Faculty Senate Minutes
9/11/2020
1-2 pm
Highlands College Room 142 and Virtual Meeting via Zoom

In Person: Charie Faught (Chair), Tamara Harp, Tony Patrick, Peter Lucon (Vice-Chair), Atish Mitra

Zoom: Karen Wesenberg, John Ray, Miriam Young, Bret Robertson, Glen Shaw, Courtney Young, Sue Schrader, Jackie Timmer, Ron White, Richard LaDouceur, Katherine Zodrow.

Quorum @1:00 pm

I. Welcome and Minutes (https://www.mtech.edu/facultystaff/facultysenate/minutes/index.html)

Approvals for August 28, 2020.

Motion to approve, and seconded. **PASSED.**

Action Items

II. CRC Items

a. Radiologic Tech Change HC

Presented by Tamara Harp. Motion to approve, and seconded. **PASSED.**

Informational Items

III. CRC Approval Process Documents

Chair presented: She worked last year and this summer with David Hood (then chair of CRC) and some students on streamlining the workflow process – presented approval process calendar, process workflow chart and CRC request forms (see attachments). In the streamlined process, at least one week time is available for level 1 and level 2 approvals, so that due diligence can be practiced.

Question from senator: why do both CRC and senate need to review all the CRC items? Chair: the faculty senate is the final arbiter of curriculum matters (CRC reports to senate), and works as the final overseeing body of the CRC process. Further comments from senators: CRC can be considered as a subcommittee reporting to senate. After process cleanup, it is expected that the senate will spend less time on CRC matters.

Discussion Items

IV. BOR Discussion with Faculty Senate Representatives

Chair: This can be discussed as a virtual coffee meet. Discussed Chancellor Cook's mail of today. Comments from Senators: The mask compliance reporting link is a positive sign. This topic has been discussed in ASMP meetings.

Chair: What are our biggest concerns that we want BOR to know? Comments from Senators: As per Chancellor's mail, the campus has no mechanism for knowing on campus statistics on COVID. However, Montana Tech has Digger-RX data, which can be used to allay fears that faculty/students have. It is a matter of concern that students are not practicing social distancing outside the buildings on campus. Can the administration do something to control social distancing on campus (outside of buildings)? Maybe the Chancellor can be requested to send a short email to students reminding them that mask requirements are needed out of buildings (on campus)? As there is no such recommendation yet, no violations can be claimed. If there are no official directives, we cannot enforce it. Further comments from senators: How does the COVID period affect our special focus status (repeat of question from last meeting)? Maybe administration can address this at the next meeting?

Motion to ask chair to communicate to chancellor the senate's concern about lack of mask requirement outside of buildings (on campus), and seconded. **PASSED.**

More topics for BOR: Discussed email from some faculty on COVID related accommodations for students. Chair: we as a group should meet virtually and discuss before the BOR meet.

V. Intersession teaching due to long semester break

Comments from Senators: Suggest that sections can run if at least 10 students are enrolled. Chair: There are also concerns from faculty about students taking sequence courses, so that they are eligible for the second part of the sequence. The intersession courses can address that.

Motion to ask chair to discuss with administration about possibility of intersession courses, and seconded. **PASSED.**

VI. Activities and priorities for the upcoming year

a. Faculty Satisfaction Survey
b. Committee Assignments
   Chair and Vice-Chair: met with Chancellor – about strategic planning. More on this during later meetings.

VII. Other Items

a. Meetings for semester

Chair: Reminder about Chancellor's meeting today.

Motion to adjourn: 2:00 pm

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Protocol: The department requesting a curriculum change holds a discussion at the departmental level, and if agreed upon, the Department Chair, elevates the request to the Dean for approval. All changed to the catalog require CRC approval.

Meetings are Thu, by COB Monday, forward the completed form along with supporting information to the CRC chair after approval from the department chair, dean, and graduate council if necessary. Please email a word file and remember to check the request level found on the signature page. The signature page can be a PDF or bring the original with signatures to the meeting and state in the email that you are doing so.

New courses require course objectives. Please contact the registrar before submitting a CRC request for a new course to evaluate the use of the common course numbering system. If numbers are pending, it is acceptable to use the XX notation. OSH 2XX

Final changes are made by the registrar after senate approval.

Guidance can be found: https://www.umt.edu/provost/faculty/curriculum/default.php.

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

Date 08/31/2020
Dept. HC- Health Programs **College – Highlands Health Programs**
Program: AAS Radiologic Technology **CRC Representative: Tamara Harp**

Description of Request: Alter the layout of the program curriculum to accommodate changes due to COVID. Alter course descriptions and credit offerings to match up with new layout.

Current Course or Program Information: Current program students were delayed due to COVID making clinical space in future semesters limited. Typically, we start a new class of students each January in the program but we need to delay the next class to start fall semester instead.

Proposed Change

Course # Name	Credits	Pre-req.
• See attached proposed new program curriculum layout		
• Add AHMS 144 as a recommended prerequisite	3	
• Change credit layout for some clinical courses		
→ AHXR 195b	8	AHXR 195
→ AHXR 295	10	AHXR 195b
→ AHXR 295b	6	AHXR 295
• Remove prerequisites for AHXR 100	3	
• Change course description for AHXR courses requiring accompanying edits		
New course require course objectives listed in this area.		

