

## Missoula College Catalog Year: 2015-2016

Degree Type: Associate of Science Level: Major Subject: **Registered Nursing**

Total Credits: 26 Cumulative GPA Required: 3.0

The Associate of Science degree (A.S.N.) program articulates with the PN program and requires at least two additional semesters of full-time study. Applicants must have completed a PN program with the A.A. pre-nursing courses listed in the practical nursing course of study, and have a cumulative GPA of at least 2.75. A.A.S. PN students are eligible to apply to the A.S.N. program during the final semester of the A.A.S. PN program. Admission to the program also requires completion of the application which can be obtained on the Missoula College Health Professions webpage. The number of students accepted into the A.S.N. program is limited to 18 each autumn and spring. Of the 18 students accepted, 10 are in the on campus, face-to-face program and 8 are part of the hybrid program. All candidates who meet the admission requirements will be considered. Students learn Registered Nursing skills through independent study, lectures, simulations, demonstrations and advanced skills practice in the nursing lab. Under instructor supervision and preceptorship, students also provide patient care in a variety of acute care settings.

The A.S.N. degree program is approved by the State Board of Nursing (301 South Park, Helena, MT 59601). The program is accredited by the National League of Nursing Accrediting Commission (NLNAC) (3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326).

Lower Division Core

Category Name: Registered Nursing Rule: All courses required

Criterion: B Number of Credits 26

Course Listing

BIOM 250N	Microbiology for Hlth Sciences 3	F,SU	
BIOM 251	Microbiology Hlth Sciences Lab	1	S
NRSG 250	LPN to RN Transition 2	F,S	
NRSG 254	Complex Care/Mntl Hlth Client 2	F,S	
NRSG 256	Pathophysiology 3	F,S	
NRSG 262	Complex Care Needs - Adult Cli	4	F,S
NRSG 265	Advanced Clinical Skills 1	F,S	
NRSG 266	Managed Client Care 4	F,S	
SOCI 101S	Introduction to Sociology 3	F,S,SU	

Commentary: Students must pass all NRSG courses with a minimum grade of a B.

It is highly recommended that students have BIOM 250N, BIOM 251N and SOCI 101S completed prior to admission to the ASN program. BIOM 250N, BIOM 251N and SOCI 101S are required for graduation from the program. Total credits for the ASN Registered Nursing Degree is 78. This includes pre-nursing credits (26 credits), AAS Practical Nursing credits (26 credits), and ASN Registered Nursing credits (26 credits).

Degree Commentary: Successful completion of pre-nursing courses and Practical Nursing courses within 2 attempts and acceptance through an application process is needed for entrance into the Associate of Science Nursing Program. Students may apply to the Associate of Science Nursing Program transferring directly from successful completion of a Practical Nursing Program or as a Licensed Practical Nurse.

## Missoula College Catalog Year: 2015-2016

Degree Type: Associate of Applied Science Level: Major Subject: **Respiratory Care**

Respiratory Care is an allied health specialty. It is an important part of modern medicine and health care. Respiratory Care encompasses the care of patients with respiratory problems in the hospital, clinic, and home. Respiratory therapists, as members of a team of health care professionals, work to evaluate, treat, and manage patients of all ages with respiratory illnesses and other cardiopulmonary disorders in a wide variety of clinical settings. Respiratory therapists must behave in a manner consistent with the standards and ethics of all health care professionals. In addition to performing respiratory care procedures, respiratory therapists are involved in clinical decision-making (such as patient evaluation, treatment selection, and assessment of treatment efficacy) and patient education. The scope of practice for respiratory therapist includes, but is not limited to:

acquiring and evaluating clinical data;

assessing the cardiopulmonary status of patients;

performing and assisting in the performance of prescribed diagnostic studies, such as drawing blood samples, performing blood gas analysis, pulmonary function testing, and applying adequate recording electrodes using polysomnographic techniques;

utilizing data to assess the appropriateness of prescribed respiratory care;

establishing therapeutic goals for patients with cardiopulmonary disease;

participating in the development and modification of respiratory care plans;

case management of patients with cardiopulmonary and related diseases;

initiating ordered respiratory care, evaluating and monitoring patients' responses to such care, modifying the prescribed respiratory therapy and cardiopulmonary procedures, and life support endeavors to achieve desired therapeutic objectives;

initiating and conducting prescribed pulmonary rehabilitation;

providing patient, family, and community education;

promoting cardiopulmonary wellness, disease prevention, and disease management;

participating in life support activities as required; and

promoting evidence-based medicine, research, and clinical practice guidelines.

Starting salaries are excellent with premiums paid for evening, night, and weekend shifts. Jobs are plentiful throughout the United States. Graduates are eligible to take the credentialing examinations administered by the National Board for Respiratory Care (NBRC) which lead to the Registered Respiratory Therapist (RRT) credential. Licensure requirements in the state of Montana also are met by successful completion of the NBRC Entry Level (CRT) examination.

The goal of the program is, "To prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) domains of respiratory care practice as performed by registered respiratory therapists (RRTs)" CoARC standard 3.01.

The program is 4 ½ semesters in length which includes the AA prerequisite courses and a summer session. The Respiratory Care Program at The University of Montana Missoula College, is accredited by the Commission on Accreditation for Respiratory Care ([www.coarc.com](http://www.coarc.com)), 1248 Harwood Road, Bedford, Texas 76021-4244. Graduates receive the degree of Associate of Applied Science in Respiratory Care.

Students accepted to the program are required to rotate to clinical sites outside the Missoula area on a periodic basis. These rotations take place during the spring semester, summer session and autumn semester of the second year. These sites may include, but are not limited to: Kalispell, Ronan, Polson, Butte, Billings, Bozeman, Hamilton, Helena, Coeur d'Alene and Lewiston, Idaho and Spokane, Washington. Transportation and housing are the student's responsibility.

Total Credits: 72          Cumulative GPA Required: 2.75

## Lower Division Core

Category Name: Pre- Respiratory Care Prerequisite Courses Rule: All courses required

Criterion: B

Course Listing	Number of Credits	20		
BIOH 201N	Human Anat Phys I (equiv 301)	4	F,S	
BIOH 202N	Human Anat and Phys I Lab	4	F,S	
BIOH 211N	Human Anat Phys II (equiv 311)	4	F,S	
BIOH 212N	Human Anat Phys II Lab	4	F,S	
M 115	Probability and Linear Math	3	F,S,SU	
PSYX 161S	Fund of Organizational Psych	3	F,S,SU	
SCN 175N	Integrated Physical Science I	3	F,S,SU	
WRIT 121	Intro to Technical Writing	3	F,S,SU	

Commentary: Must have completed or be in the process of completing when applying to the program

Commentary: Lower Division Core

Category Name: Respiratory Care Courses Rule: All courses required

Criterion: B Number of Credits 52

Course Listing			
AHRC 101	Communication Management	1	F
AHRC 129	Patient Care & Assessment	4	F
AHRC 130	Respiratory Care Lab IB	1	F
AHRC 131	Resp Care Fundamentals	5	F
AHRC 133	Resp Care Pharmacology	3	S
AHRC 150	Respiratory Care Lab I 1	F	
AHRC 231	Resp Crit Care 4	S	
AHRC 232	Resp Path & Disease	3	S
AHRC 235	Cardiopulm Anat & Phys	3	F
AHRC 243	Perinat & Pediat Res Care	3	F
AHRC 250	Respiratory Care Lab II	2	S
AHRC 252	Respiratory Care Review	2	F
AHRC 255	Clinical Experience I	5	S
AHRC 260	Resp Care Lab III	1	SU
AHRC 265	Clinical Experience II	5	SU
AHRC 270	Resp Care Lab IV	1	F
AHRC 275	Clinical Exp III	6	F

Degree Commentary: It is preferred that students have the prerequisite core completed by the end of the semester in which they intend to apply to the program (i.e. applying to the program in the spring and completing the core by the end of that spring semester.) However, those students who anticipate completing the core by the end of the summer semester are still encouraged to apply in the spring and may be granted provisional acceptance. Computer competency must be demonstrated by taking CAPP 120 or may be challenged by testing out.

