Montana State University Billings College of Technology

3803 Central Avenue
Billings, Montana 59102
(406) 247-3000
www.msubillings.edu/cot

2009-2010 Catalog

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Visiting the College of Technology

You are encouraged to visit MSU Billings College of Technology for a tour of individual programs of interest and of the College's facilities. The New Student Services Office is available to assist you with tours.

Arrangements can be made by calling (406) 247-3000.

We are here to help and serve you

We look forward to helping you make those important decisions about your future career and the programs that will provide you with the best education for that career. Please feel free to call, stop by, or visit our website

www.msubillings.edu/cot.

Student Services and Facilities
Frequently Used Phone Numbers

All numbers are area code 406

	COT Campus	East Campus University Drive
Admissions	247-3000	657-2158
Academic Support Center	247-3022	657-1641
Advising	247-3019	657-2240
Athletics		657-2369
Jackets & Company West	247-3031	657-2121
Campus Security	697-1403	657-2147
Career Services	247-3006	657-2168
Cashier	247-3002	657-1709
Disability Support Services	247-3029	657-2283
Financial Aid	247-3004	657-2188
Health Services	247-3027	657-2153
Housing and Residential Life		657-2333
Job Locator (Placement Services)	247-3006	657-1618
Library/Testing	247-3025	657-2320
New Student Services (Admissions)	247-3000	657-2158
Office for Community Involvement		895-5820
Operator	247-3000	657-2011
Physical Education Bldg		657-2370
Prior Learning Assessment		657-1747
Recreational Activities		657-2881
Retention Office	247-3021	
Student Union & Activities		657-2387

University Calendar

Fall Semester 2009

Residence Halls Open..... September 6
Labor Day OFFICES CLOSED ..... September 7
Classes Begin..... September 9
Late Registration Fee Applies ($40.00).... September 11
STUDENTS WHO HAVE NOT COMPLETED FEE PAYMENT OR SIGNED A FEE STATEMENT BEFORE FRIDAY, SEPT. 11 WILL BE DISENROLLED FROM CLASSES AND REQUIRED TO RE-REGISTER
Last Day for Registering/Adding Classes..... September 17
Last Day for Withdrawing/Dropping Classes with a Partial Refund ..... September 29
Columbus Day CLASSES IN SESSION OFFICES OPEN (Exchanged for Friday, Nov 27)..... October 12
Last Day to Drop Classes Without Instructor Permission (No Refund) ..... October 27
Registration for 2010 Spring Semester Begins..... November 2
Last Day to Apply to Graduate Spring Semester 2010..... November 6
Last Day to Apply to Graduate Summer Semester 2010 (attending ceremony)..... November 6
Veterans' Day NO CLASSES OFFICES CLOSED..... November 11
Last Day to Drop a Class with Approval of Advisor and Course Instructor..... November 24
Thanksgiving Holiday NO CLASSES ..... November 25-29
Final Exam Week.....December 14-17
Semester Ends.....December 17
Final Day to Withdraw from Fall 2009 (all classes, no refund).....December 17
Residence Halls Close .....12 noon December 18
Grades Due in the Registrar's Office.....12 noon December 23

Spring Semester 2010

Residence Halls Open.....January 11
Classes Begin.....January 13
Late Registration Fee Applies ($40.00).....January 15
STUDENTS WHO HAVE NOT COMPLETED FEE PAYMENT OR SIGNED A FEE STATEMENT BEFORE FRIDAY, JANUARY 15 WILL BE DISENROLLED FROM CLASSES AND REQUIRED TO RE-REGISTER
Martin Luther King Day NO CLASSES OFFICES CLOSED.....January 18
Last Day for Registering/Adding Classes.....January 22
Last Day for Withdrawing/Dropping Classes with a Partial Refund .....February 3
Presidents' Day NO CLASSES OFFICES CLOSED.....February 15
Registration for 2010 Summer Session Begins.....February 22
Spring Break NO CLASSES.....February 27-March 7
Last Day to Drop Classes Without Penalty for Failing (No Refund) ..... March 11
Registration for 2010 Fall Semester Begins.... March 15
Last Day to Apply to Graduate Fall Semester 2010..... March 19
Last Day to Apply to Graduate Summer Semester 2010 (NOT attending ceremony) ..... March 19
Spring Mini Break NO CLASSES ..... April 1-4
Last Day to Drop a Class with Approval of Advisor and Course Instructor..... April 8
University Day NO CLASSES OFFICES OPEN ..... April 23
Final Exam Week..... April 26-29
Semester Ends..... April 29
Final Day to Withdraw from Spring 2010 (all classes, no refund) ..... April 29
Residence Halls Close ..... 12 noon April 30
Commencement..... May 1
Grades Due in the Registrar's Office..... 12 noon May 5

***Note: Monday-only classes Spring 2010 add 25 minutes to each class session.**

Summer Session 2010

Schedule is subject to change.

First Session classes begin ..... May 10
First Session classes end..... May 28
Memorial Day NO CLASSES OFFICES CLOSED..... May 31
Second Session classes begin..... June 1
Second Session classes end.....July 1
Independence Day (Observed) NO CLASSES OFFICES CLOSED.....July 2
Third Session classes begin.....July 5
Semester Ends..... August 6

Note – extra time may be added to Session 2 courses due to 2 holidays during the session.

Fall Semester 2010

Residence Halls Open..... September 5
Labor Day Offices Closed..... September 6
Classes Begin..... September 8
Late Registration Fee Applies ($40.00).... September 10

STUDENTS WHO HAVE NOT COMPLETED FEE PAYMENT OR SIGNED A FEE STATEMENT BEFORE FRIDAY, SEPT. 10 WILL BE DISENROLLED FROM CLASSES AND REQUIRED TO RE-REGISTER

Last Day for Registering/Adding Classes ..... September 16
Last Day for Withdrawing/Dropping Classes with a Partial Refund ..... September 28
Columbus Day CLASSES IN SESSION OFFICES OPEN (Exchanged for Friday, Nov 26)..... October 11
Last Day to Drop Classes Without Instructor Permission (No Refund) ..... October 26
Registration for Spring Semester 2011 Begins..... November 1
Election Day NO CLASSES OFFICES CLOSED..... November 2
Veterans' Day NO CLASSES OFFICES CLOSED..... November 11
Last Day to Apply to Graduate Spring Semester 2011..... November 12
Last Day to Apply to Graduate Summer Semester 2011 (attending ceremony)..... November 12
Last Day to Drop a Class with Approval of Advisor and Course Instructor..... November 23
Thanksgiving Holiday NO CLASSES ..... November 24-28
Final Exam Week.....December 13-16
Final Day to Withdraw from Fall 2009 (all classes, no refund).....December 16
Semester Ends.....December 16
Residence Halls Close .....December 17
Grades Due in the Registrar's Office.....12 noon, December 22

Spring Semester 2011

Residence Halls Open.....January 10
Classes Begin.....January 12
Late Registration Fee Applies ($40.00).....January 14

STUDENTS WHO HAVE NOT COMPLETED FEE PAYMENT OR SIGNED A FEE STATEMENT BEFORE FRIDAY, JANUARY 14 WILL BE DISENROLLED FROM CLASSES AND REQUIRED TO RE-REGISTER

Martin Luther King Day NO CLASSES OFFICES CLOSED.....January 17
Last Day for Registering/Adding Classes.....January 21
Last Day for Withdrawing/Dropping Classes with a Partial Refund .....February 2
Presidents' Day NO CLASSES OFFICES CLOSED.....February 21
Registration for Summer Session 2011 Begins.....February 22
Spring Break NO CLASSES OFFICES OPEN .....February 26-March 6
Last Day to Drop Classes Without Instructor Permission (No Refund) ..... March 10
Registration for Fall Semester 2011Begins..... March 14
Last Day to Apply to Graduate Fall Semester 2011..... March 18
Last Day to Apply to Graduate Summer Semester 2011 (NOT attending ceremony) ..... March 18
Last Day to Drop a Class with Approval of Advisor and Course Instructor..... April 6
Spring Mini Break NO CLASSES OFFICES OPEN ..... April 21-24
University Day NO CLASSES OFFICES OPEN ..... April 22
Final Exam Week..... April 25-April 28
Final Day to Withdraw from Spring 2010 (all classes, no refund) ..... April 28
Semester Ends..... April 28
Residence Halls Close ..... 12 noon, April 29
Commencement..... April 30
Grades Due in the Registrar's Office..... 12 noon, May 4

***Note: Monday-only classes Spring 2011 add 25 minutes to each class session.**

ACCESSIBILITY DATA

For Individual Buildings On Campus

	General Accessibility						Restroom Facilities			
Building	Entrance ramped on ground level	Automatic entrance doors	Number of accessible floors	Stairs non-skid	Interior ramps available	ELEVATORS P=Passenger; F=Freight; *=Braille labels	Restroom designed for wheelchair	Entrance door width = 32"	Wall accessories below 40"/A	Access to showers and tubs
Academic Support Center	yes	yes	1		no		yes	yes	yes	
Apsaruke	yes	yes	3	yes	yes/F	P*	yes	yes	yes	
Art Annex	yes		1		no		yes	yes	yes	
Cisel Hall	yes	yes	4	yes	yes	P*	yes/B	yes	yes	
College of Business (McDonald Hall)	yes	Sky-Bridge	3		yes	P	yes/F	yes	yes	
College of Education	yes	yes	4	yes	no	P*	yes	yes	yes	
College of Technology	yes	yes	2		yes	P*	yes	yes	yes	
COT Health Sciences Building	yes	yes	2	yes	no	P*	yes	yes	no	
Facilities Services	yes		1				yes	yes	yes	
Family Housing	yes	no	1				yes	yes	yes	yes
Liberal Arts	yes	yes	8	yes	no	P*	yes/C	yes	yes	
Library	yes	yes	3	no	yes/F	P*	yes/D	yes	yes	
McMullen Hall	yes	yes	4	yes	no	P*	yes	yes	yes	
Parking Garage	yes			yes	yes	P*				
Petro Hall	yes	yes	8	no	no	P*	yes/H	yes	yes	no
Physical Education	yes	yes	2	yes	yes	P*	yes	yes	yes	yes
Rimrock Hall	yes	yes	6	no	no	E/G,P*	yes	yes	yes	yes
Science	yes	yes	3	yes	no	P*	yes	no	yes	
Security	yes		1		yes		yes	yes	yes	
Student Union	yes	yes	2	no	no	P*	yes	yes	yes	

A: In most restrooms, the sinks but not the towels are below 40"
B: Off ramp between new and old building
C: 1st floor, between Liberal Arts Building and Library/2nd & 5th floor Liberal Arts Building
D: 2nd floor, between Library doors and stairs
E: Stairs to basement
F: Wheelchair lifts
G: Freight elevator does not have automatic doors
H: Lobby area

Welcome from the Chancellor

It is my pleasure to welcome you to Montana State University Billings and to the College of Technology. I am delighted you have selected our University and the College of Technology to further your education.

Montana State University Billings is proud of its reputation and tradition of being an excellent teaching University. Our programs at the College of Technology provide students with the academic background and skills needed to qualify for immediate employment in occupations that parallel the workforce needs of the region and Montana. While a student at the College of Technology, you will receive a high-quality education in classroom settings, laboratories, and field-based experiences where industry standards are the norm.

Our faculty are highly trained, current and experienced in their respective fields. College of Technology programs are directly tied with local business, industry, and prospective employers through advisory committees and the College's National Advisory Committee to assure the curriculum you study continues to meet or exceed current and changing industry standards. This helps ensure your preparation for immediate employment upon graduation.

The University and College of Technology are committed to providing you the best possible education in an exciting and challenging environment where faculty and staff are dedicated to ensuring your success and your preparation for a productive and rewarding future. At the College of Technology, you will have the opportunity to become part of a high-quality, fully accredited institution of higher education serving a growing body of culturally diverse students in a friendly, caring, and supportive learning atmosphere. The mission of the College of Technology is to expand and develop workforce capacity by providing quality occupational learning opportunities and services to meet a variety of career choices and customer needs.

I am excited to share with you our vision of enhancing the mission of the College of Technology to take on the role of a comprehensive community college. The College's primary focus is to provide two-year, certificate, and lifelong learning opportunities for the entire region. I am sure you will find the College to be an indispensable part of your life, as well as the life of this community. You may, of course, choose to pursue an academic program designed to transfer toward the completion of a four year degree.

The purpose of this catalog is not only to assist you in planning your academic program, but also to provide you with additional information about Montana State University Billings and the College of Technology. If you have questions, please ask. All of us at the Montana State University Billings are committed to serving you. We are very pleased and excited you have chosen the College of Technology as the next step in preparing for your future.

Sincerely,

Ronald P. Sexton, Ph.D.
Chancellor
Montana State University Billings

Welcome from the Dean

The faculty and staff welcome you to the MSU Billings College of Technology (COT). Thank you for considering us as your educational partner.

Our college is growing with a new building just completed and many new academic programs and services to better serve you. Our enrollment now exceeds 1,400 students. Our faculty and staff are dedicated to ensuring your success! The College of Technology's small campus environment provides the benefits of a small college with the full benefits of the University.

Our vision is "to be the college of first choice, dedicated to the development of workforce capacity by providing top quality learning opportunities and services to meet a variety of career choices and customer needs by being responsive, flexible, and market-driven."

The opportunities for our graduates are endless. Employment opportunities in the Billings area and across Montana are tremendous and our Career Services staff will help you find your perfect job upon graduation. If you desire to continue your education after graduating from one of the College of Technology two year programs, we can help you transfer into the MSU Billings College of Business, College Allied Health Professions, College of Arts and Sciences, or the College of Education.

We recently received approval from the Montana Board of Regents to add a new AAS in Welding and Metal Fabrication and a Certificate of Applied Science in Welding for Energy Technology. In addition, in this upcoming year, we will be seeking approval for a new Certificate of Applied Science in Wind Technology.

Please visit our website www.msubillings.edu/cot for updates on new programs and opportunities under development at the College.

Our new 11 million dollar Health Sciences and General Education building contains some of the best classroom and laboratory equipment in the entire State of Montana. In addition, we have received many additional grants and appropriations over the past years which were used to improve our ability to serve students.

We are excited to offer you an opportunity to invest in your future by attending the COT. We strive to provide an outstanding learning environment which is constantly assessed and improved through our continuous quality improvement efforts. I invite you to call, email, or stop by and visit with me or with one of our dedicated faculty, counselors, or staff to learn more about how we can meet and exceed your expectations.

Sincerely,

John E. Cech
Dean
3803 Central Avenue
406-247-3009
jcech@msubillings.edu

MONTANA STATE UNIVERSITY BILLINGS

Core Purpose

To assure that all members of the university community reach their individual potential

Mission

MSU Billings provides a university experience characterized by:
Excellent Teaching
Support for Individual Learning
Engagement in Civic Responsibility
Intellectual, Cultural, Social & Economic Community Enhancement

Vision

Montana State University Billings will be recognized as a regional leader for:
Teaching & Learning
Translating Knowledge into Practice
Researching for the Future
Accepting Leadership for Intellectual, Cultural, Social & Economic Development Beyond University Boundaries

Core Values

Integrity
MSU Billings' actions are ethical & principled to assure dignity & equity for all

Educational Excellence
MSU Billings provides distinctive programs & challenging educational experiences for a diverse university community

Student Achievement
MSU Billings provides academic support & administrative services to foster academic & professional achievement of the university community

Community of Learners
MSU Billings respects & nurtures variety in intellectual contribution & scholarship enriching both the university & its extended community

Meaningful Engagement
MSU Billings supports all members of the university community in their individual growth toward confidence, individual sense of purpose & acceptance of civic responsibilities

Responsiveness
MSU Billings meets the changing needs of our learners with informed action & innovation based on current standards of educational & technical excellence

University Strategic Initiatives

Programs
Create and maintain distinctive, vital academic programs and services for 21st Century learners

Faculty Excellence
Cultivate excellence in & outside the classroom, in scholarly endeavors & exemplary service through faculty & staff development, support for scholarship, continuing assessment, & recognition of professional service

Needs of Learners
Identify the needs of all learners & provide access to a university experience that fulfills both individual goals & societal needs

Social Equity
Model social equity and consciousness by assuring that all members of our campus community grows because of their University experience

Research Initiatives
Increase the stature, professionalism & research initiatives of all academic programs & student services

Economic Access
Augment local, state & regional economic development through the strength of the University's financial base & our learners' contributions to their communities

Global Engagement
Increase staff, faculty & student awareness, understanding, & involvement in the international community

University Infrastructure
Ensure an administrative, operational and physical infrastructure that fully supports excellence

Continuous Quality Improvement:
A way of life at Montana State University Billings

Montana State University Billings is a student-centered learning environment that is enhanced by commitment to Continuous Quality Improvement (CQI). This dedication to CQI means that the University faculty and staff continually review programs and services to our students to provide an optimal educational experience. This persistent pursuit of quality improvement to assure excellence involves our students, staff, faculty, administration and our community.

Important Notice to All Students

The College of Technology catalog is published annually by Montana State University Billings as a guide for students, faculty and others interested in the institution. Students are expected to be familiar with the University regulations and information which are set forth in this publication. Effective date of this catalog is August 2009.

The University is not responsible for cancellation of classes due to damage to campus facilities or unavailability of teaching personnel resulting from severe weather conditions, natural or man-made disasters, work stoppages or emergency situations declared by the Governor.

Advisors assist students with selection of courses and other academically related issues, but the ultimate responsibility for meeting graduation requirements belongs to students.

MSU Billings College of Technology reserves the right to change the regulations and fees in this catalog at any time during the one-year period the publication is in effect. The institution, with the concurrence of the Board of Regents of Higher Education, also reserves the right to add or withdraw courses and degree programs at any time.

Effective dates of changes will be determined by the proper authorities and shall apply to prospective students and to those who are already enrolled.

For further information, write to the New Student Services Office, Montana State University Billings College of Technology; 3803 Central Avenue; Billings, Montana 59102.

Accreditation

Montana State University Billings is accredited by the Northwest Commission on Colleges and Universities. The College of Technology has individual programs that are recognized and approved by the United States Office of Education, Bureau of Indian Affairs, Division of Vocational Rehabilitation, National Automotive Technicians Education Foundation (NATEF), Inter-Industry Conference on Auto Collision Repair (I-CAR), Committee on Accreditation of Allied Health Education Programs (CAAHEP), Committee on Accreditation of Educational Programs for the EMS Professions (CoAEMSP), and the Montana State Board of Nursing. All programs are approved for veterans.

MSU Billings—Your University of Choice and Educational Partner for a Lifetime

The College of Technology is committed to providing its students with *Access and Excellence*. Whether it is in the classroom, a special workshop, or in the day-to-day operation of the campus, the College of Technology is committed to providing an uncommonly high level of excellence in all programs and services.

One way the Institution provides *Access and Excellence* to students is through instruction. The emphasis at the College of Technology is helping students acquire skills to help them find meaningful employment upon completion of their academic program. Our faculty are experienced in their fields and utilize innovative teaching methods to serve their students' needs.

Students experience *Access and Excellence* at the College of Technology through field-based experiences such as internships, laboratory work, clinical rotations for nursing and paramedic students, and tutoring opportunities.

Additionally, *Access and Excellence* is maintained in small classes which allow students to get to know their instructors and each other as well as experience hands-on educational opportunities.

Mission

The mission of the Montana State University Billings College of Technology is to be the College of first choice, dedicated to the development of workforce capacity by providing top quality learning opportunities and services to meet a variety of career choices and customer needs by being responsive, flexible, and market-driven.

History
In 1969, the Montana State Legislature created the Billings Vocational-Technical Education Center (BVTC) to serve the postsecondary technical training needs of adults. In 1987, by order of the Legislature, governance passed from the Billings School District to the Montana University System Board of Regents, making the BVTC one of five campuses of the Montana University System for postsecondary vocational-technical education. In 1994, the BVTC officially merged with Eastern Montana College to become the fifth College of Montana State University Billings. The merger and subsequent sharing of resources brought about new and improved student services, such as cooperative education, health services, career services, fee payment options, and credit transferability.

Advisory Boards
To achieve our vision of responsiveness, we created program advisory boards for all of our programs. These boards are made up of managers, business owners, technicians, supervisors of technicians, technical trainers, equipment vendors, and others concerned with the success of the respective programs they are advising. These committees help us respond to the changing needs of the workforce, maintain industry standards, and provide students with opportunities for internships in business and industry. They help to ensure that our curriculum is meeting industry standards. We also created a National Program Advisory Board which is integral to the long-range development of the COT. To achieve our vision of being market-driven, we continually upgrade existing programs and add new courses and programs to meet the needs of employers throughout the greater Billings region. We offer students an education targeted toward career preparation and access to networks for rapid employment.

Partnerships and Collaborative Relationships
The College of Technology enjoys partnerships with key organizations in the greater Billings region including: Billings Clinic, St. Vincent Healthcare, Billings Fire Department, Bresnan Communications, Underriner Motors, The Billings Gazette, and the Montana Contractor's Association to name a few. In addition, the College offers occupationally specific and related instructional opportunities on campus as well as through distance learning to prepare or retrain individuals to meet the demands of present and future technology. The College continues to develop collaborative relationships and articulation agreements with other institutions of higher education where appropriate. Since fall 2003, the College Of Technology has been a training site for the University of Montana's Surgical Technology Associate of Applied Science degree. Students in the Billings area are now able to complete all of the training locally instead of having to relocate to the Missoula area. We anticipate expanding such collaborations in the near future.

Faculty
The College of Technology is proud of its outstanding faculty and of their expertise in the specific areas in which they teach. Faculty are highly qualified with expertise in their specialty and current work experience in their field. A list of faculty members and their degrees and certifications are listed in the back of this catalog.

Diversity
MSU Billings supports all members of the University community in their individual growth toward confidence, individual sense of purpose, and acceptance of civic responsibilities. MSU Billings' actions are ethical and principled to assure dignity and equity for all. MSU Billings seeks to increase staff, faculty and student awareness, understanding, and involvement in the international community. MSU Billings is committed to providing an intellectual and social environment that supports and nurtures diversity awareness and cultural consciousness.

Location and Campus
The College of Technology is located at 3803 Central Avenue, seven miles from the senior MSU Billings campus in the fast-growing west-Billings "Shiloh Corridor Complex," near the intersection of Central Avenue and Shiloh Road. The campus consists of two buildings: the Tech building and new Health Sciences building. At the front of the COT campus is the MSU Billings soccer field, used by both the women's and men's soccer teams for practice and games.

Academic Calendar
The academic year consists of Fall and Spring semesters. The summer term has its own calendar. Classes are also available between the fall and spring semesters in an Intersession format.

Campus Visits
New Student Services Office, (406) 247-3000
Campus tours are available through the Office of New Student Services. For information, call (406) 247-3000; or write the Office of New Student Services; Montana State University Billings; 3803 Central

Avenue; Billings, MT 59102; or visit our web site at www.msubillings.edu/cot. To assure the availability of staff, please contact this office to set up your campus visit.

Policy of Non-Discrimination

MSU Billings pursues affirmative action to provide to all people the equal opportunity for education, employment, and participation in University activities without regard to race, color, religion, national origin, sex, age, marital or family status, disability, or sexual orientation and seeks to employ and advance in employment qualified disabled veterans and veterans of the Vietnam Era.

Responsibility for effecting equal opportunity accrues to all University administrators, faculty, and staff. This responsibility includes assurance that employment and admission decisions, personnel actions, and administration of benefits to students and employees rests exclusively upon criteria that adhere to the principle of Equal Opportunity. MSU Billings will protect against retaliation any individual who participates in any way in any proceeding concerning alleged violations of laws, orders, or regulations requiring equal education and/or employment opportunity.

Inquiries by students regarding discrimination or harassment based on physical or mental disability should be directed to the Director of Disability Support Services, Academic Support Center, Room 1, at 657-2283.

Inquiries or grievances of any faculty, staff, or visitor related to unlawful discrimination and/or harassment on the basis of race, color, religion, sex, national origin, sexual orientation, age, physical or mental disability, or veteran status should be directed to the Director of Human Resources, McMullen Hall, room 310, 1500 University Drive, at 657-2278.

Inquiries or grievances related to Title IX should be directed to the NCAA Compliance coordinator, PE Building, Room 155 at 657-2061.

Sexual Harassment

Montana State University Billings prohibits and will not tolerate sexual harassment on its premises, within any of its programs, services or other University sponsored activities, or by anyone acting as an agent of the University.

MSU Billings uses the definition of sexual harassment set forth by the U.S. Equal Employment Opportunity Commission which states:

> Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitutes sexual harassment when submission to or rejection of this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance or creates an intimidating, hostile or offensive work environment.

The University extends these protections beyond its employees to include its students (in accordance with Title IX), other consumers, and members of the general public who come into contact with the University or its agents.

Sexual harassment in education or employment covers a broad spectrum of behavior, ranging from sexual innuendoes and gender-based comments made at inappropriate times, perhaps in the guise of humor, to coerced sexual relations. In its extreme form, sexual harassment occurs when a person in a position of influence over the job, career, or grades of others uses his/her authority to coerce another person into sexual relations or to punish that person for rejecting or reporting such advances.

MSU Billings considers such behavior unacceptable. Sexual harassment is furthermore a violation of state and federal equal opportunity and nondiscrimination regulations.

In keeping with the University's policy on sexual harassment, Montana State University Billings desires to create a working environment for employees and a learning environment for students which is free of sexual harassment and intimidation. Materials such as calendars, posters, post cards, photographs and cartoons that contain sexually explicit images or language can create an intimidating, hostile or offensive environment and may subject persons of either sex to humiliation, embarrassment or discomfort because of their gender. Such materials are inappropriate and should be removed from the workplace.

This policy applies to space provided by the University for the conduct of its business such as offices, shops, classrooms, hallways, lounges and study carrels.

This policy does not apply to: (1) libraries, resource rooms, or research collections; (2) materials related to course content or assignments used in the educational

setting; (3) displays and exhibits in galleries and museums, or (4) private rooms or family housing units rented from the University.

Disciplinary action will be taken when instances of sexual harassment are identified and confirmed. Retaliation against persons who file complaints is also a violation of laws prohibiting discrimination and will lead to disciplinary action against offenders.

Supervisors who knowingly condone or fail to report incidents of harassment will themselves be subject to discipline.

Students who fail to comply with this policy may be in violation of the Code of Student Conduct, and may be subject to student disciplinary action.

Employees or students who wish to report incidents of sexual harassment should contact the Director of Human Resources/EEO Officer, McMullen Hall 310, 657-2278.

MSU Billings Conflict of Interest Policy

This policy is adopted pursuant to Board of Regents Policy 770, Conflict of Interest, and applies to all 0.5 FTE or greater employees (hereafter, employees) at Montana State University Billings and Montana law, Standards of Conduct Code of Ethics, Title 2, Chapter 2, Part 1, MCA. Procedures for Conflict of Interest can be found at www.msubillings.edu/humres/policies.

Annual Crime Report

www.msubillings.edu/security

In November of 1990 the Student Right-to-Know Act was signed into law. The Jeanne Clery Disclosure of Campus Security Policy and Crime Statistics Act mandates that institutions of higher education report and make available to both current and prospective students and employees the occurrences of specific crimes at each respective campus. In addition to the number of reported specified crimes, the institutions must report the number of arrests for liquor violations, drug-abuse violations, and weapon violations. The report is available through the Vice Chancellor for Student Affairs, (406) 657-2307, or the Office of Human Resources /EEO-AA, (406) 657-2278.

Safety & Security

In response to concerns about campus safety, Montana State University Billings College of Technology will be installing digital clocks in every classroom which will double as an emergency communication device to warn students of potential hazards. Cameras are also being installed in various parking lots and training is planned on “shelter in place” practices. The Emergency Crisis Communications Committee is meeting regularly to implement additional security.

Americans with Disabilities Act of 1990

Montana State University Billings affirms its commitment to nondiscrimination on the basis of disability and its intention to comply with all laws prohibiting such discrimination including Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act.

In order to assure nondiscrimination on the basis of disability, the University will provide appropriate and reasonable accommodation for members of the public, employees and students with disabilities, as defined by these laws.

All University administrators, faculty, staff and students have a responsibility to adhere to the philosophy of equal access and opportunity which is the basis for this nondiscrimination commitment.

An individual may be required to provide relevant, written documentation in order to establish that he/she is a person with a disability and entitled to a reasonable accommodation under the law.

The University’s ADA coordinators are the Director of Human Resources and the Director of Disability Support Services.

Any employee or applicant with disabilities concerned about accessibility and/or accommodation issues should contact the Human Resources, McMullen Hall 310, (406) 657-2278 (Voice/TTY).

Students

Any student with disabilities concerned about accessibility and/or accommodation issues should contact Disability Support Services, Academic Support Center (406) 657-2283 (Voice/TTY).

Disability Support Services reviews complaints by students regarding discrimination and/or harassment on the basis of physical or mental disability relating to disability accommodations in the classroom and physical access to facilities. The full grievance policy is on the DSS website at www.msubillings.edu/dss.

Degrees, Options, and Programs List

Programs marked with a ∇ are also offered in an online format.

Associate of Science Degree (AS)
Programs of Study in:
Business Administration
Drafting & Design
Fire Science
General Studies (Self-designed) ∇
Human Resources - General Applied Emphasis ∇
Human Resources - College of Business Articulated Emphasis ∇
Networking Technology

Associate of Science in Nursing (ASN)

Associate of Applied Science (AAS)
Accounting Technology∇
Administrative Assistant
Automobile Collision Repair and Refinishing
Automotive Technology
Computer Desktop/Network Support
Computer Programming & Application Development
Computer Systems Technology
Construction Technology-Carpentry
Diesel Technology
Drafting & Design Technology
~~Heating, Ventilation, Air Conditioning & Refrigeration~~ **(Program placed on moratorium)**
Medical Administrative Assistant
Paramedic
Power Plant Technology
Practical Nurse
Process Plant Technology
Radiologic Technology
Surgical Technology (from the University of Montana-Missoula College of Technology)
Welding and Metal Fabrication

Certificate of Applied Science Programs
Accounting Assistant∇
Assistant Drafter
Automobile Collision Repair
Automobile Refinishing
Automotive Technology
Diesel Technology
Human Resource Management ∇
Medical Coding and Insurance Billing ∇
Networking Technology
Office Assistant ∇
Welding & Metal Fabrication Technology
Welding for Energy Technology

Adult Learners

MSU Billings has many options to support busy adults who wish to return to college. We are pleased to be able to offer you an opportunity to take college courses via the internet as a way of overcoming barriers of time and place. Our students have told us they need the ability to reach their academic goals in an environment that affords them freedom and flexibility, comfort and convenience, and more time for work and family. By combining our commitment to Access and Excellence with the technology that allows you to "Learn Online… Anywhere…Anytime," this program ensures that you can achieve your personal, professional, and academic goals without sacrificing the other things that are important in your life. MSU Billings also offers adult learner scholarships. Please contact New Student Services at 247-3000 for more information and an adult learner scholarship form.

Through the MSU Billings Online University, you can complete Academic Foundations requirements as well as the following certificates and degrees listed below. We are continuously reviewing our programs to determine what we can offer in an online format. To get a current list of degrees and classes offered online, please check the online website www.msubonline.org.

Online Programs currently offered through the MSU Billings College of Technology:

Associate Degree Programs

A.A.S. Accounting Technology ∇
A.A. General Studies (Self-Designed) ∇
A.S. General Studies (Self-Designed) ∇
A.S. Human Resources-Applied Emphasis ∇
A.S. Human Resources-College of Business Articulated Emphasis ∇

Certificates of Applied Science

Accounting Assistant ∇
Human Resources Management ∇
Medical Coding & Insurance Billing ∇
Office Assistant ∇

Please refer to the program requirements for these academic programs listed alphabetically in this catalog.

You can also take individual online courses for professional development, to transfer to another institution, to apply toward another MSU Billings degree program, or to supplement your on-campus course schedule with an online learning experience. Students are encouraged to work with an advisor when pursuing any of these degree programs to ensure that courses selected will successfully meet all degree requirements and also fulfill the student's academic interests and goals. For academic advising and course selection assistance, please contact the MSU Billings Online University Advisor at inquiry@msubonline.org.

Coordinated Evening/Online Studies

The Coordinated Evening/Online Studies accommodates the needs of adults who lead busy lives but are seriously committed to continuing their education. Students can earn an Associate of Science during the evenings and online, allowing them to maintain a full-time job and family.

College of Technology Programs currently offered in Coordinated Evening/Online Studies mode:

AS Degrees

Human Resources-General Applied Emphasis
Human Resources-College of Business Articulated Emphasis
*Business Administration

Certificate of Applied Science

Human Resource Management

*The AS with a plan of Study in Business Administration offers adults flexibility by offering classes that begin every 7.5 weeks September through May. Course offering include online courses, hybrid courses (time spent online and one campus), and evening courses. There are also courses offered in the summer for students who wish to attend year around. Contact the COT New Student Services Office at 247-3000 to learn more.

First Time Student Checklist

- ☐ Complete the Application for Admission and submit it to the Office of New Student Services as early as possible prior to the term you wish to attend.
- ☐ If born after December 31, 1956, provide 2 proofs of immunization against measles and rubella that were administered on or after your first birthday and after December 31, 1967.
- ☐ Submit final high school transcript to Office of New Student Services after graduation
- ☐ If interested in securing financial aid, apply for financial aid by submitting the Free Application For Federal Student Aid (FAFSA) online at www.fafsa.ed.gov by the priority date of March 1.
- ☐ To apply for scholarships, submit the Scholarship Application. Scholarships are awarded on an on-going basis. Apply early to be considered for scholarships
- ☐ Read through the New Student Guide you will receive after completing your application. Complete all forms included in the New Student Guide that are appropriate: housing, registration, U-card, and more.
- ☐ Attend new student registration and orientation sessions prior to the term you wish to attend. Contact the New Student Services Office at (406) 247-3000 for dates and times.
- ☐ Complete housing form and submit by July 15.
- ☐ Complete registration for classes. (Register any time up to the start of classes.)
- ☐ Pay fees.
- ☐ Start classes.
- ☐ Get involved in student organizations.

Checklist for Students Returning After An Absence

- ☐ Complete the Application for Re-admission and return it to the Office of New Student Services as early as possible before the term you will enter. Also provide transcripts from any college you have attended since leaving MSU Billings or MSU Billings College of Technology.
- ☐ If born after December 31, 1956, provide proof of 2 immunizations against measles and rubella that were administered on or after your first birthday and after December 31, 1967.
- ☐ Submit the Free Application for Federal Student Aid (FAFSA) online at www.fafsa.ed.gov by the priority date of March 1, if you plan to enter MSU Billings College of Technology the following Fall term. For other terms, submit the financial aid application as early as possible before the term you will enter.
- ☐ Apply for scholarships by completing the Scholarship Application for Current and Returning Students by the deadline of February 1.
- ☐ Call the advising office to schedule a visit with an advisor (COT Tech First Floor, 406-247-3019) to discuss your plans and register for classes.
- ☐ Pay fees.
- ☐ Start classes.
- ☐ Get involved in student organizations.

Admissions and Registration

COT Tech Building First Floor
(406) 247-3000 or 1-800-565-MSUB ext.3000
www.msubillings.edu/cot

Montana State University Billings College of Technology believes that every student who is academically capable of successfully completing a course of study available through MSU Billings College of Technology should be given the opportunity of enrolling in the University without regard to age, creed, handicap, national origin, race or sex.

Montana State University Billings College of Technology reaches out to encourage minority students to attend the institution. Staff representatives of the Office of New Student Services make frequent visits to middle schools, high schools, community colleges, and tribal colleges to provide guidance to students as they consider and explore their educational future.

Admissions

New Students: How to Apply

NOTE: Students making application to attend Montana State University Billings College of Technology should be aware that the Admission Requirements may have changed since the publication of this document. Please contact the Office of Admissions and Records (406) 247-3000, 1-800-565-MSUB; or write to the Office of Admissions and Records, Montana State University Billings College of Technology, 3803 Central Avenue, Billings, MT 59102.

1. Complete and submit an application for admission. Applications may be obtained from Montana high school counselors or from the Office of New Student Services, Montana State University Billings College of Technology, 3803 Central Avenue, Billings, MT 59102. You may call (406) 247-3000 or apply online at www.msubillings.edu/cot to have this material sent to you.
   Applications will be processed only for the term that the applicant indicates on the application.
2. Submit a $30.00 nonrefundable application fee (check or money order) with the application for admission.
3. If you have not previously attended an accredited college or university, request an official transcript from your high school that includes the graduation date, final class rank, and grade point average and have it sent to the Office of New Student Services, Montana State University Billings College of Technology, 3803 Central Avenue, Billings, MT 59102.
4. Any student born after December 31, 1956, must show proof of immunization that was administered after December 31, 1967. The immunization dates must also be after your first birthday. Requirements include proof of two (2) doses of immunization against measles (Rubella) given at least 30 days apart and two (2) proofs of Rubella immunization. Include mo/day/yr. Any immunizations administered after June 11, 1993, must be an MMR. The record must be signed by a physician, health agency or school official.

When to Apply

Students wishing to attend Montana State University Billings College of Technology should apply for admission as early as possible prior to the term in which enrollment is desired.

New First-Time Students: Admission Requirements

The College of Technology requires first-time students to have earned either a high school diploma from an accredited institution, or a GED, or passed the Compass Ability-to-Benefit exam (ABT) administered by the MSU Billings College of Technology Advising Center. In an effort to meet individual needs, the College of Technology has established special admission procedures for students seeking admission to certain programs. Contact the College of Technology for this information at (406) 247-3000. The Admission application fee is $30.00 for the College of Technology.

Transfer Students

How to Apply

NOTE: Students making application to attend Montana State University Billings College of Technology should be aware that Admission Requirements may have changed since the publication of this document. Please contact the Office of New Student Services (406) 247-3000 or 1-800-565-MSUB ext. 3000; or write to the Office of

New Student Services, Montana State University Billings College of Technology, 3803 Central Avenue, Billings, MT 59102.

Applicants who have attempted 12 or more GPA credits at another accredited college or university are considered transfer students. To be admitted to Montana State University Billings College of Technology, transfer students must do the following:

1. Complete and submit an application for admission. Applications for admission may be obtained from college counselors or from the Office of New Student Services, Montana State University Billings College of Technology, 3803 Central Avenue, Billings, MT 59102. You may call (406) 247-3000 or 1-800-565-MSUB, ext 3000 to have this material sent to you or apply online at www.msubillings.edu/cot. Applications will be processed only for the term the applicant indicates on the application.
2. Submit a $30.00 nonrefundable application fee (check or money order) with the application for admission.
3. Transfer students must request official and complete transcripts from each college attended or a transcript which indicates that a baccalaureate degree has been earned and transcripts from any colleges attended after the degree was earned. Transcripts must be sent directly to the Office of New Student Services at Montana State University Billings College of Technology.
4. Any student born after December 31, 1956, must show proof of immunization that was administered after December 31, 1967. The immunization dates must also be after your first birthday. Requirements include proof of two (2) doses of immunization against measles (Rubella) given at least 30 days apart and two (2) proofs of Rubella immunization. Include mo/day/yr. Any immunizations administered after June 11, 1993, must be an MMR. The record must be signed by a physician, health agency or school official.

Montana Resident Transfer Students will be admitted upon receipt of an official and complete transcript from each college or university attended. A resident transfer student applicant must meet the criteria for "good academic standing" as defined by Montana State University Billings College of Technology.

Non-Montana Resident Transfer Students must meet the in-state student requirements and must also have a 2.00 cumulative grade point average for all college level work before his/her admission is approved.

When to Apply

Transfer applicants should apply for admission as early as possible prior to the term in which enrollment is desired.

Transfer of College-Level Credits

Transfers from Montana University System Units, Montana Community Colleges and Montana Tribal Colleges

By Board of Regents policy, Montana State University Billings is committed to facilitating undergraduate transfer for students transferred to us from units of the Montana University System and the three publicly supported community colleges and the seven tribal colleges in Montana.

Block Transfer

Undergraduate students who have completed, with a cumulative grade-point average of 2.0 (C) on a four-point scale, an approved general education program at one of the institutions noted above, will be deemed to have met the lower division Academic Foundations requirements of Montana State University Billings.

Special attention should be paid to Board of Regents Policy 301.5.3 on Minimum Course Grades which also applies to acceptance of transfer credit. Before Montana State University Billings will accept the courses as applicable for meeting Academic Foundations, a student will have to earn a grade of "C-" or better in each of the classes.

Depending on the major program the student selects, there may still be additional lower division courses required to meet published major program prerequisites. A student may be required to take additional coursework at the upper division level that is part of the approved Academic Foundations program at Montana State University Billings.

Associate of Arts and Associate of Science Degrees

A student who has completed an Associate of Arts or an Associate of Science degree with an approved general education component package at another unit of the Montana University System has satisfied the requirements of this policy.

NOTE: Students should be aware that Associate of Arts or Associate of Science degrees ordinarily do not have a designated field of study in their title.

Special attention should be paid to Board of Regents Policy 301.5.3 on Minimum Course Grades which also applies to acceptance of transfer credit. Before Montana State University Billings will accept the courses as applicable for meeting Academic Foundations, a student will have to earn a grade of "C-" or better in each of the classes.

Montana University System (MUS) Core Curriculum

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

Natural Sciences (at least one with a laboratory experience).....6 semester credits
Social Sciences/History .....6 semester credits
Mathematics.....3 semester credits
Communication - written & oral .....6 semester credits
Humanities/Fine Arts.....6 semester credits
Cultural Diversity.....3 semester credits
Total Semester credits.....30

Transfer students and student advisors should also be familiar with the additional guidelines that have been adopted by the Montana Board of Regents for students who use the Montana University System Core to satisfy their lower division general education requirement. Those guidelines are entitled Operational Rules for the Montana University System Core, and can be found at www.mus.montana.edu/transfer. They include the following:

- In order to satisfy the MUS core, students must successfully complete at least one course that includes significant content related to the cultural heritage of American Indians. (See an academic advisor for assistance in determining which transfer courses satisfy this requirement.)
- Students must earn the minimum number of credits in each of the six (6) categories of coursework. Students can only use credit-bearing competency tests or coursework to satisfy the MUS core.
- Coursework can only be used once to satisfy the requirements of the MUS Core. It cannot be "double counted" to satisfy the requirements of more than one category.
- In order to satisfy the requirements of the Communications area, students must successfully complete a combination of courses that includes significant content in both written and oral communications.
- Students must satisfy the "minimum grade" requirements established by Board of Regents' Policy 301.5.3, along with any exceptions to that policy that may have been established by their program of study.

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

An undergraduate student who has completed courses identified as part of the Montana University System (MUS) Core courses will have general education coursework reviewed for transferability to Montana State University Billings as follows:

1. If a student has completed less than 20 general education credits, that student will be required to complete the approved Academic Foundations program at Montana State University Billings. All general education transfer credits that are part of the MUS Core will be reviewed for possible application in the approved Academic Foundations program.
2. If a student has completed 20 or more MUS core credits, but does not satisfy the block transfer policy described in the preceding section, that student may choose to complete either the MUS core or the approved Academic Foundations program at Montana State University Billings. The student should make that decision in consultation with an advisor.
3. An undergraduate student who completes postsecondary coursework in the Montana University System that does not fall within the MUS Core will have his/her classes analyzed on a course-by-course basis to determine how those classes might satisfy the Academic Foundations program requirements at Montana State University Billings.

Course by Course Evaluation

Students who have not completed such an approved general education program will have their transcript evaluated for transfer purposes using the Statewide Core Curriculum and Community College Transfer Guide. **Note: College-level courses shall be defined as those that are applicable to an associate of arts, associate of science or baccalaureate degree.** In advance of a student's enrollment, Montana State University Billings will determine which courses within an associate of applied science degree program will be

credited toward a given associates or baccalaureate degree. In all cases, such courses shall not include remedial or developmental courses.

Depending upon the major program the student selects, there may still be additional lower division courses required to meet published major program prerequisites.

Minimum Course Grades

Effective Fall Semester 2005, Board of Regents policy 301.5.3 on minimum grades will apply to all students who enter or are re-admitted to the Montana University System or the three (3) community colleges that semester or subsequent semesters.
All students in the Montana University System and the three (3) community colleges must earn the following minimum grades in order to demonstrate their competency and preparation:

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

Individual programs may establish grade standards that are higher than the minimums set out in paragraph A above, for some or all of the courses that are used to satisfy the pre-requisites or requirements for a major, minor, option, certificate or general education. Students will be notified of that expectation. Please refer to page 49 of this catalog for details on grade requirements for AAS, CAS, and ASN degrees.

All Transfers

NOTE: By action of the Academic Senate of MSU Billings, MSU Billings College of Technology will accept transfer students with completed AA or AS degrees from other regionally accredited institutions as having fulfilled their MSU Billings College of Technology Academic Foundations requirements if the general education package is comparable in total credits and content. *(10/7/04 memo #446 p. 1654)*

All college-level courses from regionally accredited institutions of higher education will be received and applied towards the free elective requirements of associate or baccalaureate degrees as applicable.

The Advising Center (McMullen First Floor, 406-657-2240/COT A017, 406-247-3020) will do an evaluation of transcripts upon the request of the applicant. The student will be informed as to what transfer courses can be accepted toward the major and what courses must yet be completed for the degree. This evaluation will be processed only after an application, the admission fee, and official college transcripts are on file with the Office of Admissions and Records.

Students who transfer credit from foreign institutions or from institutions that do not have regional accreditation will have their courses evaluated on an individual basis. Policy and procedure information may be obtained in the Office of Admissions and Records.

Students transferring from institutions with candidacy status in a regional accrediting association must earn at least 20 credits at MSU Billings with a minimum 2.00 GPA before their credits from the former institution will be considered for acceptance.

Students transferring from community colleges or other two-year colleges may not use the credit transferred in lieu of upper division credits required for graduation at Montana State University Billings.

Students transferring to Montana State University Billings who have previously earned a Bachelor of Arts or Bachelor of Science degree from a regionally accredited institution of higher education are considered to have their Academic Foundations requirements completed. Only information pertaining to the degree, date, and institution conferring will be noted on the transcript, individual coursework is not transcripted.

Acceptance of credits from other institutions of higher learning does not preclude the necessity of meeting all curricular requirements of a specific program. Students transferring to MSU Billings may have their credits evaluated on the basis of the current catalog at the time when they first entered Montana State University Billings, or they may elect to enter under the catalog for the year in which they entered any accredited institution of higher education in the United States provided they have maintained continuous, full-time enrollment (excluding summers) in good standing.

Transfer students will begin a new grade point average at MSU Billings, but for graduation with honors all previous transfer work will be calculated into GPA.

Course Equivalency Guides

Annually, Montana State University Billings updates equivalency agreements with regional community colleges in Wyoming, North Dakota, and Montana; Montana's tribally controlled colleges; and Montana's four-year (public and private) institutions. The

individual Colleges at MSU Billings also prepare program-specific transfer agreements; for instance, the College of Education has a listing of courses that students at Northwest College in Wyoming can take that will transfer directly into elementary education. Beginning with 1992, MSU Billings' equivalency agreements also highlight the Montana University System Core Curriculum. Students who attend any of these colleges and who plan to transfer to MSU Billings are encouraged to visit the MSUB website (www.msubillings.edu). This information will assist students in understanding how specific courses will transfer to MSU Billings and what courses individual degree programs require.

MSU Billings has Course Equivalent Guides on the MSUB website (www.msubillings.edu) to the following colleges:

Blackfeet Community College
Casper College
Carroll College
Central Wyoming College
Chief Dull Knife Memorial College
Dawson Community College
Dickinson State University
Flathead Valley Community College
Fort Belknap College
Fort Peck Community College
Gillette Campus of Northern Wyoming Community College District
Great Falls College of Technology
Helena COT of University of Montana
Lethbridge Community College
Little Big Horn College
Medicine Hat Community College
Miles Community College
Montana State-Bozeman
Montana State-Northern
Montana Tech
Northwest College
Rocky Mountain College
Salish Kootenai College
Sheridan College of Northern Wyoming Community College District
Stone Child College
University of Great Falls
University of Montana-Western
University of Montana-Missoula
University of Wyoming
Williston State College
Northern Wyoming Community College District

Former MSU Billings Student Re-Admission

A former student of Montana State University Billings or Montana State University Billings College of Technology who is in good standing and who was not in attendance the preceding term will be eligible for registration after completing the following:

1. Complete and file a re-admission card with the Office of Admissions and Records, or, re-admit online at www.msubillings.edu
2. Request that transcripts from institutions attended, if any, since last attending Montana State University Billings or Montana State University Billings College of Technology be sent to the Office of New Student Services
3. Former students born after December 31, 1956, must show proof of immunization that was administered after December 31, 1967. The immunization dates must also be after your first birthday. Requirements include proof of two (2) doses of immunization against measles (Rubella) given at least 30 days apart and two (2) proofs of Rubella immunization. Include mo/day/yr. Any immunizations administered after June 11, 1993, must be an MMR. The record must be signed by a physician, health agency or school official.

When to Apply

Returning students should apply for re-admission as early as possible prior to the semester in which enrollment is desired.

Special Admission Procedures

In an effort to meet individual needs, MSU Billings College of Technology has established special admission procedures for undergraduate students which pertain to non-high school graduates, home-schooled students, high school students, and non-degree applicants.

NOTE: Students making application to attend Montana State University Billings College of Technology should be aware that Admission Requirements may change at any time. Please contact the Office of Admissions and Records (406) 247-3000; or write to the Office of Admissions and Records, Montana State University Billings College of Technology, 3803 Central Avenue Billings, MT 59102.

Students in these categories would also complete the process of application outlined in the "All New Students: How to Apply" section as it is appropriate to their circumstances. However, the following information also applies:

Non-High School Graduates

Non-high school graduates may be admitted on the basis of the General Educational Development (GED) test or COMPASS. Various boards establish minimum scores for these tests or groups and students can visit with the Advising Center (406-657-2240/406-247-3019) for current minimums.

Students in this age group who wish to enroll part-time may do so without restriction.

High School Students – University Connections

Approved high school students may take college courses while enrolled in high school. The signature of the high school counselor or principal certifies that student can do University level work and must accompany the application. Financial aid is not available to students in this category. Tuition for courses taken by high school students under this program is $100/credit.

Non-Degree Applicants

An applicant who wishes to pursue studies for personal growth and who does not wish to work toward a formal degree at Montana State University Billings College of Technology may apply as an undergraduate non-degree student. Acceptance into this category does not constitute acceptance into a degree-granting program. All applicants should have sufficient educational background to qualify for the course or courses in which enrollment is sought and must certify on the application form that they have graduated from high school or appropriate Ability-to-Benefit test. A maximum of 32 semester hour credits earned as a non-degree student may be applied to an undergraduate degree at Montana State University Billings College of Technology if the applicant applies and is accepted into a degree program. Financial aid is not available to students in this category, nor may they qualify for the WUE (Western Undergraduate Exchange) program.

This category is not open to students currently on academic suspension from Montana State University Billings College of Technology or on academic suspension from any other college or university.

No academic credentials or transcripts are required in support of the application; however, non-degree students who later wish to change to a degree program must furnish required supporting credentials and must meet all the regular admission requirements. Financial aid is not available to students in this category.

International Students

International applicants must meet the out-of-state admission requirements in addition to the following:

1. Certified copies of all certificates, degrees and diplomas with a certified translation of the records.

   If you have any post-secondary level course(s) completed outside of the U.S. or in non-English-speaking Canada to transfer to Montana State University Billings College of Technology, we need a **course-by-course evaluation** completed by one of the three services highlighted below:
   - AACRAO
   - ECE
   - WES

2. Completed MSU Billings Financial Statement and certified statement from a reliable financial institution, bank or U.S. citizen who will accept responsibility for the student's financial obligations. The statement must certify that the applicant has adequate funding to meet all of the expenses that will be incurred in the student's proposed program of study.

3. Students from non-English speaking countries must provide evidence of proficiency in English. Students can do this several ways:
   a. Students may take the Test of English as a Foreign Language (TOEFL) and have official results sent with their applications to the Office of International Studies. TOEFL information can be accessed on the web at www.toefl.org or by calling 609-921-9000. The Montana State University Billings Institutional Code for the TOEFL and the GRE is 4298. Students scoring higher than 500 on the paper-based TOEFL and higher than 173 on computer-based TOEFL are assured undergraduate admission if all other requirements are met; those scoring less will be reviewed on a case-by-case basis. Students with lower TOEFL scores may be asked to enroll in an English as a Second Language curriculum prior to regular admission. Prospective graduate students need a 550 paper-based TOEFL score or a 209 computer-based TOEFL score.

b. American Cultural Exchange students who have finished level 6 will be admitted to our undergraduate programs without TOEFL; graduate students who have finished level 7 will be admitted to our graduate programs without TOEFL. Students need to submit a copy of their A.C.E. program certificate and transcripts with their applications for admission to the Office of International Studies.

4. Autobiography or Personal Statement (1-2 pages double spaced) that addresses how attending MSU Billings fulfills personal or academic goals.

5. Appropriate immunization records. These records must be submitted with an English translation.

When to Apply
Application Deadlines:
Fall Semester: June 15
Spring Semester: November 1
Summer Semester: April 1
For more information on international student admission, call the International Studies Office at (406) 657-1705 or visit the website at www.msubillings.edu/intnlstudies .

Western Undergraduate Exchange (WUE)

Montana State University Billings College of Technology participates in the Western Undergraduate Exchange (WUE), a program of the Western Interstate Commission for Higher Education and other western states. Through WUE, undergraduate students who are not residents of Montana may enroll at Montana State University Billings College of Technology and pay reduced nonresident tuition and fees. This WUE tuition rate is in-state tuition plus 50 percent of that amount. Because Montana State University Billings College of Technology participates, residents of Montana may enroll under the same terms in designated institutions and programs in other participating states.

Resident students from the following states may participate if they meet eligibility requirements: Alaska, Arizona, Montana, California, Oregon, Colorado, Nevada, South Dakota, Hawaii, New Mexico, Utah, Idaho, North Dakota, Washington, and Wyoming.

All degrees and programs are offered to undergraduates in WUE. This program may be subject to enrollment limits established by the Montana Board of Regents.

Application forms for WUE are available at the Office of New Student Services (406) 247-3000 or 1-800-565-MSUB.

Veterans' Affairs Office

McMullen Hall 1st Floor, (406) 657-2158
Veterans are advised to check with the Veterans' Affairs coordinator 30-45 days prior to registration. A veteran must notify this office whenever there is a change in address, enrollment, or additional dependents.