List of supporting documentation attached:

Current program curriculum worksheet
Proposed program curriculum worksheet
Program Curriculum for other Rad Tech programs in MT
Course outcomes and Syllabus – AHMS 144
Updated AHXR course descriptions and credits

Assessment Leading to Request

- Due to COVID-19, current program students were stopped from attending clinical hours during spring and summer 2020, forcing us to extend their time in the program to facilitate necessary hours and competencies required to sit for the ARRT registry exam. There are limited student spots at clinical facilities and they cannot accommodate a new class to start January 2021 – forcing us to put off the next class start to Fall of 2021.
- New curriculum layout allows more time for students to complete prerequisite courses, particularly if they need prerequisites to any courses like M65 or WRIT 100, or if they want to repeat a course to better a grade.
- Spaces the curriculum out in a more logical fashion – this way students have courses like A&P II and Medical Law & Ethics, Medical Terminology done *before* they enter a clinical environment

- It makes the idea of one prerequisite semester not so daunting for new college students, the current prerequisite semester can be 19 credits if they have to take CAPP 131 or 16 tough credits regardless – this will lighten the load and make it an easier transition for new students into college courses.
- It also makes the first semester of the program not so overwhelming, currently it is 18 credits and it is tough for some students to start their clinical experience while carrying such a high credit load including A&P II – this feedback comes directly from students that have struggled with how the current curriculum is structured. In addition, many of the students are not local once they start the program due to their clinical assignment – so they will not have to travel to Butte three days a week – instead it can be limited to one day for radiology labs.
- The inclusion of an elective prerequisite – AHMS 144 Medical Terminology – which is another prerequisite that has been excluded prior but holds great merit so students are prepared to "speak the language" when they enter the clinical environment.
- All required courses remain the same – just changing the sequencing and clinical credits to match the new schedule
- Having the summer to make the decision on who is accepted would allow for interviews, and wouldn't rush the process like it currently is over the Christmas break, also would allow for more time to get students set up at their clinical sites so they can start earlier in the semester doing clinical hours than they currently do. In addition, there would be more prerequisites to consider in the GPA selection for program acceptance.

Anticipated Impacts to "Other" Programs
Will allow for more transferability between other healthcare programs utilizing similar prerequisites, such as our MA program.

Impact on Library: No consultation is required since changes are only in the course number, course name, or course pre-requisites.)

Date to take effect: **01/04/2021**

MontanaTech *Curriculum Change Request Form Dated 6 September 2018*

APPROVALS

Department Head Approval _____ RN, BSN, MN **Date** 8/28/20

Dean Approval _____ **Date** 8/28/20

N/A

Graduate Council Approval _____ Date _____

CRC Approval _____ Date 9/1/2020

Faculty Senate Approval _____ Date _____

VCAA Approval (see below) _____ Date _____

Chancellor Approval (see below) _____ Date _____

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

Faculty Approvals (directly to CRC, then Faculty Senate):

- ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information)
- ☒ Changed course: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing.
- ☒ Amend an existing degree program. Making changes to programs such as adding a writing course to a major, changing the list of accepted electives or removing a requirement of a minor
- ☐ New degree certification program of 29 credits or less
- ☐ Other:

Campus Approvals (must be approved by the VCAA prior to CRC submission):

- ☐ Placing a postsecondary educational program into moratorium
- ☐ Withdrawing a postsecondary educational program from moratorium
- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more
- ☐ Establishing a B.A.S./A.A./A.S. area of study
- ☐ Offering an existing postsecondary educational program via distance or online delivery
- ☐ Other:

OCHE Approvals *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Re-titling an existing postsecondary educational program
- ☐ Terminating an existing postsecondary educational program
- ☐ Consolidating existing postsecondary educational programs
- ☐ Establishing a new minor where there is a major or an option in a major
- ☐ Revising a postsecondary educational program
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
- ☐ Other:

Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:

- ☐ Establishing a new postsecondary educational program
- ☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- ☐ Forming, eliminating or consolidating an academic, administrative, or research unit
- ☐ Re-titling an academic, administrative, or research unit
- ☐ Other:

AHMS 144 Outcomes & Course Syllabus

Course Learning Outcomes

AHMS 144 3 credits

Medical Terminology

Highlands College of Montana Tech

Learning Outcomes:

Upon satisfactory completion of the course students will be able to:

- Identify, define, and correctly combine word elements (roots, prefixes, suffixes and combining forms).
- Use knowledge of basic word elements to find the meaning of most medical words by analyzing their component parts.
- Identify medical terms associated with body systems and common medical specialties, and for related diagnostic and treatment procedures.
- Identify medical abbreviations, terms and formats used in medical records.
- Correctly use various body directional and body "landmark" terms.
- Use available resources (medical dictionary, online references, text CDROM) to seek and verify information.
- Correctly pronounce and spell a variety of medical terms.

General Ed. Designators
None
Integrated Lab
No
Online
Yes
Cultural Heritage of American Indians
No

Medical Terminology,
AHMS 144 W1
Fall 2020
Course Syllabus
Version 1: 8/16/2020
3 credit hours

Instructor:
Ryan Mulcahy, BA, RMA, AEMT

Office Hours:
Available by appointment Monday through Friday.
Available by appointment via E mail – Zoom Conference.

Contact Information:
rmulcahy@mtech.edu
(406) 496 3779

Course Description:
This **online course** uses a **body systems approach** to provide an introduction to medical terminology and health records. The current text provides a sequential, programmed process for learning the language of medicine. Because no text is perfect and additional terms are generated with new science, technology and treatment, a list of additional required information is provided for each chapter of the text. Posted written and video material provides additional information.

Learning builds from an understanding of the origin of medical terms and basic medical term construction toward the comprehension of more difficult terms and concepts encountered in medical specialty areas. Basic information about medical records, common abbreviations and symbols used in health records are also included. Knowledge is reinforced and applied by use of medical records exercises.

A one semester med term course will not result in medical term experts. In reality medical terms are retained once they are applied in "real" work experiences. But… the intent is that learning the **basic roots, prefixes and suffixes** will help students decipher medical word meaning in "real world" applications.