## Missoula College Catalog Year: 2015-2016

Degree Type: Associate of Applied Science Level: Major Subject: **Surgical Technology**

Total Credits: 68 Cumulative GPA Required: 2.75

Students in the program are educated to be Surgical Technologists who work as 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 the University of Montana enter as Associate of Arts (AA) General Studies majors with an emphasis in the program of their choice. Students must select the specific prerequisite courses required for their chosen area of study after meeting with the program advisor. Students must apply to the program by October 1. Students may apply while enrolled in the A.A. prerequisite courses with acceptance to the program to be determined after the Autumn semester grades are finalized. BIOH 201N/202N, Anatomy and Physiology I, and lab, must be passed with a grade of B (3.0) and be a face-to-face course. The program-specific courses begin spring semester. Once accepted to the program, a student must complete each Surgical Technology-specific course (those courses with an AHST with a minimum grade of 'C' (80%) in order to continue in the ST program. Course grading scales may vary. If a student does not pass the required courses, he/she will not be able to continue in the program and will need to apply for readmission. If a student is re-admitted, he/she will be required to complete skills labs, AHST 115 and AHST 215, to ensure sterile technique skills are acceptable for patient care. A student may take any required course a maximum of two (2) times. A student may apply to the program a maximum of two (2) times.

A student will become a member of the Association of Surgical Technologists ([www.ast.org](http://www.ast.org)) during the first year in the program. A student anticipating program completion will write the National Certification Exam prior to graduation. A student who successfully completes the ST program is awarded an A.A.S. degree in Surgical Technology. The credential of Certified Surgical Technologist (CST) will be awarded to a student upon passing the National Certification Exam and graduation from the ST program. The credential of Certified is awarded by the National Board of Surgical Technology and Surgical Assisting (NBSTSA).

Students are required to rotate sites during the clinical portion of their education. During the last semester of the program, internships may be outside the Missoula area. Transportation and housing are the student's responsibility. Prior to entering a healthcare facility for clinical experiences, a student will be required to submit a background check. Many healthcare facilities have increasingly stringent requirements. A student could be refused entry into a clinical facility based on information disclosed in a background check. If this is a concern for you, please consult the Program Director. If a student is denied agency access based on the Background Check, there will be no placement at an alternate site, and the subsequent inability of the student to complete the clinical education will result in inability to continue in the Surgical Technology program.

The University of Montana Missoula College Surgical Technology Program also has Outreach campuses in Butte and Billings. The Butte site is the Montana Tech of The University of Montana Highlands College campus in collaboration with St James Healthcare. The Billings site is the Montana State University-Billings City College campus in collaboration with St Vincent Healthcare and Billings Clinic. Students at those sites take the equivalent prerequisite courses on their respective campuses. The Surgical Technology-specific courses begin spring semester. Students must apply to the ST program by October 1. Students may apply while enrolled in the prerequisite courses with acceptance to the program to be determined after fall grades are finalized. The classroom portion of the ST program curriculum is delivered in web-based format using the Moodle course delivery system from the Missoula campus. Lab and clinical courses are conducted on each Outreach campus. Outreach students are required to travel to Missoula to write the National Certification Exam and to participate in Commencement

exercises. Prospective students may contact the Health Professions' Office at 406-243-7868 for more information regarding the ST Program on the Butte and Billings campuses. Please refer to the specific course catalogs on the Butte and Billings campuses for prerequisite requirements.

The ST program is accredited by the Committee on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park St., Clearwater, FL 33756; phone 727-210-2350, www.caahep.org.

#### Lower Division Core

Category Name: Surgical Technology Prerequisite Courses

Rule: All courses required

Criterion: C-

Course Listing		Number of Credits	20	
AHMS 144	Medical Terminology	3		F,S,SU
BIOH 201N	Human Anat Phys I (equiv 301)	4		F,S
BIOH 202N	Human Anat and Phys I Lab	4		F,S
CAPP 120	Introduction to Computers	3		F,S,SU
M 105	Contemporary Mathematics	3		F,S,SU
PSYX 100S	Intro to Psychology	4		F,S,SU
WRIT 121	Intro to Technical Writing	3		F,S,SU

Commentary: WRIT 101 College Writing can be taken instead of WRIT 121 Intro to Technical Writing; BIOH 201N/202N must be passed with a minimum of a B

#### Lower Division Core

Category Name: Surgical Technology Courses Rule: All courses required

Criterion: C Number of Credits 48

#### Course Listing

AHMS 270E	Medical Ethics	3		F,S,SU
AHST 101	Introduction to Surgical Techn	3		S
AHST 115	Surgical Lab I	2		S
AHST 154	Surgical Pharmacology	3		S
AHST 200	Operating Room Techniques	5		F
AHST 201	Surgical Procedures I	4		F
AHST 215	Surgical Lab II	2		F
AHST 250	Surgical Clinical I	4		F
AHST 251	Surgical Clinical II	5		S
AHST 298	Surgical Internship	5		S
BIOH 211N	Human Anat Phys II (equiv 311)	4		F,S
BIOH 212N	Human Anat Phys II Lab	4		F,S
BIOM 250N	Microbiology for Hlth Sciences	3		S,SU

Degree Commentary: It is preferred that students have the prerequisite core completed by the end of the semester in which they intend to apply to the program (i.e. applying to the program in the fall semester and completing the core by the end of that fall semester.) CAPP 120 may be challenged by testing out. WRIT 101 or WRIT 121 only one is required. BIOM 250 and AHMS 270E may be taken prior to applying.

## Course Descriptions

#### AHMS 108 - Health Data Content & Struct

Credits: 2. Offered spring. In-depth study of origin, use, content and structure of health records; storage and retrieval systems; numbering and filing systems; documentation requirements; use and structure of health care data sets; and how these components relate to primary and secondary record systems. Additional topics include gathering, compilation and computing of healthcare related statistics, use of research and statistical methods for developing healthcare data into information for various requesters. Course Attributes: Technical Course

#### AHMS 144 - Medical Terminology

Credits: 3. Offered every term. Introduction to a medical word building system using Greek and Latin word roots, combining forms, suffixes, and prefixes. Course Attributes: Technical Course

#### AHMS 156 - Medical Billing Fundamentals

Credits: 3. Offered every term. Prereq. or coreq., AHMS 220 or consent of instr. An introduction to insurance claim processing for the major medical insurance programs. Students will be provided with a basic knowledge of CPT and ICD-9 procedural and diagnostic coding. Emphasis on completing universal insurance forms to maximize reimbursement as well as trouble shoot denied or underpaid claims. Course Attributes: Technical Course

#### AHMS 160 - Beginning Procedural Coding

Credits: 3. Offered autumn. Prereq., AHMS 156, AHMS 108 or consent of instr. Foundation for utilizing the CPT coding system to increase compatibility and comparability of medical data among users and providers.

#### AHMS 162 - Beginning Diagnosis Coding

Credits: 3. Offered autumn. Prereq., AHMS 156, AHMS 108 or consent of instr. Introductory foundation for utilizing the International Classification of Diseases coding for classification of morbidity and mortality information for statistical purposes and for indexing medical records by disease and operation.

#### AHMS 164 - AHMS 164 Beginning Diagnosis Coding: ICD-10

Credits: 3. This course covers basic and intermediate levels of theory and application of ICD-CM principles and guidelines for coding and sequencing diagnoses and procedures. Students perform basic and intermediate coding using real health records, case studies, and scenarios. Application will focus on the use of the electronic ICD-10-CM with an overview of encoder software. This coding class involves hands-on coding, and knowledge of basic use of applicable coding books or the electronic ICD-10-CM. Currently the students take this course through Great Falls

#### AHMS 191 - Special Topics

Credits: 1 TO 6. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

#### AHMS 192 - Independent Study

Credits: 1 TO 9. Course material appropriate to the needs and objectives of the individual student.

#### AHMS 212 - CPT Coding

Credits: 3. Offered spring. Prereq., AHMS 210 or consent of instr. Comprehensive application of the CPT coding system to assign codes for services, supplies and equipment for comparative analysis, research and reimbursement.

#### AHMS 213 - ICD-10 CODING

Credits: 3. Prereq., AHMS 164. Basic understanding of diagnostic and procedural coding principles should already be established. The course requires interpreting ICD-10-CM coding and reporting guidelines to sequence and assign appropriate diagnostic codes for both inpatient and various outpatient settings. Compliance issues associated with various IPPS reimbursement systems such as MS-DRGs, as well as APCs are covered. Encoder

software will complement the ICD-10-CM manual in the application of coding processes. Clinical information will be interpreted from brief case studies and progress to the coding of health record excerpts.

