to emergent/life-threatening/rapidly changing conditions. Topics covered include collaborative therapeutic modalities related to acute/complex neurological, cardiac, respiratory, hematological, endocrinologic events, shock, sepsis/SIRS, complex burns, etc.

NRSG265 Advanced Clinical Skills
Credits: 1; 1 (30 hrs) lab
Prerequisite: none
This course prepares the student to carry out complex nursing interventions across the lifespan. Topics covered include IV therapies such as central venous therapy, parenteral nutrition, IV medication administration, complex IV infusions, blood/blood product administrations, advanced airway/ventilatory support, wound care, laboratory values, complex gastrointestinal problems, arrhythmia identification, mobility issues, disaster preparedness, and palliative care.

NRSG266 Managed Client Care
Credits: 4; 2 lecture, 2 (90 hrs.) clinical
Prerequisite: none
This course covers topics related to integrated nursing care of individual clients and groups of clients as well as basic principles related to leadership and management in nursing. Topics include effective communication techniques in the employment setting; role differentiation among care providers; organization and prioritization; delegation, supervision, management of health care resources, legal and ethical issues, values clarification, conflict resolution and consensus building. The course requires students to integrate knowledge and skills learned from other nursing courses and help them transition from the role of student to that of a Registered Nurse. Licensure exam (NCLEX-RN) preparation and process are also included as a component of the course. The preceptor-based clinical component allows the student to function in the role of a registered nurse while working one-on-one with a designated RN preceptor.

NUTR112 Nutrition
Credits: 3
Prerequisites: none
The course provides a basic study of nutritional needs through the lifespan and nursing measures to assist in meeting those needs. The course also covers nutrients and the recommended dietary intake to promote good health and to prevent disease.

OT107 Introduction to Paralegal Studies
Credits: 3
Prerequisites: none
Introduction to Paralegal Studies introduces the student to a variety of paralegal careers in private law firms, government agencies, and business. The course provides an overview of the framework of American law, the structure and functions of state and federal court systems, and the steps involved in the litigation process. Students will develop an awareness of the skills and attributes required to perform the job duties of a paralegal, as well as learn about functioning effectively in the legal environment.

OT161 Legal Terminology
Credits: 2 *Offered Fall Semester*
Prerequisites: none
Designed to give students background in basic pronunciation, spelling, and definition of terms commonly used in the legal field. This course covers a variety of areas of law in addition to terms dealing with courts, legal systems, and litigation procedures. General Latin terms in common usage are also given.

OT165 Introduction to Legal Research
Credits: 2 *Offered Spring Semester*
Prerequisite: none
This course introduces the student to the art of legal research. The primary purpose of the course is to enable the student to develop an understanding of the fundamental sources of the law and to be able to locate the law both for lawyers and for themselves. Computerized sources of law will be introduced, including LEXIS, WESTLAW, and the Internet. Units on Montana Code Annotated and the Montana State Law Library will also be included.

OT223 Introduction To Civil Litigation and Montana Courts
Credits: 2
Prerequisites: none
Introduction to Civil Litigation and the Montana Courts provides an overview of the structure and functions of various levels of the Montana court system and the proper procedures used by legal support professionals and paralegals with a focus on pretrial procedures. Students will learn about organizing and managing case files, the discovery process, colletcing evidence, preparing exhibits for trial, as well as how to prepare pleadings and other documents according to the Montana Rules of Civil Procedure, Montana Rules of Appellate Procedure, and related statutes.

OT235 Family Law
Credits: 2 *Offered Spring Semester - Even-Numbered Years*
Prerequisites: none
An introductory survey of family law in Montana, including marriage and dissolution, parentage and adoption, child custody, support and visitation, child abuse and neglect, juvenile and school law, guardianship, elder abuse law, and domestic violence, and stalking. The course will include field trips to family court and state and local agencies administering family law, as well as guest presentations by local professionals involved in family law issues.

OT236 Employment Law
Credits: 2 *Offered Spring Semester - Odd-Numbered Years*
Prerequisites: none
Presents students from a wide range of backgrounds with an introductory understanding of the procedures and substance of employment law in Montana and the resources available for further study. This course is geared for the layperson, legal secretary/paralegal, or helping professional interested in an overview of employment law.

OT249 Desktop Publishing
Credits: 3 *Offered Fall Semester*
Prerequisite: CAPP131 or satisfactory score on placement test
This course will give students a basic understanding of designing and producing professional-looking documents for effective visual communications. The production of printed materials using Adobe InDesign CS3 and basic design skills is the focus of this course. Through hands-on projects, participants will create newsletters, brochures, posters, business cards and letterhead, and much more.

PHL110 Problems of Good and Evil
Credits: 3
Prerequisites: none
This course includes an analysis of basic moral concepts and a survey of the ways in which these concepts operate in contexts. Applications are made to contemporary moral issues one might encounter in the work world or the student's field of study.

PHL215 Introduction to Consciousness Studies
Credits: 3 *Offered Spring Semester*
Prerequisites: PSYX100
Students will learn about the basic issues in consciousness studies. These issues include the "problem" of consciousness, philosophical views, neurological models, and other issues in pertinent fields.