More about taking an on-line course: Students **must have regular** and **reliable internet access (the faster the better)** and a **functioning Tech email account.** It is expected that students will have **basic word processing skills**, the ability to **send/receive email** with attachments, and ability to **search the internet and upload/download files.**

- Students will set their own study schedules but please note: **There ARE set due dates for all quizzes.**
- Online learning requires students to be **self- directed** and **self-motivated**. **High** levels of **self-discipline** are **necessary** to **successfully complete this course.**
- The expectation for a 3 credit course is that **students will devote 6-9 hours per week to studying and completing quizzes and independent assignments.** An appropriate pace would be to complete an average of one chapter every week.

Required Text:

Hard Cover Text Not Required.

Author: Turley, Susan M.
ISBN-13: 978-0-13-498839-9
ISBN-10: 0-13-498839-6

Suggested additional resources: A medical dictionary of student's choice. Some hard copy dictionaries come with software that can bring a medical dictionary to your desktop. There are also free on-line medical dictionaries which you may access through the online course. There are also free medical terminology apps for phones.

Course Objectives:

Gain knowledge and skills to work effectively within the healthcare field as a team member responsible for effective medical care in capacities both clinical and administrative.

- *Apply broad based, state of the art clinical care as to the medical assistant scope of proactive*
- *Develop multidisciplinary skills to function in today's healthcare system*
- *Communicate in the public healthcare systems and effectively carry out patient care and communication with the healthcare team*
- *Collaborate with the community in the practice of the healthcare system, patient care*

Course Format:

Each week you will have a series of assignments(Moodle assignments are labeled as quizzes) to be completed. The assignments will include multiple choice quizzes, short answer essays, and developmental pieces of a final project presentation (Topic Choice, Synopsis, and Outline).3 cumulative quizzes will be given throughout the semester (dates appear on the last page of the Syllabus). Final Exam. Final Presentation.

Course Grading:

Introduction Discussion Forums
10%
Assignments
10%
Final Project Assignments
10%
Cumulative Quizzes (3)
30%
Final Test
20%
Presentation
20%

Grading Scale:

A93-100
A-90-92
B+87-89
B83-86
B-80-82
C+77-79
C73-76
C-70-72
D+67-69
D63-66
D-60-62
F59 or Lower

Pearson MyLab Expectations:

Class Announcements:

Class announcements will usually be made in class but you may also find them on your course Moodle page.

Communication:

Communication will take place in person during class time, before or after by appointment, email. Phone calls are not effective.

Additional Notes:

Accommodations:

Students with disabilities will receive reasonable accommodations to this course. To request modifications please contact the instructor as soon as possible. The instructor will work with you and disability services in the accommodation process. For more information, https://www.mtech.edu/accessibility/student-policy.pdf, https://www.mtech.edu/student-services/.

Changes:

This Syllabus is subject to change by the Instructor. Any changes will be announced in the announcement section in Moodle or in Lecture.

Course Schedule:

Date/Week	***Topic***	***Reading/Chapter***
8/17/2020	*Course Introduction and Prepare for Chapter 1*	*Introduction Discussion Forum*
8/24/2020	*Ch 1 Medical Language and Health Care Today*	*Introduction Discussion Forum*
8/31/2020	*Ch 2 Dermatology*	
9/7/2020	*Ch 3 Gastroenterology*	*Disease Topic Due* *Cumulative Quiz 1*
9/14/2020	*Ch 4 Respiratory*	
9/21/2020	*Ch 5 Cardiovascular*	
9/28/2020	*Ch 6 Hematology*	
10/5/2020	*Ch7 Orthopedics*	*Disease Synopsis Due* *Cumulative Quiz 2*
10/12/2020	*Ch 8 Muscular*	
10/19/2020	*Ch 9 Neurology*	*Disease Presentation Outline Due*
10/26/2020	*Chapter 13 Endocrinology*	
11/2/2020	*Review and Special Chapters*	*Cumulative Quiz 3*
11/9/2020	*Final Presentations*	
11/16/2020	*Final Exams*	
11/23/2020	*Final Exams*	

Other MT Rad Tech Program Curriculums

Missoula College

Program Prerequisites:

- All courses are required. A minimum grade' of 'C-' is required with one exception -- BIOH 201N-BIOH 202N requires a minimum grade of 'B'
- A minimum cumulative GPA of 2.75 is required for eligibility to formally apply to the program.
- Prerequisites 20 Credits
    - AHMS 144 - Medical Terminology 3 Credits
    - BIOH 201N - Human Anat Phys I with BIOH 202N - Human Anat and Phys I Lab 4 Credits
    - BIOH 211N - Human Anat Phys II with BIOH 212N - Human Anat Phys II Lab 4 Credits
    - M 115 - Probability and Linear Math OR M 121 – College Algebra 3 Credits
    - SCN 175N - Integrated Physical Science I OR CHMY 121N – Intro to General Chem. 3 Credits
    - WRIT 101 – College Writing 3 Credits
- Pre or Co-requisites (taken before or during Program): 6 Credits
    - AHMS 270E - Medical Ethics 3 Credits
    - COMX 115S - Interpersonal Communication OR PSYX 100S – Intro to Psychology 3 Credits

All program courses are required. A minimum grade of 'B' is required for all "AHXR" courses.

- AHXR 195: taken 1st year Autumn term at 1 credit, Spring term at 4 credits, and Summer at 12 credits = 17 credits.
- AHXR 295 is taken 2nd year Autumn term at 10 credits.