Falsification of Information

Each student is responsible for knowing and for complying with all regulations regarding the admission procedures. Failure to be informed or to comply does not excuse a student from responsibility or from any penalty or difficulty which may be encountered. Misrepresentation or falsification of a student's enrollment status or application for admission will be sufficient grounds to cancel a student's current registration and to suspend the student for two semesters. It is the student's responsibility to know his/her enrollment status at his/ her former institution(s).

Denial of Admission

Under Board of Regents' policy (301), MSU Billings College of Technology "may deny or condition admission, readmission, or continuing enrollment of any individual who, in the judgment of the campus, presents an unreasonable risk to the safety and welfare of the campus and persons thereon. In making such judgment, the campus may, among other things, take into account the individual's history and experience relative (a) to violence and destructive tendencies, (b) to behavior on other college campuses, and (c) to any rehabilitative therapy the individual may have undergone."

Based on this policy and completion of the application for admission and other application materials (which may include but not be limited to the Safety Questionnaire, counselor input, advising or other student affairs interview and input), a student may be denied admission or may be given provisional admission at part-time or full-time status under the guidance of an advisor.

Reasons for denial shall be communicated to the individual in writing. Applicants may appeal their denial to the Vice Chancellor for Student Affairs.

Registration

First-Time Students

1. All first-time students at MSU Billings College of Technology need to apply to the College and be accepted before they can register

2. After being admitted, students should check for the beginning dates for registration (see the University Calendar on page 3), after which students may register at any time.

3. Attend a New Student Registration and an Orientation Session prior to the term of desired attendance. **Attendance at the Registration and Orientation Sessions is expected**. Placement testing, course registration, processing of student identification cards, and other information necessary for a successful first semester at MSU Billings College of Technology is accomplished through these sessions.

4. First-time students at MSU Billings College of Technology are required to visit with an academic advisor prior to registering for classes. Academic advising is provided as part of the Registration Session. A student's course schedule must be approved by an academic advisor before actual registration can take place. The Advising Center is located in first floor of the Tech Building at the COT Campus, (406) 247-3019 and McMullen Hall First Floor, (406) 657-2240 on the senior campus

5. **As students are expected to complete 60-72 credits over a four-semester period of time to graduate in two years, a minimum of 15 or more credits must be taken each semester. To encourage students to take a full load of 15 or more credits, a "Flat Spot" in the tuition has been created allowing students to register for 12-18 credits for the same tuition as 12 credits. Thus, whether one registers for 12, 15 or 18 credits, the same tuition applies. It is clearly to students' advantage to register for 15 credits or more a semester.**

6. Once the course schedule has been approved, the student should follow registration instructions found on the web at www.msubillings.edu or from the advising office.

7. Some classes may be restricted or closed and need departmental approval. Student should see department for assistance in registering for these courses.

8. Students may add courses during the first seven instructional days of the semester before permission of the instructor or department chairperson is required. Dropping a course with a partial refund is permissible through the 15th instructional day, and a course may be dropped without a grade penalty up through the 13th week of the semester. With instructor and advisor approval, a course may be dropped up until 10 class days (not including finals) from semester's end. Once a course grade is submitted, the course may no longer be dropped without instructor and advisor approval.

9. Students who have not paid their bills by the close of business on the 3rd day of classes will be dropped from their classes.

10. If registration takes place after the third day of the semester, a late fee will be added to the registration charge.

Registration Regulations

Late Registration

Students are expected to complete registration within the dates stated. For any delay beyond that period, unless such delay is caused by University officials, a late registration fee will be charged as stated in the Catalog. Students permitted to register late must pay the full fees. Students who fail to pay or do not have their fees arranged before the final fee payment day will have their classes deleted for that semester.

Transcript(s) from Former School(s) and College(s)

All official records (transcripts) of former college study must be filed in the Office of New Student Services by new students (and by former students if they have attended other colleges since last attending MSU Billings) before registration is considered complete. (See Non-Degree Policy and Procedures under Admissions Section.) Failure to file transcripts with the Office of Admissions and Records within a reasonable time makes necessary the cancellation of a student's registration. Responsibility for securing transcripts rests with the student.

Adding Courses

Students may add courses during the first seven instructional days of each semester. Students may add courses after the seventh instructional day and through the 15th instructional day only with the instructor's and department chairperson's approvals.

Repeated Courses
When a course which a student has previously attempted is repeated, only the most recent course credit and grade is calculated into the student's grade point average, even if the most recent grade is lower. (Note: the original course and the grade remain on the official transcript in addition to the more recent course and grade). In order to inform the Office of Admissions and Records of a repeated course, the student must file with the Office of Admissions and Records a Repeat Form that identifies the proper course numbers.

No prerequisite course may be repeated if the more advanced course has been completed with a grade of "C" or better. Exception may be considered upon appeal to the chairperson of the department in which the course is offered.

Veterans' Credits (Credit for Military Service)
Credit may be granted for military service and for completed military service schools based upon the recommendations of "A Guide to the Evaluation of Educational Experiences in the Armed Forces." Application for such credits should be made at the Office of Admissions and Records.

Credit Recommended by the National Guide to Education Credit for Training Programs
Credit may be granted to students based on the recommendation of the *National Guide to Education Credit for Training Programs* and the National Program on Collegiate Sponsored Instruction.

Academic Regulations

Flat Spot
As students are expected to complete 60-72 credits over a four-semester period of time to graduate in two years, a minimum of 15 or more credits must be taken each semester. To encourage students to take a full load of 15 or more credits, a "Flat Spot" in the tuition has been created allowing students to register for 12-18 credits for the same tuition as 12 credits. Thus, whether one registers for 12, 15 or 18 credits, the same tuition applies. It is clearly to students' advantage to register for 15 credits or more a semester.

Credit Overload
Any student not on probation may register for up to 18 credits per term. However, individual students who have a 3.00 grade point average (GPA) may register for up to 20 credits per semester without consent being required. Students who wish to register for a credit load in excess of 18 hours, but who have less than a 3.00 GPA must have approval of the chairperson of the department in which they are majoring. Students who have a 3.00 GPA and wish to register for a credit load in excess of 20 credits per semester must have the approval of the chairperson of the department in which they are majoring, complete a Request for Overload form, and return the form to the Advising Office.

Change of Major
A student who considers such a change is warned that the requirements of the new curriculum may make necessary the completion of additional credits if the student is to fulfill requirements for graduation. Students need to visit the Advising Center (COT Tech Building 1st Floor/McMullen Hall 1st Floor) to obtain assistance with a change of major.

Final Examinations
Final examinations are scheduled during the last week of each semester. A final examination schedule is available at the Office of New Student Services and on the web at www.msubillings.edu.

Accelerated Coursework
Students are encouraged to decrease the time required to complete a degree by gaining credit for knowledge they have obtained which duplicates that which is taught in specific courses. Students should initiate requests for such academic credit by consulting first with their advisor or department chairperson. The following provisions indicate ways accelerated credit may be awarded.

Course Substitution
Students may request a substitution for any stated course if they have previously completed a college course in which the subject matter closely parallels that of the course for which they request the substitution. All substitutions must be approved by the academic department chairperson. In no instance will a reduction be made in the number of credits required for any academic program.

Challenging Courses
Each department or unit determines the courses which may be challenged. A course may not be challenged when the course is a prerequisite to a more advanced

course already completed. Students are advised to check with individual departments for detailed procedures to be followed.

Procedure for Challenging a Course
The student should obtain a recommendation from the instructor of the course being challenged and the approval of the chairperson of the department in which the course is listed. The following conditions apply to the challenging of courses for college credit:

1. The student must be currently enrolled in MSU Billings College of Technology.

2. Approval of the challenge request must be made by the chairperson of the department in which the course is listed, who will decide whether the challenge shall be by a comprehensive examination and/or by some other evidence of competence in the subject matter of the course.

3. Challenge credit may be granted only if the grade received is "C" or higher.

4. A course previously taken as an audit course or as a credit course may not be challenged for credit.

5. By action of the University's Academic Senate, AP, CLEP and DANTES credit is awarded with a "P" grade. Departmental challenges may carry a letter or "P" grade.

   The Board of Regents has authorized the American Council on Education's Guide to Educational Credit by Examination and National Program on Noncollegiate Sponsored Instruction for use to establish minimum scores and credit.

6. Currently enrolled students may receive credit on their transcript for successfully completed Advanced Placement (AP) exams, DANTES exams, College Level Examination Program (CLEP) exams or challenge exams prepared by the Academic Department. For the credit to be applied to an MSU Billings College of Technology transcript, the following procedure must be followed:
   Students or departments must turn in challenge documentation to New Student Services Office after the successful challenge has been completed. Admissions and Records will enroll students for the course during a semester when they are planning to enroll in 12 or more credits. Additional tuition and mandatory fees are not charged for credits taken in the tuition "flat spot" between 12 and 18 credits. AP and CLEP credits are added to student transcripts after the 15th class day each term.

Independent Study
Well-qualified students may undertake academic work in the form of independent study. The number of credits will be determined by the instructor and approved by the department chairperson. Courses listed in the Catalog as regularly offered courses may not be taken under the designation of Independent Study.

Advanced Placement
Advanced placement in certain academic areas with sequential or prerequisite courses is available to students with a high degree of competency. Normally, advanced placement is made on the basis of standardized tests and other evidence of competency in the area. Should students demonstrate sufficient competency as determined by the appropriate department, they are placed at a level in the course sequence commensurate with their abilities. Satisfactory results of the advanced placement procedure are reported to the Office of Admissions and Records by the responsible department with a grade report. AP for High School Students and College Level Examination (CLEP) are two types of Advance Placement examinations that the college accepts. For more information please refer to the MSU Billings General Bulletin, contact the Admissions and Records Office at (406) 657-2158.

Prior Learning Assessment Policies and Procedures
At Montana State University Billings College of Technology, students may earn credit through a variety of methods including work experience and challenge tests. Our University will work with the student to determine which type of experience can be translated into credit. Several options are as follows:

1. Challenge tests, such as CLEP and DANTES, allow the student to study for and test out of equivalent college-level courses. Study guides are available in Career Services or the College of Technology Library and Testing Center to assist students in preparation for these tests. Tests can be scheduled at the College of Technology (406-247-3025).

2. Students may have already earned credit through work-site training or government-sponsored workshops or military experience. If students have certificates or documentation, which state that the American Council on Education (ACE) or the National Program on Non-collegiate Sponsored

Instruction (PONSI) assesses that training, credit may be available for coursework for which there are equivalencies in MSU Billings College of Technology's curriculum. Military credit is assessed from the DD214, DD295, or military transcript. Questions about this type of training or military credit may be directed to University Admissions Office at (406) 657-1747.

3. In addition to the methods listed above, our University also offers students the opportunity to earn credit through Prior Learning Assessment. This assessment will take into account work experience or other learning experiences, which do not fall into the categories described above, but which can be assessed through the development of a portfolio. Up to 15 credits can be earned through Prior Learning Assessment, and this type of credit will be graded with "P" if credit is earned (Pass/No Pass credit guidelines can be found on page 44). The University offers individual instruction for students throughout the process of preparing this portfolio. For more information on Prior Learning Assessment, please call the University Admissions Office at (406) 657-1747.

4. Implementation of this policy needs to be consistent with existing departmental policies and consistent with accreditation policies and practices already in place in the various colleges (NCATE, AACSB, etc.).

Prior Learning Assessment Guidelines

A. Prior to enrolling in this course, students must have successfully completed 12 credits of college-level coursework with a 2.50 GPA from an accredited institution within the past five years. Prior credit must also include completion of ENGL 150 or its equivalent.

B. The student will first select the MSU Billings College of Technology course the student wishes to complete through Prior Learning Assessment. Second, the student will contact the on-campus instructor for that course to determine whether the student can meet the course objectives through this method of assessment. If the student receives a positive recommendation from the instructor or department chair or dean, the student may proceed with the portfolio process for that course; however, a positive recommendation does not guarantee the award of credit.

C. The student's completed portfolio is examined first by the College of Professional Studies and Lifelong Learning for approval or returned back to the student for additional documentation. If approved, the portfolio is forwarded to the chair of the department in which the students seek to receive credit and the faculty member from whom the student received the recommendation. If approved by both the chair and the faculty of record, the portfolio goes to the Academic Standards and Scholastic Standing Committee which consists of faculty appointed annually. Final action on the awarding of credit takes place in this committee. Credit awarded may not be the same as the number of credits requested by the student's portfolio.

D. Credit recommendation and documentation for the coursework is forwarded to the Registrar if the assessment is successful. Coursework is posted on student's transcript using the course equivalent assigned by the portfolio assessment process.

E. Up to 15 credits may be earned through this procedure and coursework will be graded Pass/ No Pass. Students may submit subsequent requests to earn credit through prior learning assessment after initial completion of the seminar course. Registration and program guidelines shall be those in force at the time of the subsequent request.

Auditing Coursework

(No credit awarded)

Any person enrolled for audit will be certified as such by the Office of Admissions and Records and will not receive credit for the course nor be required to take examinations. An audit needs to be declared during the first seven instructional days of a semester. A student who registers to audit a class will not be permitted in any COT class which requires any laboratory or clinical work. Any exceptions to this policy must be approved by the appropriate team leader and dean.

Currently enrolled students who elect to audit a class pay the normal credit hour fee as outlined in the student fee schedule. Any person not otherwise enrolled or registered in a course for college credit may, with instructor approval, audit the course at the cost of $5 per credit hour. These fees are nonrefundable.

An audit is at the discretion of the course instructor. In order to audit, the student must obtain instructor's permission and instructor's signature on an audit card. This card is available from Admissions and Records (McMullen First Floor). When the student has completed the audit card with the faculty signature and cashier payment, the card is returned to New Student Services.

A student may not later establish credit in a course that was taken under the audit option by taking a special examination. In all cases, students who register for regular credit and pay regular fees will have priority for enrollment in a class over those students who audit the class.

Class Attendance and Student Absences

Members of the faculty determine the attendance policy for their classes. Absences for official University activities are permissible providing the instructor is notified in advance of such an absence. An official University activity is an activity where a student officially represents the University through an academic department, sponsored University program, or an officially registered student organization. In all absences, the student is responsible for all requirements of the course.

Requests for absence for special events shall be submitted to the Vice Chancellor for Student Affairs on the Student Travel Authorization form. This form should be obtained from the Office of the Vice Chancellor, room 201, McMullen Hall, at least one week in advance of the expected absence. This procedure will assure students the opportunity to make up examinations given when official University activities are scheduled.

Class Enrollment Lists

Faculty may obtain class lists each term online. Only students who are regularly registered for a course may attend. No grade or credit will be given to students for any course in which they are not properly registered.

Extent of Official Absence

When issued, an official absence is an excuse for time only and does not mean that a student is excused from the study assignment for that period. Each student is responsible for making up all work missed, as required by the instructor.

Drops and Withdrawals

Dropping a Course

Dropping a course is permitted through the seventh week, 35th day of the semester. There is no penalty for failing work through the drop period. Dropping a course is also permitted through the 13th week and up until 10 class days from the official end of the semester (not including final) with the approval of the student's academic advisor and course instructor. Once a course grade is submitted, the course may no longer be dropped without instructor and advisor approval. After the 13th week, students may not drop courses, and the instructor will assign a letter grade. The mark "W" is assigned to any course dropped after the 15th day of class.

After the 15th class day and before the 13th week, all drops must be formal and must be recorded by the student with the Office of Admissions and Records

In all courses in which a student fails to complete all requirements and for which no formal withdrawal has been filed in the Office of Admissions and Records, the final grade for the course shall be an "F."

Withdrawal from College

Students who withdraw from the College of Technology during a semester are required to fill out a withdrawal form and complete an exit interview with an advisor in the Advising Center located on the first floor of COT Tech Building.

Students who officially withdraw during the first fifteen days of an academic term will not have the coursework reflected on the transcript. Students who withdraw after the third week will receive a grade of "W" (Withdrew) in all classes.

Students who do not officially withdraw from classes will receive letter grades (other than a "W" grade) to be determined by the instructor of each class.

Student Tuition and Fees

The student fee information provided in this Catalog is based upon policies of the Board of Regents of Higher Education in effect at the date of publication. ***The Board of Regents of Higher Education reserves the right to change the fees at any time without notice.*** *Additional information concerning fees may be obtained by contacting the Business Office, COT Tech Building, 3803 Central Avenue, Billings, MT 59102 (406) 247-3002 or McMullen Hall ground floor west, Montana State University Billings, 1500 University Drive, Billings, Montana 59101-0298, (406) 657-2301. Check us out at www.msubillings.edu/boffice then select Student Account Information.*

Students are encouraged to have adequate funds on deposit in a local bank in order to be able to write checks for the payment of tuition, room and board, books, supplies and other fees. Foreign checks are not accepted. Student enrollment is not complete until all fees have been paid, or satisfactory arrangements have been made with the business office.

All undergraduate and graduate students enrolling at Montana State University Billings College of Technology must pay the required fees in the fee schedule for each semester.

Semester Tuition and Fee Schedule
Effective Fall Semester, 2009

Tuition and fees are subject to change by authorization of the Board of Regents of Higher Education. If you have questions on the current fees, please call the MSU Billings College of Technology Business Office at (406) 247-3002 or stop by the COT Business office, COT Tech building 1st floor. Comprehensive fee and extra fee tables are available through the MSU Billings website at www.msubillings.edu/boffice under Student Account Information.

A student paying for 12 credits in a semester can take an additional 6 credits for no additional tuition. This is referred to as the "flat spot" in the Tuition and Fee Schedule.

Tuition and fees for graduate studies, extended studies, summer session, workshops, and conferences may be in addition to or in lieu of the required fees. Please consult the publications pertaining to the special session, course, workshop or conference to determine those fees.

Fee Schedule Explanation
Required Tuition and Fees Per Semester

Registration Fee
A $30.00 nonrefundable fee is assessed each enrolled student per semester.

Tuition Fee
Students are charged tuition each semester to pay for the delivery of the education they are receiving. Resident students are subsidized by the State of Montana and pay a reduced tuition rate.

Associated Students Activity Fee & Recreational Activity Fee
Students enrolled for seven credit hours or more each semester are required to pay for activities sponsored by the Associated Students of Montana State University Billings. Students enrolled for less than six credit hours pay a reduced activities fee each semester. **Online only students do not pay these fees.**

Academic Building Fee
The Academic Building fee varies based on the number of credit hours taken. The funds generated from this fee are used to pay a portion of the costs of repair, maintenance, and operation of the state owned buildings on campus.

Resident and Nonresident Building Renewal and Replacement Fee
All students are charged a building fee for the building and replacement of campus structures. A reduced rate

is charged to students taking less than 7 credits. A nonresident building fee is collected in addition from all students who are not residents of the State of Montana.

Equipment Renewal and Replacement Fee
Enrolled students are assessed an Equipment Renewal and Replacement Fee each semester. This fee is used to replace obsolete equipment with new equipment and cover costs of equipment repairs.

Student Union Fee
Each semester students are assessed a fee pledged for the operation of the Student Union. Students enrolled for less than four credit hours pay a reduced fee.

Computer Fee
Students are assessed a computer fee to cover the expense of student used computer equipment and labs.

Athletic Fee
Students enrolled at MSU Billings College of Technology are assessed a fee to subsidize the University's athletic department and associated activities. Students enrolled for seven credits or less pay a reduced athletic fee. **Online only students do not pay this fee.**

Library/Assessment Fee
All students are assessed a Library/Assessment fee. Funds generated from this fee are used for the purchase of new and replacement books, periodicals, and assessment tools.

Technology Replacement Fee
All students are assessed a tech replacement fee. This fee is used to support the information technology infrastructure. All students accessing email or the web are utilizing and benefiting from the tech replacement fee.

Comprehensive Health Plan
Student health coverage consists of two parts:

Health Service
All students are entitled to services provided by the Student Health Center. Students enrolled in 7 or more credits are charged a mandatory fee. Students enrolled for six credit hours or less may have the benefits of the Health Center services by electing coverage and paying the semester fee. **Online only students do not pay this fee.**

Health Insurance
All students enrolled in 7 or more credit hours will be automatically enrolled in the health insurance plan and assessed the health insurance premium. *Any student covered by another health plan must access the insurance waiver form via the student secure website prior to the 15th class day and their account will be adjusted.* Students who enroll for four to six credit hours may participate in the health insurance plan upon request by enrolling in the plan, paying the insurance premium and the Health Service fee. Students taking less than four credits may petition to enroll in the health insurance plan.

Additional Information Regarding Fees

Withdrawing from All Classes and Refunds
The following refund schedule applies to the standard semester format. For courses taught in nonstandard format such as Intersession, and special workshops, there are no refunds after the first day the class meets. See the Summer Session catalog for information regarding the refund policy during summer.

1. Registration fee is nonrefundable.
2. 90 percent of all remaining mandatory fees will be refunded to the end of the fifth classroom day.
3. 75 percent of all remaining mandatory fees will be refunded to the end of the 10th classroom day.
4. 50 percent of all remaining mandatory fees will be refunded to the end of the 15th classroom day.
5. Refunds will not be made after the 15th day of classes. Exceptions to this may occur in the case of financial aid students subject to the federal pro rata refund policy.
6. Refunds are determined as of the day the student officially withdraws from college and not from the date of last class attendance.
7. Classroom days are determined by the college calendar—not by the student's class schedule.

MSU Billing College of Technology students receiving Title IV funds and who officially or unofficially withdraw or are expelled, up to the 60% point of the semester, may be required to return federal funds. Students may also be entitled to a post withdrawal refund up to the 60% point of the semester. Examples of the Federal Title IV policy may be obtained at the MSU Billings Financial Aid Office.
Financial aid recipients will not receive refunds until their financial aid is repaid (Pell Grant, SEOG Grant, SSIG Grant, Perkins Loan, FFEL Loans, fee waivers, and some scholarships). If the refund is insufficient to repay the financial aid programs, students will be billed for the over-awards.

Students who owe over-award repayments to any federal aid programs cannot receive future financial aid until repayment is made in full.

Changes in Credit Load After Payment of Fees

Students adding classes after payment of fees are required to pay additional fees created by the change in credit load. Payment for these charges is due immediately.

Students dropping classes (but not withdrawing) will receive a 100 percent refund on classes dropped before the end of the 15th classroom day. Refunds will not be made after the 15th classroom day. Students will be assessed a $5.00 drop fee for each class dropped.

Payment of Fees

Financial Aid students must pay for fees prior to classes beginning. The student's financial aid will be applied to the student's account with any refund being mailed to the student prior to the first day of classes. Please call the Business Office at (406) 247-3002 for details, or visit us at www.msubillings.edu/boffice.

Payment may be made by credit card (VISA, MasterCard, and Discover) in person, by mail, or via the internet by accessing the student secure website and selecting the student online payment option.

Fees may be paid after courses are selected. To avoid a $40.00 late registration charge, fees must be paid by the date posted for each semester as indicated in the calendar. Fees may be paid by mail. To request that a fee statement be mailed to you, call (406) 247-3002.

Students may elect to pay their fees in installments. The installment payment method requires approximately 1/4 down, 1/4 within 30 days, 1/4 within 60 days, and 1/4 within 90 days. A $30.00 administrative charge is assessed to students using the installment method. Students not paying in accordance with the terms of the deferred fee contract will be charged a $15.00 late payment fee per installment, and may have their enrollment canceled.

If the student withdraws from the University and the installment contract is not paid in full, any refund due the student is applied first to the unpaid balance of the contract. Withdrawal from the University does not void the contract and the University refund policy will be followed.

Non-Payment of Fees

No person who owes Montana State University any fees, fines or other charges will be permitted to (1) receive academic credit or grades; (2) register; (3) secure a transcript, diploma, or other record; or, (4) access any MSU Billings facilities or services, regardless of the relationship thereof to the amount owed, until the full amount due has been paid or satisfactorily adjusted with Business Services. Any attorney's fees or other costs or charges necessary for the collection of the amount owed may be added to the balance due, including collection agency fees. MSU Billings shall have the right to apply any portion of any amount it may owe such individual for any reason, including wages, to payment of the balance owed MSU Billings.

Other Fees

Late Registration Fee

A nonrefundable fee of $40.00 is payable by all students who do not pay during the designated fee payment period unless their late payment was due to the fault of Montana State University Billings. If a bank declines payment on a check and returns it to Montana State University Billings, a late registration fee shall be charged to the student offering the check in payment of fees. The late registration fee applies to students enrolled for six credit hours or less beginning the second week of classes.

Audit Fee

Students who elect to audit a course must pay the normal per credit hour fee as outlined in the student fee schedule.

Listening Fee

Any person not otherwise enrolled, and who does not want to register in a course for college credit, may with instructor approval enroll upon payment of a $5.00 per credit hour fee. Listening fees are nonrefundable.

Application Fee

A $30.00 nonrefundable application fee is assessed to each person applying for admission for the first time as an undergraduate student. Normally, this fee applies only to the period for which the person is making initial application at the undergraduate level. If the applicant is accepted and does not register, admission to MSU Billings is cancelled. The applicant has one calendar year from the semester of initial application to apply for readmission without paying an additional application fee. After one year, the $30.00 application fee is assessed again

Course-Related Fees

Several Montana State University Billings College of Technology courses require additional fees. Examples of these are art classes, science labs, or field trips. Some practicum and internship classes require an extra fee for professional liability insurance. A complete

schedule of course related fees are available from the Business Office web site: www.msubillings.edu/boffice

Electronically Mediated Course Fees
Interactive television courses and online courses are assessed additional fees per credit hour. Electronic mediated fees are non-returnable after the 5th classroom day.

Graduation Fee
A nonrefundable fee is assessed per degree for each application to graduate. Please call Admissions and Records (406-247-3000) for details.

Transcript Fee
Students may receive one free official transcript. Each official transcript thereafter costs a minimal fee. Please call Admissions and Records (406-247-3000).

Parking Fees
MSU Billings provides parking for students who live off campus, for a fee. All vehicles parked on University property must display a current MSU Billings parking permit on weekdays when the University is in session during the hours specified in the "MSU Billings Traffic and Parking Regulations" brochure. Students may pick up parking permits from 8:00 a.m. - 3:30 p.m. Monday through Friday at the College of Technology Business Office.

Residence Halls Meal Plan
All students living on campus are required to purchase a meal plan each semester. Please check online at www.msubillings.edu/dining/ for meal plans, benefits of the plan, and services.

Western Undergraduate Exchange (WUE)
Montana State University Billings College of Technology participates in the Western Undergraduate Exchange (WUE), a program of the Western Interstate Commission for Higher Education and other western states. Through WUE, students from Alaska, Oregon, California, Colorado, Nevada, South Dakota, Hawaii, New Mexico, Utah, Idaho, North Dakota, Washington, and Wyoming may enroll in degree programs paying resident tuition plus 50 percent of that amount (plus other fees that are paid by all students). Students should be aware that the Montana Board of Regents may change regulations concerning Montana's participation in the WUE Program. Students may contact the Office of Admissions and Records at MSU Billings College of Technology, (406) 247-3000 or 1-800-565-MSUB for more information.

Determination of Resident Fee Status
The Montana University System classifies all applicants for admission and students as either in-state or out-of-state. The basic rules for making the classification are found in Board of Regent's policy. It is each student's responsibility to secure and review a copy of the policy. Failure to be aware of the rules will not be cause for granting exceptions to them. A copy of the policy is available from the Office of Admissions and Records at Montana State University Billings College of Technology. Each residency determination is based on the unique set of facts found in each individual's case. If students have questions regarding their case, they should contact the Office of Admissions and Records.

Dishonored Check Policy
An administrative service charge of $15.00 is assessed each time a check is returned by a bank. Any check tendered in payment of fees and returned by a bank may result in the postponement of a student's registration and/or the assessment of the late registration fee.

Financial Aid and Scholarships

COT Tech First Floor, (406) 247-3004
McMullen First Floor, (406) 657-2188

The Office of Financial Aid and Scholarships at Montana State University Billings College of Technology provides advice and financial assistance to students. Although families and students are expected to make a maximum effort to meet the costs of education, financial aid is available to fill the gap between family resources and educational expenses.

The amount of financial aid awarded is generally a combination of grants, loans, and employment. The award is based on the evaluated financial need of the student. The estimated financial need is the difference between the cost of attending MSU Billings College of Technology and the ability of the student and/or family to contribute to those education costs as determined by the Office of Financial Aid and Scholarships.

To apply for financial aid, students must complete the Free Application for Federal Student Aid (FAFSA). This form should be completed on the web at www.fafsa.ed.gov. Early application is essential. Priority awarding will be given to those students who have a complete file in our office on March 1. Students should allow up to two months if they file a paper application and two weeks for processing the web application. The FAFSA must be filed annually.

Verification

Some students will be required to submit tax returns and other documents to verify the information submitted on their FAFSA application. The University must verify all applications selected by the FAFSA processor.

What Does College Cost?

To help students make a realistic evaluation of their financial needs, the following are estimated costs of attending MSU Billings College of Technology for the academic year 2009-2010 from September to May. There are, of course, wide variations in actual cost, depending upon individual needs and the resourcefulness of students. The estimated budgets shown below do not include transportation expenses, health insurance, Internet fees for online classes and personal costs.

UG Full Time Resident COT Student (two semesters)

*Registration, Tuition, and Miscellaneous Fees	$3,850
Books and Supplies	$1,000
Board and Room	$5,000
Total	**$9,850-$12,900**

UG Full Time Non-Resident COT Student (two semesters)

*Registration, Incidental, and Miscellaneous Fees	$7,530
Books and Supplies	$1,000
Board and Room	$5,000
Total	**$13,530**

*Tuition and fees are subject to change by the Montana University System Board of Regents.

General Eligibility Requirements

All financial aid recipients must meet the following eligibility requirements:

- Be enrolled/accepted for enrollment in a degree or certificate program.
- Not be enrolled in an elementary or secondary school.
- Have a high school diploma or GED.
- Be a citizen or eligible non-citizen.
- Maintain satisfactory academic progress.
- Not be in default on Perkins Loans, Stafford Loans, or PLUS Loans at any institution.
- Not owe an overpayment of Pell or SEOG.
- If required, must register with the Selective Service.
- Cannot have borrowed in excess of loan limits.
- Have need, as defined by individual program requirements (except for unsubsidized Stafford Loans and PLUS Loans).
- Meet any other program-specific criteria.

Grants

Federal Pell Grant

Federal Pell Grants are awarded to undergraduate students who have not earned their first bachelor's degree. Pell eligibility is determined by a formula

developed by the U.S. Congress and is applied consistently to all applicants using the information reported in the FAFSA.

Federal Supplemental Education Opportunity Grant (FSEOG)

This grant is awarded to undergraduate students who have not earned their first bachelor's degree and have financial need. Priority is given to students who receive Pell Grants. Eligible students may receive up to $1,000 per year depending on need.

Baker/MTAP Grant, Montana Higher Education Grant, Access Grant, MSGLP Grant

To qualify for one of the state grants, a student must be a Montana resident, be eligible for financial aid, be enrolled or accepted for enrollment as an undergraduate student. Enrollment in at least twelve credits is required for most state grants. Eligible students may receive awards up to $1,000 per year depending on need.

Scholarships

Montana State University Billings College of Technology has many scholarships available to students. Any prospective or currently enrolled student may apply for a scholarship by completing a General Scholarship Application Form available online at http://www.msubillings.edu/finaid/Scholarships.htm. Since the requirements and criteria are different for each scholarship, it is advisable for students to use the general application to be considered for all scholarships. **The Scholarship Application deadline is February 1 for continuing and returning students. New and transferring students can apply for scholarships when they apply for admission to the college.**

Employment

Federal and State Workstudy Programs

The workstudy programs at MSU Billings College of Technology are funded with federal and state dollars to provide students who are in need of financial assistance with part-time employment on and off campus. Off campus workstudy jobs are limited to community service employment. Hourly rates of pay comply with minimum wage laws and vary with the type of work and the student's experience and responsibilities. Student employees are paid every other week, according to State of Montana payroll schedules.

Student Employment

The Job Locator assists MSU Billings College of Technology students in obtaining part-time employment in the community. Area businesses list job opportunities with the Job Locator. The Job Locator Service is free to all MSU Billings College of Technology students and is not based on financial need. Students who are interested in obtaining employment should refer to the Financial Aid web site, http://www.msubillings.edu/careers/linksSJobs.htm for available job listings.

Loans

Loans are a major source of aid for students. Student loans must be repaid after the student graduates, withdraws from school, or drops below six credits. Interest rates and repayment requirements vary depending on the type of loan.

Federal Perkins Loan

A Federal Perkins Loan is a low-interest (5%) loan for both undergraduate and graduate students with financial need. The school is the lender. A typical award at MSU Billings College of Technology is $2,000/year. Repayment of the Perkins Loan is deferred while the borrower is enrolled at least half-time in an approved institution of higher education. Interest begins to accrue and repayment starts nine months after the borrower ceases to be enrolled at least half-time. Repayment may be extended over a maximum of 10 years. Under certain circumstances the Perkins Loan can be forgiven. For information regarding loan forgiveness and deferment, please contact the Office of Financial Aid and Scholarships.

Federal Family Education Loan Program (FFELP)

Federal Loans are low-interest loans funded by banks, savings and loan associations, and credit unions to undergraduate and graduate students attending school at least half-time. Students must complete the Free Application for Federal Student Aid (FAFSA) in order for the University to determine loan eligibility.

FFELP loans can be subsidized and unsubsidized. A student may receive both during an enrollment period. A subsidized loan is awarded on the basis of the student having unmet financial need. The student will not be charged any interest until payment begins. Unsubsidized loans are not awarded on the basis of financial need. Interest accrues to the student from the time the loan is first disbursed. If the accrued interest is not paid while the student is in school, the interest

owing at the time the student goes into repayment will become part of the principal and increase the amount of the original loan.

Repayment of the Federal Stafford Loan begins six months after the student graduates, leaves school, or drops below half-time. Students have up to 10 years to repay. Deferment and forbearance options are available to students under certain circumstances. The Office of Financial Aid & Scholarships is your resource for more information regarding FFELP loans.

Federal Stafford Loan and Unsubsidized Federal Stafford Annual Loan Limits

First year	$5,500-$9,500
Second year	$6,500-$10,500

Aggregate Loan Limits:

Undergraduate	$23,000-$57,500

Federal PLUS Loan

Federal PLUS Loans are unsubsidized loans made to parents of dependent students. Parents may borrow the cost of attendance less other financial aid. Interest is 8.5%. Federal PLUS borrowers generally must begin repaying both principal and interest within 60 days after the loan is disbursed. MSU Billings College of Technology does require students to complete a FAFSA before a PLUS loan will be awarded.

Alternative Educational Loans

Alternative educational loans are unsubsidized private loans available from lenders. More information can be obtained in the Office of Financial Aid and Scholarships or through participating lenders.

Fee Waivers

MSU Billings College of Technology has fee waivers for veterans, senior citizens, Montana American Indians, faculty and staff, advanced honor students, athletes, graduate students, war orphans, dependents of firemen and policemen killed in the line of duty, and students with certain majors. Eligibility and selection criteria vary. Certain fee waivers require a separate application form and in some cases additional documentation in order to qualify. To be eligible for Department fee waivers students must complete the General Scholarship Application before the February 1 deadline. Inquire at the Office of Financial Aid and Scholarships for specific information regarding fee waivers.

Other Programs Available to Students

State Vocational Rehabilitation Service

Students with disabilities may qualify for educational assistance through the Montana Department of Social and Rehabilitation Service. In Billings they can be contacted at 406-248-4801.

Veterans' Benefits

Students may apply for veterans' educational benefits through the Veterans Administration. Information can be obtained from the campus Office of Admissions and Records or the student's local office of the Veterans Administration.

Tribal Grants

Assistance is available to many American Indian students through Tribal Higher Education Offices. The award limits are based on the student's need and the availability of funds. Further information may be obtained by contacting the student's tribe or the tribal higher education office.

Financial Aid Satisfactory Academic Progress Standards

Students are expected to maintain certain academic standards and make satisfactory progress toward a degree. In accordance with Federal and State laws and regulations, MSU Billings College of Technology has established a policy to define and administer standards of academic progress for all students. Detailed information explaining the financial aid satisfactory progress standards, including the appeal and reinstatement process, is available on line at www.msubillings.edu/finaid/SAP.htm.

Refund Policy

The institution's refund policy for students who withdraw from college ranges from a 90 percent refund for class days one through five; 75 percent for class days six through 10; 50 percent refund for class days 11 through 15; there are no refunds after the 15th day of classes. Students with financial aid may have to return some or all of the financial aid they received if they withdraw or if they do not begin attending classes.

Financial Aid – Summer Session

Summer financial aid is based on the FAFSA information used to determine eligibility for the previous fall and spring semesters. To determine aid

eligibility for summer, students must provide a copy of their summer schedule to the Office of Financial Aid & Scholarships. For specific information please visit our web site at: http://www.msubillings.edu/finaid/SummerFinAid.htm.

Student Affairs & Student Support Services

Montana State University Billings College of Technology provides academic and student support programs and extracurricular activities that enhance and enrich the total student life of the University. A wide range of services, challenges, and opportunities are available for every student including programs delivered through the Division of Student Affairs and other activities that affect student life from admission through graduation.

Montana State University Billings College of Technology also provides a number of support facilities and services on campus to help you succeed in your academic efforts. Facilities include such obvious ones as the library and computers.

MSU Billings Division of Student Affairs Mission Statement

We commit ourselves to students by providing quality services to facilitate the achievement of academic and personal goals. In cooperation with the campus and community, we will strive to provide a diverse student population with a supportive and caring environment and the tools to meet the challenges of the future.

Student Rights, Responsibilities and Conduct

The Board of Regents statement regarding students' rights and responsibilities is as follows:

> "The Montana University System is committed to the full support of the constitutional rights of its students, including due process of student disciplinary matters. At the same time, each unit has an obligation to protect its own educational purpose and the interests of its student body. Each educational institution is dedicated not only to the learning and the advancement of knowledge, but also the development of responsible persons. These goals are achieved through a sound educational program and through policies governing student conduct that encourage independence and maturity.
>
> "Students are subject to federal, state, and local laws, as well as the institutional rules and regulations. A student is not entitled to greater immunities or privileges before the law than those enjoyed by citizens generally. The University System cannot and will not abrogate its responsibility to protect its property, its purpose and processes, and may take appropriate disciplinary action, independent of any action taken by the courts, whenever a student commits an offense which would have an adverse effect on the institution.
>
> "Since there are appreciable differences between institutions in tradition, environment, mission, clientele, and institutional character, each unit of the Montana University System is authorized to establish rules and regulations for student conduct, within the overall state system philosophy, that are appropriate to the unique needs of an institution. The administration of each unit, in consultation with faculty and students, shall formulate these rules and regulations, and all students shall assume the responsibility for compliance with them upon entering the institution."

MSU Billings has formulated rules and regulations and has established a disciplinary system to administer and enforce these rules and regulations. The Student Code of Conduct, noted on the MSU Billings website, provides details regarding the rules, regulations and disciplinary procedures which will be followed.

Academic Advising

COT Tech Building 1st Floor, (406) 247-3019
McMullen First Floor, (406) 657-2240
www.msubillings.edu/advise

The Advising Center offers advising services to all new admitted, transfer and re-admit students for the first few semesters. The Advising Center assists students with understanding the coursework and requirements for their major, registration, and academic planning. Upon completion of the first few semester(s) in good academic standing the student is transferred to a faculty advisor in their major. Students should call this office for an appointment to begin the process of choosing coursework and determining an academic plan of study.

Mandatory Advising

All first-time freshmen students entering MSU Billings College of Technology are required to see an academic advisor before registering for classes. During the initial advising session, students will receive information regarding requirements and worksheets for their academic program.

Advisors assist students with selection of courses and academically-related issues, but the ultimate responsibility for meeting graduation requirements belongs to the student.

General Studies Students
Students who have not selected a major are registered as General Studies majors. In an effort to assist students in completing degree requirements as efficiently as possible, General Studies students are encouraged to focus on Academic Foundations requirements their first semester. Students are also encouraged to visit the Office of Career Services to explore career interests and to clarify how their academic program may support their career goals.

Transfer Students
Students transferring to MSU Billings College of Technology are required to submit an admissions application to the University prior to arranging a visit with an advisor in the Advising Center to complete a transcript evaluation and begin developing a plan of study. In order to give an accurate transcript evaluation, transfer students should provide copies of transcripts of all previous college level work. Although we maintain course equivalency guides for all Montana colleges and universities, it is helpful if transfer students can provide catalogs with course descriptions for coursework completed at out-of-state institutions.

Declaring a Major
Students are encouraged to select and declare a major during their Freshman year. Upon declaring a major through the Advising Center, the student's advising file will be updated with academic program worksheets for the major, and a long range plan of study will be developed. Students who have declared a major will be assigned a faculty advisor from their major department for the remainder of their academic career.

Changing a Major
Students who change their major are encouraged to visit with an advisor in the Advising Center. The academic advisor will clarify new program requirements, update the student's advising file with new program worksheets, and forward the student's advising file to the new faculty advisor. The changing of an academic major may have significant impact on a student's long-range academic plan. All students are encouraged to keep in close contact with their advisor through the process of changing majors.

Assessment Testing
All entering students and transfer students who have not completed their general education requirements in English or Mathematics must take the COMPASS Placement test. Results of the COMPASS Placement tests along with ACT scores are used to advise students into the most appropriate math and English courses. The Compass Placement tests are administered during Student Registration Sessions. For further information, contact the Advising Center (406-247-3019 or 406-657-2240) or cotadvising@msubillings.edu.

Academic Support Center

COT Tech Building 1st Floor, (406) 247-3022
www.msubillings.edu/asccot

East Campus: (406) 657-1641
www.msubillings.edu/asc
The Academic Support Center provides services that support the academic success of students at MSU Billings and the College of Technology. All developmental level courses in math, reading, and English are taught in the same buildings as the Centers, and tutorial assistance is provided in the Learning Labs to address the academic needs of students.

The Academic Support Center at the College of Technology provides drop-in tutoring for individuals and small group study sessions in a variety of areas, including math, reading, English, computer applications, anatomy and physiology, drafting and design, and other specialty areas as needed. The Center also provides computers and support materials such as handouts and texts for students' academic use. The Center conducts student-centered workshops throughout the year, focusing on such needs as improving reading comprehension and preparing resumes. Special educational delivery requirements that need to be addressed by persons with disabilities should be directed to Disability Support Services.

Associated Students of Montana State University Billings

SUB 213, (406) 657-2365
www.msubillings.edu/asmsub
The Associated Students of Montana State University Billings (ASMSU Billings) are governed by a Student Senate, the functions of which are to administer and to distribute student activity fees, to act as liaison among students, faculty, and administration, to protect the privileges and the rights of students, and to act as a central agent for student opinion.

Legal Services
The Associated Students of MSU Billings maintain an attorney on staff to assist students with legal problems. While there is no charge to see the attorney, there may be a nominal fee charged for certain types of legal services such as divorce, wills and name change.

Intercollegiate Athletics

Physical Education Building, (406) 657-2369
www.msubillings.edu/athletics

Athletics is an integral part of the college life at MSU Billings for both men and women. College of Technology students may be eligible to participate in intercollegiate athletics. Students must meet all admission requirements for the University East Campus on University Drive. Please contact the COT Director of Student Services for more information, (406) 247-3000. All teams are members of NCAA Division II and the Great Northwest Athletic Conference. Men's and women's teams compete on a varsity level in basketball, cross country, golf, soccer, indoor track and field, outdoor track and field, and tennis; additionally, women compete in volleyball and softball, and men compete in baseball. All MSU Billings students are admitted free to Yellowjacket Athletics events with a valid student ID. Schedules, news, and stats are available on the Yellowjacket Athletics website at www.msubillings.edu/athletics.

Jackets and Company West

COT Tech Building, 1st Floor. (406) 247-3031
Student Union Building, (406) 657-2121
www.jacketsandcompany.com

Jackets and Company West is the College of Technology's branch of the Universities book store. It provides the campus community with textbooks, supplies and supplemental learning tools required in academic courses and operates stores at four locations across the campuses. Jackets and Company also carries a wide selection of school and office supplies, imprinted apparel, computers, software, gifts, greeting cards, and sundries at competitive prices.

Jackets and Company locations are The Union located in the Student Union, the Express located in the L.A. Building and On Broadway located in downtown Billings at 112 North Broadway.

Career Services and Cooperative Education

COT Tech Building, 1st Floor, (406) 247-3006
Library 100, (406) 657-2168
www.msubillings.edu/careers

A full range of career services is available to help students gain experience and skills that will clarify career goals and facilitate entry into the job market. Services include Career Workshops, career counseling and testing, credential file service, career resource library, campus interviewing, Job Locator, and career/job fairs. See www.msubillings.edu/careers for additional information.

Cooperative Education

COT Tech Building, 1st Floor, (406) 247-3006
Library 100, (406) 657-1717

Cooperative Education (Co-Op) internships create educational partnerships among Montana State University Billings College of Technology, the business community, and students. It is a unique academic experience that allows students to earn academic credit while combining classroom learning with practical work experience. Learn more at www.msubillings.edu/careers/cooped/students.htm

Career Services/Job Locator

COT Tech Building, 1st Floor, (406) 247-3006
Library 100, (406) 657-1618

The Job Locator coordinates part-time positions for currently enrolled students. Available jobs can be accessed on the web and range from the service industry to technical positions and are designed to accommodate students' academic schedules.

Financial aid-eligible work-study students can access Community Service positions which enable students to work in non-profit agencies in the local area.

Carl Perkins Funding

The College of Technology receives funding from a grant provided by the Carl Perkins Act of 1998. The Perkins Act is designed to improve educational programs leading to academic and occupational skill competencies needed by all segments of the population to work in a technologically advanced society. Emphasis is placed on improving vocational education services for individuals who are disabled, academically or economically disadvantaged, preparing for nontraditional training and employment, or who are otherwise at an educational disadvantage, such as single parents, displaced homemakers, or those with limited English proficiency. In order to receive continued funding under the Perkins Act, institutions are expected to show constant improvement in their students' rates of academic attainment, degree completion, job placement and retention, and participation and success in nontraditional fields.

William R. Lowe Child Care and Enrichment Center

2630 Normal Avenue
(Across from the Liberal Arts Building)
(406) 896-5820
www.msubillings.edu/childcare

The William R. Lowe Child Care and Enrichment Center was opened in the summer of 2002 to provide child care services for children of MSU Billings

students. The Center is located on the east campus, and it is designed to accommodate children ages 0-5 on a full-time or part-time basis that will best fit the schedule of the student/parents. The Center is open Monday through Friday from 6:45 a.m. to 6:00 p.m. MSU Billings students who are interested in touring the Center, finding out more about the services and the facilities, and/or submitting an application to enroll their children are encouraged to contact the Director of the Child Care and Enrichment Center at (406) 896-5820.

Dining Services

COT Tech Building, 1st Floor. (406) 657-2381
www.msubillings.edu/dining

The College of Technology has a cafeteria available for student, faculty, and staff dining. The cafeteria provides an assortment of choices including hot meals, sandwiches, pizza, soup, and assorted beverages and snack items. A coffee cart is also open in the new Health Sciences building to serve students with drinks and some food items. Cafeteria food purchases can be made with the U-Card, cash, or credit card. Traditional fast food and commercial restaurant services are available a short driving distance from the College of Technology.

Disability Support Services

COT Tech Building, 1st Floor, (406) 247-3029
(406) 657-2283 (V/TTY)
www.msubillings.edu/dss

Disability Support Services (DSS) provides direct assistance to students with documented disabilities by encouraging their independence, creating and maintaining an accessible physical and program environment, providing a supportive emotional atmosphere, and serving as a liaison and advocate.

Students with disabilities have the responsibility to identify themselves and request appropriate accommodations. Students are encouraged to contact DSS at the Academic Support Center, visit our website at www.msubillings.edu/dss or call the number above (voice or text).

Housing and Residential Life

SUB 221, (406) 657-2333
www.msubillings.edu/reslife

Residence Halls

The College of Technology does not have residential facilities. However, students may benefit from the use of housing facilities at Montana State University Billings main campus. Montana State University Billings provides on-campus living facilities for students who are pursuing an educational mission. The residence halls offer an environment which is desirable for those who are seriously seeking a well-rounded education. Participation in hall programming and group processes is part of the complete experience the residence hall provides.

Students with disabilities are encouraged to make arrangements for any specific needs with the Office of Housing and Residential Life and Disability Support Services prior to moving on campus.

Residence hall living is available during Fall, Spring, and Summer sessions and during break periods to those students meeting the necessary requirements.

To apply for residence hall living, contact our office at (406) 657-2333 or visit our website at www.msubillings.edu/reslife to get the Housing Application.

Family Housing

MSU Billings offers 10 family housing apartments for students currently enrolled in 12 or more credits. Family housing eligibility includes: married students, single parent with children, or married students with children. Family housing apartments include 6 three-bedroom apartments and 4 two-bedroom apartments. There is an application and $25.00 application fee to place your name on the waiting list for an available apartment.

To obtain more information about family housing apartments, contact the housing office at (406) 657-2333 or visit our website, www.msubillings.edu/reslife.

Office of Information Technology

COT Tech Building, 1st Floor, (406) 247-3037
COE 401, (406) 247-5755

The Office of Information Technology provides computing and multi-media technology services to students, faculty, and staff. The office supports over 800 student computers across 3 campuses. Students may go to COT Tech Building, 1st Floor or College of Education 401 to receive assistance with using computing applications, questions accessing their student login accounts and developing special multi-media technology projects. Assistance is also available by calling (406) 247-5755.

Student Computing Resources

College of Technology Information Commons
Location: COT Commons and Health Sciences Building
Computer access is available with standard campus software, the Internet, email, and the Library's online catalog as well as other web-based Library resources to all current MSU Billings students during COT campus hours.

Wireless Internet Access
The campus has wireless access available to students in common study areas and dining facilities. This access is available in the Student Union, Library, Liberal Arts, College of Education, College of Technology Tech and Health Sciences Buildings, Academic Support Center, and McDonald Hall. Students should bring their computers to the Information Technology office in College of Education room 401 or to the Information Technology staff at the College of Technology to setup their MSUB wireless access. This provides a secure connection to the student campus resources.

College of Technology Library

COT Tech Building, 1st Floor. (406) 247-3025

Library Hours

Monday – Friday..... 7:30 am – 4:30 pm

The College of Technology Library is a branch of the MSU Billings Library, and is located in the Technology Building of the College of Technology. The collection supports the wide variety of programs at the College of Technology with books, magazines, multimedia, and digital resources.

Materials in the College of Technology Library are included in the OMNI MSU system, accessible in the Library and through the MSU Billings Library web site at www.msubillings.edu/library. This leads to many other digital resources and useful web sites, as well as to the shared catalog system.

Study areas and computers are available for student use in the Library, which will obtain materials from the senior campus Library or from other libraries on request.

Students are encouraged to also utilize the Library housed on the main campus, which has extended weekday and weekend hours. For more information, please call (406) 657-1662.

Copyright Warning

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material. Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or reproduction. One of these conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship or research." If a user exceeds "fair use," that user may be liable for copyright infringement.

Software licensing agreements are very specific, and may prohibit making copies for use by those who have not purchased the software.

Montana State University Billings College of Technology reserves the right to refuse to accept a copying request, if, in its judgment, fulfillment of the request would involve violation of copyright law, licensing agreements or fair use.

Multicultural Student Services

SUB 228, (406) 657-2182
www.msubillings.edu/mss
Multicultural Student Services assists all students, especially American Indian, African-American, Asian-American, and Hispanic to make academic, cultural, and social adjustments to Montana State University Billings College of Technology.

This campus recognizes and has a commitment to cultural diversity; therefore, Multicultural Student Services provides advocacy for students, referral to other Student Affairs and MSU Billings programs including Native American Studies, and liaison contact with tribal educational representatives and other community organizations.

New Student Registration and Orientation Sessions

COT Tech Building First Floor, (406) 247-3000
www.msubillings.edu
Call New Student Services for new student orientation sessions, which are scheduled each academic term.

In addition to the orientation sessions, Return-to-Learn is a free, two-day seminar that is offered to all students to help them consider their options and start on track to skills such as note-taking and study habits. Call 406-657-2162 to find out when the next seminar is offered.

Placement Testing

COT Student Services, Room A017
(406) 247-3018 or 247-3020.

ACT COMPASS tests for reading level and for English and math placement are offered one time at no cost for students who will be attending the MSU Billings College of Technology. Students who will not be attending MSU Billings College of Technology or students who wish to retest may take the COMPASS exam for a $15.00 fee. New students will have the opportunity to take the placement exams at a Registration Session or at another designated time. For questions about available testing times, please contact an academic advisor at (406) 247-3019.

Retention Counselor

COT Student Services, Room A017
(406) 247-3021

A Retention Counselor is available to offer extra support for student success. The Retention Counselor offers information and coordinates workshops on topics such as test taking skills, effective time management skills, note-taking skills, advising, financial aid, and more. In addition, students who would like extra assistance can work with the Retention Counselor individually to develop an individual success plan or to seek information about all of the student support services available to COT students.

Montana State University Billings Foundation

2615 Virginia Lane, (406) 657-2244

The purpose of Montana State University Billings Foundation is to help the University achieve excellence through the solicitation, investment, and stewardship of financial support. The Foundation promotes philanthropy, campus and community partnerships, and educational opportunities.

Established in 1968, the MSU Billings Foundation is an independent, non-profit organization under Internal Revenue Service code 501(c)(3). A governing board of trustees composed of civic, business, and industry leaders guides the Foundation in achieving its mission. The Foundation staff is dedicated to helping Montana State University Billings and to serving donors, supporters, students, and faculty of MSU Billings with integrity, perseverance, stewardship and excellence.

Parking

Campus Police, (406) 697-1403 / 657-2147
www.msubillings.edu/security

MSU Billings College of Technology provides parking for students for a fee. All vehicles parked on University property must display a current MSU Billings parking permit on weekdays when the University is in session during the hours specified in the "MSU Billings Traffic and Parking Regulations" brochure. Students may pick up parking permits from College of Technology Business Office from 8:00 a.m. – 4:00 p.m. Monday through Friday or 7:30 a.m. – 5:00 p.m. at the Campus Police office on the southwest side of the ground floor of the parking garage on the main campus.

Physical Education Building

The Physical Education Building, located on the east campus, includes two gymnasiums, a fitness center, a swimming pool, a racquetball court, a running track and other recreational and health facilities. During set hours each semester, the facilities may be used by students and their families for swimming, workouts, etc. Use is free to students while family members pay a nominal charge.

Recreational Activities

PE 016, (406) 657-2881
www.msubillings.edu/recactivities

The Recreational Activities Program offers a wide range of activities. It provides all students, faculty and staff with recreational opportunities in competitive and noncompetitive events as well as organized and informal activities as regularly as their time and interest permit. Activities include but are not limited to: Intramural Sports; such as flag football, basketball, softball and Leisure Recreation; swimming, racquetball/exercise room, indoor jogging, indoor tennis.