#### AHMS 216 - Pharmaceutical Products

Credits: 3. Offered autumn. Fundamental principles of pharmacology and the implications of medication use. Includes the law as it pertains to drug use, dosage forms, routes of administration as well as the pharmacologic actions and uses of drugs.

#### AHMS 220 - Medical Office Procedures

Credits: 4. Offered autumn. An introduction to the necessary skills and qualities required to function successfully in the medical arena. Emphasis on medico-legal and ethical responsibilities, records management and financial management of the medical practice, and interpersonal communications to include patient reception, telephone techniques and appointment scheduling. Course Attributes: Technical Course

#### AHMS 245 - Simulated Lab

Credits: 3. Prereq., consent of instr. This course will use computer applications and software in maintaining health information in medical records through practice utilizing HIT applications through the AHIMA Virtual Lab, to include the following applications: Master Patient Index, Electronic Health Record, Encoder, Abstracting, Chart Tracking, Release of Information.

#### AHMS 252 - Computerized Medical Billing

Credits: 2. Offered spring, Prereq., AHMS 156; prereq. or coreq. AHMS 220; or consent of instr. A medical package is used to enter and update patient data, enter charges, payments and adjustments, and generate management reports, insurance forms, and patient statements.

#### AHMS 255 - Medical Transcription I

Credits: 3. Offered every term. Prereq., CAPP 154; prereq. Or coreq., AHMS 144. An introduction to the transcription of authentic physician-dictated medical reports in a variety of medical specialties. Emphasis on the development of accuracy and speed in interpreting, transcribing and editing medical dictation for content and clarity.

#### AHMS 256 - Medical Transcription II

Credits: 3. Offered every term. Prereq., CAPP 154 and AHMS 255. Advanced medical transcription of realistic physician-dictated medical reports in a variety of medical specialties. Emphasis on production and increased speed in interpreting, transcribing and editing medical dictation for content and clarity. Course Attributes: Technical Course

#### AHMS 270E - Medical Ethics

Credits: 3. Offered every term. Ethical decision-making tools for addressing common ethical issues in the health professions. Course Attributes: Ethical & Human Values Course

#### AHMS 291 - Special Topics

Credits: 1 TO 6. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

#### AHMS 292 - Independent Study

Credits: 1 TO 6. (R-6) Offered intermittently. Course material appropriate to the needs and objectives of the individual student.

#### AHMS 298 - Medical Info Internship

Credits: 3. Offered every term. Prereq., last semester in program, minimum of "C" in AHMS/AHMA (MED) courses, and approval of program director. On-the-job training in positions related to each student's career goal in the medical information field. This experience increases students' skills, prepares them for initial employment and advancement on the job, and increases occupational awareness and professionalism. Students work a minimum of 180 hours at an approved site and attend a scheduled one-hour seminar. Course Attributes: Internships/Practicums

## Allied Health Respiratory Care

### AHRC 101 - Communication Management

Credits: 1. Offered autumn. Prereq., Acceptance into Respiratory Care Program. Study of respiratory care departmental organization and administration procedures, effective communication strategies, and legal and ethical issues for the Respiratory care professional.

### AHRC 115 - Blood Gas Analysis

Credits: 2. Offered autumn. Prereq., acceptance into the Respiratory Care program. Study of the indications, rational, methods, instrumentation, and analysis of Blood Gases. Emphasis will be placed on the physiology and clinical implications of acid-base abnormalities.

### AHRC 129 - Patient Care & Assessment

Credits: 4. Offered autumn. Prereq., BIOH 201N-202N. Introduction to nursing- related knowledge and skills with emphasis on application of microbiology to aseptic technique. Assessment of the respiratory system with cardiopulmonary diagnostic and laboratory tests interpretation. Observation and interpretation of overall patient condition is integrated throughout the course. Course Attributes: Technical Course

### AHRC 130 - Respiratory Care Lab IB

Credits: 1. Offered autumn. Prereq., acceptance into the Respiratory Care program. Basic clinical competencies taught in RES 129 are studied in a laboratory setting. Peer and instructor review of competencies included. Students focus on patient assessment skills and techniques/equipment.

### AHRC 131 - Resp Care Fundamentals

Credits: 5. Offered autumn. Prereq., acceptance into the Respiratory Care program. Orientation to basic respiratory care science including the application of principles of physics and chemistry. Emphasis on theory, operation and troubleshooting of equipment used at the entry level of practice. Microbiology in relation to equipment processing, pulmonary rehabilitation and home care included. Course Attributes: Technical Course

### AHRC 133 - Resp Care Pharmacology

Credits: 3. Offered winter. Prereq., acceptance into the Respiratory Care Program or consent of instr. Principles of basic chemistry introduced with an application to pharmacology as related to the pulmonary system. Cardiovascular and related pharmacology studied in preparation for ACLS and ventilator management. Course Attributes: Technical Course

### AHRC 150 - Respiratory Care Lab I

Credits: 1. Offered autumn. Prereq., acceptance into the Respiratory Care program. Basic clinical competencies taught in RES 131 are studied in a laboratory setting. Peer and instructor review of competencies included. Students earn their BLS certification. Course Attributes: Technical Course

### AHRC 231 - Resp Crit Care

Credits: 4. Offered spring. Prereq., RES 120, 129, 131, 133, 150. Continuation of RES 131. Physiology, indication, contraindications, and application of mechanical ventilation. Emphasis on patient assessment, monitoring, stabilization and weaning during assisted pressure breathing. Analysis of the various modes of ventilation, including optimizing the patient-ventilator interface in the adult through various advanced airway techniques. Course Attributes: Technical Course

### AHRC 232 - Resp Path & Disease



Credits: 3. Offered spring. Prereq., RES 120, 129, 131, 133, 150. Special lectures in medicine and disease as related to the cardiopulmonary system. Emphasis on recognition of signs and symptoms of disease and implications for treatment through the study of selected case studies. Course Attributes: Technical Course

AHRC 235 - Cardiopulm Anat & Phys

Credits: 3. Offered spring. Prereq., RES 120, 129, 131, 133, 150 or consent of instr. Principles of physiologic chemistry are introduced and applied to the macro and micro anatomy of the cardiopulmonary system with a focus on structure and function. Application made to pathology and assessment of patients receiving mechanical ventilation. Course Attributes: Technical Course

AHRC 242 - Respiratory Management

Credits: 1. Offered autumn. Prereq., RES 260T, 265T. Study of respiratory care departmental organization and administration procedures. Course Attributes: Technical Course

AHRC 243 - Perinat & Pediat Res Care

Credits: 3. Offered autumn. Prereq., RES 260, 265. Study of perinatal and pediatric respiratory care with emphasis on assessment, resuscitation and mechanical ventilation of the neonate and pediatric patient. The theory of Neonatal Resuscitations (NRP) will be presented. Neonatal and pediatric diseases will be studied. Course Attributes: Technical Course

AHRC 250 - Respiratory Care Lab II

Credits: 2. Offered spring. Prereq., RES 120, 129, 131, 133, 150. A continuation of RES 150 with emphasis on adult critical care. Clinical competencies taught in RES 231 and RES 235 are studied in a laboratory setting. Peer and instructor review of competencies included. Course Attributes: Technical Course

AHRC 252 - Respiratory Care Review

Credits: 2. Offered autumn. Prereq., RES 260, 265. A review of respiratory care in preparation for credentialing exams. Students must take an Entry Level Self-Assessment Exam, a Written Registry Self-Assessment Exam, and a Clinical Simulation Self-Assessment Exam. Course Attributes: Technical Course

AHRC 255 - Clinical Experience I

Credits: 5. Offered spring. Prereq., RES 120, 129, 131, 133, 150. Emphasis on the student directly performing basic clinical skills in a patient care setting to include hospitals, home care, and pulmonary function laboratories. Students also participate in physician rounds. Course Attributes: Technical Course

AHRC 260 - Resp Care Lab III

Credits: 1. Offered summer. Prereq., RES 231, 232, 235, 250, 255. Students study principles and theory of advanced life support. Peer and instructor review are included. Students will be Advanced Cardiac Life Support (ACLS) and Pediatric Advance Life Support (PALS) certified at the end of this class. Course Attributes: Technical Course

AHRC 265 - Clinical Experience II

Credits: 5. Offered summer. Prereq., RES 231, 232, 235, 250, 255. Continuation of clinical skills learned in RES 255. Introduction to adult critical care along with sleep and cardiac diagnostics. Students also participate in physician rounds. Course Attributes: Technical Course

AHRC 270 - Resp Care Lab IV

Credits: 1. Offered autumn. Prereq., RES 260, 265. Emphasis on neonatal and pediatric critical care. Clinical competencies introduced in RES 241 are studied. Peer and instructor review of competencies are included. Course Attributes: Technical Course

AHRC 275 - Clinical Exp III

Credits: 6. Offered autumn. Prereq., RES 260, 265, 270. Continuation of RES 265 with critical care of the adult. Neonatal and pediatric critical care experiences are emphasized. Students also participate in physician rounds.  
Course Attributes: Technical Course

#### AHRC 291 - Special Topics

Credits: 1 TO 8. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Course Attributes: Technical Course

#### AHRC 292 - Independent Study

Credits: 1 TO 6. Course material appropriate to the needs and objectives of the individual student.