Program Courses: Fall Semester Program Year 1 12 Credits Total

- AHXR 101 – Patient Care 2 Credits
- AHXR 121 - Radiographic Imaging I 4 Credits
- AHXR 140 - Radiologic Methods I 4 Credits
- AHXR 141- Radiologic Methods I Lab 1 Credit
- AHXR 195 - Radiographic Clinical I 1 Credit

Spring Semester Program Year I 12 Credits Total

- AHXR 160 - Radiologic Methods II 3 Credits
- AHXR 161- Radiologic Methods II Lab 1 Credit
- AHXR 195 - Radiographic Clinical: I 4 Credits
- AHXR 221 - Radiographic Imaging II 2 Credits
- AHXR 225 - Radiobiology/Radiation Protection 2 Credits

Summer Session (12 weeks) 12 Credits Total

- AHXR 195 - Radiographic Clinical: II 12 Credits

Fall Semester Program Year II 12 Credits Total

- AHXR 270 - Radiographic Registry Review 2 Credits
- AHXR 295 - Radiographic Clinical III 10 Credits

SUMMARY Total

- Program Courses: 48 Credits
- Pre- and Co-requisites: 26 Credits
    - **Total A.A.S. Degree 74 Credits**

City College – Billings

Suggested Plan of Study
Radiologic Technology Associate of Applied Science

Recommended Prerequisite Courses	Credits
AHMS 144 Medical Terminology	3
BIOH 211 Human Anatomy and Physiology II	3
PHSX 103 Our Physical World	3
Required Prerequisite Courses	
BIOH 201 Human Anatomy and Physiology I	3
BIOH 202 Human Anatomy and Physiology I Laboratory	1
CAPP 120 Introduction to Computers	3
M 114 Extended Technical Mathematics (preferred) **OR** M105 Contemporary Mathematics	3
WRIT 122 Introduction to Business Writing **OR** WRIT 121 Introduction to Technical Writing	3
Required Core Courses	**Credits**
AHXR 101 Patient Care in Radiology	3
AHXR 108 Introduction to Radiologic Physics	3
AHXR 150 Radiological Technology I	3
AHXR 151 Radiology I Positioning Lab	1
AHXR 160 Radiological Technology II	4
AHXR 161 Radiology II Positioning Lab	1
AHRX 181 Radiology III Positioning Lab	1
AHXR 195 Clinical Radiology Intersession	1
AHXR 195A Clinical Radiology I	5
AHXR 195B Clinical Radiology II	6
AHXR 195C Clinical Radiology III	9
AHXR 225 Radiobiology/Radiation Practicum	3
AHXR 250 Radiological Technology III	4
AHXR 260 Radiological Technology IV	2
AHXR 270 Radiographic Registry Review	2
AHXR 295A Radiographic Clinical IV	8
AHXR 295B Radiographic Clinical V	8
COMX 106 Communicating in a Dynamic Workplace	3
Total	**80**

Prerequisite Semester	Credits
BIOH 201	3
BIOH 202	1
WRIT 121/122	3
CAPP 120	3
M 114/M 105	3
Total	**13**
First Semester (fall)	**Credits**
AHXR 101	3
AHXR 108	3
AHXR 150	3
AHXR 151	1
AHXR 195A	5
Total	**15**
Intersession	**Credits**
AHXR 195	1
Second Semester (spring)	**Credits**
AHXR 160	4
AHXR 161	1
AHXR 195B	6
AHXR 225	3
Total	**14**
Summer Session	**Credits**
AHXR 181	1
AHXR 195C	9
Total	**10**
Third Semester (fall)	**Credits**
AHXR 250	4
AHXR 295A	8
COMX 106	3
Total	**15**
Fourth Semester (spring)	**Credits**
AHXR 260	2
AHXR 270	2
AHXR 295B	8
Total	**12**

Flathead Valley Community College

Required prerequisite courses:

- AHMS 144 - Medical Terminology Credit(s): 3
- BIOH 201NL - Human Anatomy and Physiology I Credit(s): 4 *
- BIOH 211NL - Human Anatomy and Physiology II Credit(s): 4 *
- M 095~ - Intermediate Algebra Credit(s): 4 *
- WRIT 101W - College Writing I Credit(s): 3 *

Prerequisite Total: 18

First Year - Fall Semester

- AHXR 101 - Patient Care in Radiology Credit(s): 2 *
- AHXR 110 - Radiographic Procedures I Credit(s): 2 *
- AHXR 115 - Radiographic Principles I Credit(s): 2 *
- AHXR 195 - Radiographic Clinical: I Credit(s): 4 *

First Semester Total: 10

Spring Semester

- AHXR 108 - Introduction to Radiologic Physics Credit(s): 3 *
- AHXR 111 - Radiographic Procedures II Credit(s): 2 *
- AHXR 116 - Radiographic Principles II Credit(s): 2 *
- AHXR 195y - Radiographic Clinical: II Credit(s): 5 *

Second Semester Total: 12

Summer Semester

- AHXR 295 - Radiographic Clinical: III Credit(s): 8 *

Third Semester Total: 8

Second Year - Fall Semester

- AHXR 210 - Radiographic Procedures III Credit(s): 2 *
- AHXR 225 - Radiobiology/Radiation Protection Credit(s): 2 *
- AHXR 295v - Radiographic Clinical: IV Credit(s): 8 *

First Semester Total: 12

Spring Semester

- AHXR 211 - Radiographic Procedures IV Credit(s): 2 *
- AHXR 270 - Radiographic Registry Review Credit(s): 2 *
- AHXR 295y - Radiographic Clinical: V Credit(s): 8 *

Second Semester Total: 12

Total Credits: 72

*Indicates prerequisite and/or corequisite needed. Check course description.