Student Health Services

COT Tech Building, 1st Floor, (406) 657-2153
Petro Hall, (406) 657-2153
www.msubillings.edu/hservices

The Student Health Services provides health care for all students enrolled at Montana State University Billings College of Technology. For those students taking less than seven credits, the Health Service fee is optional and may be paid at any time during the semester. Student Health Services is staffed by registered nurses, physicians, mental health counselors and a student health educator. Consultations with local physicians are scheduled if considered desirable by the University physician. The cost of these consultations, as well as laboratory tests and x-rays, are borne by the student. The Student Health Services is on the College of Technology campus, Monday-Thursday from 11:00 a.m. - 1:00 p.m. and available eight hours per day Monday through Friday on the senior campus.

In the event of a medical emergency after Student Health Services hours, the student is advised to seek care at either hospital's emergency room or walk in clinics. The cost of medical care received outside the Student Health Services is borne by the student.

Student Health Insurance

All MSU Billings College of Technology students enrolled in seven or more credits are required to have some form of health insurance. A student health insurance policy is available to MSU Billings College of Technology students through Blue Cross/Blue Shield of Montana, and the premium for this policy is automatically assessed to students enrolled in seven or more credits. Students enrolling for less than seven credits may be covered under this policy, but should check the insurance brochure to determine eligibility for coverage. The premiums are paid on a semester basis along with tuition and fees. Those students taking the insurance for Spring Semester will automatically be covered for Summer Semester, even if they are not enrolled for classes in Summer Semester.

Students that have other health insurance may waive the Blue Cross/Blue Shield of Montana insurance by signing the appropriate waiver form at the time of payment of fees, or by completing the waiver process that is available through the student's web login account.

Students may enroll through the first fifteen (15) school days of each semester. Policy brochures are available at fee payment and at the Student Health Services Office on the 2nd floor of Petro Hall.

Full information about the Student Health Insurance program provided by Blue Cross Blue Shield of Montana is available at the following web site: www.university.bcbsmt.com

If you have any questions about enrolling in coverage for other family member such as spouse or children, you may contact the Student Health Service at (406) 657-2153.

Student Union and Activities Office

SUB 219, (406) 657-2387
www.msubillings.edu/sub

Student Activities, Student Organizations, Leadership Development

The Student Union and Activities Office coordinates and supervises the registration of over 50 student organizations. The office provides organizations with support, consultation services, resources, and leadership development and recognition programs. The Office is also the University contact for students seeking assistance to charter and organize new student organizations on campus. At MSU Billings, student organizations exist in the following categories: Academic/Departmental, Cultural, Campus Media/Literary, Honorary, Performing and Visual Arts, Recreational/Club Sports, Religious, Service, Special Interest, and Student Government/Leadership/Campus Programming. The Director of Student Union and Activities serves as the advisor to the Student Activities Board. Several events are planned each year for MSU Billings students through funds allocated by the Associated Students of MSU Billings (ASMSUB).

The University encourages a variety of student activities and organizations, insofar as they promote both positive activity and the objectives of the University. The nonacademic aspects of student life can prove to be immensely valuable in the balanced development of the human personality. Many co-curricular activities are related to coursework and thus provide opportunities for applying knowledge and skills learned in the college classroom, in the studio or in the laboratory.

Office for Community Involvement (OCI)

SUB 222, (406) 896-5815
Kathy McIsaac, Director

The mission of the Office for Community Involvement at MSU Billings is to connect students to the community through service and educational opportunities, which will strengthen the relationship between the University and local, state, and national agencies. The OCI will help get students directly involved in civic engagement and will provide opportunities to help them become connected to the campus and Billings community.

The office will have information on various local agencies that are looking for volunteers so students can volunteer on an individual basis. Students will have direct access to the United Way's You Can Volunteer website www.youcanvolunteer.org. There are group volunteer opportunities available through the MSU Billings Student Volunteer Organization and students can become an AmeriCorps or VISTA member through the OCI. The office will also be coordinating volunteer opportunities for all student organizations each semester.

Montana Campus Compact

The Montana Campus Compact (MTCC) is a coalition of Montana college and university presidents, chancellors, and deans committed to the civic purposes of higher education. The MTCC is committed to renewing the public purposes of higher education by promoting volunteerism, public service, and service learning on Montana's college and university campuses. The MTCC is an affiliate of Campus Compact, a national organization with a rapidly growing membership of more than 700 public and private two- and four-year colleges and universities in 41 states and the District of Columbia. The MTCC provides training, technical assistance, grants and education awards to students and faculty members engaged in community service activities. The MTCC and its programs make an immediate impact on communities, students, and institutions while developing students as lifelong citizens-leaders. For more information on the Montana Campus Compact, contact the MSU Billings Student Union & Activities Office at 406-657-2387.

Student Activities Board

SUB 212, (406) 657-2257

The Student Activities Board coordinates a balanced program of cultural, social and entertainment events appropriate to the educational goals and needs of the campus community. The Board consists of 13 selected student members and two advisors. Selection of Board members occurs during fall and spring. The selection process is by SAB Chairperson, three (3) current SAB members and the non-voting advisors.

Veterans' Affairs Office

McMullen 1st Floor, (406) 657-2158

Veterans are advised to check with the Veterans' Affairs coordinator, McMullen first floor, (406) 657-2158, 30 to 45 days before registering. A veteran must notify this office whenever there is a change in address, enrollment, or additional dependents.

Veterans' Upward Bound

Cisel 109, (406) 657-2075
www.vubmt

The Veterans' Upward Bound Program of Montana State University-Northern maintains a program at MSU Billings to assist veterans to learn the skills that will enable them to be successful in college. Both day and evening courses are offered in areas such as English, math and computers. Call (406) 657-2075 or toll free at 877-356-8387 for assistance.

Office of Alumni Relations

Alumni House (2712 Normal Avenue)
(406) 247-5781
www.msubillings.edu/alumni

The Office of Alumni Relations is the University department that connects with the Alumni Association and the MSU Billings Foundation on matters regarding alumni affairs, event planning, and fundraising. This new office was established to reconnect alumni of MSU Billings with the University and provide more strategic initiatives aimed and event planning and alumni communication.

Academic Affairs

Scholastic Requirements

Grading System

A - Excellent.
B - Good.
C - Average.
D - Minimally Passing.
I - Incomplete work (not included in GPA). Work must be completed within one calendar year or the "I" grade will be converted to an "F" grade. The faculty who awards the "I" will assign all necessary academic work to convert the "I" to a letter grade. The student does NOT re-register and pay for the class.
F - Failure, grade below passing (included in GPA).
W - Withdrawal from class without penalty (not included in GPA).
N - No credit/Audit.
P - Passing (not included in GPA but credits count toward graduation).
X - No Pass

Incomplete "I" Grade

An Incomplete is given only when a student has been in attendance for at least three-fourths of the semester but has been prevented by circumstances beyond his/her control from completing all of the requirements of the course. A student must provide adequate evidence to the instructor as to the reason why he/she was unable to complete the requirements for the course. If a grade of "I" Incomplete has been given, the instructor shall advise the Office of Admissions and Records in writing what the student must do to remove the deficiency.

An Incomplete must be made up within one calendar year. An "I" grade is not included in the computation of the GPA. An "I" grade not made up in the prescribed length of time automatically becomes an "F" grade. Once the "I" grade has been converted to an "F" grade, the course must be repeated in order for the grade to be changed.

Change of Grade

A change of grade may be made for error only. A change of grade may not be made to allow additional time or for additional work once the semester is completed. A change of grade is not meant to substitute for an Incomplete grade when an Incomplete cannot be justified. No grade may be changed after one full year unless approved by the instructor's Academic Dean and the Academic Standards and Scholastic Standing Committee. Once a grade has been submitted to the Admissions and Records Office, it may not be changed to a lower grade without the written approval of the Dean of the respective College.

Pass/No Pass Grading Mode

Pass/No Pass is offered as an opportunity for undergraduate students to explore courses outside their major, minor, or option curricula and outside the Professional Core Requirements for Teacher Education or Pre-Admission Requirements for Business.

Under the grading mode, the grade of "P" is given if the students' work is judged to be the equivalent of "A," "B," or "C." The grade of "No Pass" (symbolized by "X") is awarded if the work is equivalent to "D" or "F." The students' Pass/No Pass grades do not affect overall GPA. However, "P" grades may be counted as credits earned toward a degree. Other policies concerning Pass/No Pass are as follows:

1. Courses designated by the departments are available Pass/No Pass. Certain courses are taught only with this grading mode; other courses may be excluded from Pass/No Pass grading. Therefore, students should check with their advisor for details.

2. Students may enroll in courses as Pass/No Pass up to a limit of 20 semester credit hours to be counted towards graduation. Credits earned by challenge, experiential learning assessment such as military credits, student teaching, cooperative education, or internships do not count toward this 20-credit limit.

3. Students declare this grading mode at the time of registration. Students may change their grading mode to Pass/No Pass up through the last day to add at the beginning of each semester or term. After the last day to add, any request to change grading mode (Pass/No Pass to letter grade or vice versa) must be petitioned by the student to the Academic Standards and Scholastic Standing Committee.

4. Courses taken under Pass/No Pass may be repeated for a letter grade. A course taken for a letter grade may not be repeated as Pass/No Pass.

Grade Points (Grade Point Average)

All classes required for Certificates of Applied Science and AAS degrees must be completed with a grade of "C" or better for the class to satisfy the requirement for the awarding of a degree or certificate. All required

courses in which a student received a "C-", "D" or "F" must be retaken. (Please review program summaries and plans of study for any additional grade requirements.)

A grade of "C" or better in core program courses for defined plans of study in Associate of Science and Associate of Arts degrees is required. To review grade requirements for AA or AS degrees please refer to page 50.

Repeated classes earn the second or subsequent grade and credit replacing the former course grade and credit in the calculation of the cumulative grade point average; however, all courses taken and grades received remain listed on the transcript, which is a complete and unabridged permanent school record. **The student must file a repeat card with the Office of Admissions and Records in order for the process to proceed. Students may wish to visit with an academic advisor in Student Services for assistance.**

Grade Reports

Students' grades are available on the web at www.msubillings.edu. Students who wish to have their grades mailed must leave a self-addressed stamped envelope at the Office of Admissions and Records.

Mid-term Grade Reports

Mid-term grades will be issued to all freshmen students. Instructors of classes with freshmen will be required to notify each freshman student, in writing, of the student's mid-term grade before the official last day to drop classes (7th week, 35th class day).

How to Calculate the Grade Point Average

Each grade is worth a predetermined number of grade points as indicated above. Total grade points are established by multiplying the number of credits of a course times the number of grade points of the grade received.

The grade point average is determined by dividing the number of grade points earned by the number of course credits attempted. In computing the number of grade points earned, each letter grade is assigned a certain grade point value per credit hour as follows:

Each credit hour of A..... 4 points
Each credit hour of B..... 3 points
Each credit hour of C..... 2 points
Each credit hour of D..... 1 point
Each credit hour of F..... 0 points

Effective Fall 2005 for transfer and re-admitted students, in accordance with Board of Regents policy, all campuses of the Montana University System will use the following values when determining grade point averages.

A 4.0
A- 3.7
B+ 3.3
B 3.0
B- 2.7
C+ 2.3
C 2.0
C- 1.7
D+ 1.3
D 1.0
D- 0.7
F 0.0

Grade point averages calculated before Fall Semester 2005, using the values noted above, will not be recalculated, using the new weights or values.

The new values should not be applied retroactively to grade point averages already calculated for students in the Montana University System. Decisions about those students' academic performance, including satisfactory progress, admission to limited enrollment programs, graduation and financial aid eligibility, have been made, using the grading scale in place at the time of those decisions. The decisions should not be invalidated because of a subsequent change in grade point average calculations.

Examples

WRIT 122 is a 3 credit course. If a grade of "B" was received, multiply 3 credits times 3 grade points for a total of 9 grade points (3 credits x 3 grade points = 9 grade points).

COMT 109 is a 3 credit course. If a grade of "C" was received, it would produce an additional 6 grade points (3 credits x 2 grade points = 6 grade points).

Add the 9 grade points from WRIT 122 and the 6 grade points from COMT 109 for a total of 15 grade points. Then, divide the total grade points (15) by the total number of credits (6) to determine the grade point average for the two courses. In this case, the grade point average is 2.50 (15/6 = 2.50). Remember, the total grade points divided by the total credits attempted equals the grade point average (GPA).

Academic Honors

In recognition of scholastic achievement, the University makes public at the close of each semester an honor roll of undergraduate students who earn 12 or more credits which are not of a Pass/No Pass nature and who earn a grade point average of 3.50 or better.

Minimal Academic Progress

Students are in good standing at Montana State University Billings College of Technology as long as they have a 2.00 grade point average (GPA) although additional requirements may have to be met in specific fields.

Academic Probation

Full-Time Students (12 or more credits attempted)

Students are placed on academic probation the first time their cumulative institutional GPA falls below the required 2.00. If they later meet the required 2.00 cumulative institutional GPA, they are removed from academic probation. Students who are on academic probation and fail to earn at least a 2.00 GPA during the next semester or have a 2.00 cumulative institutional GPA are suspended for one semester, excluding the Summer Session. However, students on academic probation or continued probation who do not meet the required 2.00 cumulative institutional GPA are allowed to continue in college as long as they have a 2.00 GPA for each succeeding semester. Students on probation should not carry more than 16 credits in the probationary period. All students on academic probation should meet with their academic advisors to review their respective course schedules.

Part-Time Students (Less than 12 credits attempted)

Part-time students are placed on academic probation whenever they have attempted a total of 10 overall (transfer and institutional) cumulative semester credits and do not have a 2.00 cumulative institutional GPA or a 2.0 institutional term GPA. Part-time students are suspended whenever they have attempted a total of 30 overall (transfer and institutional) cumulative semester credits and do not have a 2.00 cumulative institutional GPA or a 2.00 institutional term GPA. Part-time students on academic probation are allowed to continue in college as long as they earn a 2.00 GPA in each succeeding semester.

Veterans Receiving Educational Benefits

Veterans or other individuals who receive educational benefits from the Veterans' Administration remain eligible for those benefits as long as they remain in good academic standing at Montana State University Billings College of Technology and are permitted to continue in college. All veterans eligible to receive benefits should report to the coordinator of Veterans' Affairs upon arrival on campus.

Academic Suspension

Any full-time student who has been on academic probation one semester and who did not make a 2.00 GPA during the last semester is suspended for one semester, excluding the Summer Session. A student who is suspended may, however, attend Montana State University Billings during the Summer Session by meeting the requirements stated below.

Students suspended from Montana State University Billings may register for no more than a total of 16 semester credits during the Summer Session without reinstatement. Students must register for a minimum of nine semester credits after consultation with their advisors, for either one or all three Summer Sessions. Students who at the end of Summer Session have earned at least a 2.00 GPA in nine or more semester credits are re-admitted Fall Semester on continued probation. However, students who attend the Summer Session and fail to earn the 2.00 GPA will be suspended for an additional two semesters.

Students who are reinstated after a period of suspension must submit an application for re-admission to Admissions and Records. Upon re-admission, students are placed on continued probation and must maintain a 2.00 GPA for each successive semester of work and meet any other pertinent conditions imposed by the Academic and Scholastic Standing Committee. Students who do not meet the stipulations set by the Committee incur automatic suspension. Upon action by the Administration, a student may also be suspended for nonacademic reasons. Such a notation will be placed in the student's file.

A student who has been suspended from Montana State University Billings may apply for re-admission after one semester has elapsed. A student who has two or more suspensions is suspended for two semesters excluding summer term. The student may, however, petition the Academic Standards and Scholastic Standing Committee for reinstatement after one semester.

Exceptions to this regulation may be made for students who provide evidence to the Academic Standards and Scholastic Standing Committee that their reinstatement can be justified. Only extreme cases of extenuating circumstances may be considered by the Committee for

re-admitting a student who has been suspended, or if there is evidence that the student has taken some reasonable action to correct the cause(s) for suspension. The student must have approval from his/her major department chairperson before the Academic Standards and Scholastic Committee will consider the student for reinstatement.

Academic Dishonesty

Students at Montana State University Billings College of Technology are expected to do their own work in their own words and with their own ideas. If they quote or paraphrase the words of others, they are expected to indicate whom it is they are quoting or paraphrasing. An instructor who believes that a student has claimed the work of someone else as his or her own may take what steps he or she wishes up to failing the student and referring the student to others on campus for further discipline. The online Student Handbook contains more detailed information about the policy on Academic Dishonesty, available on the web: www.msubillings.edu/studenthandbook.

Fresh Start Option (Academic Bankruptcy)

The Fresh Start option is available to undergraduate students. It is a one- time opportunity for MSU Billings students and those who transfer to MSU Billings.

Students may bankrupt up to two consecutive semesters of previous coursework in which they received poor grades. Students must not have been enrolled in any institution for a minimum of three calendar years. To be eligible for the Fresh Start option students must have completed 30 semester credits in residence since entering or returning to MSU Billings earning a 2.65 grade point average (GPA) or higher. The bankrupted coursework will remain on the student's academic record. The student has the option to save "A" and "B" grades or bankrupt all courses. Bankrupted credits and grades will not be carried forward into the student's cumulative GPA.

Eligibility for Intercollegiate Athletics and Other Activities

To be eligible for intercollegiate athletics, students must meet the specific requirements of the N.C.A.A. Division II. Students should consult with the Athletic Administrator regarding these requirements. Students are eligible during a semester to represent MSU Billings in an University sponsored activity off-campus or to participate in co-curricular activities as long as the students are officially enrolled (this applies only to the activities that are not sanctioned by the N.C.A.A. Division II). Certain activities may have additional eligibility requirements that students must meet.

Student Records

Academic Records

Official academic records of each student's scholastic achievement are kept on file in the Office of Admissions and Records, and include the following:

1. A signed "Official Class Roll and Final Grade Report" from the instructor of each class in which the student is enrolled each semester.
2. An "Official Academic Record" for each student officially enrolled.
3. Directory information of a student currently enrolled. (See the Family Educational Rights and Privacy Act Revised.)

Transcripts

A transcript is a copy of the complete, unabridged educational record of a student who has been or is currently enrolled. It is issued only to the student upon the student's written request. An official transcript is distinguished from an unofficial copy of the student's record in that the official transcript carries the signature of the Registrar and bears the seal of Montana State University Billings.

As often as possible, transcripts are issued within five days following receipt of the transcript request and payment of the fee. During periods of registration, changes in registration, grading periods, and Commencement, the Office of Admissions and Records staff has to devote full time to such activities. The records are necessarily incomplete, and the status of students is pending; consequently, a longer time than usual is required for the issuance of transcripts.

All current and former MSU Billings College of Technology students are entitled to one free official transcript; thereafter, each official transcript request is processed only upon the receipt of the transcript fee. The student's signature and/or personal request is required for the release of any transcript except when the transcript is released to those individuals who are considered to have a legitimate educational reason to have access to the student's transcript.

Misuse of Electronic Devices

Cellular phones, pagers, and other electronic devices shall not be used in a manner that causes disruption in the classroom, library, or within any college-owned or college-operated facility. Abuse of cellular devices with photographic capabilities, use of devices for

purposes of photographing test questions or other notes and materials is prohibited. Photographing individuals in secured areas such as bathrooms, locker rooms, or other areas where there is a reasonable expectation of privacy, and/or taking photographs of any person without expressed permission is strictly prohibited.

Appeals and Petitions for Exceptions to University Regulations

Appeal by a Student on Academic Matters

The student should confer with the faculty member against whom the alleged problem exists. The student must confer with the department chairperson or, in the event the problem involves a department chairperson, with the appropriate dean before resorting to the formal grievance process. The student should consult the Student Resolution Officer for proper procedures.

Petition for Exception to University Regulations

Certain problems encountered by a student may result in a request to have an exception considered to an academic standard or to an academic regulation of the University. A student may request an exception to an MSU Billings College of Technology regulation by filing a special petition with the Academic Standards and Scholastic Standing Committee. The petition form may be obtained from the Office of Admissions and Records and it is to be returned there after the student has completed the form. The Office of Admissions and Records will present the petition to the committee. The student is encouraged to appear before the committee to respond to questions about the student's petition. The student will be notified in writing of the decision as soon as it is determined.

Grade Appeal Procedure

Montana State University Billings College of Technology has a set of procedures for contesting a grade which must be followed for appropriate resolution. The student must understand that they cannot appeal a grade after sixty (60) days from the official release date of those grades. All documentation must be in writing and submitted to the instructor and Student Resolution Officer (SRO). Please refer to the Student Handbook for a complete explanation of this process (available on the web: http://www.msubillings.edu/studenthandbook/).

Step I You must meet with or attempt to make appropriate contact (email, phone, office hours, etc.) with your instructor to discuss your reasons for the grade appeal within sixty (60) days from the official start date of the next term. Documentation supporting your claim should be made available at this meeting. The University would like to have both you and the instructor discuss the details, in a reasonable, open manner, and formulate an agreeable resolution.

Step II If the initial meeting (or attempt to meet) with your instructor did not provide an agreeable resolution, you must then contact the ASMSU Billings Student Resolution Officer and schedule a time for you and the SRO to meet and discuss the reasons for the appeal. The SRO can then help schedule a meeting between you and the instructor of the course you are contesting or, if Step I was not successful, can help move the appeal to Step III. You must submit any documentation supporting your claim and a copy of the course syllabus to the SRO. This information should be presented at the meeting with the instructor. The instructor will submit a formal decision to the student, in writing, within fifteen (15) University business days. A copy of the letter must be sent to the SRO.

Step III If no resolution is achieved at Step I or II, the dispute may be brought to the Department Chair of the relevant department (if the dispute is with the Department Chair, then refer to Step IV). All documentation and a letter of appeal must be submitted to the Department Chair within ten (10) University business days after receipt of the formal decision by the instructor. The SRO can assist with this process. A meeting will then be scheduled between you and the Department Chair. The Chair will submit a formal decision to the student, in writing, within fifteen (15) University business days. A copy of the letter must be sent to the SRO.

Step IV If no resolution is achieved at Step III, the dispute may be brought to the Dean of the relevant College. All documentation and a letter of appeal must be submitted to the Dean within ten (10) University business days after receipt of the formal decision by the Chair. The SRO can assist with this process. A meeting will then be scheduled between you and the Dean with the SRO present. The Dean, as the representative of the relevant College, has the authority to review all documentation, discuss the matter with the instructor and Department Chair, and formulate a resolution. The Dean will submit a formal decision to the student, in writing, within fifteen (15) University business days. A copy of the letter must be sent to the SRO.

Step V If no resolution is achieved at Step IV and you wish to appeal further, the dispute may be brought before the Campus Hearing Committee. All documentation and a letter of appeal must be submitted to the Vice Chancellor for Student Affairs within ten (10) University business days after receipt of the formal decision by the Dean. The SRO can assist with this process. The Campus Hearing Committee will consist of a maximum of three (3) faculty members and three (3) students. One (1) staff member will be selected to chair the hearing process and will have no vote in the recommendation process. The Campus Hearing Committee will follow prescribed hearing procedures and make a recommendation directly to the Chancellor who makes the final decision. The Chancellor will then have fifteen (15) University business days to send a formal and final decision to you.

Graduation Requirements

Catalog Time Limit

From the time a student enters MSU Billings College of Technology, he or she has four years to fulfill the curricular requirements stated in the catalog in effect when he or she entered. If a student does not complete the requirements in four years, he or she must select a subsequent catalog. If a student has a break in enrollment of a semester or more, he or she must switch to the catalog in effect at the time of re-admittance.

A student can request an exception to this policy under extenuating circumstances. Any request for an extension of time beyond the four-year limit must be approved in writing by the appropriate Director, Department Chair, and Dean. If approval is not granted through these channels, a student may appeal to the Academic Standards and Scholastic Standing Committee.

Associate of Applied Science and Certificate of Applied Science Requirements

Students who have earned a "C" (2.00) or better in all required courses and electives for an AAS degree or Certificate of Applied Science program of study in which they are enrolled are eligible for graduation. Fifty-one percent of core program requirements must be completed at the College of Technology in order to graduate from MSU Billings. **Associate of Science in Nursing students are required to complete at least 21 credits of core program requirements at the College of Technology to graduate from MSU Billings and must also earn a "C" or better in all courses.**

Please note that a single course may not be used to meet more than one certificate or degree requirement. Petitions for exceptions to this policy should be addressed to the registrar to be reviewed by an academic review board.

Related Instruction Requirements for Associate of Applied Science Degrees and Certificates of Applied Science

According to the Northwest Commission on Colleges and Universities (NWCCU), related instruction is a body of knowledge which supports programs of study for which applied or specialized associate degrees are granted or programs for which certificates are granted. This body of knowledge must contain instruction in program-related areas of communication, computation, and human relations.

The objectives of Related Instruction include the following:

- Provide students with the opportunity to acquire and practice the skills needed for successful employment in the modern work place. (To prepare for the workplace, students must develop knowledge, skills, and abilities beyond their technical training.)
- Contribute to the development of general knowledge and critical thinking skills through courses in communication, mathematics, human relations, and computer applications.
- Help students acquire the skills, knowledge, and attitudes which give them the ability to learn throughout their lives.

In order to graduate with an Associate of Applied Science degree or Certificate of Applied Science, all students are required to earn related instruction credits.

Students must see an advisor and refer to their program requirements to determine which related instruction courses are required to graduate with the Associate of Applied Science Degree, or Certificate of Applied Science in their field. Please note that the Associate of Applied Science Degree in Practical Nursing follows an approved statewide plan that differs from the traditional related instruction menu. Please also note that some related instruction courses are also part of the Academic Foundations menu for Associate of Science, Associate of Arts, and Bachelor's degrees.

The following list outlines the courses to that fulfill related instruction requirements for Certificate of Applied Science and Associate of Applied Science degrees:

Human Relations **3 credits**
COMT 109 Human Relations
COMT 130 Introduction to Public Speaking

Writing **3 credits**
WRIT 101 College Writing I
WRIT 104 Workplace Communications
WRIT 121 Introduction to Technical Writing
WRIT 122 Introduction to Business Writing
WRIT 180 Editing for Business Writing

Computation **3 credits**
M 108 Business Mathematics
M 105 Contemporary Mathematics
M 114 Extended Technical Mathematics
M 121 College Algebra
M 143 Finite Mathematics

Technology **3 credits**
CAPP 120 Introduction to Computers

If students are planning to continue on to a bachelor's degree, they are strongly encouraged to immediately consult with their academic advisor to develop a plan of study. As mentioned above, some related instruction courses also fulfill Academic Foundation requirements. Some but not all related instruction courses for the AAS degrees and Certificates of Applied Science programs will transfer to other colleges or universities.

Second AAS Degree

A student may earn a second Associate of Applied Science degree at the MSU Billings College of Technology by taking a minimum of 15 additional credits beyond the total required for the first AAS degree. Once the first AAS degree is awarded, the student must earn 15 additional credits regardless of the number of credits earned for the first degree. The student must meet all other requirements for the second degree. For AAS degrees that require electives, degree requirements from one degree may not be used to satisfy electives for the other degree. Electives from one degree may not be used to satisfy electives for the second degree.

Certificate of Applied Science and Associate of Applied Science Degree in the Same Subject

A student may earn a Certificate of Applied Science and an Associate of Applied Science degree in the same subject. However, a Certificate of Applied Science and AAS degree in the same subject cannot be earned concurrently. A student may complete a Certificate of Applied Science and Associate of Applied Science degree in the same subject provided the application for graduation for the Certificate of Applied Science is a minimum of one semester prior to the completion of the Associate of Applied Science degree. A certificate can be an exit point and is not required to earn an AAS degree.

Associate of Arts or Science Degree Requirements

In addition to the AAS degrees the College of Technology, also awards the associate of arts and science degrees.

There are two types of associate degrees: those with no particular disciplinary affiliation and those with a special focus. These degrees require that a student meet Academic Foundations requirements as specified next. Students being awarded a general associates degrees with no disciplinary affiliation should work with their advisor in planning courses, but are subject to no additional requirements other than those listed next:

1. A minimum of 60 semester credits must be earned with a minimum grade point average of 2.00 for all coursework.
2. A minimum of 20 semester credits with 40 grade points (2.00 grade point average) must be earned at Montana State University Billings.
3. Minimum grade point average of 2.00 must be earned in (a) all college work to be applied toward the degree for which credits and grades have been received, and in (b) all courses completed with credits and grades at Montana State University Billings and applied toward the degree.
4. The candidate may elect a maximum of 16 semester credits on the Pass/No Pass option in lieu of regular course grades.
5. Associate degree students must satisfy the following Academic Foundations requirements:

Academic Foundations Category .....Credits
I. Global Academic Skills
- A. Mathematics.....3
- B. English.....6
- C. Information Literacy.....3

II. Natural Sciences (7 credits total)
- A. Life Sciences....3-4
- B. Physical Sciences....3-4

III. Social Sciences....6

IV. History & Cultural Diversity
- A. History....3
- B. Cultural Diversity....3

V. Arts & Humanities
- A. Fine Arts....3
- B. Humanities....3

Total....37

Electives
Selected in consultation with advisor....23

Total minimum credits required....60

Graduating with Honors

The designation of honors and high honors is awarded to associate degree or certificate recipients. Honors recognizes students with a total academic grade point average of 3.50 to 3.74; high honors recognizes students with a total academic grade point average of 3.75 to 4.00. Again, this designation is for associate degree or certificate recipients and based on their total cumulative grade point average which includes transfer work as well as academic work done at MSU Billings.

Graduation with honors will apply to students who earn their first and/or second bachelor's degree at MSU Billings. Students who earn a second bachelor's degree at MSU Billings will have all of the grades earned in their first degree included in the determination of the recognition of academic honors. In all cases and for all degrees or certificates, transfer credits earned elsewhere to this University must be calculated with the credits earned at MSU Billings in order to qualify for academic honors.

Lists of students receiving academic honors at Commencement are posted on the bulletin board outside the Office of Admissions and Records by April 1. Students are urged to check the list, as this is the official list used to designate honors for convocations and for Commencement.

Commencement

Commencement is held once each year at the end of the Spring term. All diplomas are officially awarded at the end of each term. The date of graduation and the degree a student is to receive will be posted on the student's Official Academic Record at the end of the semester in which the student meets all requirements. Students should acquaint themselves with their specific majors' academic requirements. An advisor is assigned to every student; however, it is the student's responsibility to know and meet the requirements for graduation.

A student who intends to graduate with a master's degree, bachelor's degree, associate degree or certificate will be permitted to participate in the Spring Semester Commencement Ceremony only if the student complies with the following procedure:

Students are to file their Application for Graduation the semester before the semester of graduation. Application forms are available from the Office of New Student Services, COT Tech Building, 1st floor or online. All applications for graduation must be on file with the Registrar no later than the end of the 10th week of the semester **PRIOR** to the semester of completion. The fee should be paid at the Cashier's Window and the application needs to be filed with the Office of New Student Services, COT Tech Building, 1st Floor. This application is good for one year from the date of information supplied by the student on the Application for Graduation in the blank labeled "Semester/Year Graduating." After one calendar year from that date, the Application will be destroyed and the student will need to re-apply and re-pay the fee.

- The Application for Graduation is required in order to prepare and forward the Final Evaluation for Graduation to the necessary offices for approval. A student who submits an Application for Graduation after the fourth week of the semester may have the final evaluation for graduation processed the following semester and will graduate at the end of that particular semester.
- The Final Evaluation will be circulated during the student's final semester. The Final Evaluation must be completed, must have all the required signatures, and must be returned to the Office of Admissions and Records before notification of the student's graduation is posted on the student's Official Academic Record.
- Student must meet, by the end of the Summer Session, all of the graded requirements for graduation or be enrolled in Pass/No Pass coursework the following Fall Semester and meet all the requirements for graduation by the end of that Fall Semester.

Diplomas will be issued eight to ten weeks after the end of academic term.

Please note: Certain departments may have additional academic requirements that must be met before students will be permitted to graduate and/or participate in the

commencement ceremony. Students should check with their major department for any additional departmental requirements.

The determination for honors for students who will graduate at the end of the Spring Semester or Summer Session will be calculated on the most recent semester completed. Should a student's cumulative grade point average (including any transfer work) at the end of the Spring Semester or Summer Session entitle the student to an honors designation, this recognition will be recorded on the student's Montana State University Billings academic record.

Release of Information

In accordance with the Family Educational Rights and Privacy Act (FERPA), the Office of Admissions and Records at Montana State University Billings College of Technology may disclose directory information from the educational records of a student who is in attendance at the University. If the student wishes to have all directory information excluded as public information, the student must notify the Office of New Student Services, COT Tech Building First Floor, within the first two weeks of the current academic year. This notice is good for the remainder of the current academic year. A new form for nondisclosure must be completed each academic year.

A complete copy of the MSU Billings' FERPA policy is available upon request at the Office of Admissions and Records.

Academic Foundations Requirements

Academic Foundations (previously referred to as general education) provides for breadth of study across many areas of knowledge. In addition to a concentration in their plan of study, all students are required to complete the Academic Foundations program as an essential component of the baccalaureate degree and associate degree. Students pursuing an Associate of Science degree at the College of Technology will also have a focused plan of study in a technical area.

For COT students who wish to pursue a baccalaureate degree, this degree includes three distinct and required areas of study: Academic Foundations, concentration (major), and electives.

An area of concentration provides for depth of study within a chosen discipline (major). Students choose their major, but the specialized, in-depth courses they take are determined by the department which is responsible for the major.

Electives in a plan of study guarantee that students have the opportunity to study areas of personal interest in their own academic pursuits. Students are allowed to choose courses (electives) from any discipline that interests them.

The Purpose of Academic Foundations

Objectives

The objectives of Academic Foundations are to help students develop and demonstrate an understanding of humanity and what it means to be members of the global community. Students completing Academic Foundations will reflect upon the evolution of culture, and learn to identify and value responsible roles for the human being in the physical, social, and intellectual worlds.

Structure

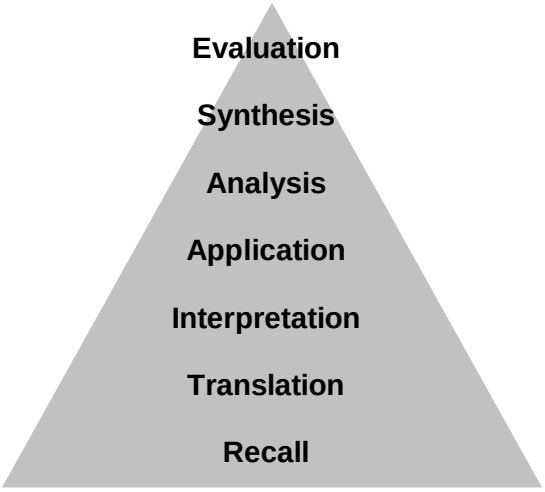
Academic Foundations is structured to fulfill the objectives by addressing essential components of human development: (1) Skills Development and Application, (2) Cultural Development, and (3) Intellectual Growth and Development. Specific courses applicable to Academic Foundation are arranged in categories and selected to ensure that students completing Academic Foundation are intellectually engaged in each of these areas of human development.

1. Skills Development and Application ensures that students will develop effective writing, mathematical, reading and oral communication skills.

2. Cultural Development ensures that students will develop an understanding of the evolution of human culture and social organizations, and an appreciation of cultural diversity.

3. Intellectual Growth and Development ensures that students will pursue knowledge, integrate knowledge among disciplines, apply knowledge to the identification and solving of problems, understand the importance of personal and societal ethics, and reflect on and appreciate the diversity of human endeavors.

In addition, the structure incorporates Bloom's Taxonomy of Thinking. Bloom characterizes thinking as increasing in complexity as one progresses. Students must progress beyond the ability to recall factual information and learn to interpret, apply, analyze, synthesize, and evaluate knowledge. The structure is illustrated below:



Evaluation

Judgement: the ability to make decisions and support views; requires understanding of values

Synthesis

Combining information to form a unique product; requires creativity and originality

Analysis
Identification of component parts; determination of arrangement, logic, semantics

Application
Use of information to solve problems; transfer of abstract or theoretical ideas into practical solutions

Interpretation
Identification of connections and relationships

Translation
Restatement in one's own words; paraphrase; summarize

Recall
Verbatim information; memorization with no evidence of understanding

Again, specific courses applicable to Academic Foundations must utilize this system as a method of ensuring intellectual rigor and meaning. The structure is inextricably linked to outcomes and assessment methods and forms the basis for the Outcomes Assessment Framework.

Categorization
Students will complete 37 credits of required courses with either traditional courses, discipline-specific courses, or integrated courses. All courses that fulfill Academic Foundations requirements are specifically designed for Academic Foundations.

Category	Required Credits
I. Global Academic Skills	**12**
A. Mathematics	3
B. English	6
C. Information Literacy	3
II. Natural Sciences	**7**
A. Life Sciences	3-4
B. Physical Sciences	3-4
III. Social Sciences	**6**
IV. History and Cultural Diversity	**6**
A. History	3
B. Cultural Diversity	3
V. Arts and Humanities	**6**
A. Fine Arts	3
B. Humanities	3
Total Required Credits	**37**

Category Descriptions

Global Academic Skills
The ability to read, write, calculate, and assess sources of information are fundamental and necessary human skills. These skills are prerequisite to effective communication of ideas and the creative solving of qualitative and quantitative problems. These skills are important for their own sake but mastery of them is also required for a university graduate to be considered an educated person.

Students will:
- Demonstrate the ability to communicate effectively in written form by writing papers which effectively develop and support theses, tell stories, describe events, or express personal insights or values,
- Read and evaluate research materials and incorporate them into informative, argumentative, or analytical writing and oral presentation,
- Read and evaluate problems and quantitatively solve those problems using mathematical reasoning,
- Demonstrate how mathematical modeling or statistical designs are used to obtain knowledge.

The Natural Sciences
The diversity of species in the biosphere, including humans, interact with their environment, changing it and being changed in the process. Science is a creative human endeavor devoted to discovering the principles that rule the physical universe. The natural world is law-driven and science is limited to investigating by asking and answering questions, processes that can be observed and measured to help us understand the laws of nature and the physical universe.

Students will:
- Understand the experimental basis of science and how scientists accumulate new knowledge,
- Appreciate the goals and limitations of science,
- Develop an understanding of important scientific facts and how those facts help us understand our observations and the laws that govern the natural world,
- Appreciate the role of science in the development of modern technological civilization.

The Social Sciences
Humans are social beings. Through their various relationships they create social life and are, in turn, influenced and transformed by the social life they create and maintain. Social sciences represent those disciplines that apply scientific methods to study the

intricate and complex network of human relationships and the forms of organization designed to enable people to live together in societies.

Students will:
- Understand the evolution of social institutions and the development and maintenance of individual and social behaviors,
- Develop perspectives about the nature of psychological and social processes and the structure of society,
- Identify and comprehend theories of human behavior and of the participation of individuals in psychological and social processes,
- Practice the basic methodologies involved in the social sciences.

History and Cultural Diversity

History is the record of human activity. History presents us with an overview of this activity with the intent that past accomplishments and failures will serve to inform present issues. Cultural diversity presents us with an awareness and understanding of the variety of human experience, especially as manifested among cultures, both present and past.

Students will:
- Develop a view of current social conditions and events within a chronological and historical context,
- Understand social, cultural, political and economic changes over time,
- Comprehend the international ramifications of domestic policies and how these may affect and be experienced by people in other cultures,
- Appreciate and be sensitized to world cultures.

Arts and Humanities

Through the arts and humanities, students will explore and experience the sensory and perceptual capacities and potentialities that are shared by people and that define us as humans. The expressive arts include visual, performing, and language-based activities in celebration of multiple perspectives. The humanities address qualitative relationships wherein judgments are made but change with time and circumstances.

Students will:
- Develop an appreciation of the varied cultural artifacts of humans throughout history,
- Foster an understanding of the variety of human expressive experiences in relation to ourselves, other cultures and the physical environment,
- Utilize the basic methodologies and practices endemic to the various disciplines,
- Explore human characteristics especially considered desirable through expressive communicative systems about how to live fully.

Academic Foundations Assessment Objectives

I. Skills Development and Application

1. Develop effective writing skills.
   a. Demonstrate knowledge of and competence in the use of conventional written forms: mechanics, spelling, punctuation, syntax, grammar, etc.
   b. Demonstrate ability to apply knowledge of writing strategies.
   c. Demonstrate the ability to undertake and accomplish original work in written form.
2. Develop effective mathematical/logical skills.
   a. Demonstrate ability to understand quantitative measures.
   b. Demonstrate ability to use quantitative skills to solve problems.
   c. Develop ability to use logical skills to make judgements.
3. Develop effective reading skills.
   a. Demonstrate an ability to negotiate a variety of text types and formats.
   b. Demonstrate an ability to respond coherently to text contents.
   c. Demonstrate an ability to use a variety of text types and formats to construct knowledge.
4. Develop effective oral communication skills.
   a. Demonstrate ability to verbally present information using a variety of techniques.
   b. Demonstrate ability to understand and interpret oral information.
   c. Demonstrate the ability to undertake and accomplish original work in oral form.

II. Social and Cultural Development

1. Develop an appreciation of social organization.
   a. Demonstrate an understanding of social organization.
   b. Demonstrate ability to reflect on the dynamics within and among social organizations.
2. Develop an appreciation of cultural diversity.
   a. Demonstrate awareness of social issues across cultures.
   b. Demonstrate an understanding of the diversity of human cultures.
3. Develop an appreciation of human culture and the human condition.
   a. Demonstrate knowledge of the philosophical, social, psychological, and biological foundations of human culture.

b. Demonstrate understanding of interaction among social cultural, physical, and technological environments.
c. Demonstrate an ability to evaluate the diversity, intrinsic value, and consequences of human endeavors.

III. Intellectual Growth and Development: Content/Thought/Expression/Values

1. Pursue knowledge.
   a. Demonstrate basic understanding of subject matter.
   b. Demonstrate thinking, comprehension, and expression of subject matter.
   c. Demonstrate ability to recognize sensory information and sensory experience.
2. Discover and evaluate sources of knowledge.
   a. Demonstrate ability to integrate through analysis.
   b. Demonstrate ability to integrate through synthesis.
   c. Demonstrate ability to recognize and/or contribute to visual, performing, and language-based arts.
3. Apply knowledge to the solving of problems and creation of new knowledge.
   a. Demonstrate ability to identify and solve problems using methods of the discipline.
   b. Demonstrate ability to pursue creative work in arts or sciences.
   c. Demonstrate ability to interpret and evaluate creative efforts.
4. Recognize, reflect, and act on personal moral development and social ethics.
   a. Demonstrate understanding of the relationship between actions and consequences.
   b. Demonstrate an understanding of the relationship among ethics, justice, and law.
   c. Demonstrate accountability for personal choices and potential actions.

Academic Foundations Courses

I. Global Academic Skills.....12

Regarding Global Academic Skills, students are required to take 1 course from Mathematics, 2 courses from English, and 1 course from Information Literacy.

A. Mathematics.....3

M 105 Contemporary Mathematics.....3
Surveys the foundations of mathematics with an emphasis on the unity of the subject.

M 114 Extended Technical Mathematics.....3
Develops and/or enhances critical thinking skills as students analyze problems and utilize mathematical skills of applied algebra, geometry, and trigonometry to solve such problems.

M 121 College Algebra 3
College algebra introduces functions and surveys the basic algebraic functions.

M 131 Mathematics for Elementary Teachers II.....3
Provides an in-depth survey of the mathematics necessary to teach through eighth grade.

M 143 Finite Mathematics 4
Surveys a number of topics in discrete and continuous mathematics that are applicable in the life, management, and social sciences.

M 151 Precalculus.....5
Covers those topics from college algebra and trigonometry necessary to prepare a student for calculus.

M 171 Calculus I.....4
Introduces and explores the mathematics of change.

STAT 141 Introduction to Statistical Concepts.....3
Surveys the basic ideas statistics has to offer.

STAT 216 Introduction to Statistics 4
Provides an introduction to the basic practice of statistics and data analysis.

B. English.....6

WRIT 101 College Writing I 3
Helps students acquire the basic writing skills expected in college-level academic writing.

WRIT 121 Introduction to Technical Writing.....3
Develops and/or enhances writing skills for various real-life work situations that emphasize technical fields.

WRIT 122 Introduction to Business Writing 3
Develops and/or enhances writing skills for various real-life work situations in the business world.

WRIT 220 Business & Professional Writing 3
Emphasizes accurate and precise writing for the business audience.

WRIT 201 College Writing II.....3
Introduces students to the expectations, conventions, and requirements of undergraduate academic research writing.

C. Information Literacy 3

COMT 130 Introduction to Public Speaking.....3
This a public speaking skills acquisition course with a two-part objective: (1) improving abilities to access, retrieve, and evaluate information (2) in order that the information might be used in effective public performance.

LS 125 Research in the Information Age.....3
Introduces students to the organization, retrieval, and evaluation of both electronic and print sources; covers concepts of the research process, methods, and ethics of information research, the evolving nature of information resources, and appropriate information citation.

MIS 150 Information Access and Organization 3
Explores access to, retrieval of, and organization of information in a wide variety of environments and formats.

II. Natural Sciences 7

Regarding Natural Sciences, students are required to take one course from Life Sciences and one course from Physical Sciences. **At least one course must include a corresponding laboratory.** Students can satisfy Natural Sciences by taking SCIN 101, 102, 103, and 104.

A. Life Sciences.....3-4

BIOL 101 Survey of Biology.....3
Provides students with academic foundation in major concepts of biology from a historical perspective and as they relate to contemporary issues in the world today.

BIOL 115 Survey of Biology Lab.....1
This course is designed to help non-majors understand basic biological concepts such as cellular biology, metabolism, genetics, and population ecology among others through hands-on laboratory exercises and demonstrations.

BIOL 178 Principles of Biology 3
Provides students with academic foundation in major concepts of biology from a historical perspective and as they relate to contemporary issues in the world today.

BIOL 188 Principles of Biology Lab.....1
Provides students exposure to major concepts of biology through hands-on lab investigations and application of the scientific method.

B. Physical Sciences.....3-4

CHMY 121 Introduction to General Chemistry.....3
This course focuses on understanding fundamental chemical principles.

CHMY 122 Introduction to General Chemistry Laboratory 1
Provides students with the opportunity to empirically verify concepts learned in Introduction to General Chemistry (CHMY 121).

CHMY 141 College Chemistry I.....3
Provides students with a foundation in qualitative and quantitative chemistry and relates chemistry to other academic disciplines and to everyday life.

CHMY 142 College Chemistry Laboratory I.....1
Provides students with the opportunity to empirically verify concepts learned in College Chemistry I (CHMY 141).

GEO 101 Introduction to Physical Geology.....3

GEO 102 Introduction to Physical Geology Laboratory 1

GPHY 111 Introduction to Physical Geography 3

GPHY 112 Introduction to Physical Geography Laboratory 1

PHYS 101 Earth Air Fire Water.....3
This course develops a basic understanding of the principles of "everyday physics."

PHYS 102 Earth Air Fire Water Lab.....1
This course provides students with laboratory experience in physics.

PHYS 110 College Physics I.....3
Provides students with a foundation in the physics of motion and an understanding of the consequences of forces and conservation laws.

PHYS 111 College Physics I Lab.....1
Provides the students with empirical observations to corroborate physical theories developed in College Physics I (PHYS 110).

PHYS 201 Introduction to Astronomy 3
Provides students with an understanding of the historical development of astronomy and an understanding of our place in the universe.

PHYS 203 Introduction to Astronomy Lab.....1
Provides the students with empirical observations to corroborate astronomical theories developed in Introduction to Astronomy (PHYS 201).

PSSC 101 The Physical World Around Us.....3
Demonstrate physical science awareness and an appreciation of laboratory practice.

PSSC 102 The Physical Word Around Us Lab 1
Provides students with the opportunity to empirically verify concepts learned in The Physical World Around Us (PSSC 101).

A. and B. Integrated Sciences.....7

SCIN 101 Integrated Sciences I 3
The first half of a two-semester integrated course in the sciences, where core principles of scientific knowledge are integrated across scientific disciplines, while also integrating applications of science into the lives of students whose very existence is impacted by science and its technological applications.

SCIN 102 Integrated Sciences Lab.....0.5
A half-credit, course that complements Integrated Sciences lecture (SCIN 101).

SCIN 103 Integrated Sciences II 3
The second half of a two-semester integrated course in the sciences.

SCIN 104 Integrated Sciences Lab II 0.5
A half-credit, course that complements Integrated Sciences lecture (SCIN 103).

III. Social Sciences.....6

Regarding Social Sciences, students are required to take two courses from different disciplines from this list:

BUS 101 Introduction to Business 3
Surveys aspects of business using concepts and tools for business decision making.

COMT 109 Human Relations 3
Aims to develop students' perception and expression skills as used in a diverse workplace.

COMT 110 Interpersonal Communication.....3
This is a communication skills acquisition course with a two-fold objective: identifying theories and patterns of communication within specific social contexts and improving communication competence within those social contexts.

ECNS 201 Principles of Microeconomics 3
The analysis of individual decisions and their impact on social organizations and structures.

ECNS 202 Principles of Macroeconomics.....3
The behavior of markets in the context of a national economy.

EDF 100 Education and Democracy 3
This course explores democracy as a form of government, and the critical relationship between democracy and education in the United States.

GPHY 141 Geography of World Regions.....3
As an overview of the major continents and regions of the world, this course provides a broad survey of how globalization processes are influencing local identities, modes of life, and standards of living.

HHP 101 Health Sciences.....3
Covers contemporary health issues and explores individual and community based solutions.

PSCI 210 Introduction to American Government 3
Covers the American political system relative to central government and institutions.

PSCI 220 Introduction to Comparative Government 3
Introduces the ideas behind the democratic and non-democratic forms of political life in the modern world.
PSYX 100 Introduction to Psychology.....3
Introduces students to the foundations of human psychology including topics such as the biological basis of behavior, learning, memory, problem solving, motivation, developmental process, and social behavior.
PSYX 231 Human Relations.....3
Applies psychological insights and principles to daily life and personal growth with an emphasis on Positive Psychology.
SOCI 101 Introduction to Sociology 3
The course examines the basic elements of the relationship between self and society, the patterns of human activity, and how these are maintained.
SOCI 201 Social Problems 3
Survey of contemporary social problems in the U.S.
SOCL 212 Physical Anthropology and Archeology..3
Surveys the structure, evolution, and history of humans as biological and cultural beings.

IV. History and Cultural Diversity.....6

Regarding History and Cultural Diversity, students are required to take one course from History and one course from Cultural Diversity.

A. History 3
HSTA 101 American History I 3
Survey of United States history from the colonial era to the end of the Reconstruction.
HSTA 102 American History II 3
Survey of United States history from the end of Reconstruction to the present.
HSTR 101 Western Civilization I 3
Survey of world history from Antiquity to the Reformation.
HSTR 102 Western Civilization II.....3
Survey of world history from the Italian Renaissance to the present.
HSTR 103 Honors Western Civilization I 3
Honors survey of western civilization from Antiquity to the Peace of Westphalia.
HSTR 104 Honors Western Civilization II.....3
Honors survey of the history of western civilization from the Italian Renaissance to the present.
PSCI 230 Introduction to International Relations.....3
Various dimensions of international politics.

B. Cultural Diversity 3
ART 131 Global Visual Culture.....3
Examines visual culture, which includes painting, sculpture, photography, the Internet, performance, cinema, advertising, and television, as our primary means of communication and of understanding our postmodern world.
COMT 160 Introduction to Intercultural Communication.....3
Explores culture as both producer and product of communication, creating an appreciation of communication processes as essential factors in promoting positive intercultural relations.
GPHY 121 Human Geography.....3
This course focuses on how the cultural values and practices of people from a variety of places have shaped the various regional landscapes.
HHP 270 Global Health Issues.....3
Explores relationships between human behavior, economics, history, culture, politics, policy formation, and the environment, while investigating the impact of these elements on the quality of health within our global community.
LIT 230 World Literature Survey.....3
Provides a comparative basis for understanding different cultures through their literary traditions.
MUSC 150 Musics of the World.....3
Introduces students to the uses and functions of music in various cultures.
NAMS 181 Introduction to Native American Studies 3
Survey course covering the cultures, sociology, and history of American Indian peoples.
NAMS 211 Social Issues of the Native American.....3
Addresses the issues raised at the interface of Native American culture and the values with the majority culture of the United States.
PHIL 105 The Religious Quest 3
Fosters careful and sensitive listening and thinking on diverse and other divisive religious issues.
REHA 201 Introduction to Diversity.....3
The course focuses on perspectives for interacting with diverse cultures, based on understanding of cultural characteristics and differences related to disability, gender, race/ethnicity, sexual orientation, religion, geography, advanced aging, and social class.
SOCL 211 Cultural Anthropology 3
Surveys the basis and diversity of human behavior from a multicultural perspective.
A&SC 250/SOCI 275 Gender and Society 3
Employs the sociological perspective to analyze the lives of girls and women in North America.
SPNS 150 The Hispanic Tradition 3
This course introduces students to various Hispanic traditions and cultures throughout history.

V. Arts and Humanities.....6

Regarding Arts and Humanities, students are required to take one course from Fine Arts and one course from Humanities.

A. Fine Arts 3
ART 110 Introduction to Studio Art for Non-Art Majors 3
Encourages enhancement of two- and three-dimensional artistic skills for the general student.
ART 142 Introduction to Pottery.....3
Develops the ability to design three-dimensional clay forms using manual dexterity.
ART 161 Introduction to Drawing 3
Introduces the beginning student to the basic fundamentals of drawing and linear perspective.
COMT 150 Introduction to Theatre and Performance.....3
Introduces students to the complexities of performance theory and criticism.

COMT 155 Global Cinema.....3
Examines films that speak in their own way to issues of arts appreciation, feminism, diversity, and the human condition.
COMT 250 Introduction to Acting.....3
Explores both collaborative and individual projects in the areas of comedy, tragedy, and social and political drama; students will find opportunities for personal expression, ensemble building, problem solving, and multi-cultural activities.
DSGN 248 Computer Presentation and Animation...3
This course explores the arts through digital three-dimensional environments and animations.
ENGL 204 Fundamentals of Creative Writing.....3
Provides students with the basic skills for self-expression.
LIT 270 Film & Literature.....3
Provides students with thinking and writing skills focused on a visual art form.
MUSC 100 Music Appreciation.....3
Designed to assist students in developing the ability to effectively perceive the aesthetic and structural qualities of music.