### Surgical Technology

#### AHST 101 - Introduction to Surgical Techn

Credits: 3. Offered spring. Prereq., admission to the program. Provides an orientation to the scrub and circulatory roles of the surgical technologist in the preoperative, intraoperative and postoperative periods. Entry level skills and theories are emphasized. Course Attributes: Technical Course

#### AHST 115 - Surgical Lab I

Credits: 2. Offered spring. Prereq., admission to the program. Demonstration of sterile technique in the campus lab, various skills and their application in the operating room. Course Attributes: Technical Course

#### AHST 154 - Surgical Pharmacology

Credits: 3. Offered spring. Prereq., admission to the program, M 090. Basic overview of the medications that are commonly used before, during and after a surgical procedure.

#### AHST 191 - Special Topics

Credits: 1 TO 9. (R-9) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Course Attributes: Ethical & Human Values Course Technical Course

#### AHST 200 - Operating Room Techniques

Credits: 5. Offered autumn. Prereq., completion of all second semester courses. Focus on the scrub and circulator roles of the surgical technologist in the preoperative, intraoperative, and postoperative periods. More complex skills and theories; impact of new technologies in the 21 century st operating room. Course Attributes: Technical Course

#### AHST 201 - Surgical Procedures I

Credits: 4. Offered autumn. Prereq., completion of all second semester courses. A study of surgical procedures following the patient through the preoperative, intraoperative, and post-operative stages of specific surgical specialties. Course Attributes: Technical Course

#### AHST 202 - Surgical Procedures II

Credits: 5. A study of surgical procedures following the patient through the preoperative, intraoperative, and postoperative stage of CV/thoracic, orthopedic, neurological, and ophthalmic specialties. Course Attributes: Technical Course

#### AHST 215 - Surgical Lab II

Credits: 2. Offered spring. Demonstration of more complex skills in the campus lab, including assistant circulating, and their application in the operating room. Course Attributes: Technical Course

#### AHST 250 - Surgical Clinical I

Credits: 4. Offered autumn. Prereq., completion of all second semester courses and successful completion of AHST 215. Perioperative experience in the minor surgical procedure role through a supervised clinical hospital rotation.

### AHST 251 - Surgical Clinical II

Credits: 5. Offered spring. Prereq., completion of all third semester courses. Perioperative experience in the major surgical procedure role through a supervised clinical hospital rotation. Course Attributes: Technical Course

### AHST 298 - Surgical Internship

Credits: 5. Offered spring. Prereq., successful completion of AHST 202, 251T. Capstone experience in the perioperative role in preparation for initial employment, increasing occupational awareness and professionalism.

Students take call for emergency surgeries alongside experienced hospital staff. Course Attributes:

Internships/Practicums

## Radiologic Technology

### AHXR 100 - Intro to Diagnostic Imaging

Credits: 3. Offered fall. Introduction to the field of radiology and its mix of technical equipment, lab work, hospital environment, patient care and team work. Course Attributes: Technical Course

### AHXR 121 - Radiographic Imaging I

Credits: 4. Offered spring. Introduction to fundamental physics principles underlying radiology and diagnostic x-ray production. Topics include electromagnetic waves, electricity and magnetism, electrical energy, and power and circuits as they relate to radiography. Factors of image quality and exposure methods: density, contrast, recorded detail, distortion, technique charts, manual and automatic exposure control, and tube rating charts. Course

Attributes: Technical Course

### AHXR 140 - Radiographic Methods

Credits: 2. Offered fall. Preparation in the procedures associated with radiology in standard radiographic environments. Course Attributes: Technical Course

### AHXR 141 - Radiology Lab

Credits: 1. Co-Requisite AHXR 140 Radiological Methods. Students will practice all patient positioning skills necessary for competency as Radiologic Technologists.

### AHXR 192 - Independent Study

Credits: 1 TO 6. Course material appropriate to the needs and objectives of the individual student. Course

Attributes: Technical Course

### AHXR 195 - Radiographic Clinical: I

Credits: 1 TO 12. (R-20) Offered over two semesters throughout the Radiology Technology program, beginning Spring semester. Students will begin with an introduction to patient management and basic radiographic procedures. The final semester offers opportunities in advanced patient management skills and experience with highly skilled radiographic procedures. Each semester builds on the previous semester, always emphasizing the principles of ALARA. Course Attributes: Internships/Practicums

### AHXR 221 - Radiographic Imaging II

Credits: 3. Offered autumn. Offers students more technical and detailed information on the use of image receptor systems, processing principles, advanced digital imaging systems and imaging modalities used in radiology.

### AHXR 225 - Radiobiology/Radiation Protctn

Credits: 2. Offered autumn. Principles of radiation protection and radio biology. Topics include the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel, and radiation monitoring devices. Course Attributes: Technical Course

### AHXR 240 - Radiological Methods II

Credits: 3. Offered spring. Knowledge and skills necessary to perform standard and specialty radiographic procedures. Emphasis on radiographic specialty procedures, pathology, and advanced imaging.

AHXR 270 - Radiographic Registry Review

Credits: 2. Offered spring. An overview of imaging concepts as a review for the national certification test. Topics include a systematic approach for image evaluation, patient care, radiation protection and the physics of radiographic imaging. Course Attributes: Technical Course

AHXR 291 - Special Topics

Credits: 1 TO 6. (R-6) Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

AHXR 295 - Radiographic Clinical: I

Credits: 1 TO 9. (R-20) Offered over two semesters throughout the Radiology Technology program, beginning Spring semester. Students will begin with an introduction to patient management and basic radiographic procedures. The final semester offers opportunities in advanced patient management skills and experience with highly skilled radiographic procedures. Each semester builds on the previous semester, always emphasizing the principles of ALARA. Course Attributes: Internships/Practicums

AHXR 298 - Internship

Credits: 1. Extended classroom experience which provides practical application of classroom learning during placements off campus. Course Attributes: Internships/Practicums

## Nursing

NRSG 100 - Introduction to Nursing

Credits: 1. Offered each semester. This online course is a prerequisite to the Practical Nursing program. Student will be presented with an introductory level of the core concepts of nursing practice and other issues such as the legal concerns and ethical/cultural issues that face professional nurses on a consistent basis. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

NRSG 106 - Nursing Assistant

Credits: 4. The Nursing Assistant course will prepare students for careers in health care under the supervision of the licensed nurse. Students will learn the basic entry-level nursing skills to work in health care setting as a Certified Nursing Assistant. Course includes providing or assisting in client care, bathing, dressing, grooming, toileting, ambulation, transferring, feeding, using equipment, documenting and reporting the general well-being of the client.

NRSG 110 - Dosage Calculation Hlth Prof

Credits: 2. This course is intended to provide the student the theory and psychomotor skills to correctly and safely calculate medications for clients in diverse health care settings. It will prepare students for the calculations used in health care professions. Students will review various systems of weights and measures (metric, apothecary, and household), conversions between these systems, ratio/proportions, dosage calculations, percentage preparations, reducing and enlarging formulas, dilution, concentrations, and intravenous flow rates.