PHSX205 College Physics I
Credits: 3 *Offered Spring Semester*
Co-requisites: PHSX206
Prerequisites: A "C-" or higher in M095, or placement into M121
This is the first semester of a two semester series of college physics. Topics covered include mechanics, wave mechanics, and theromodynamics. The lab component complements lecture material.

PHSX206 College Physics I Lab
Credits: 1 *Offered Spring Semester*
Co-requisites: PHSX205
Prerequisites: A "C-" or higher in M095, or placement into M121
This is the lab portion of the first semester of a two semester series of college physics. The lab component complements lecture material.

PHSX207 College Physics II
Credits: 3 *Offered Spring Semester*
Co-requisites: PHSX208
Prerequisites: A "C-" or higher in M095, or placement into M121
This is the second semester of a two semester series of college physics. Topics covered include states of matter and quantum mechanics. The lab component complements lecture material.

PHSX208 College Physics II Lab
Credits: 3 *Offered Spring Semester*
Co-requisites: PHSX207
Prerequisites: A "C-" or higher in M095, or placement into M121
This is the lab portion of the second semester of a two semester series of college physics. Topics covered include states of matter and quantum mechanics. The lab component complements lecture material.

PSYX100 Introduction to Psychology
Credits: 3
Prerequisites: none
An introduction to the scientific study of behavior in humans and other animals, including the biological bases of behavior, learning and memory, cognition, motivation, developmental and social processes, psychological disorders, and their treatment.

PSYX120 Research Methods I
Credits: 3 *Offered Fall Semester*
Prerequisites: PSYX100
This course examines the experimental and quantitative methods employed in the scientific study of behavior. It is an introduction to the design and analysis of psychological research. Topics include the logic and philosophy of psychological research, conceptualizing research questions, hypothesis testing, data collection, and analysis strategies used by researchers in psychology. It is also an introduction to using statistical data analysis.

PSYX161 Fundamentals of Organizational Psychology
Credits 3 *Offered Spring Semester*
Prerequisites: none
This course covers the field of study that investigates the impact that individuals, groups, and structure have on behavior within organizations for the purpose of applying such knowledge toward improving an organization's effectiveness and efficiency. The focus is on behavioral consequences of designed learning experiences, leadership, motivation, ethics, managing, job design, and perception within an organization. This is the psychology of management and human relations.

PSYX182 Stress Management
Credits 3
Prerequisites: none
This course examines the impact of today's stressful world on the physical and mental health of the individual. Techniques for coping with these stressors are explored and practiced in class (e.g., meditation, relaxation, breathing, etc.). Topics include personality and disease, job burnout, optimal performance, family stress, and others.

PSYX230 Developmental Psychology
Credits: 3 *Offered Spring Semester*
Prerequisite: A "C-" or higher in PSYX100 or consent of instructor
Developmental Psychology is a comprehensive study of development across the lifespan including physical structure, thought, and behavior of a person as a result of both biological and environmental influences. It provides an up-to-date presentation of key topics, issues, and controversies in the field of lifespan development.

PSYX240 Fundamentals of Abnormal Psychology
Credits: 3 *Offered Fall Semester*
Prerequisite: A "C-" or higher in PSYX100 or consent of instructor
This course will explore psychopathology, the major psychiatric syndromes, the different theoretical perspectives, treatment, and therapy.

PSYX244 Introduction to Marriage and Family
Credits: 3 *Offered Occasionally*
Prerequisites: none
An introduction to marriage and family processes and challenges in the current social environment, including mate selection, challenges of the marital relationship, conflict management, raising children, and roles of family members, using a cross-cultural perspective.

PSYX260 Fundamentals of Social Psychology
Credits: 3 *Offered Fall Semester*
Prerequisites: A "C-" or higher in PSYX100 or consent of instructor
This course serves as an exploration of the scientific study of how people think about one another, influence one another, and relate to one another. It emphasizes the situation, the person, and personal reactions to situations, as well as the application of social psychological principles to different societies and cultures.

READ070 Fundamentals of Reading
Credits: 3
Prerequisites: none
This course is designed to enable college students to develop strategies and skills to meet the demands of college reading. Course is offered Pass/No Pass.

SCI102 Introduction to Scientific Methods
Credits: 3
Prerequisites: A "C-" or higher in M090
Introduction to Scientific Methods is an inquiry-based, in-depth exploration of basic scientific principles. Scientific model building and proportional reasoning skills will be developed in the context of properties of matter. This course is designed to provide liberal arts students with direct experience in the scientific process, thus establishing a solid foundation for scientific literacy. This course may also help prepare students for success in science courses for science majors.

SOCI101 Introduction to Sociology
Credits: 3
Prerequisites: none
An introduction to basic sociological concepts and principles, emphasizing human social organization and how groups influence behavior.

SOCI201 Social Problems
Credits: 3
Prerequisites: none
An introduction to sociological perspectives regarding society's problems, this course examines the causes of major current and historical social problems, as well as the role of social research in identifying and solving problems.

SOCI235 Aging and Society
Credits: 3 *Offered Occasionally*
Prerequisites: none
This course focuses on the demographic, social, and cultural effects of aging in society. Students will examine how the aging population will affect and be affected by such factors as government, health care, and the economy. Emphasis is placed upon aging in the United States.