B. Humanities 3
ART 132 Art History Survey.....3
Surveys world art from prehistory through the present day with the objective of developing a critical understanding of art forms in their historical and cultural context.
HON 181 The Ancient and Medieval Worlds.....3
Examines in conjunction with HSTR 103 the political, economic, social, philosophical, literary, and artistic history of the ancient Near East, classical Greece, the Roman Empire, and medieval Europe.
HON 182 The Renaissance and Modern Worlds 3
Examines in conjunction with HSTR 104 the political, economic, social, philosophical, literary, and artistic history of the European Renaissance and the Modern World (through the 20th century).
HON 281 The American Intellectual Heritage (1620-1877) 3
Explores in conjunction with HSTA 101 the evolution of U.S. cultural, philosophical, and artistic history through the study of its humanistic achievements from the first colonial writings through the Reconstruction era.
HON 282 The American Intellectual Heritage (1877-present).....3
Explores in conjunction with HSTA 102 the evolution of U.S. cultural, philosophical, and artistic history through the study of its humanistic achievements from the Reconstruction era to the present.
LIT 110 Introduction to Literature 3
Students build and expand their knowledge to the extent that reading literature is a discovery process for the engaged mind.
LIT/PHIL 240 The Bible as Literature 3
Examines the Bible as a work of literary art.
PHIL 115 Ethics.....3
Students analyze divergent moral views and assess the strengths and weaknesses of these views in order to form their own point of view.
PHIL 117 Philosophies of Life.....3
Students evaluate the diversity, intrinsic value, and consequences of various philosophical points of view to develop their own philosophy of life.

COT Students who wish to pursue a baccalaureate degree must also be aware of the requirements below.

Students should consult with their advisors, major departments, or faculty in their programs for guidance in selecting appropriate writing, technology intensive, and experiential learning courses.

Writing Requirements

Students who intend to graduate with a baccalaureate degree are required to have passed at least three courses with a WR indicator. WRIT 101 is required. The second course must be one of the following: WRIT 201, WRIT 220, WRIT 122, or WRIT 121. The third course must have a WR indicator and be selected in consultation with an advisor. The WR indicates that the course requires at least one extensive and evaluated writing assignment. To identify these courses refer to the Course Descriptions section (see page 130).

In addition to passing at least three WR courses, each student is required to undertake and successfully complete a writing project as determined by their major department(s). The writing project will be evaluated on the following skill categories:

- ♦Audience Awareness
- ♦Clarity
- ♦Content
- ♦Development of an Idea
- ♦Purpose
- ♦Mechanics
- ♦Organization
- ♦Conciseness
- ♦Originality
- ♦Reflectivity

Additional categories may be added by the departments. For more specific information about the writing project, students should contact the department chair in their major(s) or their faculty advisor.

Technology Requirements

Students who intend to graduate with a baccalaureate degree are required to have passed at least three (3) courses which include a strong component or emphasis on using information and communication technology.

Technology intensive courses are designated TN in the course descriptions (see page 130).

Graduating students will engage in emerging information technologies. Every student will:

- demonstrate proficiency in the use of appropriate software applications for writing, email, presentations, and numerical information;
- utilize discipline-appropriate software and hardware;

- show the ability to find, evaluate, organize, disseminate and internalize information from a variety of sources;
- develop the skills necessary to be independent, lifelong learners.

Bachelor of Applied Science Degree

The Bachelor of Applied Science (BAS) degree is available to students with an Associate of Applied Science (AAS) degree. If a student has earned an AAS degree from a regionally accredited institution, he or she may enroll on the East campus of MSU Billings (or the other four units within the Montana University System to complete Academic Foundations requirements) and take upper division credits in existing areas of study which will complement the student's AAS credits already earned. The transferability of the AAS courses will be determined course by course. Students anticipating transferring are encouraged to consult with their advisor and check the requirement of the institution into which they plan to transfer.

Experiential Learning Requirement

Students who intend to graduate with a baccalaureate degree are required to take and pass at least one course of experiential learning. Examples are student teaching, internships, undergraduate research, cooperative education experiences, practica, experiences abroad, and senior projects.

Transfer Opportunities

Bachelor of Applied Science Degree

The Bachelor of Applied Science (BAS) degree is available to students with an Associate of Applied Science (AAS) degree. If a student has earned an AAS degree from a regionally accredited institution, he or she may enroll on the main campus of MSU Billings (or the other four units within the Montana University System to complete general education requirements) and complete Academic Foundations courses and upper division credits in existing areas of study which will complement the student's AAS credits already earned. At MSU Billings, there are many different plans of study including Communications, Business, Health Administration, and others. The transferability of the AAS courses will be determined course by course. Students anticipating transferring are encouraged to consult with their advisor and check the requirement of the institution into which they plan to transfer.

Pathways to other MSU Billings Bachelor's degrees

Students who complete an Associate of Science degree through the MSU Billings College of Technology have many options available to complete a Bachelor's degree and beyond. The Associate of Science degrees with plans of study in Human Resources-Business Articulated Emphasis and Business Administration are designed for students to complete their Associate of Science degree at the College of Technology and attend the University campus for two more years to complete a Bachelor of Science in Business Administration. MSU Billings COT has an articulation agreement with MSU-Northern for students who complete an Associate of Science Degree at MSU Billings COT and wish to complete a Bachelor's degree in Nursing. Students who complete an Associate of Science degree complete the Academic Foundation courses as part of that degree which also provides the foundation for a Bachelor's degree. Having this foundation opens many pathways. Students should contact an academic advisor to discuss the pathway that is right for them.

Academic Programs and Departments

Academic programs at the College of Technology are organized into four major areas with four department chairs as noted below. However, for students' convenience, the academic program plans of study following this page are listed alphabetically.

Computers, Trades, and Industry

Paul Bauer, Department Chair
(406) 247-3051
pbauer@msubillings.edu

Computer Programs:
- Computer Desktop Network Support
- Computer Systems Technology
- Computer Programming and Application Development
- Networking

Trades Programs:
- Heating, Ventilation, Air Conditioning, and Refrigeration **(Program placed on moratorium)**
- Construction-Carpentry

Industry Programs:
- Drafting and Design Technology (includes Assistant Drafter)
- Power Plant Operations
- Process Plant Technology

Transportation, Welding, and Business

Vern Gagnon, Department Chair
(406) 247-3043
vgagnon@msubillings.edu

Transportation Programs:
- Automotive Technology
- Autobody Repair and Refinishing Technology
- Diesel Technology

Welding Programs:
- Welding and Metal Fabrication
- Welding for Energy

Business Programs:
- Accounting Technology
- Administrative Assistant
- Business Administration
- Human Resources
- Medical Administrative Assistant
- Office Assistant

Nursing, Health, and Safety Occupations

Lonnie Schrag, Department Chair
(406) 247-3074
lschrag@msubillings.edu

Nursing Programs:
- Nursing—Registered Nurse
- Nursing—Practical Nurse

Cindy Rossmith, Director of Nursing
(406) 247-3073
crossmith@msubillings.edu

Safety Programs:
- Fire Science

Allied Healthcare Programs:
- Medical Coding and Insurance Billing
- Paramedic
- Radiologic Technology
- Surgical Technology

Transfer and Learner Support

(related instruction and Academic Foundation courses)
Barb Pedula, Department Chair
(406) 247-3068
bpedula@msubillings.edu

Academic Programs

Accounting Assistant ▽
Certificate of Applied Science

The Accounting Assistant program is designed to prepare students for entry-level employment in accounts receivable, accounts payable, payroll, and general accounting. A Certificate of Applied Science is awarded upon successful completion of the required Accounting Assistant courses. All credits earned in completion of the Certificate may be applied toward the Accounting Technology Associate of Applied Science Degree. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program, a student will be able to:

- Demonstrate understanding of terminology relative to appropriate program of accounting
- Perform basic accounting functions relative to appropriate program of accounting e.g. recording daily transactions, planning and recording, adjusting and closing entries, and preparing basic financial statements using common practices and GAAP (Generally Accepted Accounting Principles)
- Apply alternate accounting procedures and methods as they pertain to a service enterprise, a professional enterprise, and a merchandising enterprise

Required Courses	Credits
ACTG 101 Accounting Procedures I	3
ACTG 102 Accounting Procedures II	3
ACTG 125 QuickBooks	3
ACTG 205 Computerized Accounting	3
CAPP 120 Introduction to Computers	3
CAPP 156 MS Excel	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 115 Keyboarding Applications/Ten Key	3
CTBU 171 Introduction to Business	3
M 108 Business Mathematics	3
WRIT 122 Introduction to Business Writing	3
Total minimum credits required	**36**

Students should check course descriptions for required prerequisites. Math and communication requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	Credits
CAPP 120	3
ACTG 101	3
CTBU 115	3
CTBU 171	3
M 108	3
WRIT 122	3

Second Semester	Credits
CAPP 156	3
COMT 109	3
COMT 130	3
ACTG 205	3
ACTG 125	3
ACTG 102	3

Accounting Technology ▽
Associate of Applied Science Degree

The technical skills of a qualified accounting professional are needed by every business in America, large or small. The Accounting Technology program provides students with the basic knowledge of accounting processes necessary for employment. After completing the program, students will be able to record day-to-day financial transactions and prepare summary statements of business conditions. Computers are implemented in performing accounting functions and preparing reports. As a capstone training experience, it is highly recommended that students complete a one-semester internship in an accounting technician trainee position. This internship allows students to apply learned competencies to on-the-job situations.

This program prepares students for entry-level accounting positions as an accounting clerk, payroll clerk, bookkeeper, accounting technician, or accounting associate. Accounting clerks and bookkeepers are hired by public accounting firms, private and public organizations, and large and small businesses. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Demonstrate understanding of terminology relative to appropriate program of accounting
- Perform basic accounting functions relative to appropriate program of accounting e.g. recording daily transactions, planning and recording adjusting and closing entries, and preparing basic financial statements using common practices and GAAP (Generally Accepted Accounting Principles)
- Apply alternate accounting procedures and methods as they pertain to a service enterprise, a professional enterprise, and a merchandising enterprise
- Demonstrate understanding of basic business and workplace practices, procedures and laws

Required Courses	Credits
ACTG 101 Accounting Procedures I	3
ACTG 102 Accounting Procedures II	3
ACTG 103 Accounting Procedures III	3
ACTG 125 QuickBooks	3
ACTG 180 Payroll Accounting	3
ACTG 205 Computerized Accounting	3
CAPP 120 Introduction to Computers	3
CAPP 154 MS Word	3
CAPP 156 MS Excel	3
CAPP 158 MS Access	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 115 Keyboarding Applications/Ten Key	3
CTBU 165 Business Law	3
CTBU 171 Introduction to Business	3
M 108 Business Mathematics	3
M 121 College Algebra	3*
OR	
M 143 Finite Mathematics	4*
OR	
M 105 Contemporary Mathematics	3*
WRIT 122 Introduction to Business Writing	3

Continued…

Suggested Plan of Study

First Year	Credits
CAPP 120	3
CAPP 154	3
ACTG 180	3
ACTG 205	3
ACTG 101	3
ACTG 102	3
CTBU 115	3
CTBU 171	3
WRIT 122	3
M 108	3
Restricted Electives	3

Second Year	Credits
CAPP 156	3
CAPP 158	3
COMT 109	3
COMT 130	3
ACTG 125	3
CTBU 165	3
ACTG 103	3
College Math	3-4
Restricted Electives	6

Subtotal..... 54

Restricted Electives chosen in consultation with academic advisor 9

Total minimum credits required for degree..... 63

* Students should check with their academic advisor to determine the specific math course that is appropriate for their plan of study.

Students should check course descriptions for required prerequisites. Math and communication requirements are usually determined by performance on placement tests or transfer credits.

Suggested Electives:
ACTG 201 Principles of Financial Accounting
CAPP 110 Short Courses: MS Outlook
CAPP 153 MS PowerPoint
CMP 135 Introduction to Web Design
CTBU 131 Records and Information Management
CTBU 133 Office Applications
CTBU 296 Cooperative Education/Internship
DSGN 204 Advanced Software Applications
DSGN 208 Multimedia Technology
ECNS 201 Principles of Microeconomics
FIN 305 Financial Planning

Administrative Assistant
Associate of Applied Science Degree

Office occupations rank among the careers with the largest anticipated job growth in the next decade. The Administrative Assistant program provides students with the technical skills and knowledge necessary for employment in a variety of office positions and for advancement toward office management positions. After completing the program, students will be able to perform a variety of administrative duties in an office as well as use computers and business application software to perform advanced information processing functions. Emphasis is placed on developing problem-solving and decision-making abilities in addition to technical skills. As a capstone training experience, it is highly recommended that students complete a one-semester internship in an administrative support trainee position. This internship allows students to apply learned competencies to on-the-job situations.

This program provides the skills necessary for an entry-level clerical position in a variety of organizations, including government agencies, private industry, banks, accounting firms, insurance companies, legal firms, medical offices, real estate agencies, court offices, utility companies, and many more. Most graduates gain a position as a receptionist, secretary, administrative assistant, accounting clerk, word processor, or data entry clerk. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Use current computer programs, including word processing, spreadsheet and database software
- Type proficiently on a computer keyboard
- File and organize documents
- Understand basic accounting and business math
- Spell, proofread and use proper business English
- Communicate professionally, both in writing and in person
- Maintain professionalism in a business environment
- Conduct an effective job search

Required Courses	Credits
ACTG 101 Accounting Procedures I	3
ACTG 102 Accounting Procedures II	3
ACTG 180 Payroll Accounting	3
ACTG 205 Computerized Accounting	
OR	
ACTG 125 QuickBooks	3
CAPP 110 Short Courses: MS Outlook	1
CAPP 120 Introduction to Computers	3
CAPP 154 MS Word	3
CAPP 156 MS Excel	3
CAPP 158 MS Access	3
CMP 115 Introduction to Desktop Publishing	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 113 Transcription	3
CTBU 115 Keyboarding Applications/Ten Key	3
CTBU 131 Records and Information Management	3
CTBU 133 Office Applications	3
CTBU 165 Business Law	3
CTBU 171 Introduction to Business	3
DSGN 204 Advanced Software Applications	3
M 108 Business Mathematics	3

Continued…

Suggested Plan of Study

First Year	Credits
CAPP 120	3
CAPP 154	3
CAPP 156	3
ACTG 101	3
ACTG 102	3
CTBU 115	3
CTBU 131	3
CTBU 133	3
CTBU 171	3
WRIT 122	3
WRIT 180	1
M 108	3

Second Year	Credits
CAPP 110	1
CAPP 158	3
COMT 109	3
COMT 130	3
ACTG 180	3
ACTG 205	
OR ACTG 125	3
CTBU 113	3

M 121 College Algebra 3*
OR
M 143 Finite Mathematics 4*
OR
M 105 Contemporary Mathematics 3*
WRIT 122 Introduction to Business Writing 3
WRIT 180 Editing for Business Writing 1
Subtotal..... 65
Restricted Electives chosen in consultation with academic advisor 3
Total minimum credits required for degree..... 68

* Students should check with their academic advisor to determine the specific math course that is appropriate for their plan of study.

Students should check course descriptions for required prerequisites. Math and communication requirements are usually determined by performance on placement tests or transfer credits.

Suggested Electives:
ACTG 103 Accounting Procedures III
ACTG 205 Computerized Accounting
OR ACTG 125 QuickBooks
CMP 135 Introduction to Web Design
CST 160 Installing, Configuring and Administrating Microsoft Windows Vista
CTBU 175 Current Issues in Business
CTBU 296 Cooperative Education/Internship
DSGN 208 Multimedia Technology

CTBU 165..... 3
CMP 115..... 3
DSGN 204..... 3
College math 3
Restrictive Electives 3

Assistant Drafter
Certificate of Applied Science

Students completing one year of the program may apply for an Architectural or Civil Drafting Certificate. This provides acknowledgement to students who have achieved a rudimentary level of training but are unable or choose not to complete the two-year program. See our website at www.msubillings.edu/careers for graduate data.

The Assistant Drafter Certificate of Applied Science can be earned in two (2) semesters by completing Part One (1) or Part Two (2) of the Assistant Drafter plan of study.

Upon successful completion of this program a student will be able to:

- Interpret and create two-dimensional drawings relevant to mechanical and architectural disciplines
- Interpret and create three-dimensional models relevant to mechanical and architectural disciplines
- Perform discipline-specific data calculations
- Engage projects from conception to development of a final product
- Utilize a wide variety of software

Part One – Architectural
(Students start in the spring semester)

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
DRFT 102 Building Construction	2
DRFT 109 Introduction to Technical Drawing	4
DRFT 110 Technical Drawing Lab	3
DRFT 128 3D Applications	3
DSGN 107 Quantity Estimating	2
DSGN 112 Architectural Lab	5
DSGN 204 Advanced Software Applications	3
M 114 Extended Technical Mathematics	3
WRIT 104 Workplace Communications **OR** WRIT 122 Introduction to Business Writing **OR** WRIT 121 Introduction to Technical Writing	3
Total minimum credits required	**34**

Suggested Plan of Study

First Semester	**Credits**
CAPP 120	3
M 114	3
DRFT 109	4
DRFT 110	3
DRFT 128	3
Total	**16**

Second Semester	
COMT 109	3
DRFT 102	2
WRIT 104/121/122	3
DSGN 107	2
DSGN 112	5
DSGN 204	3
Total	**18**

Part Two – Civil
(Students start in the fall semester)

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
DRFT 104 Civil Technology	2
DRFT 109 Introduction to Technical Drawing	4
DRFT 110 Technical Drawing Lab	3
DRFT 128 3D Applications	3
DRFT 138 Structural Drafting	3
DSGN 114 Civil Lab	5
DSGN 116 GIS for Civil Applications	2
M 114 Extended Technical Mathematics	3
WRIT 104 Workplace Communications **OR** WRIT 122 Introduction to Business Writing **OR** WRIT 121 Introduction to Technical Writing	3
Total minimum credits required	**34**

Suggested Plan of Study

First Semester	**Credits**
CAPP 120	3
M 114	3
DRFT 109	4
DRFT 110	3
DRFT 128	3
Total	**16**

Second Semester	**Credits**
COMT 109	3
DRFT 104	2
DRFT 138	3
DSGN 114	5
DSGN 116	2
WRIT 104/121/122	3
Total	**18**

Students should check the course descriptions for required prerequisites.

Automobile Collision Repair and Refinishing Technology
Associate of Applied Science Degree

The ever-increasing numbers of vehicles on the highways, coupled with the high cost of original purchase and replacement, have created a demand for trained collision repair technicians. This demand is currently exceeding the supply, and future indications are that this trend will continue. A student may exit this program after completing two semesters and receive an Automobile Collision Repair Technician or Automobile Refinishing Technician Certificate of Applied Science. Graduates in our Automobile Repair and Refinishing program may find career opportunities with auto repair shops, auto parts stores, windshield repair shops and other automotive related businesses. See our website at www.msubillings.edu/careers for graduate data.

Automobile Collision Repair Technicians perform structural and cosmetic repairs on automobiles with unitized body construction in preparation for refinishing. Responsibilities include minor sheet metal repair, welding of mild and high-strength steels, panel replacement, and measuring with laser and mechanical measuring systems.

Automobile Refinishing Technicians prepare and refinish vehicles. Students perform panel and overall refinishing using the latest techniques and equipment. Basic knowledge and skills in refinishing are developed with hands-on practice of current techniques.

Upon successful completion of this program a student will be able to:

- Demonstrate operational skills of spray equipment and correct maintenance according to the manufacturer's recommendations.
- Select and use proper safety equipment for personal and environmental protection against hazards from the refinish industry. Handle and dispose of hazardous waste according to EPA regulations.
- Perform correct selection and techniques in the use of sanding materials.
- Demonstrate competent knowledge of the functions and application techniques associated with automotive paint undercoats.
- Using the correct finesse polishing techniques, remove surface imperfections in the topcoat for an optimum finish.
- Perform demonstrations with basic tools in body damage repair situations, according to lectures and demonstrations shown.
- Demonstrate the ability to remove and replace stationary automobile glass, gasket and adhesive methods.
- Adjust front and rear wheel camber on suspension systems with camber adjustments.
- Diagnose and measure structural damage using tram and self-centering gauges according to industry specifications.
- Satisfactorily perform welding operations using resistance and metal inert gas equipment.

Required Courses	Credits
ABDY 111 Introduction to Auto Body Repair	5
ABDY 112 Minor Collision Repair	6
ABDY 121 Automobile Body Structural Repair	6
ABDY 122 Automobile Collision Mechanics	5
ABDY 131 Introduction to Refinishing Principles	6
ABDY 132 Introduction to Automotive Undercoats & Plastics	6
ABDY 141 Advanced Automotive Refinishing	6
ABDY 142 Introduction to Automotive Paint Blending and Color Matching	7
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 114 Extended Technical Mathematics	3
TRID 140 Automobile Sheet Metal and Structural MIG Welding	2
TRID 150 Environmental and Shop Practices	2

Continued…

Suggested Plan of Study

First Semester	Credits
ABDY 111	5
ABDY 112	6
TRID 150	2
TRID 140	2
M 114	3
Total	**18**

Second Semester	Credits
ABDY 131	6
ABDY 132	6
TRID 152	3
CAPP 120	3
Total	**18**

TRID 152 Vehicle Heating, Ventilation & Air Conditioning 3
TRID 180 Electrical Systems..... 4
WRIT 122 Introduction to Business Writing 3

Total minimum credits required for degree..... 70

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Third Semester	**Credits**
ABDY 141	6
ABDY 142	7
COMT 109	3
Total	**16**

Fourth Semester	**Credits**
ABDY 121	6
ABDY 122	5
TRID 180	4
WRIT 122	3
Total	**18**

Automobile Collision Repair Technology
Certificate of Applied Science

Upon successful completion of this program a student will be able to:

- Perform correct selection and techniques in the use of sanding materials
- Perform demonstrations with basic tools in body damage repair situations, according to lectures and demonstrations shown
- Demonstrate the ability to remove and replace stationary automobile glass, gasket and adhesive methods
- Adjust front and rear wheel camber on suspension systems with camber adjustments
- Diagnose and measure structural damage using tram and self-centering gauges according to industry specifications
- Satisfactorily perform welding operations using resistance and metal inert gas equipment

Required Courses	Credits
ABDY 111 Introduction to Auto Body Repair	5
ABDY 112 Minor Collision Repair	6
ABDY 121 Automobile Body Structural Repair	6
ABDY 122 Automobile Collision Mechanics	5
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 111 Technical Mathematics	3
TRID 140 Automobile Sheet Metal and Structural MIG Welding	2
WRIT 104 Workplace Communications	3
Total minimum credits required	**36**

Students should check the course descriptions for required prerequisites.

Suggested Plan of Study

Fall Semester	**Credits**
ABDY 111	5
ABDY 112	6
WRIT 104	3
M 111	3
Total	**17**

Spring Semester	
ABDY 121	6
ABDY 122	5
CAPP 120	3
COMT 109	3
TRID 140	2
Total	**19**

Automobile Refinishing Technology
Certificate of Applied Science

Upon successful completion of this program a student will be able to:

- Demonstrate operational skills of spray equipment and correct maintenance according to the manufacturer's recommendations.
- Select and use proper safety equipment for personal and environmental protection against hazards from the refinish industry. Handle and dispose of hazardous waste according to EPA regulations.
- Perform correct selection and techniques in the use of sanding materials.
- Demonstrate competent knowledge of the functions and application techniques associated with automotive paint undercoats.
- Using the correct finesse polishing techniques, remove surface imperfections in the topcoat for an optimum finish.

Required Courses	**Credits**
ABDY 131 Introduction to Refinishing Principles	6
ABDY 132 Introduction to Automotive Undercoats and Plastics	6
ABDY 141 Advanced Automotive Refinishing	6
ABDY 142 Introduction to Automotive Paint Blending and Color Matching	7
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 111 Technical Mathematics	3
WRIT 104 Workplace Communications	3
Total minimum credits required	**37**

Suggested elective

TRID 152 Vehicle Heating, Ventilation and Air Conditioning	3

Students should check the course descriptions for required prerequisites.

Suggested Plan of Study

Spring Semester	**Credits**
ABDY 131	6
ABDY 132	6
CAPP 120	3
WRIT 104	3
Total	**18**

Fall Semester	
ABDY 141	6
ABDY 142	7
COMT 109	3
M 111	3
Total	**19**

Automotive Technology
Associate of Applied Science Degree

The Transportation area offers both an Associate of Applied Science degree and a Certificate of Applied Science in Automotive Technology. The Associate of Applied Science degree is usually completed in four semesters. The Certificate can be completed in two semesters. The automotive curriculum emphasizes the fundamentals of all mechanical, fuel, and electronic systems found on modern vehicles and prepares students for service and management positions in the automotive industry.

The program is NATEF and ASE certified in all eight areas of instruction. Graduates find employment in major dealerships, independent and specialty shops, government motor pools and fleet maintenance organizations. Other graduates find positions in management as service managers, shop foremen, factory representatives or diagnostic specialists. See our website at www.msubillings.edu/careers for graduate data.

The program also has articulation agreements with the Billings Career Center and MSU-Northern to provide unique training and educational opportunities for those students who are interested and qualified.

Upon successful completion of this program a student will be able to:

- Apply the learned skills to secure employment in the automotive technology field
- Identify familiar ASE style questions during Automotive Society of Engineers certification examinations
- Diagnose and repair the complex systems in modern automobiles
- Efficiently manage their time during automotive diagnosis and repair
- Identify health and safety hazards associated within the automotive industry

Required Courses — Credits

AUTO 110 Manual Drive Train and Axles	2
AUTO 111 Manual Drive Train and Axles Lab	2
AUTO 160 Automotive Brake Systems	2
AUTO 161 Automotive Brake Systems Lab	2
AUTO 172 Engine Rebuild	5
AUTO 182 Diagnosis and Tune-Up	3
AUTO 183 Automotive Diagnosis and Tune-Up Lab	3
AUTO 202 ASE Exam Preparation	1
AUTO 210 Automotive Suspension and Steering Systems	2
AUTO 211 Automotive Suspension and Steering Systems Lab	2
AUTO 220 Automotive Electrical/Electronic Systems	2
AUTO 221 Automotive Electrical/Electronic Systems Lab	2
AUTO 222 Automotive Engine Performance	3
AUTO 223 Automotive Engine Performance Lab	3
AUTO 255 Applied Automotive Service Operations	
OR AUTO 296 Cooperative Education/Internship	4
AUTO 256 Automatic Transmission/Transaxles	3
AUTO 257 Automatic Transmission/Transaxles Lab	3
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 114 Extended Technical Mathematics	3
TRID 150 Environmental and Shop Practices	2
TRID 151 Welding	2
TRID 152 Vehicle Heating, Ventilation, and Air Conditioning	3
TRID 170 Engine Theory	4
TRID 180 Electrical Systems	4
WRIT 122 Introduction to Business Writing	
OR WRIT 121 Introduction to Technical Writing	3
Total minimum credits required for degree	**71**

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	**Credits**
AUTO 110	2
AUTO 111	2
COMT 109	3
TRID 170	4
TRID 180	4
CAPP 120	3
Total	**18**

Second Semester	
AUTO 160	2
AUTO 161	2
AUTO 172	5
AUTO 182	3
AUTO 183	3
TRID 150	2
Total	**17**

Third Semester	
AUTO 202	1
AUTO 210	2
AUTO 211	2
AUTO 220	2
AUTO 221	2
TRID 152	3
M 114	3
WRIT 121 or 122	3
Total	**18**

Fourth Semester	
AUTO 222	3
AUTO 223	3
AUTO 255 or 296	4
AUTO 256	3
AUTO 257	3
TRID 151	2
Total	**18**

Automotive Technology
Certificate of Applied Science

Upon successful completion of this program a student will be able to:

- Apply the learned skills to secure employment in the automotive technology field
- Identify familiar ASE style questions during Automotive Society of Engineers certification examinations
- Diagnose and repair the complex systems in modern automobiles
- Efficiently manage their time during automotive diagnosis and repair
- Identify health and safety hazards associated within the automotive industry

Required Courses	Credits
AUTO 110 Manual Drive Train and Axles	2
AUTO 111 Manual Drive Train and Axles Lab	2
AUTO 160 Automotive Brake Systems	2
AUTO 161 Automotive Brake Systems Lab	2
AUTO 172 Engine Rebuild	5
AUTO 182 Diagnosis and Tune-Up	3
AUTO 183 Automotive Diagnosis and Tune-Up Lab	3
COMT 109 Human Relations	3
M 111 Technical Mathematics	3
TRID 170 Engine Theory	4
TRID 180 Electrical Systems	4
WRIT 104 Workplace Communications	3
Total credits required	**36**

Optional courses

CAPP 120 Introduction to Computers	3
TRID 150 Environmental and Shop Practices	2

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	Credits
AUTO 110	2
AUTO 111	2
COMT 109	3
TRID 170	4
TRID 180	4
M 111	3
Total	**18**

Second Semester	
AUTO 160	2
AUTO 161	2
AUTO 172	5
AUTO 182	3
AUTO 183	3
WRIT 104	3
Total	**18**

Business Administration
Associate of Science Program of Study

This program is designed to provide an entry point for students interested in pursuing business-related careers. It focuses on a broad business core in a flexible and practical way that is ideal for adults seeking career changes or those who desire advancement in their current position as well as the traditional students seeking a career in business. The program covers key areas dealing with economics; management, marketing, accounting, and business law that prepare students for an active and successful career. Classes are offered at flexible times with evening, hybrid, and online offerings making it ideal for adult learners or students who work during the day.

The Associate of Science Plan of Study in Business Administration offers a unique point of access for anyone interested in careers in management, marketing, finance or information systems because the program articulates directly into the College of Business Bachelor of Science degree in Business Administration. Those who enter the program can get the up-to-date skills and knowledge they need to improve their current career path or move on to the MSU Billings College of Business and complete a four-year degree with options in Management, Marketing, Finance or Information Systems. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Utilize management, marketing, accounting, and business law concepts and theories to analyze the viability of a business and to use those concepts and theories in the decision making process
- Analyze the legal requirements and ethical implications of business decisions and how such decisions affect the business, community and society
- Employ computer hardware and software to effectively manage information
- Examine workplace issues and formulate appropriate responses for viable solutions
- Utilize oral, written and listening skills to demonstrate an understanding of business practices and theories and effectively interact with others.

Required Courses — Credits

Academic Foundations Requirements 37
Students should consult with an academic advisor before registering for Academic Foundations courses. **The following Academic Foundations courses are required: M 143, WRIT 101, WRIT 220, COMT 130 or MIS 150, and ECNS 201.**

Core Courses

^ACTG 201 Principles of Financial Accounting 3
#BUS 205 Business Law I 3
CAPP 120 Introduction to Computers
OR
^CAPP 131 Basic MS Office 3
^CTBU 171 Introduction to Business 3
^CTBU 270 Introduction to Sales & Marketing 3
^CTBU 280 Principles of Applied Management 3
^CTBU 293 Workshop 2
#ECNS 202 Principles of Macroeconomics 3
Total for core 23

#Indicates courses that transfer to the College of Business core.

^Indicates courses that transfer to the College of Business as general electives.

Suggested Plan of Study

(Coordinated Evening/Online Studies Plan)

First Semester — Credits
CTBU 171 3
CAPP 120/CAPP 131 3
Academic Foundations 9

Second Semester
ACTG 201 3
CTBU 280 3
Academic Foundations 9

Third Semester
ECNS 201 3
CTBU 270 3
Academic Foundations 9

Fourth Semester
ECNS 202 3
BUS 205 3
CTBU 293 2
Academic Foundations 7

Computer Desktop/Network Support
Associate of Applied Science Degree

CDNS is a fall start program. Please see an advisor for more information.

A Computer Desktop/Network Support specialist provides technical solutions to customer-critical problems related to software applications and associated hardware. This is accomplished through problem analysis using online training, phone service support, and a variety of electronic means to achieve high-level customer satisfaction and to accomplish the goals of the organization. Students who are successful in the program will be prepared to take industry exams such as A+, Net+, MCP, and MCDST. Students who graduate with a CDNS degree can work as support specialists in business, industry, education, and government. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Demonstrate understanding of career paths, entry-level positions, and advancement in the information technology and computer user support field.
- Apply customer service and end-user support principles, including communication skills, etiquette, and courtesy when dealing with end-users and individuals lacking a technical background. Students will demonstrate methods for dealing with users who are angry, upset, or abusive. Students will demonstrate the ability to communicate effectively with clients, verbally and in writing.
- Demonstrate competency troubleshooting and solving computer hardware, software and Operating System problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve basic hardware, software, and operating system problems.
- Demonstrate competency setting up LAN networks, and troubleshooting and solving network problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve basic network problems.
- Demonstrate the ability to describe the purposes and functions of server and client operating systems.
- Demonstrate the ability to differentiate between client/server and peer-to-peer networks and will be able to describe environments where each is appropriate.
- Demonstrate proficiency in utilizing, integrating, and troubleshooting business-oriented computer software programs such as Microsoft Word, Excel, Access and PowerPoint.
- Demonstrate the ability to use appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network.

Before a student can be accepted into the Computer Desktop/Network Support program, competency in mathematics and computers must be demonstrated. This may be done by:

- transferring of appropriate credits
- completing the computer literacy challenge test
- obtaining permission of CST faculty
- taking prerequisite course (CAPP 120)
- possessing current ACT/SAT scores in the required range
- taking the necessary prerequisite English, math and/or computer classes identified in the catalog

Check with an academic advisor to determine how you can meet these requirements. Students should check the course descriptions for required prerequisites.

Required Courses	Credits
CAPP 110 Short Courses: MS Outlook	1
CAPP 153 MS PowerPoint	2
CAPP 154 MS Word	3
CAPP 156 MS Excel	3
CAPP 158 MS Access	3
CMP 135 Introduction to Web Design	3
CMP 235 Advanced Web Design and Development	3

Continued…

Suggested Plan of Study

First Semester	Credits
CST 160 (Vista)	3
CST 170 (CCNA1)	4
CST 172 (CCNA2)	4
COMT 109	3
M 114	3
Total	**17**

COMT 109 Human Relations 3
CST 160 Installing, Configuring and Administrating Microsoft Windows Vista 3
CST 162 Installing, Configuring and Administrating Microsoft Windows Server 2003 3
CST 170 Introduction to Internetworking and Cabling 4
CST 172 Introduction to IP Routing 4
CST 182 Help Desk Support 3
CST 250 Microcomputer Hardware Maintenance 3
CST 254 Advanced Hardware Technical Support 4
CST 282 Research and Advanced Software Technical Support 3
CST 285 Help Desk Infrastructure 3
CTBU 171 Introduction to Business 3
CTCM 130 Introduction to Public Speaking 3
DSGN 208 Multimedia Technology 3
M 114 Extended Technical Mathematics 3
WRIT 121 Introduction to Technical Writing 3
Elective or CST 292 Technical Support Internship 3
Total minimum credits required for degree 69

Students should check course descriptions for required prerequisites. Math and communication requirements are usually determined by performance on placement tests or transfer credits.

Second Semester
CAPP 158 3
CST 162 3
CAPP 154 3
WRIT 121 3
CAPP 156 3
CTBU 171 3
Total 18

Third Semester
CAPP 110 1
CAPP 153 2
CMP 135 3
CST 182 3
CST 250 3
CTCM 130 3
DSGN 208 3
Total 18

Fourth Semester
CMP 235 3
CST 254 4
CST 282 3
CST 285 3
Elective/Internship 3
Total 16

Computer Programming and Application Development
Associate of Applied Science Degree

Computer Programming and Application Development is a fall start program. Please see an advisor for more information.

The Computer Programming and Application Development degree prepares students to enter industry as entry-level software and web application developers. Students gain hands-on experience and skills in Java Visual Basic .NET and web development technologies such as XHTML, CSS, Flash, JavaScript and PHP. Graduates will also gain experience working on Linux and Windows Operating System platforms. These factors combine to create a powerful mix of skills valuable to a variety of businesses and business fields. Further, this course of study will prepare students for the Sun Certified Java Programmer exam as well as the Microsoft Certified Application Developer exams. At graduation, each student will have a portfolio of applications created for demonstration at job interviews. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Gather application requirements; create designs using the Unified Modeling Language (UML); write applications according to adopted standards; create project and test plans; design, code, test, and deploy Visual Basic .NET applications
- Design, code, test, and deploy Java applications
- Design, create, and deploy databases using SQL Server and MySQL
- Design, create, deploy, and maintain dynamic web sites compliant with W3C standards
- Understand the Linux and Microsoft Operating Systems

Before a student can be accepted into the Computer Programming and Application Development degree program, competency in mathematics and computers must be demonstrated. This may be done by:

- transferring of appropriate credits
- completing the computer literacy challenge test
- obtaining permission of CST faculty
- taking prerequisite course (CAPP 120)
- possessing current ACT/SAT scores in the required range
- taking the necessary prerequisite English, math and/or computer classes identified in the catalog

Check with an academic advisor to determine how you can meet these requirements. Students should check the course descriptions for required prerequisites.

Required Courses	Credits
CAPP 156 MS Excel	3
CAPP 158 MS Access	3
CMP 135 Introduction to Web Design	3
CMP 235 Advanced Web Design and Development	3
CMP 236 Advanced Web Programming	3
COMT 109 Human Relations	3
CST 110 Applied Basic Programming Concepts Using Visual Basic .NET	3
CST 130 Introduction to Scripting for the Windows Environment	3
CST 160 Installing, Configuring and Administrating Microsoft Windows Vista	3
CST 162 Installing, Configuring, and Administering Microsoft Windows Server 2003	3
CST 168 Installing, Configuring, and Administering Linux	3
CST 211 Programming Capstone Project	3
CST 220 Applied Introduction to Java	4
CST 221 Applied Intermediate Java	4
CST 233 Deploying Databases with Microsoft SQL Server	3

Continued…

Suggested Plan of Study

First Semester	Credits
CAPP 156	3
CMP 135	3
CST 110	3
CST 244	2
M 143	4
CST 160	3
Total	**18**

Second Semester	
CAPP 158	3
CMP 235	3
COMT 109	3
WRIT 121	3
CST 168	3
Restricted elective	3
Total	**18**

CST 244 Introduction to Programming Lab Companion Course 2
CST 265 Applied Advanced Visual Basic .NET Programming 4
CTBU 171 Introduction to Business..... 3
M 143 Finite Mathematics 4
MIS 210 Systems Analysis and Design 3
WRIT 121 Introduction to Technical Writing..... 3

Restricted Elective
Choose from:
CAPP 110 Short Courses: MS Outlook 1
CAPP 154 MS Word 3
CST 169 Administering Web Servers 3
CST 182 Help Desk Support..... 3
CST 217 Microsoft Certified Applications Developer Exam Preparation 2
CST 227 Sun Certified Java Programmer Exam Preparation..... 1
DSGN 248 Computer Presentation and Animation 3
Total elective credits..... 3

Total minimum credits 69

Third Semester
CST 130..... 3
MIS 210..... 3
CST 265..... 4
CTBU 171..... 3
CST 220..... 4
Total..... 17

Fourth Semester
CST 162..... 3
CST 211..... 3
CST 221..... 4
CST 233..... 3
CMP 236..... 3
Total..... 16

Computer Systems Technology
Associate of Applied Science Degree

CST is a fall start program. Please see an advisor for more information.

The Computer Systems Technology program prepares students for an exciting career in the computer industry. Technicians provide assistance and training to system users as well as administer the computer network. Graduates can find career opportunities in universities, public and private school systems, hospitals, financial institutions, retail stores, or any other organization that provides technical support to employees. See our website at www.msubillings.edu/careers for graduate data.

Students learn techniques to investigate and resolve computer problems, both on a client computer and across an entire network and to answer clients' inquiries concerning the use of computer hardware and software. This includes solving problems related to network access, operating systems, and trouble-shooting communication issues.

Students will gain knowledge and skills in Cisco networking, Microsoft Windows networking and management, and other related computer areas. They will receive hands-on experience via the lab component of this program. Advanced computer and networking equipment is provided for use in the labs. Approximately 40% of the classroom time contains hands-on training to provide the student with real world experience. Students who are successful in the program will be prepared to take industry certification tests such as A+, Net+, Server+, CCNA, CCNP, MCP, and MCSE.

Upon successful completion of this program a student will be able to:

- Demonstrate understanding of career paths, entry-level positions, and advancement in the information technology and computer network support field.
- Demonstrate competency troubleshooting and solving computer hardware, software and Operating System problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve basic hardware, software, and operating system problems.
- Demonstrate competency setting up LAN networks, and troubleshooting and solving network problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve basic network problems.
- Demonstrate competency setting up WAN networks, and troubleshooting and solving network problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve network problems.

Before a student can be accepted into the Computer Systems Technology program, competency in mathematics and computers must be demonstrated. This may be done by:

- transferring of appropriate credits
- completing the computer literacy challenge test
- obtaining permission of CST faculty
- taking prerequisite course (CAPP 120)
- possessing current ACT/SAT scores in the required range
- taking the necessary prerequisite English, math and/or computer classes identified in the catalog

Check with an academic advisor to determine how you can meet these requirements. Students should check the course descriptions for required prerequisites.

Required Courses	**Credits**
CAPP 156 MS Excel	3
COMT 109 Human Relations	3
CST 160 Installing, Configuring and Administrating Microsoft Windows Vista	3
CST 162 Installing, Configuring and Administrating Microsoft Windows Server 2003	3
CST 168 Installing, Configuring and Administering Linux	3

Continued…

Suggested Plan of Study

First Semester	**Credits**
CST 160 (Vista)	3
CST 170 (CCNA 1)	4
CST 172 (CCNA 2)	4
CST 250 (Hardware)	3
M 114	3
Total	**17**

CST 170 Introduction to Internetworking and Cabling 4
CST 172 Introduction to IP Routing..... 4
CST 174 Advanced Routing and Ethernet Switching..... 4
CST 176 Wide Area Networking 4
CST 182 Help Desk Support..... 3
CST 250 Microcomputer Hardware Maintenance..... 3
CST 260 Planning, Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure 3
CST 270 Advanced Routing Configuration 4
CST 272 Remote Access Networks..... 4
CST 274 Multi-Layer Switching..... 4
CST 276 Network Troubleshooting..... 4
CST 288 Network Security..... 3
M 114 Extended Technical Mathematics..... 3
WRIT 121 Introduction to Technical Writing..... 3
Restricted Elective (choose from list below) 3
Total minimum credits required for degree..... 68

Restricted Electives
CST 200 Cisco CCNA Exam Prep..... 1
CST 254 Advanced Hardware Technical Support..... 4
CST 263 Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure..... 3
CST 268 Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure 3
CST 277 Fundamentals of Wireless LANs..... 3
CST 296 Internship 3

Second Semester
CAPP 156 3
CST 162 (Server)..... 3
CST 174 (CCNA 3)..... 4
CST 176 (CCNA 4)..... 4
*CST 200 (CCNA Prep)..... 1
WRIT 121 3
Total..... 18

Third Semester
CST 260 (NetInf)..... 3
CST 182 (Help Desk) 3
CST 270 (CCNP 1)..... 4
CST 272 (CCNP 2)..... 4
COMT 109..... 3
Total..... 17

Fourth Semester
CST 274 (CCNP 3)..... 4
CST 276 (CCNP 4)..... 4
CST 168 (Linux) 3
CST 288 (Security)..... 3
Restricted Elective..... 3
Total..... 17

Total..... 69

*Optional

Construction Technology - Carpentry
Associate of Applied Science Degree

This degree will provide students with a foundation necessary to obtain employment in the construction industry with skills in residential and commercial construction. Students will learn skills in blueprint reading, computer aided drafting and design, construction layout, safety, residential construction, basic commercial and industrial construction, estimating, concrete and basic construction management. Students will apply these skills by performing a variety of hands-on building construction projects and field projects. They will also earn NCCER (National Center for Construction Education Research) Certification. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Read blueprints
- Use computer technology for drafting and design
- Demonstrate use of construction safety
- Estimate materials and buildings costs for basic commercial, industrial and residential construction projects
- Lay out a building from a site plan
- Read plans and elevations
- Build concrete forms
- Frame a small building from the ground up
- Install doors and windows
- Install and finish simple drywall projects
- Frame with metal studs
- Describe the installation of electrical receptacles and light fixtures
- Install cabinetry
- Build simple stair systems
- Earn NCCER (National Center for Construction Education Research) Certification

Required Courses	Credits
CAPP 120 Introduction to Computers	3
CARP 120 Carpentry Basics and Rough-in Framing	5
CARP 130 Exterior Finishing, Stair Construction, and Metal Stud Framing	4
CARP 140 Introduction to Site Layout	3
CARP 150 Beginning Carpentry Practicum	3
CARP 152 Intermediate Carpentry Practicum	3
CARP 220 Interior Finishing	4
CARP 230 Advanced Roof, Floor, Wall, and Stair Systems	4
CARP 250 Advanced Carpentry Practicum	4
CARP 252 Capstone Carpentry Practicum	4
COMT 109 Human Relations	3
CTBU 166 Principles of Applied Supervision	3
DRFT 108 Introduction to CAD	3
M 114 Extended Technical Mathematics	3
TRID 110 Fundamentals of Construction Technology	2
TRID 112 Blueprint Reading for Construction	2
TRID 115 Using a Construction Calculator	1
TRID 120 Introduction to Concrete	2
TRID 130 Basic Rigging	1
TRID 131 Metal Building Construction	1
TRID 150 Environmental and Shop Practices	2
TRID 151 Welding	2
TRID 220 Advanced Concrete Working	3
WRIT 121 Introduction to Technical Writing	3

Continued…

Suggested Plan of Study

First Semester	Credits
CARP 120	5
CARP 150	3
M 114	3
TRID 110	2
TRID 112	2
TRID 115	1
TRID 150	2
Total	**18**

Second Semester	
CAPP 120	3
COMT 109	3
CARP 130	4
CARP 140	3
CARP 152	3
TRID 120	2
Total	**18**

Third Semester	
TRID 130	1
TRID 131	1
TRID 151	2
CTBU 166	3

Restricted Elective (see below) 3

Total minimum credits required for degree..... 71

Restricted Electives
CTBU 171 Introduction to Business..... 3
HVAC 110 Introduction to HVAC..... 4
TRID 125 Introduction to Flooring Installation 4
TRID 190 Introduction to Residential Wiring..... 3

DRFT 108 3
CARP 230 4
CARP 250 4
Total..... 18

Fourth Semester
WRIT 121 3
TRID 220 3
CARP 220 4
CARP 252 4
Restricted Elective..... 3
Total..... 17

Total for degree 71

Diesel Technology
Associate of Applied Science Degree

The advent of computer-controlled machines in industry provides the College of Technology Diesel program with the challenge and opportunity to instruct students in the latest technologies available. Cooperation from industry has given this training program the advantage of having new and/or used equipment to study, adjust settings, scan readings and repair.

The program is certified in both ASE and NATEF. Current diesel employers include major truck, tractor, and auto dealerships; specialty shops; and independent garages. Diesel Technology graduates are in demand by heavy-duty construction, mining, logging, and agricultural businesses. See our website at www.msubillings.edu/careers for graduate data. Articulation agreements with MSU-Northern, MSU Billings, and the Billings Career Center provide additional education for qualifying students.

Associate of Applied Science degrees are awarded to students who successfully pass the required courses.

Upon successful completion of this program a student will be able to:

- Inspect, diagnose, and repair industrial hydraulic systems
- Inspect, diagnose, and repair diesel fuel systems
- Inspect, diagnose, and repair diesel engines
- Inspect, diagnose, and repair heavy duty power trains
- Inspect, diagnose, and repair heavy duty chassis systems

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
DIES 101 Powertrains	2
DIES 113 Introduction to Hydraulics	2
DIES 114 Introduction to Hydraulics Lab	2
DIES 117 Introduction to Diesel Fuel Systems	4
DIES 132 Diesel Engine Overhaul	6
DIES 155 Advanced Hydraulics and Pneumatics	4
DIES 202 Advanced Powertrains	2
DIES 250 Heavy Duty Chassis	6
DIES 256 Applied Diesel Service Operations I **OR** DIES 296 Cooperative Education/Internship	2
DIES 257 Applied Diesel Service Operations II OR DIES 296 Cooperative Education/Internship	2
DIES 260 Diesel Engine Diagnosis and Troubleshooting	5
DIES 277 Advanced Fuel Systems and Diesel Engine Controls	6
M 114 Extended Technical Mathematics	3
TRID 150 Environmental and Shop Practices	2
TRID 151 Welding	2
TRID 152 Vehicle Heating, Ventilation and Air Conditioning	3
TRID 170 Engine Theory	4
TRID 180 Electrical Systems	4
WRIT 122 Introduction to Business Writing **OR** WRIT 121 Introduction to Technical Writing	3
Total minimum credits required for degree	**70**

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	**Credits**
COMT 109	3
DIES 113	2
DIES 114	2
TRID 150	2
TRID 170	4
TRID 180	4
Total	**17**

Second Semester	
DIES 117	4
DIES 250	6
DIES 101	2
WRIT 121 or 122	3
M 114	3
Total	**18**

Third Semester	
CAPP 120	3
DIES 202	2
DIES 132	6
DIES 260	5
DIES 256/296	2
Total	**18**

Fourth Semester	
DIES 257/296	2
DIES 277	6
DIES 155	4
TRID 151	2
TRID 152	3
Total	**17**

Diesel Technology
Certificate of Applied Science

Upon successful completion of this program a student will be able to:

- Inspect, diagnose, and repair industrial hydraulic systems
- Inspect, diagnose, and repair diesel fuel systems
- Inspect, diagnose, and repair diesel engines
- Inspect, diagnose, and repair heavy duty power trains
- Inspect, diagnose, and repair heavy duty chassis systems

Required Courses	Credits
COMT 109 Human Relations	3
DIES 101 Powertrains	2
DIES 113 Introduction to Hydraulics	2
DIES 114 Introduction to Hydraulics Lab	2
DIES 117 Introduction to Diesel Fuel Systems	4
DIES 250 Heavy Duty Chassis	6
M 111 Technical Mathematics	3
TRID 150 Environmental and Shop Practices	2
TRID 170 Engine Theory	4
TRID 180 Electrical Systems	4
WRIT 104 Workplace Communications	3
Total minimum credits required	**35**

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	**Credits**
DIES 113	2
DIES 114	2
COMT 109	3
TRID 150	2
TRID 170	4
TRID 180	4
Total	**17**

Second Semester	
DIES 117	4
DIES 250	6
DIES 101	2
M 111	3
WRIT 104	3
Total	**18**

Drafting and Design Technology
Associate of Applied Science Degree

For the Assistant Drafter Certificate of Applied Science, see page 68.

This degree program can be completed in four semesters.

The Drafting and Design Technology curriculum prepares students to interpret basic mechanical, architectural, civil, and engineering data. Students use written/verbal directions to graphically produce detailed models and working drawings for architectural, engineering, and manufacturing purposes. The curriculum is computer-based and incorporates state-of-the-art software to prepare the student for employment in a technological office environment. Drafting and Design graduates find career opportunities with engineering and architectural firms, construction companies, manufacturing industries, and land planning companies. See our website at www.msubillings.edu/careers for graduate data.

Student projects incorporate applying ANSI Standards, three-dimensional data models, Geographic Information Systems, construction estimating, structural detailing, conformance to construction and safety codes, specialized software applications, Internet use, email communication, distance learning, and network use. The program also emphasizes the development of problem-solving skills. Some fieldwork is required during sections on surveying technique, Global Positioning Systems, and group projects.

All lab computers have Internet access and all students are eligible for an email account through MSU Billings.

Upon successful completion of this program a student will be able to:

- Interpret and create two-dimensional drawings relevant to mechanical, civil and architectural disciplines
- Interpret and create three-dimensional models relevant to mechanical, civil and architectural disciplines
- Perform discipline-specific data calculations
- Prepare projects from conception to development of a final product
- Utilize a wide variety of software

Before a student can be accepted into the Drafting Technician program courses, competency in math must be demonstrated. This may be done by:

- Receiving a passing score on the Compass Placement Test that indicates placement at M 090 or above
- Transferring of appropriate credits
- Possessing current ACT/SAT scores in the required range showing readiness to take M 090 or above

Check with the Office of Student Services or faculty advisory to determine how to meet these requirements.

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
DRFT 102 Building Construction	2
DRFT 104 Civil Technology	2
DRFT 109 Introduction to Technical Drawing	4
DRFT 110 Technical Drawing Lab	3
DRFT 128 3D Applications	3
DRFT 138 Structural Drafting	3
DSGN 107 Quantity Estimating	2
DSGN 112 Architectural Lab	5
DSGN 114 Civil Lab	5
DSGN 116 GIS for Civil Applications	2
DSGN 148 CAD Customization	3
DSGN 204 Advanced Software Applications	3
DSGN 214 SolidWorks	3

Suggested Plan of Study

First Semester	Credits
CAPP 120	3
M 114	3
DRFT 109	4
DRFT 110	3
DRFT 128	3
Total	**16**

Second Semester (offered fall)	
DRFT 102	2
DSGN 107	2
DSGN 112	5
DSGN 204	3
WRIT 121 or 122	3
Total	**15**

Continued…

DSGN 218 SDS/2 Structural Detailing..... 3
DSGN 229 Project Development Lab 3
DSGN 230 Project Development Lecture..... 3
DSGN 231 Project Development Capstone 1
DSGN 248 Computer Presentation and Animation..... 3
M 114 Extended Technical Mathematics..... 3
WRIT 122 Introduction to Business Writing
OR WRIT 121 Introduction to Technical Writing 3
Total minimum credits required for degree..... 65

Optional, but recommended:
DRFT 108 Introduction to CAD 3
DSGN 208 Multimedia Technology..... 3

Students should check the course descriptions for required prerequisites.

Third Semester (offered spring)
COMT 109..... 3
DRFT 104 2
DRFT 138 3
DSGN 114..... 5
DSGN 116..... 2
DSGN 148..... 3
Total..... 18

Fourth Semester
DSGN 218..... 3
DSGN 229..... 3
DSGN 230..... 3
DSGN 231..... 1
DSGN 214..... 3
DSGN 248..... 3
Total..... 16

Drafting and Design
Associate of Science Program of Study

For the Assistant Drafter Certificate of Applied Science, see page 68.

The Drafting and Design Program curriculum interprets basic mechanical, architectural, civil, and engineering data. Students use written/verbal directions to graphically produce detailed models and working drawings for architectural, engineering, and manufacturing purposes. The curriculum is computer-based and incorporates state-of-the-art software to prepare the student for employment in a technological office environment.

Student projects incorporate applying ANSI Standards, three-dimensional data models, Geographic Information Systems, construction estimating, structural detailing, conformance to construction and safety codes, specialized software applications, Internet use, email communication, distance learning, and network use. The program also emphasizes the development of problem-solving skills. Some fieldwork is required during sections on surveying technique, Global Positioning Systems, and group projects.