Recommended Course Offering:

BIOH 113 Credit(s): 4

PROPOSED CURRICULUM – AAS RADIOLOGIC TECHNOLOGY

APPLICANTS MUST HAVE ALL PREREQUISITES COMPLETE BY THE END OF THE SPRING SEMESTER THEY ARE APPLYING IN – all prerequisites must be complete with a "C" or better and a minimum 2.75 GPA		
REQUIRED PREREQUISITES		
Prerequisites that must be taken Fall semester		
BIOH 201/202	Anatomy & Physiology I – Lecture & Lab	4 credits
Prerequisites that must be taken Spring semester		
BIOH 211/212	Anatomy & Physiology II – Lecture & Lab	4 credits
Prerequisites that may be completed EITHER Fall or Spring semester:		
CHMY 121 or AHXR 104	Intro to General Chemistry – OR – Intro to Radiologic Sciences	3 credits
WRIT 101 or WRIT 121	College Writing I – OR – Intro to Technical Writing	3 credits
M121 or M140	College Algebra – OR – College Math for Healthcare	3 credits
AHXR 100	Intro to Diagnostic Imaging	3 credits
AHMS 175	Medical Law & Ethics	2 credits
TOTAL REQUIRED PREREQUISTES – 22 CREDITS		
***RECOMMENDED* PREREQUISITES (Electives)**		
CAPP 131	Basic MS Office	3 credits
AHMS 144	Medical Terminology	3 credits
* All prerequisite courses may only be repeated once		

Example Prerequisite breakdown:

Fall Semester:

BIOH 201/202	Anatomy & Physiology I	4 credits
CHMY 121 or AHXR 104	Intro to General Chemistry – OR – Intro to Radiologic Sciences	3 credits
AHXR 100	Intro to Diagnostic Imaging	3 credits
WRIT 101 or WRIT 121	College Writing I – OR – Intro to Technical Writing	3 credits
	Total:	13 credits

Spring Semester:

BIOH 211/212	Anatomy & Physiology II	4 credits
M 121 or M140	College Algebra – OR – College Math for Healthcare	3 credits
AHMS 175	Medical Law & Ethics	2 credits
AHMS 144	Medical Terminology	3 credits
CAPP 131	Basic MS Office	3 credits
	Total:	15 credits

Students apply for program acceptance end of Spring semester for a Fall semester start

Program Start – Fall Semester:

AHXR 101	Patient Care in Radiology	3 credits
AHXR 140	Radiographic Methods	3 credits
AHXR 121	Radiographic Imaging I	4 credits
AHXR 195	Radiographic Clinical I	4 credits
	Total:	14 credits

Spring Semester:

AHXR 221	Radiographic Imaging II	3 credits
AHXR 225	Radiobiology/Rad Protection	2 credits
AHXR 195b	Radiographic Clinical II	8 credits
	Total:	13 credits

Summer Semester:

AHXR 295	Radiographic Clinical III	10 credits

Fall Semester:

AHXR 222	Radiographic Imaging III	2 credits
AHXR 270	Radiographic Registry Review	2 credits
AHXR 295b	Radiographic Clinical IV	6 credits
PSYX 100	Intro to Psychology	3 credits
	Total:	13 credits

Program Prerequisites:	22 credits
Recommended Prerequisites:	6 credits
Program:	50 credits
Total:	72 credits required
	78 credits w/ electives

Highlands College
OF MONTANA TECH

Montana Tech - Montana's Premier STEM University 2020-2021 Catalog

[ARCHIVED CATALOG]

Radiologic Technology, A.A.S.

Description of Program

Due to unexpected course adjustments resulting from COVID-19, the curriculum outline for Radiologic Technology was altered for the 2020/2021 academic year. All continuing and new students in the program were notified of this change. An updated curriculum outline will appear in the 2021/2022 catalog after completion of the campus approval process. Please contact Tamara Harp at (406) 496-3759 or tharp@mtech.edu for additional details about the program.

In the fall of 2004, Montana Tech College of Technology (now Highlands College) began meeting the needs of Butte and the State of Montana by offering an Associate of Applied Science of Radiologic Technology. To meet these needs, the Health Programs Department is providing students with advanced education to meet the demands of the ever-changing radiologic field. The educational requirements are derived from the standards of several national organizations, including the American Registry of Radiologic Technologists (ARRT), and the American Society of Radiologic Technologists (ASRT) to provide an education that will maintain continuity among radiologic professionals. Radiologic Technologists use x-ray equipment to produce images of tissue, organs, bones, and vessels of the body. These medical professionals perform diagnostic imaging examinations. Work settings vary from large hospitals, to suburban outpatient clinics, to rural physician offices.

Program clinical experiences are available in Butte, Dillon, Helena, Miles City, and Sidney, and Baker - and are integrated through each semester. The Radiologic Technology Program employs alternative course delivery modes through web-based courses, evening classes, and varied clinical experiences. Much of the clinical training emphasizes patient care and performing radiographic procedures, computer based programs and technology, blended lecture and web based courses.

Objectives

The objectives of the Associate of Applied Science Degree in Radiologic Technology are three-fold:

- Provide a quality education that blends theory and practice to assist students with meeting their individual employment goals and help meet the needs of the health care industry.
- Facilitate effective communication and problem-solving skills through a variety of traditional and technological resources. In this regard, students receive a general education core that sets the foundation for effective communication.
- Expose the students to a vast variety of work-based learning opportunities to satisfy the personal interests of the students.

Outcomes

Students must sit for a national certification exam upon completion of the degree in order to enter the workforce. Candidates for this certification are required to meet minimum didactic and clinical competency requirements. As part of this educational

program, students must demonstrate competency in a variety of radiologic clinical activities. Graduating students must submit documents to ARRT with faculty approval stating the student performed the procedures independently, consistently, and effectively. Highlands College of Montana Tech has the necessary competency requirements as stated by the American Society of Radiologic Technologists.

Assessment

The Health Programs Department believes that the quality of an academic program is defined by the capability of the students to enter the workforce and in the end, their long term success. We believe that if our graduates meet our didactic and clinical competency requirements and goals, they will be prepared for a career in the health care industry. The goals of our assessment program are to assure our students obtain the necessary national certification to enter the workforce, to maintain our mission, and to continuously update and improve our curriculum in order that the graduates achieve the goals of the Radiologic Technology Program. A career in radiology technology can lead in many directions. There are many specialty areas with specific imaging techniques for radiology technologists to advance into. Demand is strong across the country.