SPNS101 Elementary Spanish I
Credits: 4
Prerequisites: none
This introductory course prepares students for basic communication in Spanish and presents fundamentals of the language holistically through listening, speaking, reading, and writing. The course also explores cultural information.

SPNS102 Elementary Spanish II
Credits: 4
Prerequisites: A "C-" or higher in SPNS101
This second semester of Spanish is designed to prepare students for basic communication in Spanish. It presents fundamentals of the language holistically through listening, speaking, reading, and writing. Development of conversational skills is an integral part of the course. Cultural information will be presented.

STAT216 Introduction to Statistics
Credits: 3
Prerequisites: A "C-" or higher in M121 or higher or satisfactory score on placement test
A basic introduction to the fundamental concepts and methods of statistics. Topics include frequency distributions, measures of central tendency, measures of dispersion, fundamentals of probability, bionomial distribution, estimation, confidence intervals and hypothesis testing for normal distributions, correlation, and simple linear regression.

TASK090 Introduction to Keyboarding
Credits: 1
Prerequisites: none
Designed for the student who has had no previous keyboarding experience. Major objectives are to develop touch control of the keyboard using proper keyboarding techniques and to build basic speed and accuracy.

TASK113 Keyboarding and Document Processing
Credits: 3
Prerequisite: CAPP131 or satisfactory score on placement test
This course is for students who either have successfully completed Introduction to Keyboarding (TASK090) or have previously mastered basic keyboarding skills at the rate of 20 wpm for one minute with two errors or fewer. Preparation of memos, business letters, simple tabulations, reports, along with continued speed building, and proper keyboarding techniques, are included in this course. Students will learn the basic principles of Microsoft Word 2007 and will use the software to format documents.

TASK145 Records Management
Credits: 3 *Offered Spring Semester*
Prerequisites: none
This class emphasizes the efficient management of both active and inactive records through effective use of records inventory and retention programs, uniform classification systems, electronic records control, image technology, and related records management functions. The course includes application of the twelve ARMA filing and indexing rules for alphabetic, subject, geographic, numeric, and chronological filing.

TASK150 Customer Service Strategies
Credits: 3
Prerequisites: none
Customer service is an integral part of doing business. Developing excellent customer service can help a business earn customers and accomplish its goals. In this course, students will define and evaluate effective customer service while focusing on determining and meeting the needs of internal and external customers.

TASK201 Production Keyboarding
Credits: 2 *Offered Fall Semester*
Prerequisite: TASK113 or consent of instructor
Students work on development and improvement of keyboarding techniques, keyboarding skills, speed, and accuracy. Production of mailable copy for business applications useful in an office situation will be emphasized.

TASK210 Office Success Strategies
Credits: 3 *Offered Spring Semester*
Prerequisites: none
This course is an introduction to the many aspects of a business environment. Topics covered include teamwork and office relationships, telephone and postal procedures, office equipment, use of reference materials, prioritizing and calendaring, meetings and travel arrangements, ergonomics and safety, and office etiquette.

TASK292 Independent Study
Credits: 1-3
Prerequisites: consent of instructor and approval of the Department Chair
This course is designed to meet specific learning needs of students. Typically, such independent study projects focus on learning opportunities not otherwise offered in our college curriculum. The student then initiates a proposal describing, among other things, the number of hours to be spent on the study project, specific learning outcomes, and how evaluation is to be accomplished. The approved proposal will have signatures of the student, Faculty Sponsor, Department Chair, and the Associate Dean.

TASK298 Internship
Credits: 1-3
Prerequisite: consent of instructor and approval of the Department Chair
Designed for the student who takes the initiative to perform work outside of and in addition to the normal school curriculum. If done properly, it can be a highly rewarding experience and aid the student's transition from school to work.

TASK299 Integrated Office Capstone
Credits: 3 *Offered Spring Semester*
Prerequisites: CAPP254, CAPP138 and CAPP153
Integrated Office Capstone is designed as a course to be taken your third or fourth semester. The first half of this course introduces you to a project management software program that will allow you to collaborate, administer, track, and analyze project information. You will learn to use projects to organize and analyze the details involved with achieving a specific goal or objective. The second half of the course you will work in assigned groups of three to five on a service-learning project that integrates many of the areas in Office Technology using the project management software as a tool. Your service learning project will culminate in a binder which will include a written report, a project activity (such as the design of a systems or procedure manual for a non-profit business in the community), and a presentation to a group of faculty and pertinent business members from the community.

THTR101 Introduction to Theater
Credits: 3 *Offered Fall Semester*
Prerequisites: none
An exploration of the expressive powers of theater, with an emphasis on reflection, comparison, and analysis of written and performed dramatic works.

THTR120 Introduction to Acting I
Credits: 3 *Offered Spring Semester*
Prerequisites: none
Students will work on basic acting skills through group as well as individual acting exercises, hands-on script analysis, and scene study with fellow actors.

WKAC103 Introduction to Quickbooks Pro
Credits: 1 *Offered Occassionally*
Prerequisites: none
This course is designed to be an introduction to the QuickBooks software. Its main objective is to introduce the student to the basic features of the accounting software and to provide an opportunity for hands-on computer practice. Discussions will center on the types of information that a business needs to track and how that information is entered, processed, and reported in the QuickBooks system.