NRSG 130 - Fundamentals of Nursing

Credits: 7. Offered autumn and spring. Prereq: acceptance into the Practical Nursing Program. 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. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

### NRSG 131 - Fundamentals of Nursing Lab

Credits: 3. Offered autumn and spring. Prereq., SCN 201N-202N, M 115, WRT 101, SCN 150N, PSYX 100S, CHMY 121N with lab, and acceptance into the practical nursing program. Introduces the student to basic principles and psychomotor skills to provide a framework for developing initial competencies in patient care. Campus lab experience is used initially. Off campus clinical experience in a long term care setting completes the hands on portion. Successful students are qualified to apply for certification as certified nurse assistants.

### NRSG 135 - Nursing Pharmacology

Credits: 3. Offered autumn and spring. Prereq: acceptance into the Practical Nursing Program. Students learn a structured systematic approach to the study of drug therapy through caring, communication, professionalism, critical thinking, and clinical judgment. 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. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

### NRSG 138 - Gerontology for Nursing

Credits: 2. Offered autumn and spring. Prereq: acceptance into the Practical Nursing Program. Introduces the student to the skills and knowledge needed to provide nursing care to aging clients. Topics explored include current trends (including legal and ethical issues) in gerontological nursing, developmental stages and transitions associated with aging, expected age-related physiological changes, and assessment findings, recognition and management of acute and chronic illness that commonly occur in the older adult population, promotion of health for the older adult client, end-of-life issues and care. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

### NRSG 140 - Core Concepts of Adult Nursing

Credits: 7. Offered spring and autumn. Prereq: successful completion of semester 1 of the PN nursing program. Prepares the student to care for clients experiencing common, well-defined health alterations in settings where stable clients are anticipated. Students are introduced to standardized nursing procedures and customary nursing and collaborative therapeutic modalities. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

### NRSG 142 - Cre Cncpts of Mtrnl Chld Nrsng

Credits: 3. Offered autumn and spring. Prereq: successful completion of semester 1 of the PN nursing program. Information about fetal development and prenatal and postnatal care of the mother and newborn emphasizing caring, communication, professionalism, and critical thinking. 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. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

### NRSG 143 - Cre Cncpts Mtrnl Chd Nrsng Cln

Credits: 3. Offered intermittently. Prereq: all first semester practical nursing courses and consent of instr. Capstone course that allows the student to work collaboratively with an identified LPN preceptor, performing the role expectations for care in that workplace setting.

### NRSG 144 - Cre Cncpts of Mentl Hlth Nrsng

Credits: 2. Offered autumn and spring. Prereq: successful completion of semester 1 of the PN nursing program. Exploration of physiological, psychological, sociocultural, spiritual, and environmental factors associated with mental health/illness affecting individuals and families. Focus will be placed on basic concepts of psychiatric nursing, therapeutic modalities, as well as psychiatric disorders including psychopharmacological management. Course Attributes: Practical Nursing Prog Rqrmnt Registered Nursing Prog Rqrmnt

### NRSG 147 - Practical Nursing NCLEX Review

Credits: 2. Offered autumn and spring. Prereq: Successful completion of all courses in the first semester of the practical nursing program. Preparation for the national test for LPN licensure.

#### NRSG 148 - Leadership Issues

Credits: 2. Offered autumn and spring. Prereq: successful completion of semester 1 of the PN nursing program. Capstone course that provides the Practical Nursing student information regarding the current status of vocational nursing. There is a forty-five hour clinical/precepted component to provide the student opportunity to apply theoretical knowledge in the long-term care setting. Course Attributes: Practical Nursing Prog Rqrmnt Registered

Nursing Prog Rqrmnt

#### NRSG 191 - Special Topics

Credits: 1 TO 6. (R-6) Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics. Course Attributes: Technical Course

#### NRSG 192 - Independent Study

Credits: 1 TO 6. (R-6) Offered intermittently. Course material appropriate to the needs and objectives of the individual student. Course Attributes: Technical Course

#### NRSG 250 - LPN to RN Transition

Credits: 3. Offered autumn and spring. Prereq., admission to the registered nursing program and current unencumbered LPN license. Focus on the role transition from LPN to RN in relation to the concepts and principles of holistic nursing care. Focus is on the continuing development of roles and responsibilities of the RN as defined by the scope of practice standards, nursing theory and conceptual models.

#### NRSG 252 - Cmplx Care Maternal/Child Clnt

Credits: 3. Offered spring and autumn semester. Prepares the student to provide care to maternal/child clients experiencing acutely changing conditions in settings where outcomes are 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.

#### NRSG 254 - Complex Care/Mntl Hlth Client

Credits: 2. Offered spring and autumn. Explores physiological, psychological, sociocultural, spiritual and environmental factors associated with mental health/illness. Focus is placed on psychotherapeutic management in the continuum of care, milieu management and special populations with emphasis on individuals, families and communities.

#### NRSG 256 - Pathophysiology

Credits: 3. Offered spring and autumn. Prereq: successful acceptance into the ASRN Nursing Program. An introduction to 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.

#### NRSG 262 - Complex Care Needs - Adult Cli

Credits: 4. Offered spring and autumn. Prepares the student to provide nursing care to adult client's experience acutely changing conditions in setting 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, shock, sepsis/SARS, complex burns, etc.

#### NRSG 265 - Advanced Clinical Skills

Credits: 1. Offered spring and autumn. Prepares students to carry out complex nursing interventions. Topics covered include central venous therapy, parenteral nutrition hemodynamic monitoring, advanced airway/ventilator support, intracranial pressure monitoring, IV medication administration, high risk IV infusions, blood/blood product administration, conscious sedation, advanced wound care, etc.

#### NRSG 266 - Managed Client Care

Credits: 4. Offered spring and autumn. Covers topics related to integrated nursing care of individual clients and groups as well as basic principles related to supervision of nursing practice and management of resources.

#### NRSG 291 - Special Topics

Credits: 1 TO 6. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

#### NRSG 292 - Independent Study

Credits: 1 TO 6. (R-6) Course material appropriate to the needs and objectives of the individual student. Course Attributes: Technical Course

### Pharmacy Technology

#### PHA 196 - Independent Study

Credits: 1 TO 6. (R-6) Offered intermittently.

### Pharmacy

#### PHAR 100 - Intro Pharm Practice for Techs

Credits: 3. Offered autumn. Prereq., admission into Pharmacy Technology program. This course offers information regarding careers in pharmacy. It includes the history of pharmacy practice and defines roles of personnel relating to pharmaceutical services. Ethical standards of the occupation and federal and state laws regulating pharmacy practice with emphasis on Montana State Pharmacy Law regulating pharmacy technicians are studied. Day-to-day operations including preparation, maintenance, and storage of pharmaceuticals and records, and basic concepts of computer operations and latest technologies are reviewed. Skills will be developed with are necessary for the pharmacy technician to communicate effectively in the following ways: 1) as a representative of the profession of pharmacy, 2) as an intermediary between the pharmacist and patient, and 3) as an intermediary between the pharmacist and other health care professionals.

#### PHAR 101 - Pharmacy Calculations

Credits: 3. Offered autumn. Calculations used in pharmacy practice; includes various systems of weights and measures, dosage determinations, percentage preparations, reducing and enlarging formulas, dilution, and concentration.

#### PHAR 102 - Pharmacology for Technicians

Credits: 6. Offered autumn. Prereq., admission into Pharmacy Technology program. Study of the properties, reactions, and therapeutic value of the primary agents in the major drug classes.

#### PHAR 104 - Pharmacy Dispensing Lab

Credits: 4. Offered autumn. Prereq., admission into Pharmacy Technology Program. Develop dispensing and distributive skills with hands-on lab, and lecture format.

#### PHAR 120 - Medication Safety

Credits: 3. Offered spring online only. Prereq., PHAR 100, 101, 102, 104 and second semester standing in Pharmacy Technology Program. This course will introduce students to national safety initiatives developed by the Institute of Medicine, The Joint Commission, The Institute of Safe Medicine Practices and others. This awareness will help students become part of the solution in promoting safe medication practices.

#### PHAR 192 - Independent Study

Credits: 1 TO 6. (R-6) Offered intermittently. Course material appropriate to the needs and objectives of the individual student.