The Radiologic Technology program includes anatomy, biology, radiation safety and physics. Students learn to use computers and electronic equipment. It is one of the fastest growing professions in the country. Radiologic Technologists are vital members of the patient care team.

How do I get into the Montana Tech RT program?

Admission to Montana Tech does not guarantee acceptance into the Radiologic Technology (RT) Program. Students entering with the intent to become a radiology technologist are accepted into the program through a formal selection process. Students planning to study radiology technology need a strong educational health core and must be competent in computer skills. The plan of study includes 16 credits for the first fall semester. These credits are the basis for selecting students into the program. The minimum selective GPA for consideration into the RT Program is 2.75. Other selection criteria include computer proficiency demonstrated by completion of CAPP 131 - Basic MS Office, successful challenge of the course, or prior work experience. A limited number of students are admitted spring semester of each year. If the number of qualified applicants exceeds the available space, not all qualified applicants will be accepted. Students must meet minimum Radiology Department requirements to be eligible for application into the program. Please refer to the checklist for the requirements and point system that will be used for the selection process.

1st Semester

- BIOH 201/202 - Anatomy & Physiology I *4 credits* (w/lab)
- WRIT 101 - College Writing I *3 credits*
- AHXR 100 - Introduction to Diagnostic Imaging *3 credits*

- M 121 - College Algebra *3 credits*
  -OR-
- M 140 - College Math for Healthcare *3 credits*

- AHXR 104 - Introduction to Radiologic Sciences *3 credits*
  -OR-
- CHMY 121 - Introduction to General Chemistry *3 credits*

Total: 16

2nd Semester

- BIOH 211/212 - Anatomy & Physiology II *4 credits* w/lab
- AHXR 140 - Radiographic Methods *3 credits*
- AHXR 121 - Radiographic Imaging I *4 credits*
- AHXR 195 - Radiographic Clinical I *4 credits*
- AHXR 101 - Patient Care in Radiology *3 credits*

Total: 18

Summer Semester (3rd)

- AHXR 195 - Radiographic Clinical ED II *10 credits*

Total: 10

4th Semester

- AHXR 221 - Radiographic Imaging II *3 credits*
- AHXR 225 - Radiobiology/Radiation Protection *2 credits*
- PSYX 100 - Introduction to Psychology *3 credits*
- AHXR 295 - Radiographic Clinical III *8 credits*

Total: 16

5th Semester

- AHMS 175 - Medical Law and Ethics *2 credits*
- AHXR 222 - Radiographic Imaging III *2 credits*
- AHXR 270 - Radiographic Registry Review *2 credits*
- AHXR 295 - Radiographic Clinical IV *6 credits*

Total: 12

Minimum credits for an AAS degree in Radiologic Technology: 72

UPDATED COURSE DESCRIPTIONS – AHXR

- AHXR 195 Radiographic Clinical I
  - → 4 credits (Hrs: 4 lab)
  - → 16 hours/week/4 credits hours supervised clinical practice. Rotating shifts and assignments including competency evaluations on routine exams. Active participation in radiology departments, radiographic and fluoroscopic rooms with appropriate safety practices. Anatomy and positioning all standard radiographic procedures.

    Prerequisites: acceptance to Clinical portion of program
    Off campus course, generally offered Fall semester

- AHXR 195b Radiographic Clinical II
  - → 8 credits (Hrs: 8 lab)
  - → 32 hours/week/8 credits hours supervised clinical practice. Rotating shifts and assignments including competency evaluations on routine exams. Active participation in radiology departments, radiographic and fluoroscopic rooms with appropriate safety practices. Competency evaluation of all standard radiographic procedures including surgery.

    Prerequisites: acceptance to Clinical portion of program, AHXR 195
    Off campus course, generally offered Spring semester

- AHXR 295 Radiographic Clinical III
  - → 10 credits (Hrs: 10 lab)
  - → 40 hours/week/10 credits hours supervised clinical practice. Clinical practice with less assistance to foster increased proficiency and responsible decision-making in a variety of situations.

    Prerequisites: acceptance to Clinical portion of program, AHXR 195b
    Off campus course, generally offered Summer semester

- AHXR 295b Radiographic Clinical IV
  - → 6 credits (Hrs: 6 lab)
  - → 24 hours/week/6 credits hours supervised clinical practice. Clinical practice with less assistance to foster increased proficiency and responsible decision-making in a variety of situations. Clinical experience with advanced modalities, CT, MRI, mammography, vascular procedures and nuclear medicine are optional.

    Prerequisites: acceptance to Clinical portion of program, AHXR 295
    Off campus course, generally offered Fall semester

- AHXR 100 Introduction to Diagnostic Imaging
  - → 3 credits (Hrs: 2 lec, 1 lab)
  - → Introductory course to Radiologic Technology. Course includes introduction to patient care, transportation, ethical and legal issues and various modalities available to technologists after completing the registry. The class will also include a one-hour per week lab. Students will learn proper body mechanics, how to assist patients and patient transfers, proper use of computed radiography and direct radiology.

    Web based blended course, generally offered both semesters

- AHXR 121 Radiographic Imaging I
  - → 4 credits (Hrs: 3 lec, 1 lab)
  - → Course is a basic physics course that educates the students on Einstein's theory of relativity, Newton's Laws, the electromagnetic spectrum, basic laws of speed, velocity and attenuation. This course is designed to teach students the fundamentals of how x-rays are produced and how they interact with matter. Continuation of the study of fundamental physical principles from mechanics to electromagnetism. Application of these principles to the construction and operation of fundamental x-ray equipment. Analysis of basic x-ray circuit, construction and operation of tomographic, mobile and fluoro equipment.