WKBU100 Personal Finance
Credits: 1 *Offered Occassionally*
Prerequisites: none
An introduction course into personal financial management. Specific areas include budgeting, investment, insurance needs, and estate managing.

WKBU101 Understanding You and the World of Business
Credits: 1 *Offered Occassionally*
Prerequisites: none
This course is designed to introduce the student to basic skill requirements that many employers look for in their new employees. Topics covered include how to research information and make sense of it, explore basic marketing strategies, apply problem-solving techniques, understand basic writing and math skills, identify some basic economic and statistics theories. Students should use the class as a guide to direct them towards more in-depth classes in the various subject areas presented.

WLDG101 Welding Fundamentals for Auto Tech/Diesel
Credits: 1
Prerequisites: none
This course provides students the basic welding skills needed to adequately and safely make minor repairs to automobiles and diesel powered cars and trucks using the SMAW and GMAW weld processes. Students will also be given instruction on the safe and proper use of an oxy-acetylene cutting torch and plasma cutter.

WLDG103 Welding Fundamentals for Construction Trades
Credits: 1
Prerequisites: none
This course will instruct students the proper set-up and techniques used in the cutting, fitting, and welding of steel studs used in the construction industry. Students will also receive training in the use of a cutting torch as it relates to the construction trade.

WLDG105 Shop Safety
Credits: 1
Prerequisites: none
Safe work practices are paramount in all aspects of industrial work. Students will receive training in each piece of equipment using manufacturers' safety recommendations. Students will learn to identify and follow safe work practices as well as inspections of power equipment (portable & stationary), hand tools, and also demonstrate the safe and proper use of each tool.

WLDG117 Blueprint Reading and Weld Symbols
Credits: 3
Prerequisites: none
This course covers the basics for understanding the reading of blueprints and shop drawings. The use of AWS welding symbols for blueprint reading is also covered.

WLDG131 Intro to Layout and Pattern Making
Credits: 3
Prerequisites: none
This course covers fabrication and layout of different types of welding designs, including multi-core elbows, transitions, square to rounds, flanges, and other types of dust and emission control fittings. Students will be required to layout patterns on paper transfer patterns to steel plates and tubing. Use of shear, brake, and roll machines will also be required during this phase of welding.

WLDG132 Estimating of Job Materials
Credits: 3
Prerequisites: none
This course covers the estimating of material needed to complete a job. With the use of shop drawings students create a list of the required materials. Steel supply books are used as a reference to calculate weights and then into prices. Labor time is then estimated to create a total bid for the project to be completed. This course also includes the use of formulas to measure volume, length, and weights.

WLDG133 GMAW, FCAW, and GMAW-P
Credits: 4
Prerequisites: none
The course starts with a basic understanding of how the MIG welding processes work, with the concepts of basic electricity, filler metals, and applications. A hands-on welding experience is gained in GMAW, GMAW-Dual Shield, GMAW-P. Using these welding processes in multiple steps, exercises, and welding positions, the student will gain a wide variety of welding knowledge. An American Welding Society certification in GMAW-Dual Shield core wire can be obtained at the end of the course.

WLDG140 Intro GAS Tungsten Arc Welding (GTAW)-Integrated Lab
Credits: 3
Prerequisites: WLDG105, WLDG117, WLDG131, WLDG132, WLDG133
In this course, students will be given instruction on using the Gas Tungsten ARC welding (GTAW) process. This course will cover instruction on safety, setup, and proper techniques in welding aluminum, mildsteel, and stainless steel. Instruction will also be given on proper setup and uses of spool guns used in industry.

WLDG151 Shop Practices
Credits: 4
Prerequisites: WLDG105, WLDG117, WLDG131, WLDG132, WLDG133, and WLDG140
This is an on-going semester course during normally scheduled shop hours. It is intended to match spring semester students with live, practical shop experiences involving subject matter previously covered in other courses. Emphasis will be on productivity.

WLDG155 Design and Fabrication
Credits: 4
Prerequisites: WLDG180, WLDG133, WLDG117, WLDG131, WLDG132 and WLDG140
This course incorporates all skills learned during the fall semester courses. Students will learn proper identification, care and use of hand tools used in metal fabrication. Students will be assigned in-shop and live work projects to refine their fabrication and welding skills.

WLDG160 Rigging for Welders
Credits: 1
Prerequisites: none
This course is designed to provide basic knowledge of rigging procedures. This course will include instruction on how to safely use slings, hitches, rigging hardware, sling stress, hoists, and rigging operations and practices. Students will receive training on how to communicate with hand signals and have the opportunity to operate a six-ton carry deck crane.

WLDG180 Shielded Metal Arc Welding
Credits: 4
Prerequisites: none
This course starts with a basic understanding of the stick welding process, including the concepts of basic electricity, filler metals, and applications. A hands-on welding experience is gained through multiple steps and exercises, using multiple welding filler metals and welding positions. An American Welding Society certification can be obtained at the end of the course.