All lab computers have Internet access and all students are eligible for an email account through MSU Billings.

Students should consult with an academic advisor before registering for Academic Foundations courses. Certain Academic Foundations courses may be required for trajectory into particular bachelor degrees.

Upon successful completion of this program a student will be able to:

- Create two-dimensional drawings relevant to mechanical, civil and architectural disciplines
- Create three-dimensional models relevant to mechanical, civil and architectural disciplines
- Begin a well-rounded academic base through the completion of the Academic Foundations core

Required Courses — Credits

Academic Foundations Requirements 37
Students should consult with an academic advisor before registering for Academic Foundations courses. Certain Academic Foundations courses may be required for trajectory into particular bachelor degrees.

Technical Courses

CAPP 120 Introduction to Computers 3
DRFT 109 Introduction to Technical Drawing 4
DRFT 110 Technical Drawing Lab 3
DRFT 128 3D Applications 3
DSGN 116 GIS for Civil Applications 2
DSGN 204 Advanced Software Applications 3
DSGN 214 SolidWorks 3
Restricted Electives 2
Total for Technical Courses 23

Total for degree 60

Suggested Plan of Study

First Semester — Credits

CAPP 120 3
DRFT 109 4
DRFT 110 3
Academic Foundations 6
Total 16

Second Semester

DSGN 116 2
DRFT 128 3
Academic Foundations 10
Total 15

Third Semester

DSGN 204 3
Academic Foundations 12
Total 15

Fourth Semester

DSGN 214 3
Elective 2
Academic Foundations 9
Total 14

Total 60

Fire Science
Associate of Science Program of Study

MISSION STATEMENT
The Nursing, Health, and Safety Occupations Fire Science program provides excellence in academic programs and access to qualified students. The Fire Science program provides instruction in the knowledge and skills needed to enter and prepare for advancement in the fire and emergency service fields. The knowledge and skills acquired will enable success and achievement allowing students to compete and advance in an ever changing, technologically diverse environment and will provide preparation for regional, national, and global markets. We strive, by example, to instill in each student our philosophy, civic leadership skills, an interest in life-long learning, and a commitment to service. Serving a unique blend of urban and rural educational needs in the Southeastern Yellowstone region of Montana, we work with the community to promote intellectual and educational excellence to meet the evolving needs of the fire and emergency service industry.

VISION STATEMENT
The Nursing, Health, and Safety Occupations Fire Science program envisions creating an inviting environment that serves students by being responsive, adaptive, and innovative through a proactive approach to present and future needs. The program foresees a continued increased enrollment, expanded programs, use of regional outreach delivery, use of advanced technology, and expanded alliance with our various customer bases as a bridge to becoming a leader in post-secondary two-year Fire Science education.

The fire science program has been developed to prepare students to enter fire and emergency service careers and to provide the necessary and essential education needed for advancement opportunities within the fire and emergency service fields. By providing a broad educational background, the fire science associate of science degree seeks to meet the evolving needs of the fire service industry. This program trains students in: critical thinking, communication, physical skills, public relations, and numerous other technical aspects of the fire science field.

Local fire service professionals will have an opportunity to be provided with the technical expertise and training for fire sciences. Students also do on-site training with the Billings Fire Department throughout the degree process. Nationwide, fire and emergency service providers are seeking applicants with college degrees.

See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion a student will be able to demonstrate program outcomes by:

- Exhibiting the professionalism of a firefighter (proper appearance, attire, respect, responsibility)
- Acquire - Hazardous Materials Technician Certification by meeting the requirements of OSHA 1910.120 and NFPA 472
- Acquire NFPA 1041 Fire Service Instructor Level I Certification
- Acquire NIMS ICS 100, 200, 700, 800 Certifications
- Acquire Fire Inspector Level I Certification by meeting requirements of NFPA 1031
- Acquire Basic Fire Investigator Certification by meeting requirements of NFPA 1033 (4.2 through 4.7)
- Demonstrate ability to function as a team member by successfully completing all required Certifications of the Program
- Show evidence of ability to effectively communicate, both orally and in writing, by obtaining Instructor Level I Certification.

Required Courses — Credits

Academic Foundations Requirements 37
Students should consult with an academic advisor before registering for Academic Foundations courses.

Required Technical Courses
CAPP 120 Introduction to Computers 3
FIRE 110 Firefighter Health and Safety 3
Continued…

Suggested Plan of Study

First Semester	Credits
CAPP 120	3
FIRE 101 (optional)	1
FIRE 110	3
FIRE 115	3
Academic Found. Courses	6
Total	**16**

FIRE 115 Fire Fighter I Essentials 3
FIRE 180 Incident Command 3
FIRE 214 Inspection Codes and Practice 3
FIRE 255 Cause and Origin 2
FIRE 275 Fire Service Instructor 3
TRID 160 Hazardous Materials Technician General Training 3
Total Technical Courses 23

Total minimum credits required for degree 60

Optional Courses
FIRE 101 Fire Service Orientation 1
FIRE 172 Wildlands Standards for Survival 3

It is highly recommended that all students take Emergency Medical Technician (EMT) training before graduation.

Second Semester
FIRE 275 3
FIRE 172 (optional) 3
Academic Found. Courses . 10
Total 16

Third Semester
FIRE 255 2
FIRE 214 3
Academic Found. Courses . 12
Total 17

Fourth Semester
TRID 160 3
FIRE 180 3
Academic Found. Courses ... 9
Total 15

Program placed on moratorium

Heating, Ventilation, Air Conditioning and Refrigeration Technology

Associate of Applied Science Degree

The demand for qualified Heating, Ventilation, Air Conditioning and Refrigeration technicians continues to grow. Residential and commercial contractors are seeking employees with the type of training offered in this program of study. The College of Technology offers an Associate of Applied Science degree in Heating, Ventilation, Air Conditioning and Refrigeration Technology. The program options are described below:

HVACR Technicians install, maintain, service, and repair equipment used for heating, air conditioning, and refrigeration in private or commercial settings. Troubleshooting of controls and wiring, parts replacements, and system testing are tasks required in the field. Sheet metal installation is also an important task to master in this trade. Students will receive numerous industry certifications upon successful completion of the program.

Upon successful completion of this program a student will be able to:

- Apply theoretical constructs of Heating, Ventilation, Air Conditioning and Refrigeration (HVAC) in entry-level employment positions
- Use problem-solving skills to troubleshoot electrical and electronic control wiring systems
- Design and fabricate commonly used residential and commercial sheet metal ductwork and fitting
- Identify and recognize regulations, codes and professional behaviors to successfully pass Industry Competency Exams (ICE)
- Acquire and apply an understanding of refrigerant handling to successfully pass the EPA Refrigerant Handling Certification Exam
- Identify and safely use appropriate tools in HVAC entry-level employment position
- Read and interpret blueprints for use in residential and commercial HVAC installation and maintenance
- Apply acquired knowledge of service work estimates and billing practices to customer work orders

Before a student can be accepted into the HVACR Technician program, competency in math must be demonstrated. This may be done by:

- Passing the math Placement Test
- Transfer of appropriate credits
- Current ACT/SAT scores in the required range
- Taking the necessary prerequisite math classes identified in this catalog (M 061 and/or M 090)

Check with the Advising Center to determine how you can meet these requirements. Students should check the course descriptions for required prerequisites.

Required Courses	Credits
CAPP 120 Introduction to Computers	3
CAPP 156 MS Excel	3
COMT 109 Human Relations	3
DRFT 108 Introduction to CAD	3
HVAC 110 Introduction to HVAC	4
HVAC 111 Heating Fundamentals	2
HVAC 125 Air Handling	3
HVAC 135 Air Conditioning	2
HVAC 141 HVACR Basic Electricity	4
HVAC 175 HVAC Controls	4
HVAC 182 Hydronics	2
HVAC 200 Refrigeration Technicians EPA Certification Review	1
HVAC 201 Advanced Refrigeration	3
HVAC 210 Heat Pumps	2
HVAC 203 Advanced Air Conditioning	2

Continued…

Suggested Plan of Study

First Year	Credits
First Semester	
CAPP 120	3
M 114	3
HVAC 110	4
HVAC 141	4
HVAC 212	2
TRID 150	2
Total	**18**
Second Semester	
DRFT 108	3
HVAC 111	2
HVAC 125	3
HVAC 135	2

HVAC 212 Sheet Metal Technology and Blueprint Reading 2
HVAC 231 Residential and Light Commercial Heating & Ventilation Systems 3
HVAC 243 Steam Systems 3
HVAC 255 Advanced Controls 3
HVAC 275 Capstone 1
M 114 Extended Technical Mathematics 3
TRID 150 Environmental and Shop Practices 2
TRID 151 Welding 2
TRID 152 Vehicle Heating, Ventilation and Air Conditioning 3
WRIT 122 Introduction to Business Writing
OR WRIT 121 Introduction to Technical Writing 3
One required restricted elective with advisor approval 3
Suggested courses:
CTBU 171 Introduction to Business
HVAC 296 Cooperative Education/Internship

Total for Degree 69

HVAC 200 1
TRID 151 2
TRID 152 3
Total 16

Second Year
First Semester
COMT 109 3
HVAC 175 4
HVAC 182 2
HVAC 203 2
HVAC 231 3
CAPP 156 3
Total 17

Second Semester
WRIT 121 or 122 3
HVAC 201 3
HVAC 210 2
HVAC 242 3
HVAC 255 3
HVAC 275 1
Elective 3
Total 18

Human Resources College of Business Articulated Emphasis ∇
Associate of Science Program of Study

Graduates of the AS in Human Resources will have a foundation of human resources management with an overview of laws, regulations, and course decision that determine the legal framework of Equal Employment Opportunity (EEO). This program is articulated with the Bachelor of Science in Business Administration degree through the MSU Billings College of Business. Students will be prepared to further their education or to secure an entry level position in human resource management. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Appraise and apply appropriate laws and regulations to workplace policies and procedures
- Analyze workplace issues and formulate appropriate response for viable solutions
- Manage processes and or procedures to insure legal and regulatory compliance
- Differentiate level of gravity and legal implications for a variety of workplace conflicts, issues and or situations
- Understand and apply principles and fundamentals of accounting
- Compute employee wages and salaries including preparation of state and federal payroll reports
- Explain process and procedures for filing Workers' Compensation, based on state-specific laws and regulations
- Communicate effectively
- Listen actively

Students should consult with an academic advisor before registering for Academic Foundations courses in order to maximize the number of elective credits allowed in the degree. The following Academic Foundations Courses are required: M 143 in Category I.A. Mathematics and ECNS 201 **OR** ECNS 202 in Category III. Social Sciences.

Associate of Science Emphases: The AS programs of study are arranged to transfer credits to a Bachelor degree program. Those who choose the College of Business articulated emphasis will be able to transfer directly into the College of Business.

Required Courses	Credits
Academic Foundations Requirements	**37**
Students should consult with an academic advisor before registering for Academic Foundations courses**.**	
Technical Courses	
ACTG 201 Principles of Financial Accounting	3
ACTG 180 Payroll Accounting	3
CAPP 120 Introduction to Computers	
OR	
CAPP 131 Basic MS Office	3
ECNS 201 Principles of Microeconomics	
OR	
ECNS 202 Principles of Macroeconomics	3
HR 180 Employment Law and Practices	3
HR 250 Employment and Compensation Strategies	3
HR 281 Risk Management, Safety, and Security	
OR	
HR 282 Organizational Training and Development	3
HR 296 Cooperative Education/Internship	2-9*
Total Required Courses	**23**
Total Credits	**60**

*Students are required to complete two credits, but may earn up to nine as electives.

Suggested Plan of Study

First Semester	**Credits**
ACTG 201	3
CAPP 120	3
HR 180	3
Academic Found. Courses	3
Total	**12**
Second Semester	
ACTG 180	3
HR 250	3
Academic Found. Courses	7
Total	**13**
Third Semester	
ECNS 201 or 202	3
HR 281 or 282	3
Academic Found. Courses	12
Total	**18**
Fourth Semester	
HR 296	2
Academic Found. Courses	15
Total	**17**

Human Resources General Applied Emphasis ∇
Associate of Science Program of Study

The Human Resource curriculum is broad-based and designed to meet the demands of business and service organizations. Graduates of this program will have a foundation in human resource management, an overview of various laws, regulations and court decisions that determine the legal framework of EEO and a sound base for lifelong learning. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Appraise and apply appropriate laws and regulations to workplace policies and procedures
- Analyze workplace issues and formulate appropriate response for viable solutions
- Manage processes and or procedures to insure legal and regulatory compliance
- Differentiate level of gravity and legal implications for a variety of workplace conflicts, issues and or situations
- Understand and apply principles and fundamentals of accounting
- Compute employee wages and salaries including preparation of state and federal payroll reports
- Explain process and procedures for filing Workers' Compensation, based on state-specific laws and regulations
- Communicate effectively
- Listen actively

Associate of Science Emphases: The AS programs of study are arranged to transfer credits to a Bachelor degree program. Those who choose the College of Business articulated emphasis will be able to transfer directly into the College of Business.

Required Courses	**Credits**
Academic Foundations Requirements	**37**
Students should consult with an academic advisor before registering for Academic Foundations courses in order to maximize the number of elective credits allowed in the degree.	
Required Technical Courses	
ACTG 101 Accounting Procedures I	3
ACTG 180 Payroll Accounting	3
CAPP 120 Introduction to Computers	3
HR 180 Employment Law and Practices	3
HR 250 Employment and Compensation Strategies	3
HR 281 Risk Management, Safety, and Security	3
HR 282 Organizational Training and Development	3
HR 296 Cooperative Education/Internship	2-9*
Total Required Courses	**23**
Total Credits	**60**

*Students are required to complete two credits, but may earn up to nine as electives.

Suggested Plan of Study

First Semester	**Credits**
ACTG 101	3
CAPP 120	3
HR 180	3
Academic Found. Courses	5
Total	**14**
Second Semester	
ACTG 180	3
HR 250	2
Academic Found. Courses	8
Total	**14**
Third Semester	
HR 281	3
Academic Found. Courses	12
Total	**15**
Fourth Semester	
HR 282	3
HR 296	2
Academic Found. Courses	12
Total	**17**

Human Resource Management ∇
Certificate of Applied Science

This option is available for individuals who are in the workforce or seeking quick training in basic human resources. All graduating students will be prepared for employment opportunities in human resource management. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Appraise and apply appropriate laws and regulations to workplace policies and procedures
- Analyze workplace issues and formulate appropriate response for viable solutions
- Manage processes and or procedures to insure legal and regulatory compliance
- Differentiate level of gravity and legal implications for a variety of workplace conflicts, issues and or situations
- Understand and apply principles and fundamentals of accounting
- Compute employee wages and salaries including preparation of state and federal payroll reports
- Explain process and procedures for filing Workers' Compensation, based on state-specific laws and regulations
- Communicate effectively
- Listen actively

Required Courses	**Credits**
Academic Foundations	
English Category	6
WRIT 101 College Writing I	
AND	
WRIT 121 Introduction to Technical Writing	
OR WRIT 122 Introduction to Business Writing	
Human Relations Category	3
COMT 109 Human Relations	
OR COMT 130 Introduction to Public Speaking	
Computation Category	3
M 105 Contemporary Mathematics	
OR M 114 Extended Technical Mathematics	
OR M 121 College Algebra	
OR M 143 Finite Mathematics	
Total	**12**

Students should consult with an academic advisor before registering for Academic Foundations courses in order to maximize the number of elective credits allowed in the degree. A list of Academic Foundations courses is available in the General Bulletin and College of Technology catalog.

ACTG 101 Accounting Procedures I	3
ACTG 180 Payroll Accounting	3
CAPP 120 Introduction to Computers	3
HR 180 Employment Law and Practices	3
HR 250 Employment and Compensation Strategies	3
HR 281 Risk Management, Safety, and Security	3
HR 282 Organizational Training and Development	3
HR 296 Cooperative Education/Internship	2-9*
Total Required Courses	**23**
Total minimum credits required	**35**

Suggested Plan of Study

First Semester	**Credits**
CTBU 101	3
CAPP 120	3
HR 180	3
Academic Found. Courses	8
Total	**17**
Second Semester	
ACTG 180	3
HR 250	3
HR 281	3
HR 282	3
HR 296	2
Academic Found. Courses	4
Total	**18**

***Students are required to complete two credits, but may earn up to nine as electives (total credits for degree may be up to 42).**

Medical Administrative Assistant
Associate of Applied Science Degree

Medical Administrative Assistants perform a variety of routine duties, depending on the nature of the employer's professional activities. Functions include scheduling appointments, establishing and maintaining patient records, processing mail, billing, collections, coding, insurance filing, and reception duties. The medical administrative assistant is responsible for correspondence and transcription of medical reports and letters, must follow appropriate medical office policies and be cognizant of the ethical and legal responsibilities of the medical profession. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Schedule appointments
- Establish and maintain patient records
- Process mail
- Perform billing, coding and collections
- Perform clerical functions, perform bookkeeping procedures and process insurance claims

Required Courses	Credits
ACTG 101 Accounting Procedures I	3
CAPP 110 Short Courses: MS Outlook	1
CAPP 120 Introduction to Computers	3
CAPP 154 MS Word	3
CAPP 156 MS Excel	3
CAPP 158 MS Access	3
CODE 110 CPT-4 Procedure Coding	3
CODE 120 ICD-9 Diagnosis Coding	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 113 Transcription	3
CTBU 115 Keyboarding Applications/Ten Key	3
CTBU 131 Records and Information Management	3
CTBU 133 Office Applications	3
CTBU 153 Medical Transcription	3
HLTH 101 Essentials of Anatomy and Physiology	3
HLTH 150 Health Occupations Terminology I	3
HLTH 251 Medical Office Procedures	3
HLTH 255 Medical Law and Ethics	3
M 108 Business Mathematics	3
M 121 College Algebra	3*
OR	
M 143 Finite Mathematics	4*
OR	
M 105 Contemporary Mathematics	3*
WRIT 122 Introduction to Business Writing	3
Subtotal	**64**
Restricted Electives chosen in consultation with academic advisor	3
Total minimum credits required for degree	**67**

* Students should check with their academic advisor to determine the specific math course that is appropriate for their plan of study.

Suggested Electives:
ACTG 102 Accounting Procedures II
ACTG 103 Accounting Procedures III
Continued…

Suggested Plan of Study

First Year	Credits
CAPP 120	3
CAPP 154	3
CAPP 156	3
ACTG 101	3
CTBU 115	3
CTBU 131	3
CTBU 133	3
WRIT 122	3
HLTH 101	3
HLTH 150	3
M 108	3
Second Year	
CAPP 110	1
CAPP 158	3
CODE 110	3
CODE 120	3
COMT 109	3
COMT 130	3
CTBU 113	3
CTBU 153	3
HLTH 251	3
HTLH 255	3
Restricted Electives	3

ACTG 125 QuickBooks
ACTG 180 Payroll Accounting
ACTG 205 Computerized Accounting
CMP 115 Introduction to Desktop Publishing
CMP 135 Introduction to Web Design
CTBU 165 Business Law
CTBU 171 Introduction to Business
CTBU 175 Current Issues in Business
CTBU 296 Cooperative Education/Internship
DSGN 204 Advanced Software Applications
DSGN 208 Multimedia Technology
WRIT 180 Editing for Business Writing

Students should check course descriptions for required prerequisites. Math and communication requirements are usually determined by performance on placement tests or transfer credits.

Medical Coding & Insurance Billing ∇
Certificate of Applied Science

MISSION STATEMENT
The Nursing, Health, and Safety Occupations Medical Coding and Insurance Billing program provides excellence in academic programs and access to qualified students. The Medical Coding and Insurance Billing program provides instruction in the knowledge and skills needed to deliver entry level medical coding skills. The knowledge and skills acquired will enable success and achievement for students competing in an ever changing, technologically diverse environment and will provide preparation for regional, national, and global markets. We strive, by example, to instill in each student our philosophy, civic leadership skills, an interest in life-long learning, and a commitment to service. Serving a unique blend of urban and rural health educational needs in the Southeastern Yellowstone region of Montana, we will work with the community to promote intellectual and educational excellence.

VISION STATEMENT
The Nursing, Health, and Safety Occupations Medical Coding and Insurance Billing program envisions creating an inviting environment that serves students by being responsive, adaptive, and innovative through a proactive approach to present and future needs. The program foresees increased enrollment, expanded programs, use of advanced technology, and expanded alliance with our various customer bases as a bridge to becoming a leader in post-secondary two-year education.

The Medical Coding and Insurance Billing program is designed to provide a recommended curriculum through which students may earn a two semester Certificate of Applied Science. This Certificate will educate students in the areas of medical procedure and diagnosis coding. In addition, the Certificate will prepare the student for employment in either the inpatient or outpatient medical setting to work as an integral part of the healthcare team in a medical office, dental office, hospital, clinic, or independent billing company.

Medical coding is the transformation of handwritten or verbal descriptions of diseases, injuries and medical procedures into a numbered procedure code and/or numbered diagnosis code. The Medical Coding and Insurance Billing program prepares entry-level employees with the skills to analyze health records and assign the appropriate code to each diagnosis and procedure according to national and international guidelines. They perform research and rely on their knowledge of medical terminology, anatomy and disease processes to determine the correct codes and sequences.

The program consists of class lecture, practical application of codes, auditing of records and experience with computerized medical and insurance billing software. Students will learn to prepare various health claim forms required by the insurance industry using medical billing software. This involves practicing accurate interpretation of medical records, correctly documenting and coding information, and submission of forms to the insurance company for reimbursement. The emphasis is on the high level of responsibility required and the attention to detail and accuracy needed to be a competent medical biller. Instruction will include theory and practice to meet the competencies identified as necessary for entry-level employment.

Upon completion of the program the students will be able to sit for the American Academy of Professional Coders (AAPC) or American Health Information Management Association (AHIMA) coding exam. Graduates will fill a growing need in healthcare, now and in the future.

See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program will be able to:
- Transform handwritten or verbal descriptions of diseases, injuries, and symptoms into a numerical diagnosis code
- Transform medical procedures into a numerical code
- Calculate medical practice fees using the Medicare Relative Value System
- Using medical billing software, prepare a variety of health claim forms required by the insurance industry—this would include Medicare and Medicaid

Continued…

- Practice a high degree of independent judgment and responsibility to insure accuracy of medical coding and billing
- Prepare to sit for the AAPC or AHIMA coding exams

Required courses	**Credits**
CAPP 120 Introduction to Computers	3
CODE 110 CPT-4 Procedure Coding	3
CODE 120 ICD-9 Diagnosis Coding	3
CODE 140 Computerized Medical Billing	3
CODE 150 Advanced Coding and Auditing	3
COMT 109 Human Relations	3
HLTH 101 Essentials of Anatomy and Physiology	3
HLTH 150 Health Occupations Terminology I	3
HLTH 255 Medical Law and Ethics	3
M 108 Business Mathematics	3
WRIT 122 Introduction to Business Writing	3
Total Credits	**33**

Students should check the course descriptions for required prerequisites. Math and English requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	**Credits**
CAPP 120	3
CODE 110	3
CODE 120	3
WRIT 122	3
HLTH 150	3
COMT 109	3
Total	**18**

Second Semester	
CODE 140	3
CODE 150	3
HLTH 101	3
M 108	3
HLTH 255	3
Total	**15**

Networking Technology
Associate of Science Program of Study

This program is the combination of the technical courses from the one year Networking Technology Certificate and the required Academic Foundations requirements for an Associate of Science degree. This will allow students with previous Academic Foundations credits, or who have strong experience, to gain a more diversified degree. The mixture of the courses gives students the ability to transition smoothly into a four-year degree, or to enter employment with a well-rounded degree. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Demonstrate understanding of career paths, entry-level positions, and advancement in the information technology field
- Demonstrate competency setting up LAN networks, and troubleshooting and solving network problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve basic network problems
- Demonstrate the ability to describe the purposes and functions of server and client operating systems
- Demonstrate the ability to differentiate between client/server and peer-to-peer networks and will be able to describe environments where each is appropriate
- Demonstrate the ability to use appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network

Students should consult with an academic advisor before registering for Academic Foundations courses.

Required Courses	**Credits**
Academic Foundations Requirements	**37**
Students should consult with an academic advisor before registering for Academic Foundations courses.	
Required Technical Courses	
CAPP 156 MS Excel	3
CST 160 Installing, Configuring and Administrating Microsoft Windows Vista	3
CST 162 Installing, Configuring and Administrating Microsoft Windows Server 2003	3
CST 170 Introduction to Internetworking and Cabling	4
CST 172 Introduction to IP Routing	4
CST 174 Advanced Routing and Ethernet Switching	4
CST 176 Wide Area Networking	4
Technical Courses	**25**
Total minimum credits required for degree	**62**

Suggested Plan of Study

First Semester	**Credits**
CAPP 120	3
Academic Fnd. Courses	13
Total	**16**
Second Semester	
CAPP 156	3
Academic Fnd. Courses	12
Total	**15**
Third Semester	
CST 160	3
CST 170	4
CST 172	4
Academic Fnd. Courses	3
Total	**14**
Fourth Semester	
CST 162	3
CST 174	4
CST 176	4
Academic Fnd. Courses	6
Total	**17**

Networking Technology
Certificate of Applied Science

See page 80 for the Associate of Applied Science in Computer Systems Technology.

The Networking Technology Certificate of Applied Science is earned upon successful completion of the one year of courses listed below. Students may choose to sit for the Microsoft Certified Professional and the Cisco Certified Networking Associate examinations after completion of this Certificate. Technical support employees work in organizations to maintain an in-house Management Information System (MIS) function or technical support department. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Demonstrate understanding of career paths, entry-level positions, and advancement in the information technology field
- Demonstrate competency setting up LAN networks, and troubleshooting and solving network problems by using troubleshooting strategies and techniques, diagnostic hardware & software, system documentation, and on-line documentation to resolve basic network problems
- Demonstrate the ability to describe the purposes and functions of server and client operating systems
- Demonstrate the ability to differentiate between client/server and peer-to-peer networks and will be able to describe environments where each is appropriate
- Demonstrate the ability to use appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network

Before a student can be accepted into the Computer Systems Technology program, competency in computers must be demonstrated. This may be done by:

- transferring of appropriate credits
- completing the computer literacy challenge test
- obtaining permission of CST faculty
- taking prerequisite course (CAPP 120)
- possessing current ACT/SAT scores in the required range
- taking the necessary prerequisite English, math and/or computer classes identified in the catalog

Check with an academic advisor to determine how you can meet these requirements.

Required Courses	Credits
CAPP 156 MS Excel	3
COMT 109 Human Relations	3
CST 160 Installing, Configuring and Administrating Microsoft Windows Vista	3
CST 162 Installing, Configuring and Administering Microsoft Windows 2003 Server	3
CST 170 Introduction to Internetworking and Cabling	4
CST 172 Introduction to IP Routing	4
CST 174 Advanced Routing and Ethernet Switching	4
CST 176 Wide Area Networking	4
M 111 Technical Mathematics	3
WRIT 104 Workplace Communications	3
Total minimum credits required	**34**

NOTE: Students are encouraged to take the industry certifications tests for Cisco and MCSE. Please contact our testing center for more information on cost and scheduling.

Suggested Plan of Study

First Semester	**Credits**
WRIT 104	3
CST 160	3
CST 170 (Cisco 1)	4
CST 172 (Cisco 2)	4
M 111	3
Total	**17**

Second Semester	
CST 162	3
CST 174 (Cisco 3)	4
CST 176 (Cisco 4)	4
COMT 109	3
CAPP 156	3
Total	**17**

NURSING – Practical and Registered Nurse

Practical Nursing
Associate of Applied Science

The primary role of the licensed practical nurse (LPN) is to provide nursing care for clients in structured health care settings who are experiencing common, well-defined health problems. In their roles as members of the discipline of nursing, licensed practical nurses actively participate in data collection, communicate information within the chain of command, implement nursing interventions based on established care plans and subscribe to the legal and ethical tenets of the discipline. The LPN functions under the supervision of registered nurses, physicians, osteopaths, podiatrist, or dentists. See our website at www.msubillings.edu/careers for graduate data.

The Montana Board of Regents may alter information contained in this portion of the catalog. Please contact the Director of Nursing for the most current information.

MISSION STATEMENT
The MSU Billings College of Technology Nursing Program prepares qualified nurses for entry level positions to meet community workforce needs.

VISION STATEMENT
The Nursing, Health, and Safety Occupations Practical Nursing program envisions creating an inviting environment that serves students by being responsive, adaptive, and innovative through a proactive approach to present and future needs. The program foresees increased enrollment, expanded programs, use of advanced technology, and expanded alliance with our various customer bases as a bridge to becoming a leader in post-secondary two-year education.

The program teaches biological, physical, behavioral, psychological, and sociological concepts of the nursing process. Students will learn and perform procedures that will enable them to become proficient in administering comprehensive nursing care. Competencies in these areas are acquired through a wide variety of approved health care facilities under the supervision of an RN instructor.

The basic practical nursing program utilizes a combination of didactic and clinical methods of instruction. Evaluation is a continuous process by which students and faculty measure levels of progress in personal development and academic achievement. Academic Foundations (general education) courses develop skills needed in health occupations and will enhance successful employment in the modern workplace.

Philosophy: The philosophy upon which the Nursing Program is based considers the patient as a holistic being having physical, emotional, socio-cultural, cognitive and aesthetic needs. It is our philosophy that health care is administered in a holistic manner. This empowers the patient to continually strive toward a healthy adaptation to their ever-changing environment. Nursing process and critical thinking are the foundations for **nursing practice** and these principles are emphasized throughout the curriculum.

The philosophy of the nursing department encompasses the faculty's beliefs regarding

- Health
- Nursing Practice
- Teaching and Learning
- Nursing Education

The faculty believe **health** refers to a combination of the absence of illness, the ability to cope with everyday activities, physical fitness, and quality of life. In any organism, **health** can be said to be in a "state of balance" or homeostasis. This balance affects each patient in the four dimensions of physical, mental, emotional, and spiritual. **Health** is influenced by internal and external factors. Each patient defines **health** as a state of being in relation to their own values, culture, personality, and lifestyle.

The goal of **nursing practice** is to promote, maintain, and restore holistic balance as perceived and valued by the person, family, or community. **Nursing practice** is a caring process guided by concern for the person and preservation of

human dignity. Functioning as a healthcare advocate for the patient and his/her family in our complex health care system is an essential role for the beginning student in nursing.

Nursing education is a dynamic and life-long process of acquiring knowledge, skills and values in the art and science of nursing. Learning is a teacher/student partnership in which the instructors structure and facilitate optimal environments to support student achievement. The student is a partner who is ready and willing to learn, and accepts accountability for his/her educational outcomes. **Nursing education** guides and encourages caring behaviors, preparing the students for their ever-changing role in **nursing practice**.

The faculty believe **practical and professional nursing practices** are an integral part of the nursing workforce. Each functions within the ethical and legal framework of the **Nurse Practice Act**. **Practical Nurses** provide nursing care for clients in structured health care settings who are experiencing common, well-defined health problems. In their roles as members of the discipline of nursing, practical nurses actively participate in and subscribe to the legal and ethical tenets of the discipline. **Practical Nurses** provide care under the supervision of registered nurses, physicians, osteopaths, podiatrists, and dentists. They participate in data collection, communicate information within the chain of command, and implement nursing interventions based on established care plans.

The role of the **Associate of Science** Registered nurse graduate is to provide direct care to clients, individuals, or groups, in a variety of structured settings with clear policies and procedures. Within this context, the faculty believes that the role of ASN is to practice as **provider of care, manager of care, and a participating member within the discipline of nursing.** The ASN is prepared to prioritize care by assessing the evolving needs of individuals, groups and families. The ASN utilizes critical thinking to modify the nursing plan of care. They manage, delegate, and supervise other health team members, forming collaborative relationships with a therapeutic goal.

Transferability: The College of Technology's Associate of Applied Science Program in Practical Nursing is not transferable as an articulated whole to MSU-Bozeman's College of Nursing. Some individual courses are transferable to other institutions of higher education; however, the degree is not designed specifically to facilitate transfer.

Special Considerations: If any physical limitations exist which might impair the ability of a student to fully perform required activities, a letter written by the physician attending the student should be sent to the College of Technology. The letter must state that no risk to the student or potential patient exists should the student be required to provide medical services to the patient.

Special Admission Procedures: All individuals applying for admission to the Practical Nursing program must complete the two Montana statewide Nursing Pathways prior to admission to the PN program. However, due to limited clinical/laboratory space, only 20 students per semester will be selected to continue in the program.

The following criteria will be used to select those Practical Nursing students who will continue into the program:

a. Grade point average in prerequisite semester courses
b. Recommendation forms
c. CNA experience
d. COMPASS
e. Written essay
f. Completed application form

It should be noted that completion of the practical nursing program does not guarantee state licensing to practice as an LPN. Graduates must pass appropriate licensing boards to practice as an LPN.

Readmission Policy: Students who withdraw from classes or fail (grade less than C) a nursing or Academic Foundations class in semesters 3-6 must request readmission to the nursing program. **Readmission is not guaranteed.** An exit interview with the Nursing Director is required for any student desiring readmission. Issues discussed may include: problems encountered by the student, the process for readmission, if appropriate, and other pertinent concerns.

Readmission is contingent upon:

a. Space available in the particular semester desired.
b. Successful completion of a Readmission Individual Education Plan (RIEP) formulated by the student and approved by the Director.
c. Approval for readmission by the Nursing Admissions & Standard Committee.
d. Students who have withdrawn from or failed a nursing course, or withdrawn from the nursing program will be required to do an exit interview with the Nursing Director.

   In the following situations, students may not request readmission:

   - Withdrawal from nursing courses in two separate semesters
   - Failure of the same course twice
   - Failure of two or more nursing courses in separate semesters
   - Failure and a withdrawal from the same nursing course
   - Violation of the professional code of conduct
   - Failure to complete exit interview with Nursing Director at time of departure

e. Readmission must take place within one year of failure/withdrawal. If more than one year has elapsed since the student was enrolled in the program then the student must enter the most recent catalog.

The following process is delineated for students seeking readmission to the nursing program.

1. At the time of failure or withdrawal from the nursing program the student makes an appointment for an exit interview with the Nursing Director. The Director and student will review the reasons for failure/withdrawal. The student is advised of the requirements for readmission, as stated in this policy.
2. The student must make a written request for readmission at least two months before readmission. The student must submit a self evaluation and plan of action with the request for readmission. A Readmission Individualized Educational Plan (RIEP) is formulated to meet the academic and personal needs of the student. The focus of this plan is to develop the knowledge, skills, and personal resources necessary for success in the nursing program. The RIEP identifies student problems, detailed plan, and outcomes for success.
3. The RIEP plan may include the following:
   a. Appropriate courses to complete
   b. Health problems to address
   c. Counseling recommendations/requirements
   d. Resolution of specific behavior/performance problems
   e. Other related factors, etc. work
   f. Semester for readmission designated
   g. Demonstration of skills and content proficiency of the last semester successfully completed
4. The nursing faculty may make recommendations regarding readmission.
5. After review of the exit interview, RIEP, and faculty recommendations, the Director, Admissions and Standards Committee communicate the decision to the student in writing.
6. Any conditions, coursework, or activities that are required and must be completed successfully for readmission. Coursework assists the student to relearn/reinforce knowledge skills and attitudes not attained, retained, or study test taking skills. Activities may include tutoring and referrals as deemed appropriate.

Upon successful completion of the Associate of Applied Science in Practical Nursing program a student will be able to:

- Implement nursing skills safely for common patient needs in a variety of settings
- Develop an interest in pursuit and development of knowledge regarding the discipline of nursing
- Proceed with nursing care with accountability and professionalism within the legal and ethical standards of the Nursing Program
- Predict a comprehensive care plan utilizing critical thinking skills to care for patients as human beings with common requirements
- Discuss therapeutic relationships through verbal/nonverbal communication with clients, their significant others, and the multidisciplinary healthcare team
- Recognize that each student must sit for state licensing examination after meeting eligibility requirements

Practical Nursing Associate of Applied Science
Required Courses & Plan of Study Credits

Semester One
BIOL 213 Human Anatomy and Physiology I 3
BIOL 214 Human Anatomy and Physiology I Laboratory 1
CHMY 121 Introduction to General Chemistry 3
CHMY 122 Introduction to General Chemistry Laboratory 1
M 121 College Algebra 3
NURS 101 Introduction to Nursing 1

Semester Two
BIOL 104 Nutrition for Health Careers 2
BIOL 216 Human Anatomy and Physiology II 3
BIOL 217 Human Anatomy and Physiology II Laboratory 1
PSYX 100 Introduction to Psychology 3
WRIT 101 College Writing I 3

NOTE: Admission to the Nursing Program is required prior to taking Semester Three coursework

Semester Three
NURS 230 Fundamentals of Nursing 7
NURS 232 Pharmacology 3
NURS 234 Gerontology 2

Semester Four
NURS 240 Core Concepts of Adult Nursing 7
NURS 242 Core Concepts of Maternal/Child Nursing 3
NURS 244 Core Concepts of Mental Health Nursing 2
NURS 246 Leadership Issues 2

Practical Nursing Degree Total 50

To continue in the Nursing program, please turn to the Associate of Science in Nursing (next page).

Associate of Science Registered Nurse (ASN)

The role of the associate degree nurse (ASN) is to provide direct care to clients, individuals, or groups, in a variety of structured settings with clear policies and procedures. The ASN is prepared to prioritize care by assessing the evolving needs of individual, groups and families. The ASN utilizes critical thinking to modify the nursing plan of care. They manage, delegate, and supervise other health team members, forming collaborative relationships with a therapeutic goal.

Philosophy: The philosophy upon which the Nursing Program is based considers the patient as a holistic being having physical, emotional, socio-cultural, cognitive and aesthetic needs. It is our philosophy that health care is administered in a holistic manner. This empowers the patient to continually strive toward a healthy adaptation to their ever-changing environment. Nursing process and critical thinking are the foundations for **nursing practice** and these principles are emphasized throughout the curriculum.

The philosophy of the nursing department encompasses the faculty's beliefs regarding

- Health
- Nursing Practice
- Teaching and Learning
- Nursing Education

The faculty believe **health** refers to a combination of the absence of illness, the ability to cope with everyday activities, physical fitness, and quality of life. In any organism, **health** can be said to be in a "state of balance" or homeostasis. This balance affects each patient in the four dimensions of physical, mental, emotional, and spiritual. **Health** is influenced by internal and external factors. Each patient defines **health** as a state of being in relation to their own values, culture, personality, and lifestyle.

The goal of **nursing practice** is to promote, maintain, and restore holistic balance as perceived and valued by the person, family, or community. **Nursing practice** is a caring process guided by concern for the person and preservation of human dignity. Functioning as a healthcare advocate for the patient and his/her family in our complex health care system is an essential role for the beginning student in nursing.

Nursing education is a dynamic and life-long process of acquiring knowledge, skills and values in the art and science of nursing. Learning is a teacher/student partnership in which the instructors structure and facilitate optimal environments to support student achievement. The student is a partner who is ready and willing to learn, and accepts accountability for his/her educational outcomes. **Nursing education** guides and encourages caring behaviors, preparing the students for their ever-changing role in **nursing practice**.

The faculty believe **practical and professional nursing practices** are an integral part of the nursing workforce. Each functions within the ethical and legal framework of the **Nurse Practice Act**. **Practical Nurses** provide nursing care for clients in structured health care settings who are experiencing common, well-defined health problems. In their roles as members of the discipline of nursing, practical nurses actively participate in and subscribe to the legal and ethical tenets of the discipline. **Practical Nurses** provide care under the supervision of registered nurses, physicians, osteopaths, podiatrists, and dentists. They participate in data collection, communicate information within the chain of command, and implement nursing interventions based on established care plans.

The role of the **Associate of Science** Registered nurse graduate is to provide direct care to clients, individuals, or groups, in a variety of structured settings with clear policies and procedures. Within this context, the faculty believes that the role of ASN is to practice as **provider of care, manager of care, and a participating member within the discipline of nursing.** The ASN is prepared to prioritize care by assessing the evolving needs of individuals, groups and families. The ASN utilizes critical thinking to modify the nursing plan of care. They manage, delegate, and supervise other health team members, forming collaborative relationships with a therapeutic goal.

See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of the Associate of Science (ASN) Registered Nursing Degree the student will be able to:

- Adapt nursing skills safely for complex patient needs in a variety of settings
- Incorporate an interest in pursuit and development of knowledge regarding the discipline of nursing
- Perform nursing care with accountability and professionalism within the legal and ethical standards of the nursing profession
- Critique comprehensive care plans utilizing critical thinking skills to care for patients as human beings with complex needs
- Formulate therapeutic relationships through verbal/nonverbal communication with clients, their significant others, and the multidisciplinary healthcare team
- Arrange to sit for the state licensing examination after meeting eligibility requirements

Students should consult with an academic advisor before registering for Academic Foundations courses.

Required Courses — Credits

BIOL 104 Nutrition for Health Careers 2
BIOL 213 Human Anatomy and Physiology I 3
BIOL 214 Human Anatomy and Physiology I Laboratory 1
BIOL 216 Human Anatomy and Physiology II 3
BIOL 217 Human Anatomy and Physiology II Laboratory 1
BIOL 251 Microbiology for the Health Sciences 3
BIOL 261 Microbiology for the Health Sciences Lab 1
CHMY 121 Introduction to General Chemistry 3
CHMY 122 Introduction to General Chemistry Laboratory 1
M 121 College Algebra 3
NURS 101 Introduction to Nursing 1
NURS 230 Fundamentals of Nursing 7
NURS 232 Pharmacology 3
NURS 234 Gerontology 2
NURS 240 Core Concepts of Adult Nursing 7
NURS 242 Core Concepts of Maternal/Child Nursing 3
NURS 244 Core Concepts of Mental Health Nursing 2
NURS 246 Leadership Issues 2
NURS 248 Transition to Registered Nursing 3
NURS 250 Pathophysiology 3
NURS 252 Complex Care Needs of the Maternal/Child Client 3
NURS 254 Complex Care Needs-Mental Health Client 2
NURS 260 Complex Care Needs of the Adult Client 4
NURS 262 Advanced Clinical Skills 1
NURS 264 Managing Client Care 4
PSYX 100 Introduction to Psychology 3
SOCI 101 Introduction to Sociology 3
WRIT 101 College Writing I 3
Total for Associate of Science in Nursing 72

Suggested Plan of Study

First Semester
BIOL 213 3
BIOL 214 1
CHMY 121 3
CHMY 122 1
M 121 3
NURS 101 1
Total 12

Second Semester
BIOL 216 3
BIOL 217 1
BIOL 104 2
WRIT 101 3
PSYX 100 3
Total 12

NOTE: Admission to the Practical Nursing Program is required prior to taking third semester coursework.

Third Semester
NURS 230 7
NURS 232 3
NURS 234 2
Total 12

Fourth Semester
NURS 240 7
NURS 242 3
NURS 244 2
NURS 246 2
Total 14

AAS Practical Nursing
Total 50

NURS 248 3

Continued…

NOTE: Admission to the ASN-RN Program is required prior to taking fifth semester coursework.

Fifth Semester

BIOL 251	3
BIOL 261	1
NURS 250	3
NURS 252	3
NURS 254	2
Total	**12**

Sixth Semester

NURS 260	4
NURS 262	1
NURS 264	4
SOCI 101	3
Total	**12**

Total for ASN..... 72

Office Assistant ∇
Certificate of Applied Science

A Certificate of Applied Science is awarded upon successful completion of the required Office Assistant courses. Students acquire skills using the telephone and preparing correspondence, reports, and forms. The office assistant will greet customers or visitors, schedule appointments, and work with filing systems. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Use current computer programs, including word processing, spreadsheet and database software
- Type proficiently on a computer keyboard
- File and organize documents
- Understand basic accounting and business math
- Spell, proofread and use proper business English
- Communicate professionally, both in writing and in person
- Maintain professionalism in a business environment
- Conduct an effective job search

Required Courses	Credits
ACTG 101 Accounting Procedures I	3
CAPP 120 Introduction to Computers	3
CAPP 154 MS Word	3
CAPP 158 MS Access	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 113 Transcription	3
CTBU 115 Keyboarding Applications/Ten Key	3
CTBU 131 Records and Information Management	3
CTBU 133 Office Applications	3
M 108 Business Mathematics	3
WRIT 122 Introduction to Business Writing	3
Total minimum credits required	**36**

Students should check course descriptions for required prerequisites. Math and communication requirements are usually determined by performance on placement tests or transfer credits.

Suggested Plan of Study

First Semester	Credits
CAPP 120	3
ACTG 101	3
CTBU 115	3
CTBU 131	3
WRIT 122	3
M 108	3
Total	**18**

Second Semester	
CAPP 154	3
CAPP 158	3
COMT 109	3
COMT 130	3
CTBU 113	3
CTBU 133	3
Total	**18**

Paramedic
Associate of Applied Science

This curriculum has been arranged so students may complete the Pre-Paramedic Core semester and Final Summer Session from a distance through online courses. With the exception of PARA 101 Transition to Paramedicine, the other Pre-Paramedic courses are also offered on campus. The core classes for the Paramedic program will start every fall semester.

MISSION STATEMENT
The Nursing, Health, and Safety Occupations Paramedic program provides excellence in academic programs and access to qualified students. The Paramedic program provides instruction in the knowledge and skills needed to deliver advanced pre-hospital care. The knowledge and skills acquired will enable success and achievement for students competing in an ever changing, technologically diverse environment and will provide preparation for regional, national, and global markets. We strive, by example, to instill in each student our philosophy, civic leadership skills, an interest in life-long learning, and a commitment to service. Serving a unique blend of urban and rural health educational needs in the Southeastern Yellowstone region of Montana, we will work with the community to promote intellectual and educational excellence.

VISION STATEMENT
The Nursing, Health, and Safety Occupations Paramedic program envisions creating an inviting environment that serves students by being responsive, adaptive, and innovative through a proactive approach to present and future needs. The program foresees increased enrollment, expanded programs, use of advanced technology, and expanded alliance with our various customer bases as a bridge to becoming a leader in post-secondary two-year education.

The College of Technology's Paramedic program is the only regional college program that is nationally accredited by the Committee on Accreditation of Educational Programs for EMS Professions (CoAEMSP) and the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Paramedics are recognized as allied healthcare providers who respond and provide immediate patient evaluation and treatment intervention to victims of illness or injury. Paramedics rely on their advanced knowledge of normal human physiology and pathophysiology of acute and chronic disease to develop a working field impression order to provide advanced life support care to patients in needs. Airway management, vascular access, electrical therapy, and pharmacological management are all examples of the invasive and life-saving practices a paramedic is permitted to provide in conjunction with medical oversight. Paramedics are typically employed by fire services, hospitals, flight programs, or ambulance companies.

The curriculum consists of classroom instruction with a skills laboratory, in-hospital clinical practice, and a supervised field internship to prepare students for the National Registry EMT-Paramedic Exam and entry-level paramedic practice.

See our website at www.msubillings.edu/careers for graduate data.

Special Considerations:
Submit current NREMT certification
Students will be evaluated on their cognitive ability, psychomotor skills and behavioral characteristics throughout the program. Students must be successful in all three domains of learning to be eligible for graduation. It should be noted that completion of the paramedic program does not guarantee state and national licensing to practice as a paramedic. Paramedics must pass appropriate licensing boards to practice as a paramedic.

Upon successful completion of this program a student will be able to:
- Comprehend, apply and integrate the cognitive knowledge essential to function as an entry-level paramedic
- Demonstrate appropriate level of technical capability and proficiency with psychomotor skills and assessment
- Demonstrate personal behaviors consistent with professional expectations of an entry-level paramedic as related to roles, responsibilities, well being, and legal and ethical guidelines
- Function and react as an entry-level paramedic, applying the problem-solving, decision-making, and critical-thinking skills required for assessment-based management in various clinical settings

- Recognize and demonstrate the importance of adapting pre-hospital care to a diverse patient population of age, gender, culture, religion, and background within a community
- Apply therapeutic and professional communication skills when working with patients, patients' significant others, colleagues, other healthcare providers, and members of the community

Required Courses

	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
HLTH 101 Essentials of Anatomy and Physiology	3
HLTH 150 Health Occupations Terminology I	3
M 105 Contemporary Mathematics **OR** STAT 141 Introduction to Statistical Concepts **OR** M 121 College Algebra **OR** M 114 Extended Technical Mathematics	3
PARA 101 Transition to Paramedicine	1
PARA 120 EMS Case Studies	4
PARA 130 Paramedic Fundamentals	3
PARA 131 Paramedic Fundamentals Skills Lab	1
PARA 132 Trauma	2
PARA 133 Pulmonary	2
PARA 134 Trauma/Pulmonary Lab & (PHTLS)	1
PARA 135 Hospital Internship I	5
PARA 240 Cardiology	4
PARA 241 Cardiology Lab & (ACLS)	1
PARA 242 Medical	2
PARA 243 Medical Lab	1
PARA 244 Special Considerations	1
PARA 245 OB/Neonate/Pediatrics	2
PARA 246 OB/Neonate/Pediatrics Lab & (NRP) & (PALS)	1
PARA 247 Hospital Internship II	6
PARA 252 National Registry Exam Preparation	3
PARA 253 National Registry Exam Preparation Lab	1
PARA 254 Field Internship	8
WRIT 122 Introduction to Business Writing **OR** WRIT 121 Introduction to Technical Writing	3
Restricted Elective	3
Total	**70**

Students should check course descriptions for required prerequisites.

Suggested Plan of Study

Pre-Paramedic

Core Semester	**Credits**
HLTH 101^	3
HLTH 150^	3
WRIT 121 or 122^	3
CAPP 120^	3
M 105/STAT 141/M 121/M 114^	3
PARA 101*	1
Total	**16**

Fall Semester	
PARA 120*	4
PARA 130	3
PARA 131	1
PARA 132	2
PARA 133	2
PARA 134	1
PARA 135	5
Total	**18**

Spring Semester	
PARA 240	4
PARA 241	1
PARA 242	2
PARA 243	1
PARA 244	1
PARA 245	2
PARA 246	1
PARA 247	6
Total	**18**

Summer Semester	
PARA 252	3
PARA 253	1
PARA 254	8
COMT 109^	3
Restricted Elective	3
Total	**18**

^available online
*offered *only* online

Power Plant Technology
(Pre-Apprenticeship Program)
Associate of Applied Science Degree

Montana has numerous power plants and hydroelectric power generating plants. Previously, training in Power Plant Technology was only provided by the industry. Now, the College of Technology offers an Associate of Applied Science degree in this area. Students learn technical, electrical laws, basic systems of a power plant, mechanical and safety systems during this four-semester program offering. Equipment operations and power plant control are also discussed in detail. Power plant simulators give students a realistic feel for actual power plant control room activities. A hazardous materials technician level 3 certificate is awarded as part of the safety training.

Graduates will be prepared for entry level apprenticeship training and qualification at nuclear, fossil fuel, and other types of electrical power generating facilities. Within any power plant, there are several different entry-level opportunities including Operations, Mechanical Maintenance, Electrical Maintenance, and Instrumentation and Control Technicians. See our website at www.msubillings.edu/careers for graduate data.

Power Plant is a spring start program only. The program has been approved as a pre-apprenticeship program with the International Brotherhood of Electrical Workers (IBEW). See an advisor for more information

Upon successful completion of this program a student will be able to:

- Describe Occupational Safety and Health Administration (OSHA) industrial safety precautions related to material handling, electrical and machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazard accident prevention and management
- Use power plant measurement with emphasis on proper use, accurate reading, and calculations
- Demonstrate knowledge of basic electrical laws, power sources, and circuits
- Demonstrate maintenance procedures including defense in depth, conduct of verifications, and work control processes while applying the standards and documentation requirements to meet power plant safety and management expectations
- Describe manufacturing properties of materials, the behavior of materials under load, stress, strain, torsion, and strength
- Examine hand and power tools used in the power plant including safe usage, purpose, and maintenance
- Discuss information distribution including methods and avenues of communication, material and design, procedural deficiencies of motors and equipment, operation of sensitive equipment, plant vulnerabilities, and personnel errors
- Explain basic systems and components involving reactor coolant, volume control, safety injection, mainstream, turbine, feedwater, steam, and heater drain systems within the power plant
- Demonstrate microcomputer software applications for the personal computer to include word processing, development of an electronic spreadsheet, and keyboarding in a desktop environment
- Explain advanced systems and components involving water, electrical, cooling, waste drain, fuel handling and storage, fuel pool cooling and cleanup, radioactive waste management, air and gas systems, and ventilation and fire protection systems within the power plant
- Demonstrate knowledge of renewable energy sources
- Read blueprints and plant drawings including flow diagrams, symbols, dimension, tolerance, clearance, and amendments following proper procedure
- Apply mathematical concepts of algebra, geometry, and trigonometry to the industrial power generation industry

Before a student can be accepted into the Power Plant Technology Program, competency in Math and English must be demonstrated. This may be done by:

- Receiving a passing score on the Compass Placement Test that indicates adequate preparation to enroll in WRIT 122 and M 114
- Transfer of appropriate credits
- Current ACT/SAT scores in the required range showing readiness to take WRIT 122 and M 114

If none of the above criteria are met, a student must complete the necessary prerequisite English and math classes identified in this catalog (WRIT 104 and/or M 061 and M 111). Check with the Advising Center to determine how you can meet these requirements.

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 171 Introduction to Business	3
M 114 Extended Technical Mathematics	3
PPT 101 Fundamentals of Processing Technology	5
PPT 120 Environmental Awareness	2
PPT 130 Process Diagrams for Process Technology	2
PPT 135 Instrument and Control Systems	5
PPT 151 Process Plant Safety I	2
PPT 161 Process Plant Safety II	2
PPT 175 Process Plant Sciences	5
PPT 207 Boilers, Accessories and Basic Operations	3
PWRP 201 Power Plant Equipment and Operations	3
PWRP 203 Energy Sources and Conversion	3
PWRP 210 Turbines, Accessories and Basic Operation	3
PWRP 214 Power Generation	4
PWRP 216 Electrical System Components and Protections	3
PWRP 218 Advanced Plant Operations and Troubleshooting	4
PWRP 296 Cooperative Education/Internship	2
TRID 160 Hazardous Materials Technician General Training	3
TRID 185 Introduction to Industrial Power Systems	3
WRIT 122 Introduction to Business Writing	
OR WRIT 121 Introduction to Technical Writing	3
Total minimum credits required for degree	**72**

Students should check the course descriptions for required prerequisites.