#### PHAR 198 - Internship: Pharmacy

Credits: 4. Offered spring. Prereq., PHAR 100, 101, 102, 104 and second semester standing in Pharmacy Technology Program. Training and experience in either hospital, compounding, home infusion, nursing home or other alternative pharmacy settings under supervision of a pharmacist. Emphasizes special skills unique to that pharmacy setting. Course Attributes: Internships/Practicums

# Industrial Technology Department

## Rodney Front, Interim Chair

The mission of the Department of Industrial Technology is to provide the regional workforce with credentialed, skilled, and competent entry-level technicians and to be responsive to emerging workforce needs. The Department encourages the development of teamwork and interpersonal communication skills required in the workplace. It also stresses the importance of a strong work ethic and the value of continuing education and lifelong learning. The instruction for the Department of Industrial Technology Certificate of Applied Science and Associate of Applied Science (A.A.S.) degree programs are primarily delivered at the West Campus at 3639 South Avenue West. Some instruction is delivered at the East Campus or Mountain Campus.

All students admitted to Industrial Technology programs are required to submit writing and math placement scores immediately upon admission to the Missoula College or make arrangements to take these assessments as soon as possible. Thereafter, students needing to take a math and/or writing assessment should contact the Academic Support Center at 406-243-7826 to schedule an appointment to take the placement assessments as soon as possible. Students who live outside of the Western Montana area may take a math and writing assessment at their local community college. Contact the Academic Support Center at 406-243-7826.

## Missoula College Catalog Year: 2015-2016

Degree Type: Certificate of Applied Science Level: Certificate Subject: **Building Maintenance**

Total Credits: 36 Cumulative GPA Required: 2.0

The mission of the Building Maintenance Program is to provide the regional workforce with credentialed, skilled and competent building maintenance professionals, and to be responsive to emerging workforce needs.

Students in the Building Maintenance program are trained as building maintenance professionals capable of maintaining commercial buildings. Subject matter in the program includes plumbing, electricity, carpentry, and heating/air conditioning. Students learn physical and electrical theories that enable them to understand building systems. In addition, they study building cleaning, landscape maintenance, pool care, computers, and boiler operation. Water treatment is discussed in both the pool and boiler courses. The program introduces current



environmental and energy problems that can be reduced through efficient building operation. It also encourages resource development, teamwork and interpersonal skills required on the job.

Students are awarded a Certificate of Applied Science upon successfully completing the program. Contact John Walker, Program Director, at 406-243-7645 or john.walker@umontana.edu for more information.

Lower Division Core Category Name: BME

Rule: Required for Building Maintenance

Criterion: C- Number of Credits 36

Course Listing

BME 122T	Electricity	5	S	
BME 123T	Carpentry	6	F	
BME 127T	Low Pressure Boilers	3	S	
BME 128T	Maintenance	6	F	
BME 130T	Heating & Air Conditioning	6	S	
CAPP 120	Introduction to Computers	3	F	
COMX 102	Interprsnl Skills in Workplace	1	S	
M 111	Technical Mathematics3		F	
WRIT 121	Intro to Technical Writing	3	S	

### **Missoula College Catalog Year: 2015-2016**

Degree Type: Associate of Applied Science Level: Major Subject: **Carpentry**

Total Credits: 69 Cumulative GPA Required: 2.0

The mission of the Carpentry Program is to provide the regional workforce with credentialed, skilled and competent carpenters and to be responsive to emerging workforce needs.

The Carpentry program provides students the opportunity to learn carpentry skills in a competency-based learning environment. Students work hand-in-hand with professional carpenters both on campus and at construction sites. Students use hand and power tools with blueprints to build foundation forms, frame buildings, side and roof buildings, and apply roofing materials. They install windows, doors, stairs, attic vents, insulation, vapor barriers, and drywall. Students learn methods for installing trim, locksets, suspended ceilings, countertops, cabinets, and flooring. They also learn to operate construction equipment.

In addition to general education courses, students in the program learn the various steps of becoming a carpenter, including safe practices. Students construct real-world projects and can earn a Certificate of Applied Science or an Associate of Applied Science degree from the University of Montana. The program often has a waiting list.

Prospective students are encouraged to apply one year prior to anticipated school attendance. Contact Dennis Daneke, Program Director, at 406-243-7692 or Dennis.Daneke@umontana.edu for more information.

Lower Division Core Category Name: Carpentry

Rule: Associate in Applied Sciences

Criterion: C-

Course Listing Number of Credits 33

BMGT 242	Front Line Supervision	3	S	
CAPP 120	Introduction to Computers	3	F	
CSTN 120	Carpentry Bscs & Rough-In Frmg	5	F	
CSTN 122	Beginning Carpentry Lab	5	F	
CSTN 142	Int & Ext Finish Carpentry	4	S	

CSTN 143	Intermediate Carpentry Lab	4	S	
CSTN 171	Site Prep, Found, Concrete Ins	3	F	
M 111	Technical Mathematics3	S		
WRIT 101	College Writing I	3	S	

Commentary: Upper Division Core

Category Name: Carpentry

Rule: Associate in Applied Sciences

Criterion: C- Number of Credits 36

Course Listing

CSTN 205	Advanced Carpentry Lecture	6	S	
CSTN 206	Advanced Carpentry Lab	2	S	
CSTN 261	Building Management	4	F	
CSTN 278	Applied Building Practices Lab	6	S	
CSTN 279	Commercial Construction	4	F	
CSTN 282	Green Bldg Concept & Design I	4	F	
CSTN 283	Green Bldg Concept & Design II	3	S	
CSTN 299	Capstone: Carpentry	2	F	
DDSN 114	Introduction to CAD	3	F	
WLDG 103	Welding Fund Constructn Trades	2	S	

## Missoula College Catalog Year: 2015-2016

Degree Type: Certificate of Applied Science Level: Certificate Subject: **Carpentry**

Total Credits: 33 Cumulative GPA Required: 2.0

The mission of the Carpentry Program is to provide the regional workforce with credentialed, skilled and competent carpenters and to be responsive to emerging workforce needs.

The Carpentry program provides students the opportunity to learn carpentry skills in a competency-based learning environment. Students work hand-in-hand with professional carpenters both on campus and at construction sites. Students use hand and power tools with blueprints to build foundation forms, frame buildings, side and roof buildings, and apply roofing materials. They install windows, doors, stairs, attic vents, insulation, vapor barriers, and drywall. Students learn methods for installing trim, locksets, suspended ceilings, countertops, cabinets, and flooring. They also learn to operate construction equipment.

In addition to general education courses, students in the program learn the various steps of becoming a carpenter, including safe practices. Students construct real-world projects and can earn a Certificate of Applied Science or an Associate of Applied Science degree. The program often has a waiting list. Prospective students are encouraged to apply one year prior to anticipated school attendance. Contact Dennis Daneke, Program Director, at 406-243-7692 or [Dennis.Daneke@umontana.edu](mailto:Dennis.Daneke@umontana.edu) for more information.

Lower Division Core

Category Name: Certificate of Applied Science Rule: Carpentry Certificate requirements

Criterion: C- Number of Credits 33

Course Listing

BMGT 242	Front Line Supervision	3	S	
CAPP 120	Introduction to Computers	3	F	
CSTN 120	Carpentry Bscs & Rough-In Frmg	5	F	

CSTN 122	Beginning Carpentry Lab	5	F
CSTN 142	Int & Ext Finish Carpentry	4	S
CSTN 143	Intermediate Carpentry Lab	4	S
CSTN 171	Site Prep, Found, Concrete Ins	3	F
M 111	Technical Mathematics3	S	
WRIT 101	College Writing I	3	S

## Missoula College Catalog Year: 2015-2016

Degree Type: Associate of Applied Science Level: Major Subject: **Diesel Technology**

Total Credits: 66 Cumulative GPA Required: 2.0

The mission of the Diesel Technology Program is to provide the regional workforce with credentialed, skilled and competent diesel technicians and to be responsive to emerging workforce needs.

Students in the Diesel Technology program train to be diesel mechanics that repair diesel-powered trucks and heavy equipment. Students study hydraulics, electrical systems, fuel systems, power trains, air conditioning, brakes and suspension, engine theory, and engine diagnosis, beginning with basic principles and proceeding to an advanced level of system technology. Along with these core courses, students take classes in welding, machining, computers, communications, and math. Credit for independent study is available to those desiring additional instruction in diesel mechanics. Students who complete the program successfully are awarded the Associate of Applied Science degree.

The program often has a waiting list. Prospective students are encouraged to apply one year prior to anticipated school attendance. Contact the Jim Headlee, Program Director, at 406-243-7648 or Jim.Headlee@umontana.edu for more information.