WLDG213 Pipe Welding Lab I
Credits: 4
Prerequisites: Completion of Certificate of Applied Science in Welding
This course provides the student with a thorough technical understanding of preparation and fit-up for welding pipe. Students acquire the necessary skills to perform satisfactory welds on different materials of pipe, in all positions and situations, using SMAW welding process. The student develops the skills necessary to produce quality pipe fitting and welds needed in today's workforce.

WLDG217 Advanced Blueprint
Credits: 2
Prerequisites: Completion of Certificate of Applied Science in Welding
This course will instruct students how to draw and read sophisticated blueprints using AutoCAD format. Instructions will also include taking general arrangement drawings and breaking down into shop drawings. Students will learn how to properly dimension, detail, and include weld symbols into shop drawings.

WLDG225 Structural Fabrication
Credits: 2
Prerequisites: Completion of Certificate of Applied Science in Welding
This course is designed to give students the ability to lay out and fabricate various components used in the structural construction of buildings and infrastructure. Students will lay out, drill, and cut to length columns and beams according to blueprint specifications. Instruction will also be given on how to layout and fabricate base plates, gusset supports, and brackets used to support steel structure. In addition, students will fabricate a stairway and adjoining handrail using proper rise and run standards and dimensions.

WLDG230 Field Welding and Processes
Credits: 2
Prerequisites: Completion of Certificate of Applied Science in Welding
This course is designed to introduce the students into a field welder's environment. The students will become knowledgeable in the different weld applications presented in the field and the welding variables that can occur. In this course the students will learn to properly set up and maintain portable welding power sources, suitcase wire feeders, cutting systems, and other field equipment. Students will be taught safety in the field environment.

WLDG243 Advanced Metal Fabrication I
Credits: 6
Prerequisites: Completion of Certificate of Applied Science in Welding
Metal Fabrication will focus on the planning and execution of projects using the knowledge and skills already acquired during the first year of the welding program. Students will apply these skills in a shop-like atmosphere working directly with customers, completing repairs, modifications and new construction. With this work the students will prepare blueprints, using hand drawing techniques along with AutoCAD to complete more complicated drawings.

WLDG244 Advanced Metal Fabrication II
Credits: 6
Prerequisites: Completion of Certificate of Applied Science in Welding
Students will learn to layout and fabricate various ventilation components found in industrial settings. This course will give students instruction in laying out, cutting and fabricating elbows, square to round, cones, offsets, and laterals. These components will be fabricated using shears, bending breaks, forming rolls, and hydraulic punches. In addition students will weld out and assemble ventilation components according to blueprint specifications.

WLDG245 Metal Fabrication Design and Construction
Credits: 5
Prerequisites: Completion of Certificate of Applied Science in Welding
This course is designed to challenge students on more complex fabrication and repair job assignments. Students will systematically plan out, order material, and perform repair and fabrication work orders. Students will select the proper welding procedures and processes for each job assignment. Although instructors will oversee the job, students will be challenged to take on a leadership role with less supervision. Students will experience working with others in a team like atmosphere while accomplishing specific goals.

WLDG255 CNC Burn Table Programming and Operation
Credits: 3
Prerequisites: Completion of Certificate of Applied Science in Welding
Introduction to computer numerically controlled machines with an emphasis on programming, setup, and use in plasma-cutting burn tables. Students will use the Shop Data Systems HVAC program to create duct work transitions to be cut on the CNC burn table. AutoCad is used to create specialty parts for burn table cutting. As a final step, all parts are programmed through the use of OneCNC programming by the students to prepare the G-codes used by the CNC burn table.

WLDG265 MSHA Safety Training
Credits: 1
Prerequisites: Completion of Certificate of Applied Science in Welding
A major part of the welding industry involves working in the mining industry. This course will cover required safety rules governing work performed in the mining industry. Upon satisfactory completion of this course, students will be certified to work at mine and quarry sites. In addition, students will receive certification in C.P.R.

WRIT080 Building Basic Writing Skills
Credits: 3
Prerequisites: none
A review of fundamental writing skills, this course focuses on sentences and paragraphs. Students will develop short compositions that demonstrate control of the conventions of standard written English, sentence structure, and sequence of ideas. Course is offered Pass/No pass. The student post-tests in COMPASS and must earn an adequate score before taking higher-level English courses.

WRIT095 Developmental Writing
Credits: 3
Prerequisite: A "C-" or higher in WRIT080 or satisfactory placement score
This course provides experience in written expression of ideas in expository prose with emphasis on the development of ideas, awareness of audience, structure, and clarity.

WRIT101 College Writing I
Credits: 3
Prerequisite: A "C-" or higher in WRIT095 or satisfactory placement score
This course provides experience in written expression of ideas in expository prose with emphasis on the development of ideas, awareness of audience, structure, and clarity.

WRIT104T Workplace Communication
Credits: 2 *Offered Spring Semester*
Prerequisites: none
An introduction to the basic demands of written communication in the workplace. Emphasis on the elements of and strategies for effective communication in typical written formats, with particular attention paid to job applications, job inquiry letters, resumes, and interviews.