Suggested Plan of Study

First Semester	Credits
CAPP 120	3
M 114	3
PPT 101	5
PPT 130	2
PPT 151	2
TRID 185	3
Total	**18**

Second Semester	
WRIT 121 or 122	3
COMT 130	3
PPT 120	2
PPT 135	5
PPT 161	2
PPT 175	5
Total	**20**

Third Semester	
CTBU 171	3
COMT 109	3
PWRP 201	3
PWRP 203	3
PPT 207	3
TRID 160	3
Total	**18**

Fourth Semester	
PWRP 210	3
PWRP 214	4
PWRP 216	3
PWRP 218	4
PWRP 296	2
Total	**16**

Process Plant Technology
Associate of Applied Science Degree

Process Plant is a spring start program only. See an advisor for more information

Montana has numerous petroleum refineries and chemical processing industries. Previously, training in Process Plant Technology was only provided by the industry. Now, the College of Technology offers an Associate of Applied Science degree in this area. Students learn technical, mechanical and safety systems during this four-semester program offering.

Process Plant Technology graduates will find career opportunities through initial assignments in one of a variety of industries including Petroleum Refining, Petrochemical Manufacturing Plants, Electrical Power Plants, Electrical Power Generation Facilities, Inorganic Chemical Production, and Paper Manufacturing. See our website at www.msubillings.edu/careers for graduate data.

Equipment operations and process control are also discussed in detail. Plant simulators give students a realistic feel for actual industrial control room activities. A hazardous materials technician level 3 certificate is awarded as part of the safety training.

Upon successful completion of this program a student will be able to:

- Successfully complete the Center for the Advancement of Process Technology (CAPT) exit testing program
- Provide an overview of a typical process plant; understand the basic techniques as they pertain to process troubleshooting; have an understanding of process design and instrumentation drawings; demonstrate a theoretical and practical understanding of process electrical control circuits; identify process equipment; state the purpose of equipment; and describe the roles, responsibilities, and work environment
- Understand and be able to explain the components of typical plant Quality, Safety, Health and Environmental (SHE) programs
- Understand working within an industrial complex with special emphasis being placed upon shift work; teamwork; and the effect that this non-typical career may have on family and social activities
- Obtain entry level employment within an industrial complex

Before a student can be accepted into the Process Plant Technology Program, competency in Math and English must be demonstrated. This may be done by:

- Receiving a passing score on the Compass Placement Test that indicates adequate preparation to enroll in WRIT 122 and M 114
- Transfer of appropriate credits
- Current ACT/SAT scores in the required range showing readiness to take WRIT 122 and M 114

If none of the above criteria are met, a student must complete the necessary prerequisite English and math classes identified in this catalog (WRIT 104 and/or M 061, M 111). Check with the Advising Center to determine how you can meet these requirements.

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
COMT 130 Introduction to Public Speaking	3
CTBU 171 Introduction to Business	3
M 114 Extended Technical Mathematics	3
PPT 101 Fundamentals of Processing Technology Lecture	4
PPT 102 Fundamentals of Processing Technology Laboratory	1
PPT 120 Environmental Awareness	2
PPT 130 Process Diagrams for Process Technology	2
PPT 135 Instrument and Control Systems Lecture	4
PPT 136 Instrument and Control Systems Laboratory	1

Continued…

Suggested Plan of Study

First Semester	Credits
CAPP 120	3
M 114	3
PPT 101	4
PPT 102	1
PPT 130	2
PPT 151	2
TRID 185	2
TRID 186	1
Total	**18**

PPT 151 Process Plant Safety I 2
PPT 161 Process Plant Safety II 2
PPT 175 Process Plant Sciences Lecture 4
PPT 176 Process Plant Sciences Laboratory 1
PPT 207 Boilers, Accessories and Basic Operations 3
PPT 208 Equipment and Operations Laboratory 2
PPT 210 Equipment and Operations Lecture 4
PPT 211 Advanced Operations Lecture 2
PPT 212 Advanced Operations Laboratory 1
PPT 220 Quality Control Practices 2
PPT 225 Plant Investigation and Troubleshooting 2
PPT 296 Cooperative Education/Internship 3
TRID 160 Hazardous Materials Technician General Training 3
TRID 185 Introduction to Industrial Power Systems Lecture 2
TRID 186 Introduction to Industrial Power Systems Laboratory 1
WRIT 122 Introduction to Business Writing
OR WRIT 121 Introduction to Technical Writing 3

Restricted Elective (to be selected in consultation with the advisor) 3
Choose from the following:
BIOL 101 Survey of Biology 3
CAPP 110 Short Courses: MS Outlook 1
CAPP 156 MS Excel 3
PWRP 210 Turbines, Accessories and Basic Operations 3
SOCI 101 Introduction to Sociology 3
TRID 151 Welding 2

Total minimum credits required for degree 69

Students should check the course descriptions for required prerequisites.

Second Semester
COMT 130 3
PPT 120 2
PPT 135 4
PPT 136 1
PPT 161 2
PPT 175 4
PPT 176 1
Total 17

Third Semester
CTBU 171 3
COMT 109 3
PPT 207 3
PPT 208 2
PPT 210 4
TRID 160 3
Total 18

Fourth Semester
WRIT 121 or 122 3
PPT 211 2
PPT 212 1
PPT 220 2
PPT 225 2
PPT 296 3
Restricted Elective(s) 3
Total 16

Radiologic Technology
Associate of Applied Science

This is a fall start program. Students must have all prerequisite course requirements completed prior to the fall semester in which they wish to start.

MISSION STATEMENT
The Nursing, Health, and Safety Occupations Radiologic Technology program provides excellence in academic programs and access to qualified students. The Radiologic Technology program provides instruction in the knowledge and skills needed to deliver entry level medical imaging. The knowledge and skills acquired will enable **success and achievement** for students competing in an ever changing, technologically diverse environment and will provide preparation for regional, national, and global markets. We strive, by example, to instill in each student our philosophy, **civic leadership skills**, an interest in life-long learning, and a commitment to service. Serving a unique blend of urban and rural health educational needs in the southeastern Yellowstone region of Montana, we will work with the community to **promote intellectual** and educational excellence.

VISION STATEMENT
The Nursing, Health, and Safety Occupations Radiologic Technology program envisions creating an inviting environment that serves students by being responsive, adaptive, and innovative through a proactive approach to present and future needs. The program the expanded use of advanced technology, and expanded alliance with our various customer bases as a bridge to becoming a leader in post-secondary two-year education.

Radiology is the art and science of using radiation to produce images of the body for use in diagnosing medical problems. This program will train students to apply modern principles of radiation exposure, radiation protection, and human anatomy and physiology to produce radiographic images. Students will learn how to manipulate x-ray equipment and to position patients to produce diagnostic images. They will also learn how to assist and educate patients before, during, and after radiographic procedures.

Students will study clinical radiographic applications in a hospital radiology department. Computer skills applicable to radiographic requirements will be examined in detail. Students will also learn proper care and maintenance of patient records in accordance with applicable regulations.

Upon graduation, students will be prepared to take the certification examination administered by the American Registry of Radiologic Technologists (ARRT).

Graduates will find career positions in clinics, hospitals, physician's offices, and mobile units, as well as in research, public health, industry, and in sales of radiographic equipment. See our website at www.msubillings.edu/careers for graduate data.

Technical Standards: Students must possess the following:

a. Visual ability: Students must have the visual acuity to see at a distance and to discriminate colors.
b. Strength: Students must possess the strength to perform physical activities including the ability to push/pull objects weighing more than 100 pounds and to transfer objects of more than 100 pounds.
c. Mobility: Students must be able to perform mobility skills such as walking, standing, bending, and pushing portable equipment throughout the hospital.
d. Communication (speech, reading and writing): Students must be able to interact with individuals and communicate promptly and effectively when required.
e. Hearing: Students must be able to receive verbal communication from patients and members of the health care team and to use/assist with monitoring devices such as cardiac monitors, stethoscopes, IV pumps, fire alarms, etc.
f. Coordination: Students must possess hand-eye coordination including the ability to align an x-ray beam with body parts and film trays. Students must be able to operate a computer/keyboard and must possess arm-hand steadiness to enable them to perform such tasks as taking blood pressure, performing venipuncture, catheterization, and/or calibration of tools and equipment.

Special Admission Procedures: All individuals applying for admission to the Radiologic Technology program must complete the prerequisite semester. **However, due to limited clinical space, only 14 to 16 students per year will be selected to continue in the clinical portion of the program which begins each fall semester.**

The following criteria will be used to select those Radiologic Technology students who will continue into the clinical portion of the program. The selection process is divided into two phases. Phase I will be applied to all applicants. Only the top 24 applicants will move to Phase II of the selection process.

I. Phase I
Points will be awarded for categories from the completed Radiologic Technology application form such as:

a. Grade point average in prerequisite semester courses
b. Letters of reference
c. Prior medical and work experience
d. Degrees and education
e. Career Assessment Test
f. Written essay
g. Hospital site visit and answers to site visit questions

II. Phase II. Personal interviews.
The personal interview portion of the selection process will involve answering a series of questions from an RT selection committee. All applicants will be asked the same questions. Follow-up questions may be asked. Only those students selected by the committee will continue in the clinical portion of the Radiologic Technology program. The decision of the selection committee is final.

Upon successful completion of this program a student will be able to:

- Perform radiographic examinations with the knowledge and skill of an entry level radiologic technologist
- Assess the patient's physical and mental status and formulate the appropriate x-ray technique and positioning requirements to produce optimal radiographic images
- Manipulate x-ray equipment and computer equipment to produce diagnostic x-ray images
- Implement radiation protection measures to insure the protection of the patient, co-workers, medical staff and the public
- Demonstrate the ability to communicate effectively with co-workers, medical staff, patients and patient families
- Administer applicable regulations to maintenance of patient records

Required Courses

	Credits
BIOL 213 Human Anatomy and Physiology I	3
BIOL 214 Human Anatomy and Physiology I Laboratory	1
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 114 Extended Technical Mathematics (preferred)	
OR M 105 Contemporary Mathematics	
OR STAT 141 Introduction to Statistical Concepts	3
RAD 101 Radiological Technology I	2
RAD 102 Clinical Radiology I	5
RAD 103 Radiology I Positioning Lab	1
RAD 104 Introduction to Radiologic Physics	3
RAD 105 Patient Care in Radiology	3
RAD 108 Clinical Radiology Intersession	1
RAD 110 Radiation Physics and Biological Principles	3
RAD 151 Radiologic Technology II	3
RAD 152 Clinical Radiology II	6
RAD 153 Radiology II Positioning Lab	1
RAD 181 Radiologic Technology III	2

Continued…

Suggested Plan of Study

Prerequisite Semester	Credits
BIOL 213	3
BIOL 214	1
WRIT 121/122	3
CAPP 120	3
M 114/M 105/STAT 141	3
Total	**13**

First Semester (Fall)	
RAD 101	2
RAD 102	5
RAD 103	1
RAD 104	3
RAD 105	3
Total	**14**

Intersession	
RAD 108	1

RAD 182 Clinical Radiology III 8
RAD 183 Radiology III Positioning Lab 1
RAD 201 Radiologic Technology IV .....3 (twice)
RAD 202 Clinical Radiology IV 8
RAD 252 Clinical Radiology V 8
RAD 271 Registry Review 3
WRIT 122 Introduction to Business Writing
OR WRIT 121 Introduction to Technical Writing 3
Total..... 80

Students should check the course descriptions for required prerequisites.

Second Semester (Spring)
RAD 110..... 3
RAD 151..... 3
RAD 152..... 6
RAD 153..... 1
Total..... 13

Summer Session
RAD 181..... 2
RAD 182..... 8
RAD 183..... 1
Total..... 11

Third Semester (Fall)
RAD 201..... 3
RAD 202..... 8
COMT 109..... 3
Total..... 14

Fourth Semester (Spring)
RAD 201..... 3
RAD 252..... 8
RAD 271..... 3
Total..... 14

Surgical Technology
Associate of Applied Science

The University of Montana College of Technology is proud to partner with Montana State University Billings College of Technology to offer the Associate of Applied Science Degree in Surgical Technology on the Outreach campus in Billings.

Students will take classes on the Montana State University Billings COT (MSU Billings COT) and Montana State University Billings (MSU Billings) campuses, and online through The University of Montana College of Technology (UM COT). The lab and clinical components of the curriculum are offered at St. Vincent Healthcare and Billings Clinic. All coursework can be completed in Billings. However, Outreach students are required to come to Missoula for commencement and to take the national Certification exam.

Students in the program are educated to be Surgical Technologists (ST), part of the surgical team, to ensure the operative procedure is conducted under optimal conditions. The ST is responsible for three phases (preoperative, intraoperative, and postoperative) of patient care with minimal direction. All surgical team members must adhere to the principles of asepsis and the practice of sterile technique. The ST normally functions in a sterile capacity by passing instruments, equipment and supplies to the surgeon during the surgical procedure but may also perform many non-sterile duties throughout the workday.

Students admitted to MSU Billings COT enter as General Studies majors and should indicate Surgical Technology as their desired program. After meeting with an advisor, specific prerequisite courses are selected. Program applications are accepted each November 1. Students applying to the UM COT Surgical Technology program must successfully complete (or be in the process of completing) the prerequisite courses. Acceptance to the program is determined after fall semester grades are finalized and applications have been evaluated. The courses, BIOL 213/214, Anatomy and Physiology I and Lab, must be passed with a grade of B (3.0) for program acceptance. All other prerequisite courses must be passed with a grade of C (2.0). Course grading scales may vary. If, after program admission, a student fails a required course, he/she will not be able to continue in the program and will need to apply for readmission. If a student is readmitted, he/she will be required to complete skills labs, ST 115 and ST 215, to ensure sterile technique skills are acceptable for the delivery of safe patient care. **A student may take any required course a maximum of two (2) times.**

The Surgical Technology-specific courses begin each spring semester. The classroom portion of the program is delivered online in a web-based format from Missoula. Lab and clinical courses are conducted face-to-face in Billings. **It is expected that students applying to the Outreach program will have considerable computer expertise in order to be successful at the delivered online format**. Students are required to rotate sites during the clinical portion of their education. During the last semester of the program, internships may be outside their respective area. Transportation and housing are the student's responsibility.

As an allied health professional, a Surgical Technologist (ST) works closely with surgeons, anesthesiologists, registered nurses, and other surgical personnel delivering patient care and assuming appropriate responsibilities before, during and after surgery. As part of the surgical team, the ST must be able to work quickly and accurately with a commitment to detail. A number of activities must be integrated according to priority when under pressure in stressful and emergency situations. Therefore, a stable temperament and a strong sense of responsibility are qualities essential to the Surgical Technologist. Considerable patience and concern for order are required. Manual dexterity, good vision and hearing and physical stamina are vital. Sensitivity to the needs of the patient as well as other members of the surgical team must be demonstrated. Individuals who practice this profession have a strong desire to help others and make a valuable contribution to society. Honesty and moral integrity are essential in upholding standards and providing safe patient care. Technical skills will be important, as advances in medical technology will be central to the profession, and students will need to learn to incorporate computers, lasers, fiber optics, electronics and robotics for patient care.

Upon admission to the program, students must provide proof of the following:

- Tuberculosis testing using the PPD (Purified Protein Derivative) or chest x-ray (positive results will require a physician's letter before a student can continue in clinical settings)
- Hepatitis B vaccine (HBV); A three-injection series and a post-injection titer is required
- Measles, mumps and rubella vaccine (MMR; those born before 1956 must provide a titer)
- Tetanus vaccine
- CPR training for Healthcare Providers
- A baseline eye examination (includes a retinal exam prior to exposure to surgical lasers)
- Proof of health insurance

Many healthcare institutions have increasingly stringent access requirements. Background checks and drug testing may be conditions for student clinical experiences or employment. Surgical Technology students should be prepared for such requirements and are responsible for the costs.

The Surgical Technology program is accredited by the Committee on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756; phone 727-210-2350; www.caahep.org.

Prospective students may contact UM COT Outreach Office at 406-243-7871 for more information regarding the Surgical Technology program or Program Director, Debbie Fillmore, at 406-243-7860 or debbie.fillmore@mso.umt.edu

General Education/Academic Foundations Prerequisites

These courses are to be successfully completed, or in the process of completion, at the time of application to the program.

Pre-Surgical Technology

Course	Credits	Location
CAPP 120 Introduction to Computers	3	MSUB COT
BIOL 213/214 Human Anatomy and Physiology I with Lab	4	MSUB COT
^Grade of "B" required for BIOL 213/214		
WRIT 101 College Writing I	3	MSUB COT
M 105 Contemporary Mathematics	3	MSUB COT
HLTH 150 Health Occupations Terminology I	3	MSUB COT

Surgical Technology Program Curriculum

Please note: Surgical Technology course titles, numbers and rubrics have changed from previous listings.

First Year – Spring

Course	Credits	Location
*BIOL 216/217 Human Anatomy & Physiology II & Lab	4	MSUB COT
*PSYX 100 Introduction to Psychology	3	MSUB COT
ST101 Introduction to Surgical Technology	3	UM Online
ST 115 Surgical Lab I	2	Hospital Lab
ST 154 Surgical Pharmacology	3	UM Online
ST 164 Microbiology for the Surg Tech	3	UM Online
Total	**19**	

Second Year – Fall

Course	Credits	Location
ST 200 Operating Room Techniques	5	UM Online
ST 201 Surgical Procedures I	4	UM Online
ST 215 Surgical Lab II	2	Hospital Lab
ST 250 Surgical Clinical I	4	Hospital
*MED 280E Ethics in Health Professions	3	UM Online
Total	**18**	

*Can be taken earlier

Continued…

Second Year – Spring

Course	Credits	Location
ST 202 Surgical Procedures II	5	UM Online
ST 251 Surgical Clinical II	5	Hospital
ST 298 Surgical Internship	5	Hospital
Total	**15**	

Welding and Metal Fabrication Technology
Associate of Applied Science

Welding is a fall start program only. See an advisor for more information.

The welding industry offers workers immediate tangible rewards for their efforts. Few professions allow the opportunity for creativity found in the fabrication shop. In addition, the fabrication industry represents one of the largest employment segments in our local economy. The program is NCCER and AWS certified. Upon successful completion of the program, students can earn a National Center for Construction Education and Research (NCCER) Certification. Graduates may also qualify for advanced placement in the Ironworkers, Pipefitters, or Boilermakers unions.

Graduates find work in structural and steel fabrication shops and with heavy equipment rebuilders and manufacturers, mining, refineries, and other energy related enterprises in the region. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Describe and demonstrate welding and metal fabrication safety
- Follow written and oral directions related to welding procedures and fabrication
- Read and draw blueprints
- Set up and operate hand, semi-automatic, and automatic cutting processes
- Identify material shapes and sizes
- Weld in all positions with a variety of welding processes current with the welding and energy industry
- Weld ferrous and non-ferrous metals with a variety of welding processes
- Operate fabrication equipment common in a welding and fabrication environment
- Identify, select, and match filler metals to base metals
- Apply fabrication principles and practices
- Prepare parts for assembly and welding
- Understand and apply welding metallurgy to weldments
- Understand and apply CNC processes to fabrication and welding
- Formulate a plan for assembly and welding of weldments
- Comprehend and apply inspection and testing methods
- Earn NCCER (National Center for Construction Education and Research) Certification

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 114 Extended Technical Mathematics	3
METL 111 Welding Technology, Theory and Safety	3
METL 112 Blueprint Reading and Welding Symbols	3
METL 113 Cutting and Shielded Metal Arc Welding Lab	5
METL 114 Shielded Metal Arc Welding Lab	4
METL 151 Layout and Pattern Making Fundamentals	3
METL 152 Metal Fabrication Basics	2
METL 153 Metal Fabrication Lab	3
METL 154 Semi-Automatic Welding	2
METL 155 Semi-Automatic and SMAW Lab	5
METL 211 Pipe Welding and Layout	3
METL 212 Pipe Welding Lab I	5
METL 213 Gas Tungsten Arc Welding	5
METL 214 Advanced Weld Technology and Theory II	2
METL 251 Specialty Welding Processes	5
METL 252 CNC Processes for Metal Fabrication	5

Continued…

Suggested Plan of Study

First Semester	Credits
WRIT 104	3
METL 111	3
METL 112	3
METL 113	5
METL 114	4
Total	**18**

Second Semester	
M 111	3
METL 151	3
METL 152	2
METL 153	3
METL 154	2
METL 155	5
Total	**18**

METL 253 Weld Testing and Certification 2
METL 254 Weld Testing and Certification Lab..... 3
WRIT 122 Introduction to Business Writing 3
Total minimum credits required..... 72

Suggested Elective
METL 296 Cooperative Education/Internship 3-9

In order to take the first semester of METL courses, students must prove their skills in Reading Comprehension and Writing. For more information, please contact the Advising Office.

Summer
METL 296 (optional)..... 3-9
Total..... 6

Third Semester
CAPP 120 3
METL 211..... 3
METL 212..... 5
METL 213..... 5
METL 214..... 2
Total..... 18

Fourth Semester
COMT 109..... 3
METL 251..... 5
METL 252..... 5
METL 253..... 2
METL 254..... 3-6
Total..... 18

Welding and Metal Fabrication Technology
Certificate of Applied Science

Welding is a fall start program only. See an advisor for more information.

The welding industry offers workers immediate tangible rewards for their efforts. Few professions allow the opportunity for creativity found in the fabrication shop. In addition, the fabrication industry represents one of the largest employment segments in our local economy. Graduates find work in structural and steel fabrication shops and with heavy equipment rebuilders and manufacturers, mining, refineries, and other energy related enterprises in the region. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Engage in safe practices
- Follow written and oral directions and procedures
- Set up and operate various cutting and welding processes
- Select process for project at hand
- Operate machinery common in welding environment
- Identify material shapes and sizes
- Construct basic sketches and blueprints
- Recognize welding symbols and apply correctly
- Identify base material and filler material
- Match filler metal to base material
- Prepare parts for assembly
- Formulate a plan of assembly
- Construct assemblies
- Apply fabrication principles and practices
- Comprehend inspection and testing methods
- Visually examine work for acceptable workmanship

Required Courses	**Credits**
COMT 109 Human Relations	3
M 111 Technical Mathematics	3
METL 111 Welding Technology, Theory and Safety	3
METL 112 Blueprint Reading and Welding Symbols	3
METL 113 Cutting and Shielded Metal Arc Welding Lab	5
METL 114 Shielded Metal Arc Welding Lab	4
METL 151 Layout and Pattern Making Fundamentals	3
METL 152 Metal Fabrication Basics	2
METL 153 Metal Fabrication Lab	3
METL 154 Semi-Automatic Welding	2
METL 155 Semi-Automatic and SMAW Lab	5
WRIT 104 Workplace Communications	3
Total minimum credits required	**39**

Suggested Elective

CAPP 120 Introduction to Computers	3

In order to take the first semester of METL courses, students must prove their skills in Reading Comprehension and Writing. For more information, please contact the Advising Office.

Suggested Plan of Study

First Semester	**Credits**
WRIT 104	3
COMT 109	3
METL 111	3
METL 112	3
METL 113	5
METL 114	4
Total	**21**

Second Semester	
M 111	3
METL 151	3
METL 152	2
METL 153	3
METL 154	2
METL 155	5
Total	**18**

Welding for Energy Technology
Certificate of Applied Science

Entrance Requirement

Entrance requirement for the Welding for Energy Technology Certificate of Applied Science is successful completion of the Welding and Metal Fabrication Certificate of Applied Science or equivalent professional industry certification, and/or evaluation by qualified College of Technology faculty of applicable work experience.

Welding is a fall start program only. See an advisor for more information.

The welding industry offers workers immediate tangible rewards for their efforts. Few professions allow the opportunity for creativity found in the fabrication shop. In addition, the fabrication industry represents one of the largest employment segments in our local economy. Graduates find work in structural and steel fabrication shops and with heavy equipment rebuilders and manufacturers, mining, refineries, and other energy related enterprises in the region. See our website at www.msubillings.edu/careers for graduate data.

Upon successful completion of this program a student will be able to:

- Describe and demonstrate welding and metal fabrication safety
- Follow written and oral directions related to welding procedures and fabrication
- Read and draw blueprints
- Set up and operate hand, semi-automatic, and automatic cutting processes
- Identify material shapes and sizes
- Weld in all positions with a variety of welding processes current with the welding and energy industry
- Weld ferrous and non-ferrous metals with a variety of welding processes
- Operate fabrication equipment common in a welding and fabrication environment
- Identify, select, and match filler metals to base metals
- Apply fabrication principles and practices
- Prepare parts for assembly and welding
- Understand and apply welding metallurgy to weldments
- Understand and apply CNC processes to fabrication and welding
- Formulate a plan for assembly and welding of weldments
- Comprehend and apply inspection and testing methods
- Earn NCCER (National Center for Construction Education and Research) Certification

Required Courses	Credits
COMT 109 Human Relations	3
M 111 Technical Mathematics	3
METL 211 Pipe Welding and Layout	3
METL 212 Pipe Welding Lab I	5
METL 213 Gas Tungsten Arc Welding	5
METL 214 Advanced Weld Technology and Theory II	2
METL 251 Specialty Welding Processes	5
METL 252 CNC Processes for Metal Fabrication	5
METL 253 Weld Testing and Certification	2
METL 254 Weld Testing and Certification Lab	3-5
WRIT 104 Workplace Communications	3
Total minimum credits required	**39**

Suggested Elective

CAPP 120 Introduction to Computers	3

Students should check the course descriptions for required prerequisites.

Suggested Plan of Study

First Semester	**Credits**
WRIT 104	3
COMT 109	3
METL 211	3
METL 212	5
METL 213	5
METL 214	2
Total	**21**

Second Semester	
M 111	3
METL 251	5
METL 252	5
METL 253	2
METL 254	3
Total	**18**

AA/AS General Studies (Self-Designed)

Requirements	Credits
Academic Foundations	37
Electives	23
Total	**60**

- Earn a minimum of 60 semester credits with a cumulative grade point average of 2.0 or better
- Satisfy the Academic Foundations requirements of MSU Billings
- Earn a C- or better in all Academic Foundations requirements
- A minimum of 20 semester credits with 40 grade points must be earned at MSU Billings

Outreach & Community Programs

Bruce Whittenberg, Outreach and Special Projects Coordinator
(406) 896-5877; bwhittenberg@msubillings.edu

Lisa Skriner, Project Manager, US-DOL CBJT Energy Workforce Training Grant
(406) 247-3055; lskriner@msubillings.edu

COT Workforce Training Center

As the MSU Billings College of Technology evolves into a comprehensive community college, a critical part of its mission is to become a center for community learning. The College of Technology with funding from the U.S. Department of Labor has developed a Workforce Training Center focusing on skill development in support of local business and industry. The Workforce Training Center offers short-term non-credit courses, modular-based courses delivered in hybrid formats, and access to College of Technology academic courses and programs. In addition, the College of Technology has partnered with the MSU Billings College of Professional Studies and Lifelong Learning to bring together the rich resources of the COT and the entire University to serve the workforce and lifelong learning needs of our community.

The Workforce Training Center has acquired extensive resources for training that include:

- A $250,000 Mobile Energy Workforce Training Lab complete with satellite link-up to deliver training anywhere it is needed throughout the region.
- Portable computer labs with 28 laptops designed to deliver software and simulator-based training.
- Portable welding and HazMat equipment that allows instructors to deliver training in a variety of settings and give students real-world, hands-on experience that replicates what they will encounter in the field.
- Simulator trainers as follows: Caterpillar Heavy Equipment Operation, Amatrol - AC/DC electrical, hydraulics and pneumatics, PLCs, process control, and rigging.
- Heavy equipment machines as follows: Caterpillar 14M Motor Grader, Volvo BL60, Bobcat Skidsteer, and Bobcat Versahandler to offer students hands-on experience.

Customized Solutions

Why outsource your training issues when you can in-source a training director to be part of your executive team? Through a multi-step, consultative process, we listen to your needs and design a customized organizational development solution that may include technical and "soft skills" training. The College of Technology can bring the resources of MSU Billings to your business and help you achieve the next level.

As an effective community partner, the COT Workforce Training Center develops and delivers customized training contracts for local businesses. These contracts include courses delivered on campus and at employer's worksites. Courses have included safety training, mentoring and leadership, skills training, software, HazMat, and a variety of other specially developed courses. Many of the courses offer nationally recognized, portable skills certifications.

The COT Workforce Training Center partners with The College of Professional Studies to offer courses utilizing a powerful and world-recognized program and Fortune 500 company, AchieveGlobal, which forms the foundation for customized training and personal development programs with MSU Billings. The Achieve Global programs, available to MSU Billings by exclusive license, have been utilized by a number of businesses and non-profit organizations in our community.

For additional information about the College of Technology Workforce Training Center, contact Lisa Skriner, at (406) 247-3055. For more information about AchieveGlobal programs contact Bruce Whittenberg at (406) 896-5877.

ACT Center

The ACT Center is located next to the library at the College of Technology. Our fast internet connections will give you access to over 3000 titles from personal development to business development. You can access 95% of our titles from your home or office computer via the Web. You can access up-to-date training anytime, anywhere at a cost effective rate.

Certification Testing Center

A variety of testing services are administered at the College of Technology. Sylvan Prometric tests are available for areas including Microsoft, A+, Novell, Cisco, IBM, Lotus, J.D. Edwards, Auto Glass Technician, etc. The Microsoft Office Specialist (MOS) testing program offers certification tests for Word, Excel, Outlook, PowerPoint, and Access.

Additional ways to serve the community by expanding the certification test offerings in additional areas are always being sought. For more information please contact our Library/Testing Center at (406) 247-3025.

Community Education

The College of Technology frequently collaborates with other organizations in the region to offer conferences and workshops. Conference and workshop topics include agriculture, healthcare, computer network security, leadership and other areas of professional development. COT Conferences are regionally known for their quality and timeliness.

Summer Camps

The College of the Technology offers a wide array of summer camps for youth ranging from primary to secondary education each summer. Many of the camps focus on informing students of available educational and career paths, while providing them with skills development and educational growth. Successful summer camps have included Kid's Construction Camps for Girls and Boys and Energy Explorers focused on Process Plant Technology.

MSU Billings Online University

Coordinator: Tim Tirrell
Director E-Learning Operations
(406) 247-5776
ttirrell@msubillings.edu

Online Advising: inquiry@msubonline.org or (406) 657-2240

Website: www.msubonline.org

∇ - This symbol denotes programs offered in an online format in addition to classroom training

We are pleased to be able to offer you an opportunity to take college courses via the internet as a way of overcoming barriers of time and place. Our students have told us they need the ability to reach their academic goals in an environment that affords them freedom and flexibility, comfort and convenience, and more time for work and family. By combining our commitment to Access and Excellence with the technology that allows you to "Learn Online… Anywhere…Anytime," this program ensures that you can achieve your personal, professional, and academic goals without sacrificing the other things that are important in your life.

Through the MSU Billings Online University, you can complete Academic Foundations requirements as well as the following certificates and degrees listed below. We are continuously reviewing our programs to determine what we can offer in an online format. To get a current list of degrees and classes offered online, please check the online website www.msubonline.org.

Online Programs currently offered at the MSU Billings College of Technology:

Associate Degree Programs

A.A.S. Accounting Technology ∇
A.A. General Studies (Self-Designed) ∇
A.S. General Studies (Self-Designed) ∇
A.S. Human Resources-Applied Emphasis ∇
A.S. Human Resources-College of Business Articulated Emphasis ∇

Certificates of Applied Science

Accounting Assistant ∇
Human Resources Management ∇
Medical Coding & Insurance Billing ∇
Office Assistant ∇

Please refer to the program requirements listed in the Business and Industry section of the catalog for information on any of these programs.

You can also take individual online courses for professional development, to transfer to another institution, to apply toward another MSU Billings degree program, or to supplement your on-campus course schedule with an online learning experience.

Students are encouraged to work with an advisor when pursuing any of these degree programs to ensure that courses selected will successfully meet all degree requirements and also fulfill the student's academic interests and goals. For academic advising and course selection assistance, please contact the MSU Billings Online University Advisor at inquiry@msubonline.org.

International Studies

McM 200 (406) 657-1705
http://www.msubillings.edu/intnlstudies

Who am I? What is my place in this world? The International Studies Program seeks to engage students in a process of awakening. Through various study abroad programs and the International Studies Minor, students begin to experience the complexity of cultures and the richness of diversity. The end result produces students who are involved, lifelong learners, with a

concern for the world in which we live, and an ability to become leaders who think of future generations.

More prosaically, the Office of International Studies (OIS), McMullen Hall 200, provides support services for current and prospective international students, the International Studies Club, and facilitates study abroad applications.

Drop by the OIS today to see how your educational experiences and your career opportunities can be enriched. Learn to be a citizen of the world!

There is a new minor in International Studies through the Modern Languages Department. Please see the General Bulletin.

Course Descriptions

Common Course Numbering Changes

The Common Course Numbering process is ongoing. Please see our course number equivalency tool in the class schedule under "my info" login at www.msubillings.edu/cot .

OLD			NEW		
ACCT	233	Principles of Accounting I	ACTG	201	Principles of Fin Acct
CHEM	104	Fund of Gen & Org Chem	CHMY	121	Intro to General Chemistry
CHEM	105	Fund of Gen & Org Chem Lab	CHMY	122	Intro to Gen Chem Lab
CMP	105	Intro Computers & Applications	CAPP	120	Introduction to Computers
CMP	118	Word	CAPP	154	MS Word
CMP	119	Excel	CAPP	156	MS Excel
CMP	121	Intro to Microsoft Outlook	CAPP	110	Short Courses: MS Outlook
CMP	122	Intro to Microsoft PowerPoint	CAPP	153	MS PowerPoint
CMP	262	Microsoft Access	CAPP	158	MS Access
CMP	292	Seminar	CAPP	291	Special Topics
CTBU	103	Payroll Accounting	ACTG	180	Payroll Accounting
CTBU	105	Integrated General Ledger Accounting	ACTG	205	Computerized Accounting
CTBU	106	QuickBooks	ACTG	125	QuickBooks
CTBU	108	Applied Accounting I	ACTG	101	Accounting Procedures I
CTBU	109	Applied Accounting II	ACTG	102	Accounting Procedures II
CTBU	201	Applied Accounting III	ACTG	103	Accounting Procedures III
ECON	200	Principles of Microeconomics	ECNS	201	Principles of Microeconomics
ECON	201	Principles of Macroeconomics	ECNS	202	Principles of Macroeconomics
ENGL	102	Engl Essntl for Tech Writers	WRIT	104	Workplace Communications
ENGL	140	Business Writing	WRIT	122	Intro to Business Writing
ENGL	145	Technical Communication	WRIT	121	Intro to Technical Writing
ENGL	150	College Composition	WRIT	101	College Writing I
ENGL	180	Editing for Business Writing	WRIT	180	Editing for Business Writing
MATH	085	Math Fundamentals	M	061	Basic Mathematics
MATH	101	Introductory Algebra	M	090	Introductory Algebra
MATH	103	Essential Mathematics for the Trades	M	111	Technical Mathematics
MATH	104	Business Mathematics	M	108	Business Mathematics
MATH	105	Algebra for College Students	M	095	Intermediate Algebra
MATH	106	College Algebra	M	121	College Algebra
MATH	122	College Math for Technology	M	114	Extended Technical Mathematics
MATH	292	Seminar	M	294	Seminar/Workshop
MATH	293	Workshop	M	294	Seminar/Workshop
MIS	225	Introduction to Productivity App Software	CAPP	131	Basic MS Office
PSYC	101	General Psychology	PSYX	100	Intro to Psychology
SOCL	101	Introduction to Sociology	SOCI	101	Introduction to Sociology

**These courses may only be available on the MSU Billings East Campus*
∇ - This symbol denotes courses offered in an online format in addition to classroom training

Arts & Sciences

A&SC 103 College Survival Skills
3 cr. (3 lec/wk)
Prepares entry-level students to succeed in college by providing study skills strategies and practice to increase reading and math proficiency.

Auto Body

ABDY 111 Introduction to Auto Body Repair
5 cr. (2 lec/6 lab/wk)
Covers the basic methods and techniques used in the repair of non-structurally damaged automobile sheet metal panels, the use and care of basic hand tools, identifying metal composition, automobile body construction, set up and use of a metal inert gas (MIG) and resistance welding equipment.

ABDY 112 Minor Collision Repair
6 cr. (2 lec/6 shop/wk) Prerequisite: ABDY 111.
Covers training in removal, replacement, and alignment of various panels and parts, including glass. Diagnosis and correcting body component malfunctions. Advanced training in panel repair, damage analysis and estimating using manuals and computer software programs.

ABDY 121 Automobile Body Structural Repair
6 cr. (2 lec/6 shop/wk) Prerequisite: ABDY 111.
Covers the inspection, measurements, and repair of automobile bodies. Methods and techniques recommended by the manufacturers are studied and utilized. Tasks and procedures which are promoted by ASE and I-CAR programs are incorporated into the training. Repair of plastic body parts as recommended by manufacturers is practiced.

ABDY 122 Automobile Collision Mechanics
5 cr. (2 lec/6 lab/wk)
Includes the removal, replacement, and service of mechanical and electrical components in repairing collision damaged automobiles. Components include suspension, steering, brakes, drive train, cooling system, fuel system and restraint system.

ABDY 131 Introduction to Refinishing Principles
6 cr. (3 lec/6 lab/wk)
Provides the student with entry level training in job safety, refinishing basic application techniques, tools and equipment, and the skills necessary to prepare a vehicle for the refinishing process.

ABDY 132 Introduction to Automotive Undercoats and Plastics
6 cr. (2 lec/4 lab/6 shop/wk) Prerequisite: ABDY 131.
Provides the student with entry level access to knowledge in automotive refinishing undercoats: types, specific usages, and application. The course also provides the student with automotive plastic identifications, alternate repair procedures, and refinishing.

ABDY 141 Advanced Automotive Refinishing
6 cr. (2 lec/4 lab/6 shop/wk) Prerequisites: ABDY 131 and ABDY 132.
Provides the student with training in application and paint makeup of current automotive finishes. Causes and the possible cures of surface defects and the art of finesse polishing are also studied. The student is exposed to the latest techniques in duplicating original factory paint finishes.

ABDY 142 Introduction to Automotive Paint Blending and Color Matching
7 cr. (3 lec/2 lab/6 shop/wk) Prerequisites: ABDY 131, ABDY 132 and ABDY 141.
Develops mental and optical skills in the art of color matching. Alternate processes in spot repairing solid, metallic, and MICA finishes are also covered. Skills in equipment adjustment and techniques provide for blendable repair procedures.

ABDY 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of automobile collision repair and refinishing technology.

ABDY 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of automobile collision repair and refinishing.

ABDY 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Automobile Collision Repair and Refinishing Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Accounting

ACTG 101 Accounting Procedures I
[formerly CTBU 108 Applied Accounting I]
3 cr. (3 lec/wk)
Introduces fundamental double-entry accounting concepts and terminology. Emphasis on analyzing and recording business transactions and completing, adjusting, and closing entries for the accounting cycle of a service business. Includes procedures for banking, cash funds, and calculating and recording payroll.

ACTG 102 Accounting Procedures II
[formerly CTBU 109 Applied Accounting II]
3 cr. (3 lec/wk) Prerequisite: ACTG 101.
Studies accounting for a merchandising concern through the use of special journals including adjusting and closing entries and financial statements. Introduces accounting for notes payable and receivable as well as valuation for receivables, inventories, and plant assets.

ACTG 103 Accounting Procedures III
[formerly CTBU 201 Applied Accounting III]
3 cr. (3 lec/wk) Prerequisite: ACTG 102.
Introduces advanced accounting topics. Includes voucher systems, accounting procedures for partnerships and corporations, statement of cash flows, analysis of financial statements, and an overview of departmental and manufacturing accounting.

ACTG 125 QuickBooks
[formerly CTBU 106 QuickBooks]
3 cr. (3 lec/wk) Prerequisite: ACTG 101, ACTG 102.
Studies QuickBooks, an accounting system for small-business owners and bookkeepers. Topics of this course include creating a company, setting up company lists, editing a preset chart of accounts, entering opening balances, entering sales and invoices, receiving payments and making deposits, handling expenses and bills, working with bank accounts, analyzing financial data, tracking and paying sales tax, managing inventory, and preparing payroll.

∇ ACTG 180 Payroll Accounting
[formerly CTBU 103 Payroll Accounting]
3 cr. (3 lec/wk) Prerequisite: ACTG 101.
Introduces the various aspects of the Fair Labor Standards Act and other laws that affect payroll operations and employment practices. Emphasizes the methods of computing wages and salaries, the methods of keeping records, and the preparation of government reports. Includes a project requiring students to record all of the payroll information for a business.

∇ * ACTG 201 Principles of Financial Accounting
[formerly ACCT 233 Principles of Accounting I]
3 cr. (3 lec/wk) Corequisite: M 095 or student has tested out of M 095.
Introduces the concepts and terminology of accounting and financial reporting for modern business enterprises. The course will focus on analyzing and interpreting accounting information for use in making decisions about organizations. Problem solving, critical thinking, communication skills and group activities that are necessary to use accounting information, to form conclusions about businesses and to communicate these conclusions to others will be emphasized.

∇ ACTG 205 Computerized Accounting
[formerly CTBU 105 Integrated General Ledger Accounting]
3 cr. (3 lec/wk) Prerequisite: ACTG 101, ACTG 102.
Studies how computers are used in today's accounting environments through the use of an integrated accounting software package. Uses a hands-on approach to complete the accounting cycle for merchandise or service businesses as well as entries for voucher systems, departmentalized accounting, financial statement analysis, depreciation, inventory, and payroll.

Automotive

AUTO 110 Manual Drive Train and Axles
2 cr. (2 lec/wk)
Includes a study of the basic theory and principles of gearing, and reconditioning of automotive power train components. Components covered include clutches, transmissions, differentials, axles, transaxles, and transfer cases.

AUTO 111 Manual Drive Train and Axles Lab
2 cr. (4 lab/wk) Corequisite: AUTO 110.
Provides a study of the service, repair, and reconditioning of automotive power train components. Components covered include clutches, transmissions, differentials, axles, transaxles, and transfer cases.

AUTO 160 Automotive Brake Systems
2 cr. (2 lec/wk)
Provides a study in the design and operation of today's sophisticated braking and related systems. Subject matter includes brake systems fundamentals, safety, master cylinders, power assist units, hydraulic lines and valves, disk and drum brakes, antilock systems, parking brakes, and brake electrical and electronic components.

AUTO 161 Automotive Brake Systems Lab
2 cr. (4 lab/wk) Corequisite: AUTO 160.
Provides a study in the diagnosis and service of today's sophisticated braking and related systems. Subject matter includes brake system safety, master cylinders, power assist units hydraulic lines and valves, disk and drum brakes, antilock systems, parking brakes, and brake electrical/electronic components.

AUTO 172 Engine Rebuild
5 cr. (2 lec/6 lab/wk) Prerequisite: TRID 170.
Gives an overview of the design, operation, diagnosis, and service procedures of modern automotive engines. Students participate in the disassembly and re-assembly of engine units. Service and technical engine date are presented to prepare the students for practical experience in engine servicing.

AUTO 182 Diagnosis and Tune-Up
3 cr. (3 lec/wk) Prerequisites: TRID 170 and TRID 180.
Studies the theory of fuel systems, emission control systems, ignition systems, and engine mechanical tests. Proper testing with modern diagnostic equipment will also be discussed.

AUTO 183 Automotive Diagnosis and Tune-Up Lab
3 cr. (6 lab/wk) Prerequisites: TRID 170 & TRID 180. Corequisite: AUTO 182.
Examines diagnosis, testing, and repair of fuel systems, emission control systems, ignition systems, and engine mechanical tests. This course provides training on the proper uses of modern engine diagnostic equipment.

AUTO 202 ASE Exam Preparation
1 cr. (2 lec/wk for 7 wks) Prerequisites: TRID 170, TRID 150, TRID 180, AUTO 110, AUTO 140, AUTO 182, AUTO 172, or consent of instructor.
Prepares students for automotive technician ASE exams in the Automobile/Light Truck Test Series including eight certification areas: Engine Repair (A1), Automatic Transmission/Transaxle (A2), Manual Drive Train and Axles (A3), Suspension and Steering (A4), Brakes (A5), Electrical/Electronic Systems (A6), Heating and Air Conditioning (A7), and Engine Performance (A8). Emphasis of certification areas covered will be determined by the general make up of the student body per semester (i.e., if all students are registering for A5-Brakes, the course content will use examples from the brakes area). At the conclusion of this course, students will take four of the automotive technician ASE certification exams.

AUTO 210 Automotive Suspension and Steering Systems
2 cr. (2 lec/wk) Prerequisite: M 111 or equivalent.
Provides a study in the design and operation of modern automotive suspension, steering, and related systems.

AUTO 211 Automotive Suspension and Steering Systems Lab
2 cr. (4 lab/wk) Prerequisite: M 111 or equivalent. Corequisite: AUTO 210.
Provides a practical study in the diagnosis and service of modern automotive suspension, steering, and related systems. Alignments are performed on computerized four-wheel alignment systems. This class is designed to provide the student with the training necessary to perform chassis-related service on automobiles and light trucks.

AUTO 220 Automotive Electrical/Electronic Systems
2 cr. (2 lec/wk) Prerequisite: TRID 180.
Studies electrical/electronic systems and applications found in today's automotive industry. This course is designed to give the student a strong background in the theory of operation of electrical and electronic systems. Upon completion of this course, the student will have acquired the knowledge necessary to effectively diagnose modern automobiles.

AUTO 221 Automotive Electrical/Electronic Systems Lab
2 cr. (4 lab/wk) Prerequisite: TRID 180. Corequisite: AUTO 220.
Studies electrical/electronic systems and applications found in today's automotive industry. This course is designed to give the student a strong background in the operation, diagnosis, and repair of electrical/electronic systems. Upon completion of this course, the student will have acquired the knowledge and developed the skills necessary to effectively diagnose and repair the vehicles and equipment presently used in the industry.

AUTO 222 Automotive Engine Performance
3 cr. (3 lec/wk) Prerequisites: TRID 170, TRID 180, AUTO 182 and AUTO 220.
Covers the theory of operation for General Motors, Ford, Chrysler, Toyota, and Bosch computerized systems. The student will obtain the necessary knowledge required to use the specialized test equipment designed for diagnosis and repair of domestic and foreign automotive systems.

AUTO 223 Automotive Engine Performance Lab
3 cr. (6 lab/wk) Prerequisites: TRID 170, TRID 180, AUTO 182, AUTO 220. Corequisite: AUTO 222.
Covers operation and testing for General Motors, Ford, Chrysler, Toyota, and Bosch computerized systems during practical exercises. This course focuses on the diagnosis and repair of computerized engine control systems. The student will obtain the necessary hands-on training required to use the specialized test equipment to diagnose and repair domestic and foreign automotive systems.

AUTO 255 Applied Automotive Service Operations
4 cr. (4 lab/wk) Prerequisites: TRID 150, TRID 152, TRID 170, TRID 180, AUTO 110, AUTO 160, AUTO 210, AUTO 182, AUTO 220.
Provides in-depth, practical analysis and repair of components related to engine, chassis, power trains systems, and standard power trains systems. This course simulates service department operations as found in industry.

AUTO 256 Automatic Transmission/Transaxles
3 cr. (3 lec/wk) Prerequisites: AUTO 110, TRID 180.
Covers automatic transmissions including theory of operation, design, and construction for the purpose of understanding the functions, servicing, and trouble-shooting procedures of modern automatic transmissions and transaxles.

AUTO 257 Automatic Transmission/Transaxles Lab
3 cr. (3 lab/wk) Prerequisites: AUTO 110, TRID 180.
Covers automatic transmissions including demonstration and student participation in disassembly and re-assembly of selected transmissions for the purpose of understanding function, construction, operation, servicing, and trouble-shooting procedures of modern automatic transmissions and transaxles.

AUTO 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of automotive technology.

AUTO 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of automotive technology.

AUTO 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Automotive Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Biology

BIOL 104 Nutrition for Health Careers
2 cr. (2 lec/wk)
Introduces the importance of a nutritious diet in the maintenance and promotion of health. Emphasizes clinical aspects of human nutrition and appropriate uses of diet therapy in the clinical setting. Designed for students in health care pathways. Restricted to ASN/PN majors at MSUB COT.

BIOL 213 Human Anatomy and Physiology I
3 cr. (3 lec/wk) Corequisite: BIOL 214.
Introduces functional human anatomy and physiology at the molecular, cellular, tissue, and organ levels. This course is appropriate for those individuals entering allied health fields. Topics include chemistry, cell biology, histology, and a detailed overview of the anatomy and physiology of the integumentary, skeletal, muscular, and nervous systems. Entry is restricted to College of Technology students only.

BIOL 214 Human Anatomy and Physiology I Laboratory
1 cr. (2 lab/wk) Corequisite: BIOL 213.
Supplements concepts of human anatomy and physiology introduced in BIOL 213 with hands-on laboratory experience. Entry is restricted to College of Technology students only.

BIOL 216 Human Anatomy and Physiology II
3 cr. (3 lec/wk) Prerequisites: BIOL 213, BIOL 214. Corequisite: BIOL 217.
Continues the examination of functional human anatomy and physiology at the molecular, cellular, tissue, and organ levels introduced in BIOL 213. Topics include the sensory, endocrine, blood, cardiovascular, respiratory, lymphatic, digestive, urinary, and reproductive systems. Entry is restricted to College of Technology students only.

BIOL 217 Human Anatomy and Physiology II Laboratory
1 cr. (2 lab/wk) Prerequisites: BIOL 213, BIOL 214. Corequisite: BIOL 216.
Supplements concepts of human anatomy and physiology introduced in BIOL 216 with hands-on laboratory experience. Entry is restricted to College of Technology students only.

BIOL 251 Microbiology for the Health Sciences
3 cr. (3 lec/wk) Prerequisites: BIOL 101 or BIOL 341, or BIOL 213 & 216.

Surveys the fundamental principles of microbiology, while emphasizing the relationship of microorganisms to infectious disease. Designed as an introductory course in microbiology for nurses and health-related majors. Lab optional.

BIOL 261 Microbiology for the Health Sciences Lab
1 cr. (2 lab/wk) Corequisite: BIOL 251.
The laboratory emphasizes techniques for the isolation, identification and control of microorganisms. The lab is intended for allied health science students requiring an introductory microbiology laboratory.

Business

BUS 205 Business Law I
3 cr. (3 lec/wk)
Covers the nature, origin and philosophy of law and civil procedure. Provides a comprehensive treatment of contracts and also emphasizes the advantages and disadvantages of different organizational forms.

Computer Applications

CAPP 110 Short Courses: MS Outlook
[formerly CMP 121 Introduction to Microsoft Outlook]
1 cr. (1 lec/wk) Prerequisite: CAPP 120.
Instructs students in the full functional usage of Microsoft Outlook as a tool. Students will learn the special features for the application such as: Scheduling, Managing Contacts and Emails, and Integrating Outlook with other applications.

∇ CAPP 120 Introduction to Computers
[formerly CMP 105 Introduction to Computers and Applications]
3 cr. (3 lec/wk)
Instructs students in fundamental computing skills. Concepts include the creation and manipulation of files, use of a common Operating System, a basic understanding of computer hardware, and a functional knowledge of common business applications such as: word processing, spreadsheets, Internet and email, and presentation software. The course is performed in a lab setting with access to computers and necessary software.

CAPP 131 Basic MS Office
[formerly MIS 225 Introduction to Productivity Application Software]
3 cr. (3 lec/wk)
Provides introductory concepts of computers, Windows operating system, Internet, spreadsheets, and word processing.

CAPP 153 MS PowerPoint
[formerly CMP 122 Introduction to Microsoft PowerPoint]
2 cr. (1 lec/2 lab/wk) Prerequisite: CAPP 120.
Instructs students in the features of PowerPoint and its usage as a tool for presentations. Students will learn the full host of features available in PowerPoint to create, modify, and enhance presentations and slide-shows. Further, students will be instructed in design techniques and how to give presentations.

∇ CAPP 154 MS Word
[formerly CMP 118 Word]
3 cr. (3 lec/wk) Prerequisite: CTBU 112 and CAPP 120.
Provides hands-on experience in word processing on the microcomputer using Word for Windows software. The process of creating and formatting business documents includes editing, search and replace, pagination, document assembly, merging, macros, printing, headers and footers, columns and file management.

∇ CAPP 156 MS Excel
[formerly CMP 119 Excel]
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Introduces students to business applications using spreadsheets. Emphasis is placed on the essential functions of spreadsheet operation, as well as introduction to some advanced functions such as lookup functions and database management. Content emphasizes mastery of spreadsheet concepts and applications and development of analytical thinking skills.

∇ CAPP 158 MS Access
[formerly CMP 262 Microsoft Access]
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Examines the process of database design using a relational model. Use of applications software focuses on data query, report generation, multiple file relationships and interface techniques.

CAPP 291 Special Topics
[formerly CMP 292 Seminar]
V 1-3 cr. Prerequisite: CAPP 120.
Investigates intensively topics pertaining to an area of data processing.

Carpentry

CARP 120 Carpentry Basics and Rough-in Framing
5 cr. (2 lec/6 lab/wk) Corequisite: TRID 110 or instructor's approval.
Introduces the carpentry trade, including history, career opportunities, and requirements. This course covers a variety of building materials, fasteners, and adhesives.

It also covers installation procedures for windows and exterior doors. Skills required for framing a simple structure are studied and practiced.

CARP 130 Exterior Finishing, Stair Construction, and Metal Stud Framing
4 cr. (2 lec/4 lab/wk) Prerequisite: CARP 120 or instructor's approval.
Introduces students to materials and methods for sheathing, exterior siding, stairs, and roofing. Students will lay out and build a simple stair system as well as a metal stud wall with door and window openings.

CARP 140 Introduction to Site Layout
3 cr. (1 lec/4 lab/wk) Prerequisite: TRID 110 or instructor's approval.
Introduces the process of distance measurement as well as differential and trigonometric leveling for site layout. It covers the principles, equipment, and methods used to perform the site layout tasks that require making angular measurements. This course is designed to let students apply the blueprint reading skills learned so far to a practical exercise.

CARP 150 Beginning Carpentry Practicum
3 cr. (9 lab/wk) Prerequisites: CARP 120, TRID 112, and TRID 115 or instructor's approval. Corequisite: CARP 130.
Provides hands-on experience in which the student applies, with minimal supervision, the basic skills and knowledge presented thus far in the NCCER Carpentry Program. This course is designed as a practical task-oriented application utilizing the skills covered in prerequisites as well as in parts of CARP 130.