### Lower Division Core

Category Name: Diesel Equipment Technology Rule: Required courses for Diesel Mechanics

Criterion: C- Number of Credits 33

#### Course Listing

CAPP 120	Introduction to Computers	3	S
COMX 102	Interprsnl Skills in Workplace	1	F
DST 120	Electrical Systems	8	S
DST 128	Engine Service I	4	F
DST 135	Power Trains (UMCOT)	7	F
M 111	Technical Mathematics3	S	
MCH 115	Related Metals Processes III	3	S
WLDG 101	Welding Fund Auto Tech/Diesel	2	F

### Commentary: Upper Division Core

Category Name: Diesel Equipment Technology

Rule: Required to achieve Certification in Diesel Mechanics

Criterion: C- Number of Credits 33

#### Course Listing

DST 221	Brakes Suspns and Undercarr	6	F
DST 225	Hydraulics (UMCOT)	6	F
DST 229	Engine Service II	7	S
DST 230	Air Conditioning	3	S

DST 231	Fuel Systems	5	S	
DST 235	Advanced Power Trains	2	S	
WLDG 139	Welding Maint & Repair -Diesel	1	F	
WRIT 121	Intro to Technical Writing	3	F	

Commentary: Other Courses

Category Name: Commercial Driver's Training

Rule: TRK 106T Commercial Driver's License Training non-credit is a recommended elective

Criterion: C- Number of Credits 0

Course Listing

TRK 106T	CDL Training	1	F,S	
----------	--------------	---	-----	--

Commentary: Commercial Driver's License (DCL) Elective non-credit

### Missoula College Catalog Year: 2015-2016

Degree Type: Certificate of Applied Science Level: Certificate Subject: **Heavy Equipment Operation**

Total Credits: 36 Cumulative GPA Required: 2.0

Lower Division Core

Category Name: Heavy Equipment Operation

Rule: Required for Certification in Heavy Equipment Operation

Criterion: C- Number of Credits 36

Course Listing

CAPP 120	Introduction to Computers	3	F	
COMX 102	Interprsnl Skills in Workplace	1	S	
HEO 146T	Safety & Basic Controls	5	F	
HEO 148T	Operational Skill Bldg	5	F	
HEO 150T	Job Simulation	6	S	
HEO 151T	Service & Maintenance2		F	
HEO 153T	Const Theory & Spec Equip	5	S	
M 111	Technical Mathematics3		F	
MCH 112	Related Metals Processes I	1	S	
SRVY 108	Construction Surveying	2	F	
WRIT 121	Intro to Technical Writing	3	S	

Commentary: Other Courses

Category Name: Commercial Driver's Licence

Rule: TRK 106T Commerical Driver's License (CDL) Training is an elective (not required)

Criterion: C- Number of Credits 0

Course Listing

TRK 106T	CDL Training	1	F,S	
----------	--------------	---	-----	--

Commentary: TRK 106T Commercial Driver's License (CDL) is a recommended elective as a non-credit course. If chosen, it is suggested in the Fall semester.

Commentary: Degree Commentary

TRK 106T Commercial Driver's License (CDL) Training non-credit is a recommended elective.

### Missoula College Catalog Year: 2015-2016

Degree Type: Certificate of Applied Science Level: Certificate Subject: **Recreational Power Equipment**

Total Credits: 39 Cumulative GPA Required: 2.0

The mission of the Recreational Power Equipment Program is to provide the regional workforce with credentialed, skilled, and competent power equipment technicians and to be responsive to emerging workforce needs.

The Recreational Power Equipment Program prepares students to repair and maintain a wide variety of two-cycle and four-cycle engines and related equipment. Students work on motorcycles, ATVs, snowmobiles, outboard motors, and personal watercraft. Units of instruction include mechanical, fuel, and electrical systems. The program also encourages the development of teamwork and interpersonal skills required on the job.

For more detailed information including program costs, tool requirements, student class schedules, and course syllabi, visit: <http://www.cte.umt.edu/industrialtech/rpe/>

Contact Mike Steffenson, Program Director, at 406-243-7693 or [Michael.Steffenson@umontana.edu](mailto:Michael.Steffenson@umontana.edu) for more information.

Lower Division Core

Category Name: Recreational Power Equipment

Rule: Required for Certification in Recreational Power Equipment

Criterion: C- Number of Credits 39

Course Listing

CAPP 120	Introduction to Computers	3	F
COMX 102	Interprsnl Skills in Workplace	1	S
M 111	Technical Mathematics3		S
MCH 115	Related Metals Processes III	3	F
SET 160	Basic Electricity for RPE	3	F
SET 176	Motorcy/ATV Eng, Sus, Chas	3	F
SET 177	Motorcy/ATV Elect & Fuel	4	F
SET 178	Marine Elec & Fuel Syst	5	S
SET 179	Marine Powerhds/Low Units	6	S
SET 180	Snowmobile Main & Rep I	2	F
SET 181	Snowmobile Main & Rep II	2	S
SET 182	Comp Apps Motorsports	1	S
WRIT 121	Intro to Technical Writing	3	S

Commentary: Please note: SET 160 is first half only, SET 176 is first half only, SET 177 second half first 5 weeks and SET 180 is second half last 5 weeks.

### **Missoula College Catalog Year: 2015-2016**

Degree Type: Associate of Applied Science Level: Major Subject: **Welding Technology**

Total Credits: 67 Cumulative GPA Required: 2.0

The mission of the Welding Technology Program is to provide the regional workforce with credentialed, skilled, and competent welders and to be responsive to emerging workforce needs. The Welding Technology Program prepares students to operate and troubleshoot a variety of welding power sources and related equipment. The program prepares students to solve problems using computational skills and other problem-solving techniques essential to welding and steel fabrication. It also encourages the development of the teamwork and interpersonal skills required on the job.

Welding students develop skills in six different welding processes: oxyacetylene (OAW), shielded metal arc (SMAW), gas metal arc (GMAW), flux core arc, (FCAW), submerged arc (SAW), and gas tungsten arc welding (GTAW). Students also develop additional skills, such as blueprint reading and layout, metallurgy, and gain an understanding of how heating and cooling cycles affect the properties of metals. Students also study the design of jigs and fixtures and how to incorporate these into an automated welding system.

Courses such as Computer Aided Design and Drafting (CADD), OSHA Rules and Compliance, and Related Metals Processes provide for a solid background in the metals industry. Fabrication basics and Metal Design and Construction utilize all of the gained knowledge in an instructor-approved/student-designed project.

Welding technology students have the opportunity to become certified to American Welding Society Standards and receive documentation stating qualifications.

Students are awarded the Certificate of Applied Science upon successful completion of the first year of the Welding Technology program. Students are awarded the Associate of Applied Science degree upon successfully completing the two-year program.

The program often has a waiting list. Prospective students are encouraged to apply one year prior to their anticipated school attendance. For more detailed information including program costs, tool lists, class schedules, and course syllabi, visit our web site at: <http://www.mc.umt.edu/industrialtech/welding/>. Contact Mark Raymond, Program Director, at 406-243-7647 or [Mark.Raymond@umontana.edu](mailto:Mark.Raymond@umontana.edu)

#### Lower Division Core

Category Name: First Year Welding Program

Rule: All Courses Required for Certification in Welding

Criterion: C- Number of Credits 37

#### Course Listing

CAPP 120	Introduction to Computers	3	F	
COMX 102	Interprsnl Skills in Workplace	1	S	
M 111	Technical Mathematics3		F	
MCH 114	Related Metals Processes II	3	F	
WLDG 117	Blueprint Rdnng & Weldng Symbls	3		S
WLDG 145	Fabrication Basics	4	S	
WLDG 150	Welding Layout Techniques	2	F	
WLDG 180	Shielded Metal Arc Welding	4	F	
WLDG 184	OSHA Rules & Regulations Wldng	1		S
WLDG 187	Flux Core Arc Welding	4	S	
WLDG 205	Applied Metallurgy	4	F	
WRIT 121	Intro to Technical Writing	3		S

#### Commentary: Upper Division Core

Category Name: Second Year Welding Program

Rule: All Courses Required for Certification in Welding

Criterion: C- Number of Credits 30

#### Course Listing

BMGT 242	Front Line Supervision	3	S	
DDSN 114	Introduction to CAD	3	F	
MCH 214	Advanced Related Metals Proc	3		F
WLDG 210	Pipe Welding - Integrated Lab	4	F	

WLDG 215	GTAW (integrated lab) 4	F		
WLDG 245	Metal Fab Design/Construction	4	S	
WLDG 275	Gas Metal Arc Welding4	S		
WLDG 280	Weld Testing Certification	2	S	
WLDG 285	Automation in Welding 3	S		

## Missoula College Catalog Year: 2015-2016

Degree Type: Certificate of Applied Science Level: Certificate Subject: **Welding Technology**

Total Credits: 37 Cumulative GPA Required: 2.0

The mission of the Welding Technology Program is to provide the regional workforce with credentialed, skilled, and competent welders and to be responsive to emerging workforce needs. The Welding Technology Program prepares students to operate and troubleshoot a variety of welding power sources and related equipment. The program prepares students to solve problems found within the welding industry using computational skills and other problem-solving techniques essential to welding and steel fabrication. It also encourages the development of teamwork and interpersonal skills required on the job.