    Prerequisites: acceptance to Clinical portion of program
    Web based blended course, generally offered Fall semester

- AHXR 140 Radiographic Methods
  - → 3 credits (Hrs: 2 lec, 1 lab)
  - → Detailed instruction of bony anatomy as it relates to radiography. Instruction on patient positioning for routine radiographic and fluoroscopic procedures.

    Prerequisites: acceptance to Clinical portion of program
    Web based blended course, Generally offered Fall semester

- AHXR 221 Radiographic Imaging II
  - → 3 credits (Hrs: 2 lec, 1 lab)
  - → Continuation from Radiographic Imaging I; Survey of specialty areas, including Ultrasound, MRI, CT, and Nuclear Medicine. Analysis of quality assurance and quality control programs. Course includes in-depth DR imaging discussion.

    Prerequisites: acceptance to Clinical portion of program, AHXR 121
    Web based blended course, generally offered Spring semester

- AHXR 222 Radiographic Imaging III
  - → 2 credits (Hrs: 1 lec, 1 lab)
  - → Continuation from Radiographic Imaging II, analyze radiographic images for accuracy and to know how to adjust inaccurate positioning or technical factors for an optimum radiograph.

    Prerequisites: acceptance to Clinical portion of program, AHXR 121, AHXR 221
    Web based blended course, generally offered Fall semester

- AHXR 225 Radiobiology/Radiation Protection
  - → 2 credits (Hrs: 2 lec)
  - → Learn and understand the concepts of radiobiology and radiation protection, as it relates to general radiography. Includes cell biology and the effects of radiation on cells, causing genetic damage and how this can be passed onto future generations. Radiation protection as it relates to workers in the radiology field and patients.

    Prerequisites: acceptance to Clinical portion of program, AHXR 121
    Generally offered Spring semester

- AHXR 270 Radiographic Registry Review
  - → 2 credits (Hrs: 1 lec, 1 Lab)
  - → This course provides an online and classroom review for the ARRT certification examination. The course will consist of readings, multiple testing, testing strategies, and review utilizing multiple, published radiology review texts.

    Prerequisites: acceptance to Clinical portion of program
    Web based blended course, Generally offered Fall semester

Montana Tech Faculty Senate CRC Approval | 2020-2021 CALENDAR

AUGUST '20

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FS scheduled for Friday, August 28

SEPTEMBER '20

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

1 FS CRC Items Due
15 FS CRC Items Due
29 Level I and II items Due to BOR
29 FS CRC Items Due

OCTOBER '20

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7 RTP Items Due to BOR
13 FS CRC Items Due
27 Level I and II Items Due to BOR
27 FS CRC Items Due

Full Faculty Meeting Week of October 26

NOVEMBER '20

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

10 FS CRC Items Due
18 RTP Items Due to BOR
24 Level I and II items Due to BOR
24 FS CRC Items Due
29 Level I and II items Due to BOR

DECEMBER '20

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

28 Level 1 and II items Due to BOR

JANUARY '21

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

5 FS CRC Items Due
20 RTP Items Due to BOR
19 FS CRC Items Due
26 Level 1 and II items Due to BOR

FEBRUARY '21

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

02 FS CRC Items Due
16 FS CRC Items Due
23 Level I and II items Due to BOR

MARCH '21

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

02 FS CRC Items Due
16 FS CRC Items Due
30 Level I and II items Due to BOR
30 FS CRC Items Due

APRIL '21

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

7 RTP Items Due to BOR
13 FS CRC Items Due
27 Level I and II Items Due to BOR
27 FS CRC Items Due

MAY '21

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

25 Level I and II Items Due to BOR
28 Priorities and Planning Statements Due
28 RTP Statements Due

JUNE '21

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

JULY '21

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

4 Independence Day

Faculty Senate (FS) Meetings
Highlands College
Main Campus
BOR Due Dates

Protocol: The department requesting a curriculum change holds a discussion at the departmental level, and if agreed upon, the Department Chair, elevates the request to the Dean for approval. All changes to the catalog require CRC approval.

Final changes are made by the registrar after faculty senate approval and BOR approval, as needed.
See workflow document
https://helpx.adobe.com/acrobat/how-to/convert-word-excel-paper-pdf-forms.html?set=acrobat--fundamentals--pdf-forms
Guidance can be found at: https://mus.edu/che/arsa/academicproposals.html

Submission Requirements: All Submissions (checked by CRC):

- ☐ Electronic Copy (with the exception of signatures- no handwritten items)
- ☐ Completed CRC Form, with all Signatures and Attachments based on level of request (see below)
- ☐ Naming Convention as determined by CRC

LEVEL of Request

Please indicate the type of request(s) by selecting *all that apply*:

1. *Faculty Approvals (directly to CRC, then Faculty Senate):*
   - ☐ Establish a new course for the catalog (please contact the Registrar of MUS CCN information) Required Documents:
     - ☐ Course Number
     - ☐ Course Outcomes
     - ☐ Course Description
     - ☐ Syllabus
     - ☐ Curriculum Worksheet
     - ☐ Pre-requisite or co-requisite
   - ☐ Course Changes: addition, deletion or change of title, credit, course number, pre-req, description, or cross listing. Required Documents:
     - ☐ Course Number
     - ☐ Course Outcomes
     - ☐ Course Description
     - ☐ Syllabus
     - ☐ Pre-requisites or co-requisites
     - ☐ Existing Curriculum Worksheet
     - ☐ New Curriculum Worksheet, with changes highlighted
   - ☐ Amend an existing degree program. Making changes to programs such as adding a writing course to a major, changing the list of accepted electives or removing a requirement of a minor. Required Documents:
     - ☐ **Documents as listed under establishing a new course (as applicable)**
     - ☐ Existing Curriculum Worksheet
     - ☐ New Curriculum Worksheet, with changes highlighted
   - ☐ Other (for those that are considered in this level but otherwise not listed):