CARP 152 Intermediate Carpentry Practicum
3 cr. (9 lab/wk) Prerequisites: CARP 120, CARP 150, TRID 110, TRID 112. Corequisite: CARP 130.
Provides hands-on experience in which the student applies with supervision the basic skills and knowledge presented thus far in the NCCER Carpentry Program. The course is designed as a practical task-oriented application utilizing the basic skills learned in CARP 120, TRID 110, TRID 112, and CARP 130. The course will emphasize basic application in the areas of exterior finishing and interior finishing.

CARP 220 Interior Finishing
4 cr. (2 lec/4 lab/wk) Prerequisites: CARP 120 and TRID 112 or instructor's approval.
Covers interior building materials. This course covers materials and installation techniques for interior trim, countertop, base cabinet, and wall cabinet. It also covers suspended ceiling materials, layout, and installation as well as wood and metal door installation.

CARP 230 Advanced Roof, Floor, Wall, and Stair Systems
4 cr. (2 lec/4 lab/wk) Prerequisites: CARP 130 and CARP 150 or instructor's approval.
Covers the installation methods and materials for various roofing systems. It covers a variety of flooring applications as well as interior wall construction for residential and commercial structures. It also covers advanced staircase construction.

CARP 250 Advanced Carpentry Practicum
4 cr. (12 lab/wk) Prerequisites: CARP 130, CARP 140, CARP 150, and CARP 220 or instructor's approval. Corequisite: CARP 230.
Provides students the opportunity to practice skills they have acquired in the entire carpentry program. It includes task-oriented projects in which students can apply many of the skills and knowledge that have been presented throughout the NCCER Carpentry Program. This course is designed as a practical task-oriented exercise utilizing a variety of skills covered in all the NCCER carpentry courses required for the AAS degree.

CARP 252 Capstone Carpentry Practicum
4 cr. (12 lab/wk) Prerequisites: CARP 120, CARP 130, CARP 140, CARP 150, CARP 152, CARP 230, and CARP 250, TRID 110, TRID 115. Corequisite: CARP 220.
Provides hands-on experience in which the student applies with MINIMAL supervision the skills and knowledge presented thus far in the NCCER Carpentry program. The course is designed as a practical task-oriented application utilizing the ADVANCED skills learned in CARP 220 and CARP 230. The course will emphasize advanced application in the areas of exterior finishing and interior finishing.

Chemistry

CHMY 121 Introduction to General Chemistry [formerly CHEM 104 Fundamentals of General Chemistry]
3 cr. (3 lec/wk) Prerequisite: M 095 or equivalent.
Covers the fundamental definitions of chemistry, structure, chemical equations, solutions, equilibrium, oxidation-reduction, and acid/base chemistry. This is primarily a course for pre-nursing and allied health students.

CHMY 122 Introduction to General Chemistry Laboratory (TN)
[formerly CHEM 105 Fundamentals of General Chemistry Lab]
1 cr. (2 lab/wk) Corequisite: CHMY 121.
Provides laboratory experiences that complement and extend the lecture materials.

Computer Applications

CMP 111 Lotus 1-2-3
3 cr. Prerequisite: CAPP 120.
Introduces students to business applications using spreadsheets. Emphasis is placed on the essential functions of spreadsheet operation, as well as introduction to some advanced spreadsheet functions such as macros and database management. Emphasizes mastery of spreadsheet concepts and applications and development of analytical thinking skills.

CMP 114 Integrated Software Applications
3 cr. Prerequisite: CAPP 120.
Examines the use of an integrated computer software package containing word processor, spreadsheet and database modules for the business environment. Time is spent learning not only the individual programs, but how they can work together to simplify office tasks.

CMP 115 Introduction to Desktop Publishing
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Presents the current processes to incorporate text, photographs, and graphics to create eye-catching brochures, ads, catalogs, magazines, newsletters, books, reports, and other printed materials. Students in this hands-on course become proficient with the features of desktop publishing software by learning about page layout, typography, image manipulation, and color management while designing and creating professional quality publications.

CMP 116 WordPerfect
3 cr. Prerequisites: CTBU 112 and CAPP 120.
Introduces students to word processing using WordPerfect software. Basic and advanced functions used in the office and home are learned including the essentials of editing and formatting a document to desktop publishing.

CMP 123 Introduction to Microsoft Publisher
1 cr. (2 lab/wk) Prerequisite: CAPP 120.
Instructs students in Desktop Publishing using Microsoft Publisher. Students will learn to integrate text and graphics in documents to create newsletters, brochures, letterhead, and even web pages.

CMP 135 Introduction to Web Design
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Provides students with the necessary skills to design, create, and maintain functional web pages. The class will teach Hyper Text Markup Language (HTML), Microsoft Front Page, the use of Adobe Photoshop to optimize and customize pictures for display to the web, as well as fundamental methods, standards, and techniques for designing web pages.

CMP 204 Advanced Applied Software and Utilities
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Provides the student with exposure to current applications of commonly used software. Licensing policies, communication devices and a variety of software are used to further reinforce and broaden the background of the computer user.

CMP 205 Computer Skills Aide
2 cr. (4 lab/wk) Prerequisite: Approval from the appropriate instructor and department chairperson.
Allows students the opportunity to enhance their own skills while assisting other students in the development of technical and academic skills as a computer classroom instructional aide. The student must have completed the same course with a grade of "B" or better. Students are allowed to aide in one computer course per semester and only once per course.

CMP 235 Advanced Web Design and Development
3 cr. (3 lec/wk) Prerequisite: CMP 135.
Provides students with the skills required to create and maintain enhanced and dynamic web pages. These skills will include the use of common web development tools such as: Dreamweaver, Fireworks, Flash, and Adobe Photoshop. Further, it will instruct students in the use of the web languages: Extensible Hyper Text Markup Language (XHTML), Cascading Style Sheets (CSS), Dynamic HTML (DHTML), and JavaScript.

CMP 236 Advanced Web Programming
3 cr. (2 lec/2 lab/wk) Prerequisite: CMP 235
Provides students with advanced programming skills to create and maintain dynamic web sites using technologies such as Java Server Pages and languages such as PHP and JavaScript. Students will gain skills in developing interactive web sites that perform both client-side and server-side processing while interacting with databases.

CMP 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of data processing.

Medical Coding/Insurance Billing

CODE 110 CPT-4 Procedure Coding
3 cr. (3 lec/wk) Prerequisite: Health Care Core prerequisites.
Develops the knowledge, skills, and abilities necessary for students to correlate a numerical code to a handwritten or typed procedure description generated by clinical staff in the health care setting for insurance purposes utilizing the principles of Current Procedural

Terminology 4th edition (CPT-4). This course is required for the Medical Coding and Insurance Billing Certificate.

CODE 120 ICD-9 Diagnosis Coding
3 cr. (3 lec/wk) Prerequisite: Health Care Core prerequisites.
Develops the knowledge, skills, and abilities necessary for a student to correlate a numerical code to a handwritten or typed diagnosis description generated by clinical staff in the health care setting for insurance purposes utilizing published International Classification of Diseases, 9th Revision (ICD-9). Also emphasizes the standards for accuracy in medical coding. This course is required for the Medical Coding and Insurance Billing Certificate.

CODE 140 Computerized Medical Billing
3 cr. (3 lec/wk) Prerequisite: Health Care Core prerequisites.
Develops the knowledge, skills, and abilities necessary for a student to understand the theory and application of computerized medical and insurance billing software specifically designed for the medical practice. This course is required for the Medical Coding and Insurance Billing Certificate.

CODE 150 Advanced Coding and Auditing
3 cr. (3 lec/wk) Prerequisite: Health Care Core prerequisites.
Develops the knowledge, skills, and abilities necessary for students to correlate a numerical code to a handwritten or typed procedure description generated by clinical staff in the health care setting for insurance purposes utilizing the principles of CPT-4, ICD-CM, and HCPCS Coding. This course is required for the Medical Coding and Insurance Billing Certificate.

Communication

∇ COMT 109 Human Relations
3 cr. (3 lec/wk)
Offers a theoretical and practical understanding of communication processes in the working environment, self-awareness in that environment, and the individual's participation in these relationships. The course aims to develop the student's perception and expression skill to communicate successfully in a variety of work contexts.

COMT 130 Introduction to Public Speaking
3 cr. (3 lec/wk)
Develops the student's speaking abilities. Students acquire an understanding of basic rhetorical theory and its application in a variety of speech situations. Listening, speaking and critiquing abilities are emphasized. This course addresses the following topics: speech preparation and delivery, forming and fielding questions, audience analysis, listening skills, critiquing and speaker anxiety.

CTCM 130 Introduction to Public Speaking
3 cr. (3 lec/wk)
Develops the student's speaking abilities. The student acquires an understanding of basic rhetorical theory and its application in a variety of speech situations. Listening, speaking, and critiquing abilities are emphasized. The course addresses the following topics: speech preparation and delivery, audience analysis, listening skills, critiquing and speaker anxiety.

CTCM 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of communication.

Computer Systems Technology

CST 110 Applied Basic Programming Concepts Using Visual Basic .NET
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Introduces student to programming with Microsoft's Visual Basic .NET. The course will cover all the basic elements of Visual Basic and programming as well as how to use the Visual Studio Integrate Development Environment (IDE). Further, the course will then touch on more advanced programming, such as Graphical User Interfaces (GUI), database connectivity, streams, and network programming.

CST 111 Applied Intermediate Programming Concepts Using Visual Basic .NET
5 cr. (2 lec/6 lab/wk) Prerequisite: CST 110.
Instructs students in more advanced programming techniques using the Visual Basic .NET programming language. This course will strengthen the students' skill in Visual Basic .NET programming and will further enhance that skill through the creation of web-based applications.

CST 130 Introduction to Scripting for the Windows Environment
3 cr. (2 lec/2 lab/wk) Prerequisite: CAPP 120.
Introduces Perl scripting in the Win32 environment. This class will instruct students in the use of Perl to update, manage, and administer Window environments. It will also include the creation of dynamic web interfaces through Perl.

CST 160 Installing, Configuring and Administrating Microsoft Windows Vista
3 cr. (2 lec/2 lab/wk) Prerequisite: CAPP 120 or Instructor Approval.
Provides students with the knowledge and skills

required to set up and administer a computer running Microsoft Windows Vista operating system as a single workstation and a member of a domain. The course provides the skills required to perform basic installation, configuration tasks, and day-to-day administration tasks in a Windows Vista-based network. The course also teaches students how to troubleshoot basic installation, configuration, and administration problems.

CST 162 Installing, Configuring and Administering Microsoft Windows Server 2003
3 cr. (2 lec/2 lab/wk) Prerequisite: CST 160.
Provides students with the knowledge and skills required to set up and administer a computer running Microsoft Windows 2003 operating system in a single domain environment. The course provides the skills required to perform basic installation, configuration tasks, and day-to-day administration tasks in a Windows 2003-based network. The course also teaches students how to troubleshoot basic installation, configuration, and administration problems. The course content applies to the Windows 2003 Server network operating system and the Windows client operating system.

CST 168 Installing, Configuring and Administering Linux
3 cr. (2 lec/2 lab/wk)
Provides students with the knowledge and skills required to set up and administer a computer running a Linux operating system. The course provides the skills required to perform basic installation, configuration tasks, and day-to-day administration tasks in a Linux network. The course also teaches students how to troubleshoot basic installation problems and perform system maintenance.

CST 169 Administering Web Servers
3 cr. (2 lec/2 lab/wk)
Examines and instructs students in the tasks and concerns for deploying, administering, and maintaining web servers. Students will work with Apache and Internet Information Server web servers applying techniques learned in class and gaining familiarity with both. Topics will include setting up servers, securing servers, optimizing services, and managing access and logs.

CST 170 Introduction to Internetworking and Cabling
4 cr. (2 lec/4 lab/wk) Prerequisite: CAPP 120 or Instructor Approval.
Provides students in the first of four semester courses with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment or further education and training in the computer networking field. Covers the following networking topics and skills: OSI model and industry standards, network topologies, IP addressing including subnet masks, networking components, basic network design, beginning router configurations, and routed and routing protocols.

CST 172 Introduction to IP Routing
4 cr. (2 lec/4 lab/wk) Prerequisite: CST 170.
Teaches students the skills they will need to design, build, and maintain small to medium size networks. The focus of this course is basic configuration of routers into small networks.

CST 174 Advanced Routing and Ethernet Switching
4 cr. (2 lec/4 lab/wk) Prerequisite: CST 172.
Teaches students the skills they will need to design, build, and maintain small to medium size networks. The focus of this course is the integration of routers and switches into small networks.

CST 176 Wide Area Networking
4 cr. (2 lec/2 lab/wk) Prerequisite: CST 174.
Teaches students the skills they need to design, build, and maintain small to medium size networks. The focus of this course is configuring routers and small networks into WANs (wide area networks).

CST 182 Help Desk Support
3 cr. (2 lec/2 lab/wk)
Provides an overview of topics relevant to working a help desk. Included are sections on people, processes, technology, and information, and how these components come together to instruct the student on how the Help Desk functions to support business operations.

CST 200 Cisco CCNA Exam Prep
1 cr. (1 lec/wk) Prerequisite: CST 176.
Prepares students to successfully pass the Cisco CCNA exam by reviewing the current exam requirements and topics and assists the student in building self-confidence towards being prepared for the exam.

CST 211 Programming Capstone Project
3 cr. (1 lec/4 lab/wk) Prerequisite: CST 265.
Strives to grant students real-world experience by requiring that they create a fully functioning application that meets specified criteria. This course will cover most every aspect of programming from requirements gathering to design to actual coding and testing of the application.

CST 217 Microsoft Certified Applications Developer Exam Preparation
2 cr. (2 lec/wk) Prerequisite: CST 265.
Prepares the student to take the three exams required to gain Microsoft's Certified Applications Developer certification. The class will review the topics for the test and take many practice tests.

CST 220 Applied Introduction to Java
4 cr. (3 lec/2 lab/wk) Prerequisite: CAPP 120.
Demonstrates the power of Object-Oriented programming through the use of the Java Programming language. Students will learn specifics about the Java programming language and how to use that programming language to create objects, Graphical User Interfaces, Applets, and other basic Java applications.

CST 221 Applied Intermediate Java
4 cr. (3 lec/2 lab/wk) Prerequisite: CST 220 or consent of instructor.
Consolidates students' knowledge concerning Java and then proceeds into more advanced areas. The course begins with a rapid review of concepts covered in CST 220, then dives into more advanced subjects such as Swing, Java Database Connectivity (JDBC), Java Server Pages (JSP), Sevlets, Advanced Collections, Networking, and Java Utilities.

CST 227 Sun Certified Java Programmer Exam Preparation
1 cr. (1 lec/wk) Prerequisite: CST 221.
Prepares the student to take Sun's Java Programmer examination. The class will review the topics for the test and take many practice tests.

CST 230 Systems Analysis and Design
3 cr. (3 lec/wk) Prerequisite: CST 160.
Provides a thorough introduction to the features and methodologies of structures systems analysis and design. A variety of techniques and disciplines are explored in the course.

CST 231 Software Development and Documentation
3 cr. (3 lec/wk) Prerequisite: CST 230.
Examines standard methodologies for developing software and documenting that software. This course will instruct students how to model and diagram applications using Unified Modeling Language, how to decompose problems into base pieces, and how to manage projects. Further, the course will also focus on maintaining solid documentation of any program developed.

CST 233 Deploying Databases with Microsoft SQL Server
3 cr. (2 lec/2 lab/wk) Prerequisite: CAPP 158.
Initiates the student into the art of deploying database applications. The class will focus on designing and creating databases, Structured Query Language, integration with Visual Basic .NET applications, deployment of such databases, and various maintenance and setup issues. Coursework relies heavily on hands-on projects and working within the SQL Server and Visual Basic .NET environments.

CST 244 Introduction to Programming Lab Companion Course
2 cr. (4 lab/wk) Corequisite: MIS 245.
Applies and practices the concepts learned in MIS 245 through the use of exercises and case problems.

CST 250 Microcomputer Hardware Maintenance
3 cr. Prerequisite: CAPP 120 or Instructor Approval. Corequisite: CST 252.
Provides students with the skills necessary to install and troubleshoot hardware devices. Topics include system setup, RAM, hard and floppy drives, data buses, power supplies, IO cards, and diagnostic tools.

CST 252 Microcomputer Hardware Maintenance – Lab
3 cr. (6 lab/wk) Prerequisite: CAPP 120 or Instructor Approval. Corequisite: CST 250.
Provides students with a supporting lab course designed to provide students with the skills necessary to install and troubleshoot hardware devices. Topics include system setup, RAM, hard and floppy drives, data buses, power supplies, IO cards, and diagnostic tools.

CST 254 Advanced Hardware Technical Support
4 cr. (2 lec/4 lab/wk) Prerequisites: CST 162 and CST 250.
Provides students with the skills necessary to troubleshoot computers, networks, and peripheral devices. Students complete software and hardware installation projects to increase competency and hands-on skills and then learn how to troubleshoot common problems associated with each stage of the project.

CST 260 Planning, Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
3 cr. (2 lec/2 lab/wk) Prerequisite: CST 162.
Instructs students how to install, configure, manage, and support a network infrastructure that uses Microsoft Windows Server products.

CST 263 Planning, Implementing, and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure
3 cr. (2 lec/2 lab/wk) Prerequisite: CST 162.
Provides students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows Active Directory directory services. The course also focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers.

CST 265 Applied Advanced Visual Basic .NET Programming
4 cr. (3 lec/2 lab/wk) Prerequisite: MIS 255.
Explores advanced programming topics using Visual Basic .NET as a programming platform. Topics will include the creation of advanced Graphical User Interfaces, working with advanced data structures, building client/server applications, and network programming.

CST 268 Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure
3 cr. (2 lec/2 lab/wk) Prerequisite: CST 260.
Provides students with the knowledge and skills necessary to design a Microsoft Windows networking services solution for enterprise networks.

CST 270 Advanced Routing Configuration
4 cr. (2 lec/2 lab/wk) Prerequisite: CST 176.
Addresses those tasks that network managers and administrators need to perform when managing access and controlling overhead traffic in growing, routed networks once basic connectivity has been established. This course also discusses router capabilities used to control traffic over LANs (local area network) and WANs (wide area network), as well as connecting corporate networks to an Internet Service Provider (ISP).

CST 272 Remote Access Networks
4 cr. (2 lec/4 lab/wk) Prerequisite: CST 176.
Teaches students how to build a remote access network to interconnect central sites to branch offices and home office/telecommuters. Once the network is built, the course further teaches students how to control access to the central site, as well as maximize bandwidth utilization over the remote links.

CST 274 Multi-Layer Switching
4 cr. (2 lec/4 lab/wk) Prerequisite: CST 176.
Teaches network administrators how to build campus networks using multi-layer switching technologies over high speed Ethernet. This course addresses how routing and switching concepts and implementations along with various technologies work together.

CST 276 Network Troubleshooting
4 cr. (2 lec/4 lab/wk) Prerequisites: CST 270, CST 272, CST 274.
Teaches students how to baseline and troubleshoot an environment using Cisco routers and switches for multi-protocol client hosts and servers connected with the following: Ethernet, Fast Ethernet, and Token Ring LANs using Serial, Frame Relay, and ISDN BRI WANs.

CST 277 Fundamentals of Wireless LANs
3 cr. (2 lec/2 lab/wk) Prerequisite: CST 176 or consent of instructor.
Teaches students to design, plan, implement, operate, and troubleshoot wireless LANs. The course covers a comprehensive overview of technologies, security, and design best practices with particular emphasis on hands-on skills in the following areas: wireless LAN setup and troubleshooting, 802.11a & 802.11b/g wireless networking technologies, wireless hardware and solutions, radio technologies, WLAN applications and site surveys, resilient WLAN products, design, installation, configuration, and troubleshooting, WLAN security, vendor interoperability strategies, and emerging wireless technologies. This hands-on, lab-oriented course stresses documentation, design, and installation issues, as well as laboratory safety, on-the-job safety, and working effectively in group environments.

CST 280 Integration of Microsoft Windows 2000, Novell NetWare and Unix
3 cr. (2 lec/2 lab/wk)
Provides students with the knowledge and skills required to integrate the Microsoft Windows 2000 Server network operating system with a Novell NetWare network; migrate users, files, directories, and permissions from a NetWare environment to a Windows NT Server-based domain, and implement a single network login for NetWare users in a multiple-server network. This course also provides students with the knowledge and skills required to integrate the Microsoft Windows 2000 Server network operating system with a UNIX network, as it applies to working in mixed (UNIX and Windows 2000) environment. This will be accomplished by comparing the two operating systems, services, tasks, and concepts.

CST 281 Computerized Inventory and Asset Tracking
3 cr. (2 lec/2 lab/wk) Prerequisites: CAPP 158.
Introduces the student to applications in Auto ID technology, including bar coding and magnetic striping, for use in inventory control and asset tracking in all organizations.

CST 282 Research and Advanced Software Technical Support
3 cr. (2 lec/2 lab/wk) Prerequisites: CAPP 156, CAPP 158, and CAPP 291.
Studies advanced software applications in order to solve in-depth business cases. Database management and database query languages are utilized. Students also conduct Internet research and use script and macro programming to customize end-user applications for a variety of business cases.

CST 285 Help Desk Infrastructure
3 cr. (1 lec/4 lab/wk) Prerequisites: WRIT 121 and CST 182.
Strengthens student skills in diagnosing and solving user- and software-related problems with on-site projects or in short-term assignments. Students will also engage the topics of technical communication, professional development, and other work place skills. This is a capstone course for the AAS Degree in Desktop Support. A team approach is used for some projects.

CST 288 Network Security
3 cr. (2 lec/2 lab/wk)
Provides students with the technical knowledge required of foundation-level security practitioners. Provides a foundation level of skill and knowledge in general security concepts, communications security, infrastructure security, basics of cryptography, and operational/organizational security.

CST 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Computer Systems Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Business

CTBU 111 Basic Keyboarding
2 cr. (1 lec/2 lab/wk)
Provides intense practice in basic keyboarding skills. Students with no previous training on the keyboard or who have difficulty with keyboarding tasks should complete this course before attempting CTBU 115 (Keyboard Applications/Ten Key).

CTBU 113 Transcription
3 cr. (1 lec/4 lab/wk) Prerequisites: CTBU 115, CAPP 154.
Develops the ability to produce business correspondence using dictation/transcription equipment.

CTBU 115 Keyboard Applications/Ten Key
3 cr. (1 lec/4 lab/wk)
Applies keyboarding skills to the formatting of various kinds of business correspondence. The ten-key component develops the skill to operate the computer numeric ten-key pad by the touch method. Students will continue building speed and improving accuracy on both keyboards.

∇ **CTBU 131 Records and Information Management**
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Applies concepts of file storage and retrieval and ARMA basic rules for the four most commonly used filing systems: alphabetic, numeric, subject, and geographic. Emphasis is also placed on electronic file management. The student will learn the basics of database management through design, control, organization, and accuracy.

CTBU 133 Office Applications
3 cr. (3 lec/wk)
Presents practical strategies to enhance job search and career management skills through the study of contemporary workplace issues including current business practices, globalization, communications, and human relations. Career-building assignments including skills and interest assessment assist students in achieving immediate and future goals.

CTBU 153 Medical Transcription
3 cr. (2 lec/2 lab/wk) Prerequisites: CTBU 113 and CTBU 152.
Provides students with opportunities to transcribe taped medical reports from chapters organized by medical specialty. Students are required to use medical references skillfully while improving their transcribing skills. The taped material presents realistic report excerpts.

CTBU 165 Business Law
3 cr. (3 lec/wk)
A broad-based survey approach to the study of business law. Traditional areas of business law are covered. Includes an introduction to law; the creation of contracts; sales, agency, and consumer protection; commercial paper; and emerging topic in law. Presents a basic overview of the concepts and terminology essential to understanding the field of business law.

CTBU 166 Principles of Applied Supervision
3cr. (3 lec/wk) Prerequisite: CAPP 120 or consent of instructor.
Introduces students to supervision functions, principles, and contemporary issues in the modern workplace. Emphasis will be placed on practical applications and insights regarding supervisory applications, individual

and group performance, workplace dynamics and change, and team-oriented environments. Students will explore key skills needed for effective supervision, supervisory challenges of the 21st century, and how supervisors operate in real situations.

CTBU 167 Organizational Leadership Applications
3 cr. (3 lec/wk) Prerequisite: CAPP 120 or consent of instructor.
Introduces students to leadership principles and the application thereof. The course will focus on various dimensions of leadership, including leadership styles; leadership components; and the development of an understandable, usable definition of leadership. Students will discover how these principles will apply to work and life by engaging the theories of leadership and organizational culture in life-like simulations.

∇ CTBU 171 Introduction to Business
3 cr. (3 lec/wk)
Provides an overall picture of business operations. Specialized fields within business organizations are presented and analyzed. The role of business in today's society is examined and career opportunities in business are explored.

CTBU 175 Current Issues in Business
3 cr. (3 lec/wk) Prerequisite: CAPP 120.
Focuses on contemporary issues in business from emerging concerns to more controversial problems. Various instructional formats, including guest speakers, print media, the Internet, and discussion groups will be used to gather information and research business issues.

CTBU 270 Introduction to Sales & Marketing
3 cr. (3 lec/wk)
Provides students with the fundamental principles and concepts of sales practices and procedures as well as an introduction into marketing terminology and strategies. Topics covered include: personal selling, product development, the marketing concept, consumer behavior, marketing research, pricing, channels of distribution, and promotion.

CTBU 280 Principles of Applied Management
3 cr. (3 lec/wk) Prerequisite: CAPP 120 or consent of instructor.
Introduces students to the study of management and organizational principles of business firms. Emphasis is on effectively working through others to achieve objectives. This is done by exploring planning, decision making, organizing, leading, staffing, controlling, EEOC requirements, appraising performance, and handling disciplinary problems.

CTBU 267 Applied Organizational Planning
3 cr. (3 lec/wk) Prerequisite: CAPP 120 or consent of instructor.
Introduces students to three different types of organizational planning: 1) workforce planning and scheduling to meet current business needs, 2) project planning and management, and 3) strategic planning. Emphasis will be placed on practical applications regarding the contemporary issues regarding workforce planning, the project management process, and the strategic management process. The student will explore key skills and tools needed for effective planning to meet current needs and future goals, various ways in which technology is used for planning, and current planning challenges facing supervisors.

CTBU 268 Customer Service
2 cr. (2 lec/wk) Prerequisite: CAPP 120 or consent of instructor.
Introduces students to customer service strategies, practices, and systems which are required in the 21st century business environment. Emphasis will be placed on practical applications regarding customer service strategies. The student will explore strategic customer service, internal and external customers, work processes and customer/supplier relationships within a work process, the impact of technologies, current trends, and best practices.

CTBU 292 Seminar
V 1-3 cr.
Provides students with the opportunity to intensely study a wide variety of topics pertinent to the field of Business and Information.

CTBU 293 Workshop
V 1-3 cr.
Provides students with the opportunity for experiential study in the varied areas of Business and Information.

CTBU 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Business and Information Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Diesel

DIES 101 Powertrains
2 cr. (1 lec/2 lab/wk)
Instructs students in the design and operation of manual transmissions. Emphasis will be placed on diagnosis and service procedures for clutches, transmissions, drivelines, and differentials in on and off highway trucks, heavy equipment, and agricultural applications.

Students will be expected to perform service tasks on clutches, transmissions, differentials, and drivelines using supplied training equipment.

DIES 113 Introduction to Hydraulics
2 cr. (2 lec/wk) Corequisite: DIES 114.
Presents the theories of basic hydraulic principles and their uses in heavy-duty truck, heavy equipment, and agricultural applications. Students are exposed to the application of standard fluid power schematic symbols.

DIES 114 Introduction to Hydraulics Lab
2 cr. (4 lab/wk) Corequisite: DIES 113.
Provides students a means to demonstrate knowledge of basic principles on live work stations, as well as disassemble and reassemble components. Students will work with linear and rotary actuators, directional valves, fixed displacement gear pumps, and pressure controls.

DIES 117 Introduction to Diesel Fuel Systems
4 cr. (1 lec/6 lab/wk) Prerequisite: DIES 113 & 114.
Introduces students to diesel fuel hydromechanical injection systems. Students are required to disassemble and reassemble assorted diesel fuel system components. Students will be exposed to mechanical inline and distributor pumps, unit, poppet, and pintle injectors and nozzles, and basic electronic control methods. The course will also cover manufacturer-specific systems including Detroit, Caterpillar, Cummins PT, and John Deere pumps, injectors, and governors.

DIES 132 Diesel Engine Overhaul
6 cr. (3 lec/6 lab/wk) Prerequisite: TRID 170.
Provides a detailed overview of the design, operation, and repair procedures for diesel engines. The lecture portion of this class covers procedures for overhauling, machining, and dynamometer performance testing. Students are then required to apply lectured topics in the lab portion of this class.

DIES 155 Advanced Hydraulics and Pneumatics
4 cr. (2 lec/4 lab/wk) Prerequisite: DIES 113 & 114.
Instructs students on fluid power system pressure, flow, and directional controls. Students receive training on fluid conductors, seals, and fixed and variable displacement pumps. Diagnosis and repair of controls, conductors, seals, and pumps are also covered. Students will be required to understand, describe, and design fluid power systems using standard schematic symbols.

DIES 202 Advanced Powertrains
2 cr. (1 lec/3 lab/wk) Prerequisites: DIES 114, DIES 113.
Instructs students in the design and operation of automated twin counter shafts, automatic, and powershift transmissions. Emphasis will be placed on diagnosis and service procedures for twin counter shaft, powershifts, and automatic transmissions in on and off highway truck, heavy equipment, and agricultural applications. Students will be expected to perform service tasks on twin counter shafts, powershifts, and automatic transmissions using supplied training equipment.

DIES 245 Heavy Duty Powertrains/Powershifts
4 cr. (2 lec/4 lab/wk) Prerequisites: DIES 113 & 114, TRID 150.
Instructs students in the design and operation of manual, automatic, and powershift transmissions. Emphasis will be placed on diagnosis and service procedures for clutches, transmissions, and differentials in on- and off-road truck, heavy equipment, and agricultural applications. Student will be expected to perform service tasks on clutches, transmissions, differentials, and drivelines using supplied training equipment.

DIES 250 Heavy Duty Chassis
6 cr. (2 lec/8 lab/wk) Prerequisites: DIES 113 & 114, TRID 150.
Instructs students on suspension and braking systems for on- and off-road truck, heavy equipment, and agricultural applications. Studies will include heavy duty truck suspension diagnosis, repair, and alignment procedures, as well as hydraulic and pneumatic braking systems.

DIES 255 Applied Diesel Service Operations
4 cr. (8 lab/wk) Prerequisites: DIES 113 & 114, DIES 117, DIES 132, DIES 155, DIES 245, DIES 250, TRID 150, TRID 170, TRID 180 or instructor permission.
Applies diagnosis and repair procedures for chassis, powertrain, and engine systems for on- and off-road trucks and heavy and agricultural equipment. The course will simulate an actual service shop environment.

DIES 256 Applied Diesel Service Operations I
2 cr. (4 lab/wk)
Applies diagnosis and repair procedures for chassis, powertrains, preventative maintenance, and engine systems for on and off road trucks and heavy equipment. The course will simulate an actual shop environment.

DIES 257 Applied Diesel Service Operations II
2 cr. (4 lab/wk)
Applies diagnosis and repair procedures for chassis, powertrains, preventative maintenance, and engine systems for on and off road trucks and heavy equipment. The course will simulate an actual shop environment.

DIES 260 Diesel Engine Diagnosis and Troubleshooting
5 cr. (2 lec/8 lab/wk) Prerequisites: DIES 113 & 114, DIES 117, DIES 132, TRID 170, TRID 180.
Coordinates diagnosis and testing of diesel engine problems using electrical test equipment and an engine dynamometer. This course will expand on engine assembly and startup procedures, as well as tuning and performance testing.

DIES 277 Advanced Fuel Systems and Diesel Engine Controls
6 cr. (2 lec/8 lab/wk) Prerequisites: DIES 113 & 114, DIES 117, DIES 132, DIES 155, DIES 260, TRID 180.
Provides an in-depth study of modern diesel fuel systems used in on- and off-road truck, heavy equipment, agricultural, and stationary engine applications. The course will cover engine and powertrain electronic management systems used for common high speed diesel engines. Students will also be exposed to stationary industrial engine electronic control systems.

DIES 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of diesel technology.

DIES 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of diesel technology.

DIES 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Diesel Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Drafting

DRFT 102 Building Construction
2 cr. (2 lec/wk) Prerequisites: DRFT 109 or DRFT 110.
Studies methods and materials of construction for residential, light commercial and commercial buildings along with mechanical systems, electrical systems and specifications.

DRFT 104 Civil Technology
2 cr. (2 lec/wk) Prerequisites: DRFT 109 or DRFT 110.
Field notes from surveys are reduced using calculators, traverses balanced, elevations determined, contours interpolated and areas determined. U.S. Public Land surveys are studied. Legal descriptions are written. Earthwork quantities are calculated from roadway cross-sections. Transportation and utility plans are studied.

DRFT 108 Introduction to CAD
3 cr. (2 lec/2 lab/wk)
Introduces the student to CAD software. Commands relating to settings, drawing, editing, dimensioning, and viewing are used to create two-dimensional working drawings.

DRFT 109 Introduction to Technical Drawing
4 cr. (4 lec/wk)
Presents basic mechanical drafting principles and techniques in a lecture format. Topics covered include geometric figures, multi-view working drawings, auxiliary views, sectional drawings, pattern drawings, and pictorial drawings. Correct application of CAD techniques and commands are also emphasized and integrated through the course to provide a solid foundation for future CAD classes. These CAD techniques include layer control, dimensioning techniques, file management, and the use of prototype drawings.

DRFT 110 Technical Drawing Lab
3 cr. (3 lab/wk)
Uses computers to apply the mechanical drafting principles and techniques from DRFT 109 to specific assignments. Utilizing a CAD station, students create geometric figures, multi-view working drawings, auxiliary drawings, sectional drawings, pattern drawings, and pictorial drawings. Students then reproduce assigned drawings on a variety of output devices. Correct application of CAD techniques and commands are emphasized as additional subject matter is presented.

DRFT 128 3D Applications
3 cr. (2 lec/2 lab/wk) Prerequisites: DRFT 109 and CTDP 105.
Introduces the student to the concepts of 3-dimensional drafting and design. The topics of viewing, coordinate systems, and object creation are applied to the construction of models and working drawings.

DRFT 138 Structural Drafting
3 cr. (2 lec/2 lab/wk) Prerequisites: DRFT 109 and CAPP 120.
Prepares the student to enter the discipline of structural drafting. The structural drafting areas of concrete, steel, joist and deck roof systems, structural wood, and emerging systems are explored through the creation of working drawings. Communication interaction between construction entities is also incorporated.

CTDR 206 Programming Calculators
2 cr. Prerequisite: M 061.
Programmable hand-held calculators are used to solve a variety of mathematical problems ranging from moderate to advanced. Keystroke, programming and printing functions are covered as programs are created involving geometry and trigonometry. Documentation techniques are also reviewed.

DRFT/DSGN 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of drafting technology.

DRFT/DSGN 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of drafting technology.

DRFT/DSGN 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Drafting Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Design

DSGN 107 Quantity Estimating
2 cr. (2 lec/lab/wk) Prerequisites: DRFT 109 or DRFT 110, and M 061 and M 114.
Studies estimates, specifications and plans of residential and light commercial structures. Estimates of excavation and backfill, structural, finish and other construction materials are prepared.

DSGN 112 Architectural Lab
5 cr. (10 lab/wk) Prerequisites: DRFT 109 or DRFT 110.
Prepares architectural, electrical and mechanical working drawings for residential, light commercial and commercial buildings.

DSGN 114 Civil Lab
5 cr. (10 lab/wk) Prerequisites: DRFT 109 or DRFT 110.
Land surveys, contour maps, plats, drainage and grading plans, roadway plans, utility plans, profiles and cross-sections are drawn using a standard CAD station. GIS and GPS data is incorporated into drawings. Field surveys are performed.

DSGN 116 GIS for Civil Applications
2 cr. (1 lec/2 lab/wk) Prerequisites: DRFT 109, DRFT 110, and M 114.
Occupationally-related problems are solved using geographic information systems (GIS) and cartographic principles integrated with computer aided design (CAD).

DSGN 148 CAD Customization
3 cr. (2 lec/2 lab/wk) Prerequisite: DRFT 109 and CAPP 120.
Familiarizes the student with the rationale and sequence for customizing a major CAD software. The topics of discipline-oriented customization, symbol libraries, symbol library access, data creation and data exchange methods are explored and applied to the creation of a custom overlay.

DSGN 204 Advanced Software Applications
3 cr. (2 lec/2 lab/wk) Prerequisite: CAPP 120.
Expands the student's base of technical expertise with discussions and lab exercises utilizing current software applications. Licensing policies, LAN and Internet communication commands and issues, and a broad variety of current software are used to further reinforce and broaden the background of the computer user.

DSGN 208 Multimedia Technology
3 cr. (2 lec/2 lab/wk) Prerequisite: CAPP 120, transfer equivalent or consent of instructor.
Provides the student with an opportunity to explore hardware and software aspects of multimedia. Students participate in a hands-on environment utilizing recordable CD media, digital cameras, scanners, image capture hardware, digital video recorders, and multimedia editing software. Relevance and application of multimedia presentations are also covered.

DSGN 214 SolidWorks
3 cr. (2 lec/2 lab/wk) Prerequisite: DRFT 108 or DRFT 109 and DRFT 110.
Utilizes the SolidWorks software to produce three-dimensional models of mechanical objects and assemblies. Topics include sketching a part feature, providing dimensions and constraints to tie the features together, converting a sketch into a solid object, and creating and editing full assemblies. Working drawings are created from the part design, including a variety of views and dimension styles.

DSGN 218 SDS/2 Structural Detailing
3 cr. (2 lec/2 lab/wk) Prerequisite: DRFT 138.
Prepares the student to use the SDS/2 structural detailing software in the professional environment. Setup procedures, connection types, frame input, erection and detail sheet creation, and editing processes are covered.

DSGN 229 Project Development Lab
3 cr. (6 lab/wk) Prerequisite: All 100-level Drafting and Design classes or permission of instructor. Corequisites: DSGN 230, DSGN 231.
Companion lab for DSGN 230.

DSGN 230 Project Development Lecture
3 cr. (3 lec/wk) Prerequisite: All 100-level Drafting and Design classes or permission of instructor. Corequisites: DSGN 229, DSGN 231.
Provides an advanced level of CAD application interaction relating to major drafting disciplines. An emphasis on 3D inclusion and multiple CAD software brand interaction is used to prepare drawings in the areas of mechanical, civil, and architectural commercial drafting. A team approach is used for the development of major projects.

DSGN 231 Project Development Capstone
1 cr. (3 lab/wk) Prerequisite: All 100-level Drafting and Design classes or permission of instructor. Corequisites: DSGN 229, DSGN 230.
Prepares the student for employment through the exploration of off-campus applications in their discipline while compiling their portfolio and preparing for employment. Students are also evaluated against program, state, and national standards through the National Occupational Certification Testing Institute (NOCTI) exam.

DSGN 248 Computer Presentation and Animation
3 cr. (2 lec/2 lab/wk) Prerequisite: CAPP 120, course equivalent or consent of instructor.
Excites the student through immersion into the topic of 3D computer graphics and animation. Digital environments are explored using the 3D Studio Max software. Interdisciplinary projects are created utilizing digital object construction, lighting, camera, kinetic and artistic techniques. An overview of audio impact and integration is included.

DSGN/DRFT 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of drafting technology.

DSGN/DRFT 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of drafting technology.

DSGN/DRFT 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Drafting Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Economics

***ECNS 201 Principles of Microeconomics**
[formerly ECON 200 Principles of Microeconomics]
3 cr. (3 lec/wk)
Introduces the analytical tools of economists as they pertain to microeconomic theory and applications. This course emphasizes price theory, production theory, theory of economic organizations, and factor markets.

***ECNS 202 Principles of Macroeconomics**
[formerly ECON 201 Principles of Macroeconomics]
3 cr. (3 lec/wk)
Introduces the analytical tools of economists as they pertain to macroeconomic theory and applications. This course emphasizes the behavior of markets in the context of a national economy. Introduces theories of national income and employment, economic growth and stabilization theory, money and banking, and international economics.

Fire Science

FIRE 101 Fire Service Orientation
1 cr. (1 lec/wk)
Introduces the prospective firefighter to the history, traditions, terminology, organization, and operation of the fire service. In addition, the course will provide opportunity to explore the inner workings of the fire service. A 24-hour ride-along with the Billings Fire Department will be included in this course.

FIRE 110 Firefighter Health and Safety
3 cr. (3 lec/wk)
Examines the requirements of the fire service in areas of infectious disease control, firefighter protective clothing, and fire scene safety. The student will examine all the safety devices of firefighting equipment and apparatus as well as clothing and personal protective choices. The course will also address personal health and wellness as an essential part of firefighter safety and survival.

FIRE 115 Fire Fighter I Essentials
3 cr. (2 lec/2 lab/wk)
Introduces the students to the fire service career. Through lecture and practice, the course provides a history of fire service skills and illustrates all the basic requirements of the firefighter in the performance of his/her duty from suppression, code enforcement, technical rope rescue through basic hazardous materials training.

FIRE 172 Wildlands Standards for Survival
3 cr. (3 lec/wk)
Directs the students in the identification, description, and reaction to situations and conditions that would be considered dangerous to the wildland firefighter. The course content will also provide the student with a better understanding of fire behavior. The course includes federal requirement qualifications needed for beginning wildland firefighting.

FIRE 180 Incident Command
3 cr. (3 lec/wk)
Acquaints the student with basic principles of emergency incident management. The components of management and chain of command will be emphasized. A computer simulator will be used to give hands-on training with incident success as the goal.

FIRE 214 Inspection Codes and Practice
3 cr. (3 lec/wk)
Provides essential information concerning the background and evolution of fire prevention, code interpretation and applicability, hazard identification and abatement, risk assessment, operation of a fire prevention bureau, design and operation of fire protection systems and equipment, and the basic concepts of fire investigation. Emphasizes building construction and associated hazards.

FIRE 255 Cause and Origin
2 cr. (2 lec/wk)
Instructs students in basic investigative techniques for fire causes and origin. Fire behavior in structures is discussed as well as legal requirements of fire service personnel for evidence preservation.

FIRE 275 Fire Service Instructor
3 cr. (3 lec/wk)
Develops the student's speaking and creative skills as well as the ability to use instructional tools and various media in an educational environment. Emphasis will be placed on developing lesson plans and evaluation instruments. Students will give instructional presentations using the aforementioned tools.

Health Science

HLTH 100 Survey of Health Occupations
1 cr. (1 lec/wk)
Introduces the student to health occupations career options by providing an overview of each career path offered by the COT. After completion of this course, students will be able to make an informed decision regarding the health care path most appropriate to their interests.

HLTH 101 Essentials of Anatomy and Physiology
3 cr. (3 lec/wk)
Provides students with a basic understanding of human anatomy and physiology. Concepts of the body plan and homeostasis will be introduced. Students will also learn the basic structure, function, and interaction of the integumentary, skeletal, muscular, nervous, endocrine, blood, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

HTLH 104 Introduction to Nursing Skills
2 cr. (2 lec/wk)
Introduces the health care system, the health care team, and basic health care skills. Classroom theory and basic skills are integrated and practiced in the campus laboratory.

HLTH 105 Drug Dosage Calculations
1 cr. (1 lec/wk) Prerequisites: Successful completion of M 061 or appropriate math placement test score.
Prepares the health occupations student for the mathematics required by the profession. Topics presented include working with English, apothecary and metric measurement systems and conversions, and the calculation of adult and pediatric dosages (using dimensional analysis) for oral, parenteral and intravenous orders.

HLTH 112 Math Fundamentals for Health Occupations
3 cr. Prerequisites: Passing M 061 or appropriate placement test score.
Prepares the health occupations student for the mathematics required by the profession. Topics presented include working with whole numbers; proportions; English, Apothecary, and Metric

measurement systems; conversions; and dosage calculation (dimensional analysis) for the adult and child. Emphasizes the skills and knowledge necessary to prepare and administer drugs safely.

HLTH 150 Health Occupations Terminology I
3 cr. (3 lec/wk)
Introduces the student to the specialized language of the medical profession and builds a background vocabulary in this area using a word-building system which provides a solid foundation for understanding medical terms. Basic word-building concepts are taught with emphasis on spelling, pronunciation, and definitions.

HLTH 251 Medical Office Procedures
3 cr. (3 lec/wk)
Emphasizes the standards for accuracy in health insurance claims processing and professional reporting which includes accurate claim form completion, an introduction to national coding requirements, medical ethics and legal responsibilities, and medical and insurance terminology.

HLTH 252 Medical Coding
3 cr. (3 lec/wk) Prerequisites: HLTH 101, HLTH 150, or permission of instructor.
Develops the knowledge, skills, and abilities necessary to code medical documentation for insurance purposes. Emphasizes standards of accuracy required in medical coding. This course will be taught fall semester only.

HLTH 255 Medical Law and Ethics
3 cr. (3 lec/wk)
Addresses legal and ethical issues relevant to the healthcare field. Students will learn the importance of a professional code of ethics and the consequences of illegal or unethical behavior in health care. The course will also help the student distinguish among law, ethics, bioethics, etiquette, and protocol.

HLTH 292 Seminar: Special Projects
Credit varies. Prerequisite: Student must be in last semester of the Practical Nurse Program or have successfully completed a practical nursing course.
Special projects and independent study are available for students by special arrangements. Such projects are classified as advanced studies and prerequisites might be required.

HLTH 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of health occupation.

Human Resources

∇ HR 180 Employment Law and Practices
3 cr. (3 lec/wk)
Introduces students to laws and practices affecting the employer-employee relationship. Students gain a general knowledge of employment law, diversity management, equal employment opportunity, record-keeping requirements, and affirmative action.

HR 250 Employment and Compensation Strategies
3 cr. (3 lec/wk)
Introduces students to the recruiting and selection process, including interviewing techniques and the legal implications in the recruiting and hiring process. Explores different labor market approaches and organizational recruiting activities. Examines compensation practices and differentiates organizational culture, philosophies, strategies, and objectives that impact compensation.

∇ HR 281 Risk Management, Safety, and Security
3 cr. (3 lec/wk)
Introduces students to legal and record-keeping requirements affecting health and safety. Students explore safety management activities and policies, workplace health issues, health promotion, workplace violence, and security management.

∇ HR 282 Organizational Training and Development
3 cr. (3 lec/wk)
Introduces students to the training and change management process associated with organizational development and planning. The student will explore training needs and objectives, delivery approaches, levels of training evaluation, adult learning techniques, and coaching strategies.

HR 285 Collective Bargaining and Labor Relations
1 cr. (1 lec/wk)
Introduces students to labor relations, the bargaining process itself, major provisions of collective bargaining agreements, and current labor relations issues. Emphasis will be placed on the legal framework of collective bargaining, labor management interactions, various approaches to labor management relations, trends in union membership, and how changes in competition and globalization are influencing labor-management interactions.

HR 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides students with an opportunity for experimental study in the varied areas of human resource management. Students complete a specific assignment in a pre-arranged employer setting. Examples of

assignments may include developing an Exit Interview, New Employee Orientation Program, or Training Program, auditing records, assisting with personnel files, or writing job descriptions.

Heating, Ventilation, Air Conditioning, and Refrigeration

(NOTE: HVACR program placed on moratorium)

HVAC 110 Introduction to HVAC
4 cr. (4 lec/wk)
Exposes students to theories and concepts of the HVAC industry. Topics covered will include principles of thermodynamics, the study and nature of air, and an introduction to heating and cooling loads.

HVAC 111 Heating Fundamentals
2 cr. (1 lec/2 lab/wk) Prerequisite: HVAC 110.
Introduces the student to basic theories of heating and their applications to heating equipment. Operation, maintenance and troubleshooting procedures of gas, fuel oil and electric furnaces will be studied.

HVAC 125 Air Handling
3 cr. (2 lec/2 lab/wk) Prerequisite: HVAC 110.
Exposes students to load calculations, psychrometrics, principles of air flow, and duct design. Students will create diagrams providing adequate heating and cooling in accordance with local and national codes.

HVAC 135 Air Conditioning
2 cr. (1 lec/2 lab/wk) Prerequisite: HVAC 110.
Exposes students to residential and commercial air conditioning applications, installation, troubleshooting, and design.

HVAC 141 HVACR Basic Electricity
4 cr. (3 lec/2 lab/wk)
Introduces the student to basic electricity concepts, electrical test instruments, electrical devices used on heating, air conditioning and refrigeration systems, and the different types of AC electrical motors. Students learn how to measure voltage, ohms, watts and amperage on series/parallel circuits.

HVAC 175 HVAC Controls
4 cr. (3 lec/2 lab/wk) Prerequisite: TRID 180.
Introduces students to concepts of control and automation in HVAC systems. Students will also learn to troubleshoot systems using diagrams and test equipment.

HVAC 182 Hydronics
2 cr. (1 lec/2 lab/wk) Prerequisite: HVAC 111.
Introduces the student to hot water heating principles and systems. Students will learn to install, maintain, and troubleshoot these systems.

HVAC 200 Refrigeration Technicians E.P.A. Certification Review
1 cr. (1 lec/wk)
Exposes the student to requirements and criteria needed for passing the Section 608 E.P.A. exam certification for refrigeration technicians.

HVAC 201 Advanced Refrigeration
3 cr. (2 lec/2 lab/wk) Prerequisite: HVAC 111.
Exposes the student to the selection, installation, adjustment, maintenance and repair of refrigeration systems.

HVAC 203 Advanced Air Conditioning
2 cr. (1 lec/2 lab/wk) Prerequisite: HVAC 135.
Exposes students to the selection, installation, adjustment, maintenance, and repair of air conditioning systems. Students will recover, charge, and troubleshoot residential and light commercial systems.

HVAC 210 Heat Pumps
2 cr. (1 lec/2 lab/wk) Prerequisite: HVAC 135.
Exposes the student to the selection, installation, adjustment, maintenance, and repair of heat pumps.

HVAC 212 Sheet Metal Technology and Blueprint Reading
2 cr. (2 lec/wk)
Introduces the student to basic sheet metal terms and fittings, how to use the sheet metal hand tools, equipment, and procedures for duct layout. They also will learn to read blueprints for residential and commercial buildings.

HVAC 231 Residential and Light Commercial Heating & Ventilation Systems
3 cr. (2 lec/2 lab/wk) Prerequisite: HVAC 111.
Exposes the student to the selection, installation, adjustment, maintenance and repair of residential and small commercial heating and ventilating systems.

HVAC 243 Steam Systems
3 cr. (2 lec/2 lab/wk) Prerequisite: HVAC 182.
Introduces students to design, installation, adjustment, maintenance, and repair of small commercial steam systems.

HVAC 255 Advanced Controls
3 cr. (2 lec/2 lab/wk) Prerequisite: HVAC 175.
Introduces students to commercial control systems such as digital direct, programmable logic, and pneumatic controls. Students will install, diagnose, and repair all types of systems using test equipment and diagrams.

HVAC 275 Capstone
1 cr. (1 lec/wk) Prerequisite: HVAC 200.
Introduces students to regulations, codes, and professionalism, while preparing them for the Industry Competency Exams (ICE). A passing grade on the ICE is required to pass this class.

HVAC 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of heating, ventilation and air conditioning or major appliance repair.

HVAC 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of heating, ventilation and air conditioning or major appliance repair.

HVAC 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Heating, Ventilation, Air Conditioning and Refrigeration Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Mathematics

M 061 Basic Mathematics
[formerly MATH 085 Math Fundamentals]
3 cr. (3 lec/wk)
Covers pre-algebra concepts involving terminology, fractions, decimals, percent, ratio and proportion, measurement, geometry, and statistics. Credits do not apply toward graduation requirements nor fulfill Academic Foundations requirements. However, the credits do count towards enrollment status for financial aid. (This course will be offered at the College of Technology to those students lacking fundamental math skills.)

M 090 Introductory Algebra
[formerly MATH 101 Introductory Algebra]
3 cr. (3 lec/wk) Prerequisite: Proficiency in basic mathematics.
Covers introductory algebra concepts involving terminology, exponents, operations on rational numbers, multiplication of polynomials, and basic factoring. Credits do not apply toward graduation requirements and do not fulfill Academic Foundations requirements. However, the credits do count towards enrollment status for financial aid.

M 095 Intermediate Algebra
[formerly MATH 105 Algebra for College Students]
4 cr. (4 lec/wk) Prerequisite: M 090 or equivalent.
Reviews elementary algebraic concepts and covers more advanced factoring, operations on rational expressions and radical expressions, quadratic equations, the rectangular coordinate system, and exponential and logarithmic functions. Credits do not apply toward graduation requirements and do not fulfill Academic Foundations requirements. However, the credits do count towards enrollment status for financial aid.

∇ **M 108 Business Mathematics**
[formerly MATH 104 Business Mathematics]
3cr. (3 lec/wk) Prerequisite: Passing M 061 or appropriate placement test scores.
Examines the mathematics of business ownership and exposes the mathematical needs of business decisions. Techniques include marketing, payroll, cash flow, simple and compound interest, credit, promissory notes, insurance financial statements, ratio analysis, depreciation, annuities, and inventory valuation.

M 111 Technical Mathematics
[formerly MATH 103 Essential Mathematics for the Trades]
3 cr. (3 lec/wk) Prerequisite: M 061 or appropriate placement scores.
Applies math to problems drawn from diverse occupational fields. In addition to a review of operations on rational numbers, the topics of measurement, percent, proportion and variation, applications of algebra to the extent of solving quadratic equations, and applications of plane and solid figure geometry are developed for use in a trade or industrial setting. Course may serve as a prerequisite to M 114, but does not satisfy the prerequisite of any other math courses. Credits apply to graduation but do not fulfill Academic Foundations requirements.

M 114 Extended Technical Mathematics
[formerly MATH 122 College Mathematics for Technology]
3 cr. (3 lec/wk) Prerequisite: M 111 or M 095 or appropriate placement score.
Applies math to problems drawn from diverse occupational fields. Provides college level study of measurement, algebra, geometry, and trigonometry as needed to solve mathematical applications in a trade or technical work environment.

M 121 College Algebra
[formerly MATH 106 College Algebra]
3 cr. 3 lec/wk) Prerequisite: M 095.
Covers polynomial, rational, exponential, and logarithmic functions.

M 294 Seminar/Workshop
[formerly CTMA 292 Seminar]
V 1-2 cr.
Provides students an opportunity to investigate topics pertinent to the field of technical mathematics or the technology used to study mathematics.

M 294 Seminar/Workshop
[formerly CTMA 293 Workshop]
V 1-2 cr.
Provides an opportunity for experimental study in an area of technical mathematics of the technology used to study mathematics.