Welding students develop skills in six different welding processes—oxyacetylene (OAW), shielded metal arc (SMAW), gas metal arc (GMAW), flux core arc, (FCAW), submerged arc (SAW), and gas tungsten arc welding (GTAW). Beyond the development of welding skills and understanding of the process, they also study other skills, such as blueprint reading and layout, metallurgy, and gain an understanding of how heating and cooling cycles affect the properties of metals. Students also study the design of jigs and fixtures and how to incorporate these into an automated welding system.

The Welding Technology Program also has courses that provide for a solid background in the metals industry. Such courses are Computer Aided Design and Drafting (CADD), OSHA Rules and Compliance, and Related Metals Processes. Fabrication basics and Metal Design and Construction utilize all of the gained knowledge with an instructor approved/student designed project.

Welding technology students have the opportunity to become certified to American Welding Society Standards and receive documentation stating qualifications.

Students are awarded the Certificate of Applied Science upon successful completion of the first year of the Welding Technology program. Students are awarded the Associate of Applied Science degree upon successfully completing the two-year program.

The program often has a waiting list. Prospective students are encouraged to apply one year prior to their anticipated school attendance. For more detailed information including program costs, tool lists, class schedules, and course syllabi, visit our web site at:<http://www.mc.umt.edu/industrialtech/welding/>. Contact Mark Raymond, Program Director, at 406-243-7647 or [Mark.Raymond@umontana.edu](mailto:Mark.Raymond@umontana.edu) Lower Division Core Category Name:

Welding

Rule: All courses are required

Criterion: C- Number of Credits 37

Course Listing

CAPP 120	Introduction to Computers	3	F	
COMX 115S	Intro to Interpersonal Communc	3	S	
M 111	Technical Mathematics3	F		
MCH 114	Related Metals Processes II	3	F	
WLDG 117	Blueprint Rdnng & Weldng Symbls	3	S	

WLDG 145	Fabrication Basics	4	S	
WLDG 150	Welding Layout Techniques	2	F	
WLDG 180	Shielded Metal Arc Welding	4	F	
WLDG 184	OSHA Rules & Regulations Wldng	1	S	
WLDG 187	Flux Core Arc Welding	4	S	
WLDG 205	Applied Metallurgy	4	F	
WRIT 121	Intro to Technical Writing	3	S	

## Course Descriptions

---

### Buildg Maintenance Engineering

#### BME 122 - Electricity

Credits: 5. Offered spring. The electrical laws and principles pertaining to DC and AC circuits. Includes current, voltage, resistance, power, load, panels, feeders, lamps, motors, and fuses. Introduction to wiring methods and materials in conformance with the National Electric Code (NEC). Includes installation and replacement of light fixtures, heaters, GFCI's, switches, receptacles, and electrical thermostats.

#### BME 123 - Carpentry

Credits: 6. Offered autumn. Application of carpentry principles and techniques. Construction and maintenance of foundation, floor, wall, ceiling, and roof systems. Includes safe use of tools and materials common to the industry. Additional topics are painting, masonry, insulation, and ventilation of commercial buildings.

#### BME 127 - Low Pressure Boilers

Credits: 3. Offered spring. The fundamentals of low pressure boiler operation and maintenance. Covers steam, feed-water, fuel, and draft systems. Includes boiler water treatment and hot water heating systems. Introduces safe mechanical operating procedures used in the industry.

#### BME 128 - Maintenance

Credits: 6. Offered autumn. Maintenance principles pertaining to lawns, groundcovers, trees, swimming pools, plumbing, and building cleaning. Emphasis is placed on safe application of chemicals; maintenance frequency; and the identification and safe uses of associated tools and materials.

#### BME 130 - Heating & Air Conditioning

Credits: 6. Offered spring. The fundamentals of heating, ventilating, and air conditioning. Covers heating and refrigeration cycles, gas furnaces, refrigerants, system evacuation and charging, and components used in associated systems. Introduces the basic mechanical service procedures used in the industry.

#### BME 191 - Special Topics

Credits: 1 TO 6. (R-6) Offered autumn and spring. Prereq., consent of instr. Experimental offerings of visiting professors, experimental offerings of new courses, or one time offerings of current topics.

#### BME 192 - Independent Study

Credits: 1 TO 6. Course material appropriate to the needs and objectives of the individual student.

### Construction Trades

#### CSTN 120 - Carpentry Bscs & Rough-In Frmg

Credits: 5. Introduction to the carpentry trade, including history, career opportunities, and requirements. The course covers building materials, fasteners, adhesives, hand tools, and power tools. OSHA rules and regulations for a safe



working place and procedures for compliance are covered. This course includes a two-credit imbedded lab.

Students will also learn how to install windows and an exterior door. Course Attributes: Technical Course

#### CSTN 122 - Beginning Carpentry Lab

Credits: 5. Lab to support CSTN 102 and 120.

#### CSTN 142 - Int & Ext Finish Carpentry

Credits: 4. Prereq: CSTN 120 and 122. Study of various types of siding, gutter systems, roof venting requirements, and framing with metal studs. Installation of sheathing, exterior siding, roofing felt, shingles, insulation vapor barriers, and stairs on small building constructed in CSTN 120. Installation of wood and metal doors. Demonstration of materials, layout and installation of suspended ceilings. Selection and installation of countertops, base cabinets and wall cabinets. Window, door, floor, ceiling trim and drywall are installed in a small building. This course includes a one-credit imbedded lab.

#### CSTN 143 - Intermediate Carpentry Lab

Credits: 4. Lab to accompany CSTN 142. Prereq: CSTN 102, CSTN 120 and CSTN 122.

#### CSTN 171 - Site Prep, Found, Concrete Ins

Credits: 3. Offered Autumn. Prereq., CSTN 100 or consent of instr. 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.

#### CSTN 191 - Special Topics

Credits: 1 TO 6. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

#### CSTN 192 - Independent Study

Credits: 1 TO 6. (R-6) Offered intermittently. Course material appropriate to the needs and objectives of the individual student. Course Attributes: Technical Course

#### CSTN 201 - Advanced Concrete Working

Credits: 3. Offered spring. Prereq., CSTN 171. 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 CSTN 171. The course will emphasize the advanced application in the area of concrete foundations, flatwork, forms, reinforcing, handling, and placing concrete.

#### CSTN 205 - Advanced Carpentry Lecture

Credits: 6. Prereq: CSTN 102, 120, 122, 142, and 143. Study of the process for angular measurement, using transits, theodolites, electronic distance measuring devices, lasers, and trigonometric calculating to lay out foundations and determine elevations. Installation of standing seam, lap seam, and built-up roofing systems; concrete, vinyl, wooden, tile, and carpeted floors as well as radiant heating; paneling, wainscoting, movable partitions, curtain walls and fire-rated commercial wall construction. Advanced stair systems, including shop built and prefabricated stairs, balustrades, mitered risers and treads, and layout of elliptical fastening methods, and assembly techniques. Project planning, scheduling, estimating, and management skills included. This course includes a two-credit lab. Course Attributes: Technical Course

#### CSTN 206 - Advanced Carpentry Lab

Credits: 2. Laboratory to accompany CSTN 205. Prereq: CSTN 102, 120, 122, 142, and 143. Course Attributes: Technical Course

#### CSTN 261 - Building Management