     _____

2. *Campus Approvals Level I (must be approved by the VCAA prior to CRC submission):*
   - ☐ Placing a postsecondary educational program into moratorium: Required Documents:
     - ☐ Program Termination and Moratorium Form
     - ☐ Academic Proposal Request Form
   - ☐ Withdrawing a postsecondary educational program from moratorium. Required Documents:
     - ☐ Academic Proposal Request Form

- ☐ Establishing, re-titling, terminating or revising a campus certificate of 29 credits or more. Required Documents:
  - ☐ Academic Proposal Request Form
  - ☐ **Documents as listed under establishing a new course (see section 1)**
- ☐ Establishing a B.A.S./A.A./A.S. area of study. Required Documents:
  - ☐ Academic Proposal Request Form
  - ☐ **Documents as listed under establishing a new course (see section 1)**
- ☐ Offering an existing postsecondary educational program via distance or online delivery. Required Documents:
  - ☐ Academic Proposal Request Form

3. OCHE Approvals Level I *(must be approved by the VCAA and Chancellor prior to CRC submission)*:
Level I items are those requests for which the Board of Regents has fully designated approval authority to the institution or Commissioner of Higher Education. These requests are to be submitted for notification to or approval by Commissioner as Level I proposals. Level I proposals may be submitted to OCHE at any time by the flagship campuses or community colleges and will be processed on a rolling monthly schedule. The approval of such proposals will be conveyed to the Board of Regents at the next meeting of the board. Level I proposals include campus initiatives typically characterized by minimal costs, clear adherence to approved campus mission, and the absence of significant programmatic impact on other institutions within the MUS and community colleges. BOR Forms can be found using the following link:
https://mus.edu/che/arsa/Forms/AcademicForms.html

- ☐ Re-titling an existing postsecondary educational program. Required Documents:
  - ☐ Academic Proposal Request Form
- ☐ Terminating an existing postsecondary educational program.
  - ☐ Academic Proposal Request Form
  - ☐ Program Termination and Moratorium Form
- ☐ Consolidating existing postsecondary educational programs
  - ☐ Academic Proposal Request Form
  - ☐ Curriculum Proposal Form
  - ☐ **Documents as listed under establishing a new course (see section 1)**
- ☐ Establishing a new minor where there is a major or an option in a major
  - ☐ Academic Proposal Request Form
  - ☐ Curriculum Proposal Form
  - ☐ **Documents as listed under establishing a new course (see section 1)**
- ☐ Revising a postsecondary educational program
  - ☐ Curriculum Proposal Form
  - ☐ Academic Proposal Request Form
- ☐ Establishing a temporary C.A.S. or A.A.S. degree program Approval limited to 2 years
  - ☐ Academic Proposal Request Form
  - ☐ **Documents as listed under establishing a new course (see section 1)**

4. Level II *(must be approved by the VCAA and Chancellor prior to CRC submission)*:
Level II proposals require initial approval and comment by the Board of Regents through a Request to Plan prior to final review and approval by the Office of the Commissioner of Higher Education. These proposals entail more substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination or personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other MUS institutions and community colleges.

- ☐ Establishing a new postsecondary educational program

- ☐ Request to Plan (RTP)
- ☐ Academic Proposal Request Form
- ☐ Curriculum Proposal
- ☐ Fiscal Analysis Form
- ☐ Completed Intent to Plan Form
- ☐ **Documents as listed under establishing a new course (see section 1)**

☐ Permanent authorization for a temporary C.A.S. or A.A.S degree program

- ☐ Academic Proposal Request Form
- ☐ C.A.S/A.A.S Curriculum Proposal
- ☐ Fiscal Analysis Form
- ☐ Completed Intent to Plan Form
- ☐ **Documents as listed under establishing a new course (see section 1)**

☐ Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11

- ☐ Academic Proposal Request Form
- ☐ **Documents as listed under establishing a new course (see section 1)**

☐ Forming, eliminating or consolidating an academic, administrative, or research unit

- ☐ Academic Proposal Request Form
- ☐ Curriculum or Center/Institute Proposal
- ☐ Completed Request to Plan, except when eliminating or consolidating
- ☐ **Documents as listed under establishing a new course (see section 1)**

☐ Re-titling an academic, administrative, or research unit Permanent authorization for a temporary C.A.S. or A.A.S degree program

☐ Curriculum Proposal

☐ Completed Intent to Plan Form

MontanaTech *Curriculum Change Request Form Dated August 15, 2020*

Date _____
Dept. _____ **College** _____
Program _____ **CRC Representative** _____

Description of Request: _____

Current Course or Program Information: _____

Number (Assigned By CRC): _____
Proposed Change

Course #	Name	Credits	Pre-req.

This should include what will appear in the catalog, exactly. **New course require course outcomes listed in this area.**

List of supporting documentation attached (See Level of Request for Requirements):

Assessment Leading to Request

Anticipated Impacts to "Other" Programs

Impact on Library: _____ has consulted with _____ at the Montana Tech library to ensure needed materials and media are available. (Or No consultation is required since changes are only in the course number, course name, or course pre-requisites.)

Date to take effect (note that the earliest date is the next calendar year): _____

APPROVALS

Department Head Approval _____
Date _____

Dean Approval _____
Date _____

Graduate Council Approval _____
Date _____

CRC Approval _____
Date _____

Faculty Senate Approval _____
Date _____

VCAA Approval (see below) _____
Date _____

Chancellor Approval (see below) _____
Date _____

Montana Tech Curriculum Review Process