MATH 109 Using the HP-48G
1cr. (1 lec/wk)
Introduces the use of the HP-48G (G, G+, or GX) calculator to solve mathematical problems. Included topics are Reverse Polish Notation, tick mark entry, equation editor, solver, plot, stack & memory management and more.

CTMA 161 Math Computations for Health Occupations
3 cr. Prerequisite: Passing M 095 or appropriate placement test score.
Prepares health occupations students for the mathematics required in their profession. Topics investigated include: inductive reasoning; logic; mathematical number systems; linear, quadratic, exponential, and logarithmic functions; graphing; probability; statistics; Household, Apothecary and Metric systems and conversions; dosage calculations; and dimensional analysis. Utilizing these areas, the course emphasizes the skills and knowledge necessary to prepare and administer drugs safely.

Medical Assistant

MEDA 224 Medical Assisting Clinical Procedures II
3 cr. (3 lec/wk) Prerequisites: MEDA 124 and MEDA 125. Corequisite: MEDA 225.
Builds on the clinical knowledge, skills, and duties expected of a medical assistant as learned in Medical Assisting Clinical Procedures I. The course provides education in specialized areas of the medical office environment.

Metal Fabrication

METL 111 Welding Technology, Theory and Safety
3 cr. (3 lec/wk) Prerequisite: RD 101 and WRIT 104 or compass score equivalent.
Examines and presents welding and shop safety, oxy-fuel safety, base metal preparation, weld quality, SMAW equipment and set-up, electrode selection, and joint design and fit-up. Other topics introduced are air carbon arc cutting, plasma cutting, and beginning pipe welding.

METL 112 Blueprint Reading and Welding Symbols
3 cr. (3 lec/wk) Prerequisite: RD 101 and WRIT 104 or compass score equivalent.
Introduces the student to structural steel, piping, and mechanical blueprint reading. Hand sketching of orthographic and isometric drawings are taught along with weld symbols and solid modeling for blueprint design.

METL 113 Cutting and Shielded Metal Arc Welding Lab
5 cr. (10 lab/wk) Prerequisite: METL 111.
Includes manual and semi-automated oxy-acetylene cutting processes and safety. Shielded Metal Arc Welding with 6010 electrode prepares students for the American Welding Society D1.1 and American Society of Mechanical Engineers Section IX structural certification. In addition, air carbon cutting process, plasma arc cutting process, and equipment set-up are presented. Welding shop safety and quality are emphasized.

METL 114 Shielded Metal Arc Welding Lab
4 cr. (8 lab/wk) Corequisite: METL 111.
Continues METL 113 which leads the student toward American Welding Society D1.1 and American Society of Mechanical Engineers Section IX structural certification for 6010 and 7018 electrodes in all positions. Equipment set-up, operation, weld quality, and safety are emphasized.

METL 151 Layout and Pattern Making Fundamentals
3 cr. (3 lec/wk) Prerequisites: METL 112, M 111 or consent of instructor. Corequisites: METL 152 and METL 153.
Provides layout and fitting skills applicable to an industrial welding and fabrication shop. Tasks include reading prints, estimating, and ordering materials. Employs simple layout, parallel line development, radial line development, triangulation for pattern development and applied math concepts.

METL 152 Metal Fabrication Basics
2 cr. (2 lec/wk) Prerequisites: METL 111, METL 112, METL 113, METL 114, M 111, or instructor consent. Corequisites: METL 151 and METL 153.
Introduces metal fabrication procedures and safe operation of fabrication equipment. Instruction covers operation of shears, press-brakes, ironworkers, punches, drill presses, and CNC plasma tables. Common terminology, fabrication theory, material use, and equipment safety are taught.

METL 153 Metal Fabrication Lab
3 cr. (6 lab/wk) Prerequisites: METL 111, METL 112, METL 113, METL 114, or consent of instructor. Corequisites: METL 151, METL 152.
Uses techniques learned in METL 151 and METL 152 to perform layout, cutting and fabrication, fitting, and weld-out procedures applicable to fabricating a finished product or project. Includes the proper use of fabrication equipment and shop practices. Safety, accuracy, quality, and commitment to excellence are emphasized. Semester projects are assigned.

METL 154 Semi-Automatic Welding
2 cr. (2 lec/wk) Prerequisites: METL 111, METL 112, METL 113, METL 114, or consent of instructor.
Prepares and teaches students basic knowledge of Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW), shielded and non-shielded, and GMAW-Pulsed. Equipment needs, set-up, joint design, filler metals, shielding gasses, welding techniques, and safety will be taught.

METL 155 Semi-Automatic and SMAW Lab
5 cr. (10 lab/wk) Prerequisites: METL 111, METL 113, METL 114, or consent of instructor. Corequisite: METL 154.
Introduces semi-automatic wire feed processes. This course leads to AWS and ASME certification of plate (all positions) with the SMAW, GMAW, GMAW-P, and FCAW-G and FCAW processes. Safe practices and weld quality are emphasized.

METL 211 Pipe Welding and Layout
3 cr. (1 lec/4 lab/wk) Prerequisite: Completion of first year of program or consent of instructor.
Provides the second year welding student with an introduction to pipe layout, fitting, and welding. Instructs students in piping information, basic pipe layout practices, use of pipe layout tools, and basic pipe welding techniques for 1G rolled position, 2G, 5G, and 6G fixed position using 6010 and 7018 electrodes. Safety, quality, and proper welding techniques according to ASME SEC IX and API 1104 standards are stressed.

METL 212 Pipe Welding Lab I
5 cr. (5 lec/10 lab/wk) Prerequisite: Completion of first year of program or consent of instructor. Corequisite: METL 211.
Provides students with the practical application of pipe welding and fitup. Students will practice pipe layout, fitting, and welding techniques in the 1G rolled position the 2G, 5G, and 6G fixed position using 6010 and 7018 welding electrodes and semi-automatic wire processes. Quality and safety will be emphasized.

METL 213 Gas Tungsten Arc Welding
5 cr. (2 lec/6 lab/wk) Prerequisite: Completion of first year of program or consent of instructor.
Provides an intense course in all aspects of manual gas tungsten arc welding (GTAW). Course covers welding techniques and applications, equipment setup, and procedures for ferrous and non-ferrous metals. Quality and safety will be stressed.

METL 214 Advanced Weld Technology and Theory II
2 cr. (2 lec/wk) Prerequisite: Completion of first year of program or consent of instructor.
Introduces the student to weldability of metals, welding metallurgy, welding automation and robotics, and related cutting and welding processes.

METL 251 Specialty Welding Processes
5 cr. (2 lec/6 lab/wk) Prerequisite: Completion of first year of program, METL 212, METL 213, and METL 214 or instructor's consent.
Provides welding students with the practices and difficulties welding high carbon and low alloy steels, cast iron, stainless steel, and aluminum with SMAW, GTAW, GMAW, and FCAW. Welding safety will be a component of this course.

METL 252 CNC Processes for Metal Fabrication
5 cr. (2 lec/6 lab/wk) Prerequisites: METL 111, 112, 151, 152, and 153 or consent of instructor.
Introduces the student to CNC processes used in metal fabrication. Students will learn how to understand and use machine post processors and controllers. Covers programming of metal shears, metal brakes, and plasma cutting tables as well as programming basic operations on CNC lathes and mills. Master Cam CNC programming software and Solid Works solid modeling software will be taught and used.

METL 253 Weld Testing and Certification
2 cr. (2 lec/wk) Prerequisite: Completion of first year of program or consent of instructor.
Prepares the student for weld testing and certification. Covers destructive and non-destructive testing for weld

inspection. Students learn the weld certification process and welding codes governing welding.

METL 254 Weld Testing and Certification Lab
V 3-5 cr. (6-10 lab/wk) Prerequisite: Completion of first year of program or consent of instructor.
Provides students with the opportunity to prepare, practice, and certify for plate and pipe according to AWS D1.1, API 1104, and ASME Section IX codes and standards.

METL 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of metal fabrication.

METL 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of metal fabrication.

METL 296 Cooperative Education/Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Welding and Metal Fabrication Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Nursing

NURS 101 Introduction to Nursing
1 cr. (1 lec/wk)
Socializes student 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 judgement, legal/ethical/cultural issues in nursing, the need to understand human motivation and behavior, and use of the nursing process.

NURS 214 Basic IV Therapy
2 cr. (1 lec/2 lab/wk) Prerequisite: NURS 210.
Addresses administration of parenteral drugs and fluids by the intravenous route. Covers the nursing role and responsibility of intravenous therapy, the techniques of therapy, equipment selection, fluid and electrolyte balance, parenteral nutrition therapy, transfusion therapy, and special applications.

NURS 230 Fundamentals of Nursing
4 cr. (4 lec/wk) Prerequisite: Acceptance to PN program. Corequisites: NURS 231, 232, 234, and 235.
Introduces learners to the clinical skills essential for the nursing role. Also includes complex concepts and behaviors of nursing roles within the context of the nursing process, holistic care, and health care. Emphasizes the theoretical and practical concepts of nursing skills required to meet the needs of clients in a variety of settings.

NURS 231 Fundamentals of Nursing Lab
3 cr. (6 lab/wk) Prerequisite: Acceptance to PN program. Corequisites: NURS 230, 232, 234, and 235.
Introduces learners to the clinical skills essential for the nursing role. Also includes complex concepts and behaviors of nursing roles within the context of the nursing process, holistic care, and health care. Emphasizes the theoretical and practical concepts of nursing skills required to meet the needs of clients in a variety of settings.

NURS 232 Pharmacology
3 cr. (3 lec/wk) Corequisites: NURS 230 and 234
Develops a structured systematic approach to the study of drug therapy through caring, communication, professionalism, critical thinking, and clinical judgement. 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.

NURS 234 Gerontology
1 cr. (1 lec/wk) Prerequisite: Acceptance to PN program. Corequisites: NURS 230, 231, 232, and 235.
Provides the student with introductory skills and knowledge needed in delivering nursing care to aging clients. Topics explored include current trends (including legal and ethical issues) in gerontological nursing, developmental stages and transitions associated with aging, expected age-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, and end-of-life issues and care.

NURS 235 Gerontology Clinical
1 cr. (3 clinical/wk) Prerequisite: Acceptance to PN program. Corequisites: NURS 230, 231, 232, and 234.
Provides the student with introductory skills and

knowledge needed in delivering nursing care to aging clients. Topics explored include current trends (including legal and ethical issues) in gerontological nursing, developmental stages and transitions associated with aging, expected age-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, and end-of-life issues and care.

NURS 240 Core Concepts of Adult Nursing
4 cr. (4 lec/wk) Prerequisite: Satisfactory completion of 3rd semester PN coursework. Corequisites: NURS 241, 242, 243, 244, 246, and 247.
Applies concepts preparing 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 peri-operative care, pain, infection/immunity, and cancer will be addressed. Additionally, recognition and emergent treatment of rapidly changing conditions will be introduced.

NURS 241 Core Concepts of Adult Nursing Clinical
3 cr. (9 clinical/wk) Prerequisite: Satisfactory completion of 3rd semester PN coursework. Corequisites: NURS 240, 242, 243, 244, 246, and 247.
Applies concepts preparing 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 peri-operative care, pain, infection/immunity, and cancer will be addressed. Additionally, recognition and emergent treatment of rapidly changing conditions will be introduced.

NURS 242 Core Concepts of Maternal/Child Nursing
2 cr. (2 lec/wk) Prerequisite: Satisfactory completion of 3rd semester PN coursework. Corequisites: NURS 240, 241, 243, 244, 246, and 247.
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 caring 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.

NURS 243 Core Concepts of Maternal/Child Nursing Clinical
1 cr. (3 clinical/wk) Prerequisite: Satisfactory completion of 3rd semester PN coursework. Corequisites: NURS 240, 241, 242, 244, 246, and 247.
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 caring 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.

NURS 244 Core Concepts of Mental Health Nursing
2 cr. (2 lec/wk) Prerequisite: Satisfactory completion of first, second, and third semester coursework. Corequisites: NURS 240 and 242.
Examines the physiological, psychological, sociocultural, spiritual, and environmental factors associated with mental health/illness effecting individuals and families. Focus will be placed on basic concepts of psychiatric nursing, therapeutic modalities, as well as psychiatric disorders including psychopharmalogical management.

NURS 246 Leadership Issues
1 cr. (1 lec/wk) Prerequisite: Satisfactory completion of 3rd semester PN coursework. Corequisites: NURS 240, 241, 242, 243, 244, and 247.
Expands the Practical Nursing student information regarding the current status of vocational nursing through a capstone course. This course assists the nursing student to bridge the role between student and employee. Leadership/management skills, health care 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 care setting.

NURS 247 Leadership Issues Clinical
1 cr. (3 clinical/wk) Prerequisite: Satisfactory completion of 3rd semester PN coursework. Corequisites: NURS 240, 241, 242, 243, 244, and 246.
Expands the Practical Nursing student information regarding the current status of vocational nursing through a capstone course. This course assists the nursing student to bridge the role between student and employee. Leadership/management skills, health care 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 care setting.

NURS 248 Transition to Registered Nursing
3 cr. (2 lec/2 lab/wk) Prerequisite: LPN license and out of college 3 years or more.
Integrates the components of lifelong learning, adapting to change, critical thinking, nursing process, legal and ethical issues, math for meds, IV therapy, APA format, and skill review to "socialize" the student from the LPN/LVN to the Associate Degree RN.

NURS 250 Pathophysiology
3 cr. (3 lec/wk) Prerequisite: Acceptance into ASN program. Corequisites: NURS 252 and 254.
Explores the basic principles and processes of pathophysiology including cellular communication, genes and genetic disease, forms of cellular injury, fluid and 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.

NURS 252 Complex Care Needs of the Maternal/Child Client
2 cr. (2 lec/wk) Prerequisite: Acceptance to ASN program. Corequisites: NURS 253, 254, and 255.
Expands the knowledge base of the student to provide care to maternal/child clients experiencing acutely changing conditions in settings where outcome is less predictable. Topics include care of the client during childbirth, high-risk pregnancies, obstetrical emergencies, neonatal emergencies, and infants and children requiring complex collaborative care.

NURS 253 Complex Care Needs of the Maternal/Child Client Clinical
1 cr. (3 clinical/wk) Prerequisite: Acceptance to ASN program. Corequisites: NURS 252, 254, and 255.
Expands the knowledge base of the student to provide care to maternal/child clients experiencing acutely changing conditions in settings where outcome is less predictable. Topics include care of the client during childbirth, high-risk pregnancies, obstetrical emergencies, neonatal emergencies, and infants and children requiring complex collaborative care.

NURS 254 Complex Care Needs-Mental Health Client
1 cr. (1 lec/wk) Prerequisite: Acceptance to ASN program. Corequisites: NURS 252, 253, and 255.
Evaluates the physiological, psychological, sociocultural, spiritual, and environmental factors associated with mental health/illness. Focus will be placed on psychotherapeutic management in the continuum of care, milieu management, and special populations with emphasis on individuals, families, and communities.

NURS 255 Complex Care Needs-Mental Health Client Clinical
1 cr. (3 clinical/wk) Prerequisite: Acceptance to ASN program. Corequisites: NURS 252, 253, and 254.
Evaluates the physiological, psychological, sociocultural, spiritual, and environmental factors associated with mental health/illness. Focus will be placed on psychotherapeutic management in the continuum of care, milieu management, and special populations with emphasis on individuals, families, and communities.

NURS 260 Complex Care Needs of the Adult Client
2 cr. (2 lec/wk) Prerequisite: Completion of 5th semester ASN coursework. Corequisites: NURS 261, 264, and 265.
Expands previously learned concepts to prepare the student to provide nursing care to adult clients experiencing acutely changing conditions in settings where 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, and shock, sepsis/SIRS, complex burns, etc.

NURS 261 Complex Care Needs of the Adult Client Clinical
2 cr. (6 clinical/wk) Prerequisite: Completion of 5th semester ASN coursework. Corequisites: NURS 260, 264, and 265.
Expands previously learned concepts to prepare the student to provide nursing care to adult clients experiencing acutely changing conditions in settings where 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, and shock, sepsis/SIRS, complex burns, etc.

NURS 262 Advanced Clinical Skills
1 cr. (2 lab/wk) Corequisites: NURS 260 and 264.
Applies concepts from previous nursing courses to carry out complex nursing interventions. Topics covered include central venous therapy, parenteral nutrition, hemodynamic monitoring, advanced airway/ventilatory support, intracranial pressure monitoring, IV medication administration, high risk IV infusions, blood/blood product administration, conscious sedation, advanced wound care, etc.

NURS 264 Managing Client Care
2 cr. (2 lec/wk) Prerequisite: Completion of 5th semester ASN coursework. Corequisites: NURS 260, 261, and 265.
Synthesizes nursing care of individual clients and groups of clients as well as basic principles related to supervision of nursing practice and management of resources in order to prepare students for the many roles available in health care today. Topics include: role differentiation among care providers, organization and prioritization, delegation, supervision and appropriate practice/practice settings, management of the needs of individuals and groups of clients, and management of health care resources. Additionally, the course helps the student integrate didactic content from all other nursing courses and will help the student in her or his transition from the student role to the role of the Registered Nurse. Students examine legal/ethical issues in nursing as well as values, clarification, conflict resolution, consensus building, and defective communication techniques in the employment setting. Licensure exam (NCLEX-RN) preparations and process are included as a component of the course. The preceptor-based clinical component allows the student to function in the role of a registered nursing while working one-to-one with a designated RN preceptor.

NURS 265 Managing Client Care Clinical
2 cr. (6 clinical/wk) Prerequisite: Completion of 5th semester ASN coursework. Corequisites: NURS 260, 261, and 264.
Synthesizes nursing care of individual clients and groups of clients as well as basic principles related to supervision of nursing practice and management of resources in order to prepare students for the many roles available in health care today. Topics include: role differentiation among care providers, organization and prioritization, delegation, supervision and appropriate practice/practice settings, management of the needs of individuals and groups of clients, and management of health care resources. Additionally, the course helps the student integrate didactic content from all other nursing courses and will help the student in her or his transition from the student role to the role of the Registered Nurse. Students examine legal/ethical issues in nursing as well as values, clarification, conflict resolution, consensus building, and defective communication techniques in the employment setting. Licensure exam (NCLEX-RN) preparations and process are included as a component of the course. The preceptor-based clinical component allows the student to function in the role of a registered nursing while working one-to-one with a designated RN preceptor.

Paramedic

PARA 101 Transition to Paramedicine
1 cr. (1 lec/wk)
Provides an opportunity to start learning the cognitive, psychomotor, and behavioral differences between an EMT and paramedic. Topics covered include roles and responsibilities of the paramedic, EMS systems, licensure/recertifications requirements, medical legal, patient evaluation, radio communication, documentation, and current issues that impact the EMS profession.

PARA 120 EMS Case Studies
4 cr. (4 lec/wk)
Provides an opportunity to study and manage trauma and respiratory emergencies from a case study perspective. Trauma topics covered include shock, head, spinal, thoracic, abdominal, burns, and environmental. Respiratory topics covered include asthma, emphysema, chronic bronchitis, pneumonia, pulmonary edema, and embolism.

PARA 130 Paramedic Fundamentals
3 cr. (3 lec/wk)
Prepares the paramedic student in the basic knowledge and skills needed in the pre-hospital environment. Topics covered include roles and responsibilities of the paramedic, medical legal considerations, communications, rescue and disaster operations, initial

patient assessment and management, airway management and ventilation, pathophysiology of shock, and emergency pharmacology.

PARA 131 Paramedic Fundamentals Skills Lab
1 cr. (2 lab/wk)
Practices and gains the manipulative skills necessary to effectively manage the tasks in PARA 130.

PARA 132 Trauma
2 cr. (2 lec/wk)
Provides an intense course in the pathophysiology and the management of trauma to include assessment of the trauma patient, management of head injuries, chest injuries, abdominal injuries, spinal injuries, orthopedic injuries, management of the multi-trauma patient, management of special airway problems, and current trends in trauma management.

PARA 133 Pulmonary
2 cr. (2 lec/wk)
Provides an in-depth study of the anatomy of the respiratory system, its relationship to the other systems of the body, the pathophysiology of diseases of the respiratory system, and treatment modalities of pulmonary disease. Topics included are anatomy of the respiratory system, measurements of pulmonary function, respiration and gas exchange, assessment of the respiratory system, pathophysiology and management of respiratory disorders, and principles and management of acute respiratory insufficiency.

PARA 134 Trauma/Pulmonary Lab & (PHTLS)
1 cr. (2 lab/wk)
Practices and gains the manipulative skills necessary to effectively manage the tasks in PARA 132 and PARA 133. Upon completion, the student receives provider certification in Pre-Hospital Trauma Life Support.

PARA 135 Hospital Internship I
5 cr. (15 clinical/wk) Prerequisites: PARA 130, PARA 131, PARA 132, PARA 133 and PARA 134.
Provides the opportunity to apply, in a clinical setting, the didactic knowledge and skills developed in the classroom and lab. Serves as the first stage in assisting the student to become an employable EMS provider. Clinical skills addressed include patient assessment and evaluation, vital signs management, development of airway management skills, autopsy observation, development of communication skills, introduction to various skills necessary for patient care, and development of safety practices.

PARA 240 Cardiology
4 cr. (4 lec/wk)
Provides an in-depth study in the pathophysiology and management of cardiovascular disease and related emergencies. Topics include anatomy and physiology of the heart and circulatory system, basics of electrophysiology, assessment of the cardiac patient, pathophysiology of atherosclerosis, specific conditions resulting from atherosclerotic heart disease, peripheral vascular emergencies, pharmacologic intervention, dysrhythmia recognition, and specific management of cardiac emergencies.

PARA 241 Cardiology Lab & (ACLS)
1 cr. (2 lab/wk) Corequisite: PARA 240.
The student practices and gains manipulative skills to satisfactorily manage the task in PARA 240. Upon completion, the student receives provider certification in Advanced Cardiac Life Support.

PARA 242 Medical
2 cr. (2 lec/wk)
Provides an intense course in the pathophysiology and management of medical emergencies to include endocrine, nervous system, the acute abdomen, anaphylaxis, toxicology and substance abuse, infectious diseases, environmental, geriatric and pediatric emergencies.

PARA 243 Medical Lab
1 cr. (2 lab/wk) Corequisite: PARA 242.
Practices and gains the manipulative skills necessary to effectively manage the tasks in PARA 242.

PARA 244 Special Considerations
1 cr. (1 lec/wk)
Provides an opportunity to study and manage behavioral emergencies. Students are taught to recognize symptoms of abnormal behavior and responses. Students learn techniques to manage the suicide patient.

PARA 245 OB/Neonate/Pediatrics
2 cr. (2 lec/wk)
Provides the student with the opportunity to participate in normal and abnormal obstetrical problems. Anatomy and physiology of the female reproductive system, assessment of the gynecologic patient, deliveries (normal, abnormal and complicated), routine care of the neonate, care of the distressed infant, neonatal emergencies, and neonatal transport are addressed.

PARA 246 OB/Neonate/Pediatrics Lab & (NRP) & (PALS)
1 cr. (2 lab/wk) Corequisite: PARA 245.
Practices and gains the manipulative skills necessary to effectively manage the tasks in PARA 245. Upon

completion, the student receives provider certification in Neonatal Resuscitate Program (NRP) and Pediatric Advanced Life Support (PALS).

PARA 247 Hospital Internship II
6 cr. (18 clinical/wk) Prerequisites: PARA 130, PARA 131, PARA 132, PARA 133, PARA 134, PARA 240, PARA 241, PARA 242, PARA 243, PARA 244, PARA 245, PARA 246.
A continuation of the clinical skills initiated in PARA 135. Provides the opportunity to apply in the clinical setting, the didactic knowledge and skills developed in the classroom and lab. Serves as a final stage in assisting the student to become an employable EMS provider. Clinical skills addressed include electrocardiology, assessment and management of acute and chronic disease, pediatric advanced life support skills, obstetrical and neonatal care, and behavioral intervention techniques.

PARA 252 National Registry Exam Preparation
3 cr. (3 lec/wk) Corequisite: PARA 253.
Prepares the paramedic student for the national registry paramedic exam. It is a review of the core curriculum taught throughout 2nd and 3rd semester of the paramedic program.

PARA 253 National Registry Exam Preparation Lab
1 cr. (2 lab/wk) Corequisite: PARA 252.
Prepares the paramedic student for the national registry paramedic exam. It is a review of the psychomotor skills taught throughout 2nd and 3rd semester of the paramedic program.

PARA 254 Field Internship
8 cr. (24 clinical/wk) Prerequisites: PARA 130, PARA 131, PARA 132, PARA 133, PARA 134, PARA 135, PARA 240, PARA 241, PARA 242, PARA 243, PARA 244, PARA 245, PARA 246, PARA 247.
Provides the opportunity to apply in the clinical setting, the didactic knowledge and skills developed in the classroom and lab. It serves as the final stage in assisting the student to become an employable EMS provider. Cognitive, psychomotor, and affective evaluation skills addressed include patient assessment, history gathering, treatment prioritizing, diagnostic impression, protocol knowledge, radio communication, written documentation, airway management, fluid/drug management, cardiac management, trauma/medical management, attitude, professionalism, assertiveness, team leader qualities.

Process Plant

PPT 101 Fundamentals of Processing Technology Lecture
4 cr. (4 lec/wk)
Introduces the student to the fundamentals of process/refinery technology. Areas covered are the mechanics of fluids, hydrocarbons, gases, heat, and chemistry. The student realizes how each plays a significant role in the refining distillation process.

PPT 102 Fundamentals of Process Technology Laboratory
1 cr. (2 lab/wk) Corequisite: PPT 101.
Provides students exposure to major concepts of industry through hands-on laboratory investigations and application of principles learned in PPT 101.

PPT 120 Environmental Awareness
2 cr. (2 lec/wk)
Provides the student with the history behind certain environmental policies, the creation of OSHA, and key environmental issues. Provides learning in treatment processes, waste water units, vapor recovery systems, cleanup, and an overview of the specialty equipment necessary for an ecologically sound process plant.

PPT 130 Process Diagrams for Process Technology
2 cr. (1 lec/2 lab/wk)
Provides the student with an introduction in the use of process flow and instrument drawings. Upon completion of this course, students will be familiar with using P&ID (Process and Instrument Drawings) drawings in the course of their work as process technicians. In addition, students will obtain the skills necessary to produce process flow diagrams.

PPT 135 Instrument and Control Systems Lecture
4 cr. (4 lec/wk) Prerequisites: PPT 101 & 130, TRID 185.
Familiarizes the student with the vocabulary surrounding the instrument and control field as well as examining the function of each instrument. The topics of process measurements, analytical instrumentation, process controls, and instrument systems are also covered in this course.

PPT 136 Instrument and Control Systems Laboratory
1 cr. (2 lab/wk) Corequisite: PPT 135.
Provides students exposure to major concepts of industry through hands-on laboratory investigations and application of principles learned in PPT 135.

PPT 151 Process Plant Safety I
2 cr. (2 lec/wk)
Examines the regulatory safety programs instituted by

OSHA and other regulatory agencies which are specific to the processing industry. Covers a variety of topics such as hazards safety, personal protective equipment, emergency response and safe work practices.

PPT 161 Process Plant Safety II
2 cr. (1 lec/2 lab/wk) Prerequisite: PPT 151.
Provides the student with detailed instruction in the field of safety and health within the Process industry. In this course, the student will complete an in-depth study in the use of gas detection equipment, the use of the permitting system including lock out/tag out, the use of OSHA logs, the use of advanced safety equipment, and study the importance of industrial hygiene in an industrial setting.

PPT 175 Process Plant Sciences Lecture
4 cr. (4 lec/wk) Prerequisite: PPT 101.
Provides the fundamentals necessary for an in-depth look at the distillation process. Examines the concepts of heat and thermodynamics, as well as the chemical bonds, organic chemistry, the periodic table and hydrocarbon concepts. Gives students the necessary tools for a better understanding of the process taking place in the refining and power industries.

PPT 176 Process Plant Sciences Laboratory
1 cr. (2 lab/wk) Corequisite: PPT 175.
Provides students exposure to major concepts of industry through hands-on laboratory investigations and application of principles learned in PPT 175.

PPT 207 Boilers, Accessories and Basic Operations
3 cr. (2 lec/2 lab/wk)
Offers an introduction to boiler equipment, controls, and systems. Instruction includes the function and operation of all major components and control devices, common troubleshooting problems, and common maintenance concerns.

PPT 208 Equipment and Operations Laboratory
2 cr. (4 lab/wk) Corequisite: PPT 210.
Provides students exposure to major concepts of industry through hands-on laboratory investigations and application of principles learned in PPT 210.

PPT 210 Equipment and Operations Lecture
4 cr. (4 lec/wk) Prerequisite: PPT 175.
Covers the equipment necessary for the operation of a process/refining plant. A few topics of discussion include pumps, compressors, valves, heat exchangers, distillation towers, cooling towers, as well as auxiliary systems. Some of the operations principles reviewed are pneumatics, boilers, hydraulic functions, furnace processes, reactor systems, and distillation. Reading process flows and instrument diagrams is also included.

PPT 211 Advanced Operations Lecture
2 cr. (2 lec/wk) Prerequisite: PPT 210.
Introduces the student to actual refining processes, taking an in-depth look at each process, as well as the unit variables, equipment, critical control areas, product and unit specific safety considerations. Various types of processes are discussed, including Fluid Catalytic Cracking, Alkylation, Catalytic Reforming, De-sulfurization, Crude/Vacuum Systems, Amine, Coking, and Hydro treating. The course is also designed to provide classroom time balanced with field review of the various processes.

PPT 212 Advanced Operations Laboratory
1 cr. (2 lab/wk) Corequisite: PPT 211.
Provides students exposure to major concepts of industry through hands-on laboratory investigations and application of principles learned in PPT 211.

PPT 220 Quality Control Practices
2 cr. (2 lec/wk) Prerequisites: PPT 210, CTBU 171.
Provides the student with an overview of the field of quality within the Process industry. Within this course, students will be introduced to many industry-related quality concepts including operating consistency, continuous improvement, plant economics, team skills, and statistical process control (SPC).

PPT 225 Plant Investigation and Troubleshooting
2 cr. (1 lec/2 lab/wk) Prerequisite: PPT 210.
Provides the student with an overview of the various troubleshooting models used by process technicians. Process troubleshooting involves different types of troubleshooting techniques, procedures, and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships, and reasoning. The student is exposed to many different trouble situations similar to those encountered in the process plant experience. The student is taught a systematic way to solve problems, using measured process variables and personal knowledge of how they affect each other (cause and effect).

PPT 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of process plant technology.

PPT 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of process plant technology.

PPT 296 Cooperative Education /Internship
V 1-9 cr. (45 hours/credit)
Provides university credit for a sophomore experience in the area of Process Plant Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

Psychology

PSYX 100 Introduction to Psychology
[formerly PSYC 101 General Psychology]
3 cr. (3 lec/wk)
Presents an overview of the psychological functioning of the individual, including such topics as the biological bases of behavior, learning, cognition, motivation, developmental and social processes, psychological disorders and their treatment.

Power Plant

PWRP 201 Power Plant Equipment and Operations
3 cr. (2 lec/2 lab/wk)
Provides the student with an introduction to the major systems and components that make up a modern power plant. Students learn how electric power is produced and distributed; how boilers, turbines, and condensers operate; and what the general responsibilities of plant operators are during all phases of plant operation. Specific attention is given to the flow of water and steam through the steam cycle, how combustion occurs, types of boilers and turbines, operation of steam cycle support systems, bearings and lubrication, turbine control, pollution control, and plant safety. This course covers the various types of equipment used in the production of electricity, including pumps, valves, air compressors, coal pulverizers, fans, cooling towers, condensers, and heat exchangers.

PWRP 203 Energy Sources and Conversion
3 cr. (2 lec/2 lab/wk)
Allows students to study the various forms of energy and the processes used to convert chemical and potential energy into thermal, mechanical, and in some instances, electrical energy. Energy sources that will be studied include fossil fuels (coal, oil, and natural gas), hydro, wind, fuel cells, solar, derived fuel, geothermal, and nuclear. Combustion and reaction will be discussed in detail for those energy sources that require combustion to convert from one energy form to another.

PWRP 210 Turbines, Accessories and Basic Operations
3 cr. (2 lec/2 lab/wk) Prerequisites: PPT 135, PPT 175
Allows students to study all the elements that make up gas and steam turbines, a combined cycle unit, and associated auxiliary systems. This course also covers the safe and efficient operation of gas turbines and heat recovery steam generators and their different applications as used in combine cycle and cogeneration configurations. Students will learn how thermal energy is converted to mechanical energy as the steam passes through a typical industry steam turbine. Steam turbine start-up and shut-down procedures will also be studied.

PWRP 214 Power Generation
4 cr. (3 lec/2 lab/wk) Prerequisite: PPT 175.
Introduces the basic elements of generator design, protection, and operation. Students are introduced to the theoretical aspects of reactive power in power systems by analyzing the inductive and capacitive components of the system, with an emphasis on megavar loading as it is affected by the excitation system. The generator's auxiliary systems, including hydrogen cooling systems, stator cooling systems, seal oil systems, and generator degassing procedures, are also introduced and the function and types of exciters commonly found in power plants are examined.

PWRP 216 Electrical System Components and Protections
3 cr. (2 lec/2 lab/wk) Prerequisite: PPT 175.
Introduces typical devices used to protect personnel and prevent damage to plant equipment. Also covered are generator, bus, and line differential protection, as well as high- and low-pressure protection. The material presented includes trip and alarm logic for chemical protection, turbine protection, boiler protection, and generator protection. Devices covered include fuses over current relays and over- and under-voltage relays. The course covers practices for electrical protection of plant equipment and personnel.

PWRP 218 Advanced Plant Operations and Troubleshooting
4 cr. (2 lec/4 lab/wk) Prerequisite: PWRP 201.
Allows students to gain the knowledge necessary to comprehend overall power plant operations and respond to abnormal operating conditions. Students will also participate in root cause analysis exercises while troubleshooting different operating scenarios.

PWRP 296 Cooperative Education/Internship
2 cr. (45 hours/credit)
Provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

Radiology

RAD 101 Radiological Technology I
2 cr. (2 lec/wk) Corequisite: RAD 102 & RAD 103.
Instructs students in the fundamentals of producing radiographic images including radiographic positioning, anatomy, technique, and radiographic procedures.

RAD 102 Clinical Radiology I
5 cr. (15 clinical/wk) Corequisite: RAD 101 & RAD 103.
Instructs students in radiographic examinations in the clinical environment. The students are required to perform radiographic examinations on patients and to participate in scheduled clinicals under the direct supervision of the clinical instructor or registered technologist. Students will be oriented into patient care methodologies. CPR certification is required.

RAD 103 Radiology I Positioning Lab
1 cr. (2 lec/wk) Corequisites: RAD 101 & RAD 102.
Provides laboratory practice in radiographic positioning, anatomy, and patient care for radiographic examinations covered in corequisite course in preparation for competency-based testing at the clinic site.

RAD 104 Introduction to Radiologic Physics
3 cr. (3 lec/wk) Corequisites: RAD 101, 102.
Provides the student with an introduction to radiologic physics including electricity, radiation, radiographic equipment, and the processes involved in radiographic imaging. X-ray production and the interaction of radiation with matter are examined in detail.

RAD 105 Patient Care in Radiology
3 cr. (3 lec/wk)
Provides students with an introduction to radiologic technology including the history of radiology, patient care and the radiographer's role in health care, medical ethics, infection control, radiology organizations, and radiologic technology certification.

RAD 108 Clinical Radiology Intersession
1 cr. (40 total) Prerequisites: RAD 101 & RAD 102.
Provides students the opportunity to perform radiographic examinations on patients at the clinical sites and participate in scheduled clinical assignments under the direct supervision of the clinical instructor or registered technologist.

RAD 110 Radiation Physics and Biological Principles
3 cr. (3 lec/wk)
Emphasizes radiation safety and the biological effects of radiation on the human body. Explores the various modalities including equipment requirements, design and quality assurance.

RAD 151 Radiologic Technology II
3 cr. (3 lec/wk) Prerequisites: RAD 101 & RAD 102. Corequisites: RAD 152 & RAD 153
Continues examination of the fundamentals of radiography, including radiographic anatomy and radiographic procedures. This course includes the essential operating principles of X-ray machines and the factors that contribute to the production of diagnostic quality radiographs.

RAD 152 Clinical Radiology II
6 cr. (18 clinical/wk) Prerequisites: RAD 101 & RAD 102. Corequisites: RAD 151 & RAD 153.
Provides sequential clinical instruction on application, critical analysis, integration, synthesis, and evaluation of concepts and theories required to perform radiologic procedures. Patient centered clinical practice labs and professional development will be taught through competency-based assignments in the clinical setting.

RAD 153 Radiology II Positioning Lab
1 cr. (2 lec/wk) Corequisites: RAD 151 & RAD 152.
Provides laboratory practice in radiographic positioning, anatomy, and patient care for radiographic examinations covered in corequisite course in preparation for competency-based testing at the clinic site.

RAD 181 Radiologic Technology III
2 cr. (2 lec/wk) Prerequisites: RAD 151 & RAD 152. Corequisites: RAD 182 & RAD 183.
Continues the examination of the fundamentals of radiography including radiographic anatomy and radiographic procedures. This course includes the essential operating principles of X-ray machines and the factors that contribute to the production of diagnostic quality radiographs.

RAD 182 Clinical Radiology III
8 cr. (24 clinical/wk) Prerequisites: RAD 151 & RAD 152. Corequisites: RAD 181 & RAD 183.
Continues to provide sequential clinical instruction in radiographic procedures. Patient-centered clinical practice labs and professional development will be taught through competency-based assignments in the clinical setting.

RAD 183 Radiology III Positioning Lab
1 cr. (2 lec/wk) Corequisites: RAD 181 & RAD 182.
Provides laboratory practice in radiographic

positioning, anatomy, and patient care for radiographic examinations covered in corequisite course in preparation for competency-based testing at the clinic site.

RAD 201 Radiologic Technology IV
3 cr. (3 lec/wk) Prerequisites: RAD 181, 182. Corequisite: RAD 202.
Continues to examine radiographic anatomy and radiographic procedures in coordination with the concurrent clinical radiography course. Fluoroscopic procedures will be examined and the evaluation of diagnostic quality radiographs will continue.

RAD 202 Clinical Radiology IV
8 cr. (24 clinical/wk) Prerequisites: RAD 181, 182. Corequisite: RAD 201.
Provides sequential clinical instruction of the analysis and evaluation of concepts and theories required to perform radiographic procedures. Patient-centered clinical practice labs will be taught through competency-based assignments in the clinical setting.

RAD 251 Radiologic Technology V
3 cr. (3 lec/wk) Prerequisites: RAD 201, 202. Corequisite: RAD 252.
Provides the radiographic fundamentals and radiographic anatomy necessary for advanced fluoroscopic examinations as well as routine radiologic procedures. Includes a study of pathology in radiography.

RAD 252 Clinical Radiology V
8 cr. (24 clinical/wk) Prerequisites: RAD 201, 202. Corequisite: RAD 251.
Provides the clinical practice and experience necessary for the performance of advanced radiographic procedures. Includes the study of pathology and rotations through the different modalities within radiology.

RAD 271 Registry Review
3 cr. (1 lec/wk) Prerequisites: RAD 201, 202.
Provides a comprehensive review of the Radiologic Technology course material in preparation for the national certification examination.

Reading

RD 101 Reading Improvement for College Students
3 cr. (3 lec/wk)
Provides instruction and practice in applying active reading strategies, improving comprehension in content areas, demonstrating critical thinking skills in responding to individual content area reading assignments, and increasing vocabulary to improve academic success. RD 101 prepares students for the demands of college-level reading. Course earns academic credit but does not count toward Academic Foundations, a degree, or certification.

Sociology

SOCI 101 Introduction to Sociology
[formerly SOCL 101 Introduction to Sociology]
3 cr. (3 lec/wk)
Introduces concepts and principles of sociology. Surveys the discipline's basic ideas and orientation.

Trade and Industry

TRID 110 Fundamentals of Construction Technology
2 cr. (1 lec/2 lab/wk)
Introduces basic concepts in using construction-related safety apparatus. It also covers proper safety procedures in the operation of hand and power tools. It reviews and applies construction-related math.

TRID 112 Blueprint Reading for Construction
2 cr. (2 lec/wk)
Concentrates on concepts associated with blueprint reading, sketching, and interpreting light commercial and residential drawings. It includes instruction in the recognition of construction materials, procedures, specifications, and methods of estimating construction costs from blueprints. This course also covers trade-specific symbols found on construction drawings.

TRID 115 Using a Construction Calculator
1 cr. (1 lec/wk)
Explains uses and needs for quality construction calculators. This course is designed to help students become proficient in solving common construction problems using the Construction Master Pro calculator.

TRID 120 Introduction to Concrete
2 cr. (1 lec/2 lab/wk) Prerequisite: TRID 110 or instructor's approval.
Provides students with basic skills and knowledge in the area of concrete and reinforcing materials. The course will also provide a limited opportunity for students to be involved in hands-on experience in the forming, reinforcing, handling, and placing of concrete.

TRID 125 Introduction to Flooring Installation
4 cr. (2 lec/4 lab/wk)
Introduces basic concepts, practices, and procedures related to the floor covering installation trade. It covers proper safety procedures in the operation of hand and power tools that are related to the trade. This course also reviews and applies math related to floor covering installation.

TRID 130 Basic Rigging
1 cr. (1 lec/wk)
Explains how ropes, chains, hoists, loaders, and cranes are used to move material and equipment from one location to another on a job site. It describes inspection techniques and load-handling safety practices as well as reviews American National Standards Institute (ANSI) hand signals.

TRID 131 Metal Building Construction
1 cr. (1 lec/wk)
Introduces the basic structural components, fastening methods, and assembly techniques for metal buildings. It provides an overview of the materials and procedures used in application of roofs, wall panels, windows, doors, and flashings relating to metal buildings.

TRID 140 Automobile Sheet Metal and Structural MIG Welding
2 cr. (1 lec/2 lab/wk)
Demonstrates the basic methods and techniques used in GMAW (Gas Metal Arc Welding) also referred to as MIG (Metal Inert Gas) welding. The MIG welding concentration is focused on gauges of metal used in the production of modern automobiles.

TRID 150 Environmental and Shop Practices
2 cr. (1 lec/2 lab/wk)
Informs students on safety, hazardous materials and toxic waste. Students are given a working knowledge of tool use, measuring devices, fasteners, use of shop manuals, and hazardous waste precautions and handling procedures.

TRID 151 Welding
2 cr. (1 lec/2 lab/wk)
A theory and practical course designed to give students experience in oxyacetylene welding, cutting, and arc welding processes used in the trade and industrial field applications. Various types of welders and electrodes are used for practice on weld coupons.

TRID 152 Vehicle Heating, Ventilation and Air Conditioning
3 cr. (1 lec/4 lab/wk)
The auto air portion of this course is designed to help students gain an understanding and working knowledge of air conditioning systems and controls currently used in automobiles and trucks. Theory, diagnosis and service procedures, and environmental concerns are presented to give students the necessary skills to repair vehicle air conditioning systems.

TRID 160 Hazardous Materials Technician General Training
3 cr. (2 lec/2 lab/wk)
Provides hazardous materials training needed to meet all requirements of the first responder at the awareness, operations, and technician level of emergency hazardous materials response. Technicians shall meet the training requirements in accordance with requirements of OSHA and NFPA (National Fire Protection Association).

TRID 170 Engine Theory
4 cr. (4 lec/wk)
Theory-driven introductory course that will give the student a basic understanding of compression and spark ignition engines. This course will study engine components, terminology of engine design, and will provide a basic understanding of engine design and operation. This is not an engine overhaul course.

TRID 180 Electrical Systems
4 cr. (2 lec/4 lab/wk)
Covers introductory material in Automotive Electrical Systems. This course is designed to give the student a strong background in the theory of operation, diagnosis, and repair of electrical and electronic systems. Theory of AC/DC electricity, Ohm's Law, magnetism, wiring, and measuring devices are discussed. Units covered include the theory of testing and/or repair of automotive and heavy-duty batteries, starters, alternators, and regulators.

TRID 185 Introduction to Industrial Power Systems Lecture
2 cr. (2 lec/wk)
Covers the fundamental principles of direct current and alternating current circuits and their use in an industrial setting. Also includes transformers and electrical distribution systems.

TRID 186 Introduction to Industrial Power Systems Laboratory
1 cr. (2 lab/wk) Corequisite: TRID 185.
Provides students exposure to major concepts of industry through hands-on laboratory investigations and application of principles learned in TRI 185.

TRID 190 Introduction to Residential Wiring
3 cr. (2 lec/2 lab/wk)
Introduces wiring methods and materials used in single- and two-family dwellings. It covers basic installation and replacement techniques for residential electrical components.

TRID 220 Advanced Concrete Working
3 cr. (1 lec/4 lab/wk) Prerequisite: TRID 120.
Provides basic knowledge of concrete materials and tools and provides hands-on experience in which the student applies with supervision those basic skills and knowledge presented in the area of concrete. The course is designed as a practical task-oriented application utilizing the basic skills learned in TRID 121 and TRID 220. The course will emphasize the advanced application in the area of concrete foundations, flatwork, forms, reinforcing, handling, and placing concrete.

TRID 290 Internship
Credit varies.
Integrates coursework with program-related work experience in business, industry, and/or government. Students do not receive pay. This must be coordinated through the department chairperson.

TRID 292 Seminar
V 1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of trade and industry.

TRID 293 Workshop
V 1-3 cr.
Provides an opportunity for experimental study in an area of trade and industry.

Writing/English

WRIT 095 Developmental Writing
[formerly ENGL 100 English Essentials]
3 cr. (3 lec/wk)
Reviews basic grammar with emphasis on sentence structure and mechanics. Also presents basic writing considerations, especially paragraph organization and development of the multi-paragraph essay. Placement by student's request or by results of Writing Placement Test, SAT, or ACT and by faculty recommendation. Credits do not apply toward graduation requirements and do not fulfill Academic Foundations requirements. Credits not applicable to English major or minor. However, the credits do count towards enrollment status for financial aid.

WRIT 101 College Writing I
[formerly ENGL 150 College Composition]
3 cr. (3 lec/wk) Prerequisite: Satisfactory passing score on Placement Examination or grade of "C" or better in WRIT 095.
Provides instruction in writing competencies expected of college students. Pays special attention to writing as a problem-solving process, patterns of organization in personal and informative writing, and logical thinking and style in argumentative/persuasive writing. (Course not applicable to English major or minor.)

WRIT 104 Workplace Communications
[formerly ENGL 102 English Essentials for Technical Writers]
3 cr. (3 lec/wk)
Designed to teach students the fundamentals of the English language. Includes grammar, spelling, punctuation, and word usage with emphasis on both written and oral communication.

∇ WRIT 121 Introduction to Technical Writing
[formerly ENGL 145 Technical Communication]
3 cr. (3 lec/wk) Prerequisite: WRIT 095, WRIT 104, or qualifying score on placement exam and CAPP 120.
Introduces the student to the creation and evaluation of several kinds of written and oral technical communication.

∇ WRIT 122 Introduction to Business Writing
[formerly ENGL 140 Business Writing]
3 cr. (3 lec/wk) Prerequisite: Satisfactory completion of WRIT 095, WRIT 104, or qualifying score on the placement exam.
Provides instruction in the preparation of business memos, letters, reports, oral presentations, and computer assisted writing in business contexts.

WRIT 180 Editing for Business Writing
[formerly ENGL 180 Editing for Business Writing]
1 cr. (1 lec/wk) Prerequisite: Satisfactory completion of one of the following: WRIT 122, WRIT 121, WRIT 101, an approved college English course, or qualifying score on the placement exam.
Develops three basic editing skills necessary to achieve an on-the-job level of proficiency. This includes review and instruction on grammar, usage, and style as they apply to the modern office environment.

Faculty

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Glossary of Terms

The following is a collection of explanations and interpretations of terms commonly used in the Montana State University Billings College of Technology Catalog.

Academic Probation - Denotes that a student's academic performance is below standard as defined by the institution; the student is warned of possible suspension.

Academic Record - The unabridged and complete historical record of a student's academic coursework.

Academic Year - That period of time from the opening of Fall Semester to the closing of the next Spring Semester is the "academic year." Summer Session is specifically excluded.

Accredited Institution - A college or university accredited by or a candidate for accreditation from one of the recognized regional accrediting commissions. Montana State University Billings College of Technology is fully accredited by the Northwest Commission on Colleges and Universities.

Admission - The process of accepting a candidate for enrollment into college.

Advising - A service provided by a faculty member or designated person (academic advisor). An advisor guides students through academic questions, problems, and/or coursework to plan and complete a degree program.

Adjunct Faculty - A part-time faculty member.

Academic Advisor - A faculty member or designated person who guides students through academic questions, problems, and/or coursework to plan and complete a degree program.

Academic Foundations/Related Instruction - A common body of knowledge which supports every program of study for which a specialized associate degree or certificate is granted.

Associate Degree - A degree which generally requires two years to complete. MSU Billings offers Associate of Arts and Associate of Science degrees as well as the Associate of Applied Science degree.

Auditor - One who enrolls in a class for informational instruction only. No academic credit is granted for auditing a class.

Bachelor's Degree - A first-level degree granted upon completion of a course of study in a given field and based on at least four years of college work, or the equivalent thereof.

Candidate for a Degree or Certificate - A status students assume when they have completed all requirements for a degree and apply for graduation. To apply for graduation a student completes an application for graduation at the Admissions and Records Office, pays a fee, and returns the application to the Admissions and Records Office.

Certificate - Official recognition denoting successful completion of a technical body of knowledge.

Class Schedule - The list of courses and sections offered in a given semester, including days, hours, places of meeting and names of instructors.

College - One of six major divisions of academic areas at MSU Billings. They are the College of Allied Health Professions, the College of Arts and Sciences, the College of Business, the College of Education, the College of Professional Studies and Lifelong Learning and the College of Technology. Each College is headed by a dean who reports to the Provost and Academic Vice Chancellor.

Core Courses - Courses required by the University, the College, or the department by all students in a degree program regardless of the option or concentration in which they may choose to major.

Course - A unit of academic work in a particular subject, normally one semester long, for which credit toward graduation is usually given.

Course Load - The number of semester credit hours associated with the academic work in which a student is enrolled in any given term.

Credit Hours - Normally one semester credit hour represents 60 minutes of classroom instruction each week for one semester. (Credit in a laboratory or studio class may require a longer period of time). A three credit class will meet for three 60-minute or two 90-minute sessions each week for the entire semester.

Degree - An academic title MSU Billings is authorized to confer as official recognition to those who complete an academic program. An example is a Bachelor of Applied Science Degree.

Degree or Certificate Program - A prescribed course of study which leads to a degree or certificate.

Electives - Courses which are not a required part of a degree program are electives. Some departments may insist that their majors choose between certain electives (referred to as Restricted Electives).

Extension Class - A special class offered through the Center for Continuing Education, Summer Session, and Community Service. A special fee is required and the course may be offered for regular college credit or it may be a noncredit course.

Faculty Advisor - A faculty member who helps a student plan and complete a degree program.

Fall Start Program – Programs which start their class rotations only in the Fall semester. Please note that some students may need a prerequisite semester of training.

Full-time Student - An undergraduate student registered for 15 or more semester credits, or any graduate student registered for nine or more semester credits is considered a full-time student.

General Education - see Academic Foundations.

Good Standing - Status denotes that a student is eligible to continue at or return to an institution.

Grade Point Average (GPA) - The grade average a student earns for each semester. It is calculated by multiplying the number of credits given for a course times the value of the grade received for the course (A=4, B=3, C=2, D=1, F=0), adding the value calculated for each class and dividing by the total number of credits. Thus, if a student has an "A" in a 4 credit course; a "B" in a 3 credit course; a "C" in a 2 credit course, and a "D" in a 2 credit course the GPA calculation would be as follows:

A=4 times 4 credits =16 grade points
B=3 times 3 credits = 9 grade points
C=2 times 2 credit = 4 grade points
D=1 times 2 credits = 2 grade points
Total=31 grade points divided by 11 total credits
=2.82 GPA.

Grade Report - A report of the student's grades earned at the end of each semester.

Graduation Check - The determination of whether a student has met the specified minimum educational requirements necessary for the granting of a degree.

Headcount - The number of students enrolled in an educational institution, program, course, etc., without regard to the number of credit hours being taken by individual students.

Hours - Sometimes referred to as semester credit hours unless specifically stated otherwise.

Human Services - A broad field of human endeavor in which individuals act as agents to assist individuals, families, and communities to better cope with crisis, change, and stress; to prevent or alleviate stress; and to function effectively in all areas of life and living.

Intersession - An enrollment period that is held between the end of Fall term and the beginning of Spring term.

Laboratory - A course involving supervised experimentation or practice related to a program area. It generally requires hands-on use of equipment and materials.

Major - The area in which a student concentrates. An academic major is required for graduation.

Part-time Student - A student enrolled with 11 or fewer credits.

Pre-registration - The process by which students select courses for a succeeding term in advance of the official opening date of the semester.

Prerequisite - A course to be completed successfully or a condition to be met before a student may enroll in a specific course.

Probation - Academic probation is the result of unsatisfactory scholarship. It is not a penalty but a warning and an opportunity to improve.

Registration - The process by which students officially enroll in classes and pay fees. Students must be formally admitted to MSU Billings before they may register.

Restricted Electives - Courses where students choose between several particular classes to meet requirements of the University, College or department.

Section - A division of a course, as between one or more instructors, but having the same course title and the same subject matter.

Semester - An enrollment period of about sixteen to 15 weeks.

Semester Credit Hours - Units of credit awarded for successful completion of academic work. Students' progress toward fulfilling curricular, degree and certificate requirements is measured in terms of semester credit hours.

Spring Start Program – Programs which start their class rotations only in the Spring semester. Please note that some students may need a prerequisite semester of training.

Summer Session - An enrollment period that begins after the Spring Semester ends.

Suspension - Academic suspension is an involuntary separation of the student from the University for unsatisfactory scholarship. Financial Aid also has suspension policies. (See Minimal Academic Progress or the Financial Aid section for details.)

Transcript - An Official Transcript is an unabridged and certified copy of a student's permanent academic record. A small fee is charged for each copy. (An uncertified working copy of the student's academic record is available at no charge).

U-card - Usually this refers to your ID card used to make purchases at the food services on campus.

Undergraduate Student - A student who has not yet earned a bachelor's degree or who has earned a bachelor's degree, but is a candidate for an additional bachelor's degree, or is pursuing additional undergraduate coursework.

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