WRIT121T Introduction to Technical Writing
Credits: 3
Prerequisite: A "C-" or higher in WRIT095 or satisfactory placement score
Experience in communication formats typical of technical careers. Emphasis on writing as the craft of the critical thinker, involving analysis of audience, context, and purpose, as well as the ability to locate, synthesize, analyze, organize, and present information effectively.

WRIT122T Introduction to Business Writing
Credits: 3 *Offered Fall Semester*
Prerequisite: A "C-" or higher in WRIT095 or satisfactory placement score
Effective Business Communication will offer a survey of business communications and documents used in the typical organization: emails, letters, memos, and business reports. The course will offer advanced English grammar, usage, and mechanics with a focus on sentence-level accuracy. The course will emphasize the delivery of concise, correct, clear, accurate, and courteous written and spoken messages.

WRIT201 College Writing II
Credits: 3
Prerequisite: A "C-" or higher in WRIT101
Continued experience in written expression of ideas in expository prose with an emphasis on critical response, argumentation, and research. Areas of study include research methods, evaluating source materials, and formal documentation, critical review and evaluation, and presenting logical, coherent, and forceful arguments.

WRIT210 Scientfic Report Writing
Credits: 3
Prerequisite: A "C-" or higher in WRIT121T or WRIT101
This course provides students with the tools to write effective research documents and other documents in the scientific and industrial fields. Topics include the challenges of scientific writing and other workplace writing, summary writing, identifying and correcting common writing problems, completing governmental agency forms, and revising documents for maximum effectiveness. This course will also examine how audience influences a document's style, format, and content.

Tools

Tools are ***required*** by each student entering Automotive, Aviation Maintenance, Carpentry and Construction, Diesel, Machine Tool, and Welding Technology programs. Except for students in Carpentry and Construction, students are required to purchase school-approved coveralls and red rags for use in the shops and are responsible for the cleaning fee each semester.

Ordering Procedure

Students do not purchase tools through the College. Tool vendors will be available at the College at the beginning of each semester for students who wish to place orders. These tools are sold by the vendors at an educational discount. **Tool costs vary depending on the vendor; approximates are average costs.** Tools may take several weeks to arrive, and vendors will not deliver without full payment. A commitment sheet in writing from your vendor on the latest possible delivery date is advised before ordering.

Automotive/Diesel Technology Tool Set

$1,500 - $2,800 (Approximately)

1. Tool Chest Roll Cabinet (with lock), 5 drawer minimum
2. 1/2 Drive Breaker bar
3. 1/4 Drive Metric Sockets, Shallow 4mm to 15 mm; 13 pc.
4. 3/8 Metric Sockets, Deep and Shallow 8 mm to 19 mm
5. 1/2 Drive Standard Sockets, Shallow 1/2 to 1-1/8
6. 1/4 Drive Standard Sockets, Deep and Shallow; 3/16 to 9/16 20 pc.
7. 3/8 Standard Sockets, Deep and Shallow 1/4 to 7/8 22 pc.
8. 5/8 and 13/16 Spark Plug Sockets
9. Torx Sockets T8 to T55 11 pc. set
10. 1/2 Drive Ratchet
11. 1/4 Drive Ratchet
12. 3/8 Flex Head Ratchet
13. 3/8 Ratchet
14. 1/2 Drive Extensions 5″, 11″
15. 1/4 Drive Extensions 2″, 4″, 6″
16. 3/8 Drive Extensions 1″, 3″, 6″, 11″
17. 1/4 Drive Screwdriver Style Handle
18. Adapters 3/8″ to 1/4″; 3/8″ to 1/2″; 1/2″ to 3/8″
19. Universals 1/4″, 3/8″
20. Standard Wrenches 3/8″ to 1″
21. Metric Wrenches 10 mm to 19 mm
22. Standard Flare Nut Wrenches 1/4″ to 13/16″
23. Standard Allen Wrenches
24. Metric Allen Wrenches
25. 12″ Adjustable Wrench
26. 8 pc. Screwdriver Set
27. Ratchet Type Screwdriver
28. 6″ Needle Nose pliers
29. 8″ Needle Nose pliers
30. 7″ Side Cutters
31. 7″ Conventional Pliers [common]
32. Stiff Bladed Putty Knife
33. 10″ Slip Joint Pliers [waterpump]
34. Battery Service Pliers
35. Side Post Battery Wrench and Wire Brush
36. Top Post Battery Brush
37. Reversible Snap Ring Pliers
38. 10″ Vise Grip Type Pliers
39. Wire Stripper Cutters 10-20 ga. wire
40. 10 pc. Punch and Chisel set
41. 16 oz. Ball Peen Hammer
42. 16 oz. Dead Blow Soft Face Hammer
43. Hacksaw
44. Wire Brush
45. Flashlight
46. 12′ Tape Measure
47. Circuit Tester
48. Radiator Hose Removal Tool
49. 4 pc. Seal Pick Set
50. 16″ Rolling Head [Heel] Bar
51. Inspection Mirror
52. Magnetic Retrieval Tool
53. Carbon Gasket Scraper
54. Ignition Gauge Set [Short Blade .010 through .035]
55. Feeler Gauge Set .0015 through .025
56. Wire Gap Gauge .044 through .080
57. Spark Plug Gap Gauge [Taper]
58. Safety Goggles
59. Blow Gun
60. Fluorescent Tube Trouble Light with Accessory Plug, 25 ft. cord, minimum
61. 6″ Steel Rule with Fractional Scales

Aviation Maintenance Technology Tool Set

$400 (Approximately)

*The following are the **minimum** number of tools required for aviation maintenance students to complete **the first and second semester** shop and course work. These tools are not provided by the school.*

1. Safety Glasses
2. Safety Goggles
3. Hearing Protection (Muff type)
4. Mechanics Gloves
5. Flashlight
6. Inspection Mirror
7. Digital Multimeter
8. Wire strippers
9. Wire crimpers
10. Screw Driver Set (Flat blade and Phillips Head)
11. 6″ steel machinists rule
12. 10X Jewelers Loupe
13. Drawing Tools
    - a. Drafting Compass
    - b. French Curve Set
    - c. 12″ ruler
    - d. ¼″ Graph paper
    - e. Mechanical Pencils
    - f. Eraser
    - g. Sharpie Markers
    - h. Protractor
14. Tool box or tool bag (lockable)
15. OSHA Approved Respirator w/Organic Vapor Cartridge
16. Side Cutters
17. Pliers set (needle nose, straight jaw, channel lock, duckbill)
18. Box end/open end wrench set 5/16″ to 1″ including 11/32″
19. 3/8″ drive 6pt socket set with ratchet and extensions
20. 1/4″ drive 12pt socket set with ratchet, extensions and universal adapter
21. Standard Allen Wrench Set (Hex Key)
22. Hacksaw with spare blades
23. Automatic Center Punch
24. 1/4″ drive Speed Handle
25. 1/4″ drive Bit Adapter
26. Screw driver bits with extra #2 Phillips bits

***Third and Fourth Semester tool list will be provided in the first year, approximately an additional $600 minimum.*

Tools

Carpentry and Construction Technology Tool Set

Interior Design students not required to purchase tool set.

$700 (Approximately)

1. Steel Tape, 1" x 25' (minimum size)
2. Steel Tape, 100'
3. Chalk Line Reel, 100'
4. Rafter Square
5. Speed Square
6. Sliding T Bevel
7. Torpedo Level
8. 4' Level (Optional)
9. 4-in-hand file
10. Screwdriver (both Phillips and Straight)
11. Nail Claw, 10"
12. Ripping Bar (Optional)
13. Utility Knife
14. Nail Sets, 1/32", 1/16", 3/32" (Optional)
15. Wood Chisel Sets, 1/4", 1/2", 3/4" (Optional)
16. Adjustable Wrench, 8" (Optional)
17. Nail Apron
18. Framing Hammer, 22 oz
19. Drill Set 1/16" to 1/2" (Optional)
20. Approved Safety Glasses
21. Approved Hard Hat and Liner
22. Wonder Bar (Optional)
23. Tin Snips (Optional)
24. Side-cutting Pliers
25. Approved Respirator

Power Tools

26. 7 1/4" Arbor Power Skill Saw
27. 3/8" Variable Speed Drill (Optional)
28. Carbide Blade (7 1/2" Saw Blade)
29. 50' Extension Cord (Optional)
30. Cordless Drill/Driver Kit (Optional)
31. Contractor's Calculator

Diesel Technology Tool Set

See Automotive/Diesel List (Page 114)

Machine Tool Technology Tool Set

$1,200 (Approximately)

1. Allen Wrenches
2. Dead Blow Hammer – 1 pound
3. Center Punch Set
4. Transfer Punches
5. 4 pc. Combination Square
6. Double End Edge/Center Finder
7. Carbide Scribe
8. 6" Rigid Scale, 32nds and 64ths one side/100ths on flip side
9. 6" Flex Scale, 32nds and 64ths one side/100ths on flip side
10. Thread Wire Set
11. Pitch Gauges, Inch and Metric
12. Acme Thread Gauge
13. File Set with Handles
14. File Brush
15. Indicol Universal Indicator Holder and Test Dial Indicator
16. Rollaway Bottom Tool Box (no top box allowed)

OPTIONAL

1. 12" Dial Calipers
2. 0" - 6" Micrometers
3. 0" - 6" Depth Micrometers
4. 2" - 12" Inside Micrometers
17. Centerdrill's #1 - #5, Right Hand H.S.S
18. H.S.S. Drill Set – 1/16", 1/2", by 1/6"
19. 1" Indicator Dial
20. 2" Indicator Dial
21. Magnetic Base
22. Mighty Mag Base (Magnetic)
23. De-burring Tool
24. Pocket Flash Light
25. Screwdriver Set
26. Standard Set Combo Wrenches 3/8" – 1"
27. 16' Measuring Tape
28. 3-piece Snap Gauges
29. 1/4" Die Grinder
30. One set of Parallels
31. Carbide Insert Holders - RH Turning and Threading
32. Carbide Inserts - 1 Threading; 1 Turning; 1 Grooving

Second Year (approximately an additional $500)

1. Test Dial Indicator .0005 res
2. Set 1-2-3 Blocks
3. Set V-Blocks
4. 6" Calipers
5. Sine Bar
6. Gauge Block Set
7. Surface Finish Gauge

Welding Technology Tool Set

$350 (Approximately)

TOOLS:

1. Welding Hood – Standard with 9-11 shade or Auto*
2. Cutting Goggles - #5 Shade*
3. Chipping Hammer*
4. Friction Light (striker)*
5. Tip Cleaner*
6. Wire Brush (stainless steel)*
7. 8″ slip joint pliers*
8. MIG Pliers*
9. Cleaning Picks*
10. 10″ dividers
11. Small flashlight*
12. 10″ crescent wrench*
13. 25′ tape measure
14. Soap stone holder with soap stone
15. Scribe with magnet on end
16. Silver marking pencil
17. Center Punch
18. Combination/Tri-square 12″
19. Construction Calculator
20. 4 1/2 inch grinder*

*indicates tools needed immediately

SAFETY EQUIPMENT (Required every day at the start of class):

1. Carhartt pant/bibs/or coveralls
2. Welding shirt/jacket
3. Leather boots (steel toe)
4. Welding cap
5. Leather gloves
6. Safety glasses

Montana University System

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Helena, MT 59601

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Administrator Profiles

Dr. Daniel J. Bingham, Dean/CEO
Ph.D., The University of Texas; M.Ed., B.S., Northern Arizona University
Twenty years technical instruction and administrative leadership
At The University of Montana - Helena College of Technology since July 2005

Brandi N. Foster, Associate Dean/Academic Affairs
M.A., Iowa State University; B.A. The University of Montana; Administrative Fellow, Harvard University
Twelve years administrative experience; Nine years classroom experience
At The University of Montana - Helena College of Technology since August 2003

Russell K. Fillner, Assistant Dean/Fiscal and Plant
B.S., Montana State University, Certified Public Accountant,
Twenty-one years accounting experience; Five years administrative experience
At The University of Montana - Helena College of Technology since August 2004

Michael S. Brown, Assistant Dean/Student Services
M.A., B.A., California State University, Fullerton
Ten years student and enrollment services experience
At The University of Montana - Helena College of Technology since July 2006

Kevin C. Brockbank, Executive Director of Academic and Workforce Development
M.Ed., University of Montana, B.A., University of Montana
Eleven years classroom experience; Twelve years of higher education and industry experience
At The University of Montana - Helena College of Technology since January 1996

Faculty Profiles

Ceartin, Mike
Construction Technology
At UM-Helena since Spring 2003

Coon, Emmett
Electronics Technology
A.S., Northern Montana College
A+, CCNA, CCAI
U.S. Air Force
Army National Guard
At UM-Helena since Fall 1996

Cronin, Mike
General Education - Literature and Writing
M.A., The University of Montana
B.A., Carroll College
At UM-Helena since Fall 2000

Dumas, Tod
Aviation Maintenance Technology
Airframe and Powerplant License
At UM-Helena since Fall 2008

Foust, Joella
General Education - Biology
M.S., Montana State University
B.S., Union College
At UM-Helena since Fall 2008

Hartman, John
General Education - Chemistry
Ph.D., Montana State University
B.S., Saint John's University
At UM-Helena since Fall 2009

Harris, Tim
Metals - Welding Technology
U.S. Navy
Journeyman Welding Certification
At UM-Helena since Fall 2002

Haughee, Kim
General Education - Mathematics
M.S.T., Portland State University
B.A., Central Washington University
At UM-Helena since Fall 2006

Holt, Michelle
General Education - Literature and Writing
M.A., University of Montana
B.A., Montana State
At UM-Helena since Fall 2000

Jones, Dave
Automotive Technology
M.S., MSU - Northern
B.T., Northern Montana College
ASE Master Certified Technician
At UM-Helena since Fall 1994

Jungst, Tom
Metals - Machine Tool Technology
B.S., Montana State University
At UM-Helena since Spring 2010

Kelly, Harold
Construction Technology
B.S., Western Montana College
At UM-Helena since Fall 1998

Kruger, Karl
Aviation Maintenance Technology
A.A.S., Nashville State Community College
Airframe and Powerplant License with Inspection Authorization
Private Pilot License
U.S. Army/Army National Guard
Montana Air National Guard
At UM-Helena since Fall 2007

Lewis, Steve
General Education - Literature and Writing
M.A., Florida Atlantic University
B.A., Bates College
At UM-Helena since Spring 2007

Marchand-Smith Sheri
Nursing Program
M.S.N., Lewis University
B.S.N., Lewis University
At UM-Helena since Fall 2007

Munn, Nathan
General Education - Psychology
M.D., University of Washington
B.A., Seattle Pacific University
At UM-Helena since Fall 2004

Pescosolido, Candace
Nursing Program
M.S.N., Saint Joseph's College
B.S.N., University of Hawaii
At UM-Helena since Spring 1999

Faculty Profiles

Purcell, Rick
Diesel Technology
A.O.S., Universal Technical Institute
At UM-Helena since Fall 2008

Raphael-Conley, Karen
Interior Space Planning and Design
M.A., CSULB
B.A., CSULB
NCIDQ# 6808
At UM-Helena since Fall 2007

Rinehart, Ralph
Diesel Technology
Western Technical College
Northern Montana College
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