

Faculty Senate Agenda  
2/19/2025  
Noon-1 p.m.  
Mill 201

- I. Welcome and minutes: <https://www.mtech.edu/facultystaff/facultysenate/minutes/docs/2025/minutes-2-7-25.pdf>

- II. Emeritus Application - CLSPS
- III. CRC Recommendations
  - a. Pre-Apprentice Line Program
  - b. Mining Engineering
- IV. Grade appeal policy proposal and revision process

**Discussion Items**

- V. Response to senate resolution concerning CAI and Canvas support
- VI. Proposal to update Faculty/Staff Handbook section 303
- VII. For the Good of the Order

## **Request for authorization to confer the title of Professor Emeritus of Interdisciplinary Arts and Sciences on Dr. Pat Munday—Montana Technological University**

### **THAT**

Upon the occasion of the retirement of Professor Pat Munday from the faculty of Montana Tech, the faculty wishes to express its appreciation for his 35 years of dedication and valued service by requesting the rank of Professor Emeritus be conferred upon him by the Board of Regents of Higher Education.

### **Education**

Pat earned a double B.S. in Materials Engineering and Humanities from Drexel University in Philadelphia, Pennsylvania, and then an MS from Rensselaer Polytechnic Institute in Troy, New York.

After working 5 years as an engineer, Pat took the MA and PhD in History & Philosophy of Science & Technology from Cornell University in Ithaca, New York. As part of his doctoral journey, Pat won his first Fulbright Award in 1987-88 for research in West and East Germany.

### **Academic Performance**

Pat joined Montana Tech as an Assistant Professor with the Society and Technology Program in 1990. He developed and taught classes in technology and society, professional ethics, history of science and technology, and philosophy of science and technology. In 1998 he was a founding member of the Professional & Technical Communication Department (PTC). To support the new BS and MS, he developed and taught classes such as communicating technical information, semiotics, research methods, and environmental communication. After PTC was terminated in 2019, Pat joined Interdisciplinary Arts and Sciences. Over the years he taught more than 30 different courses at the undergraduate and graduate levels.

### **College Service**

In his early years with Tech, Pat advised the very active Society and Technology student club. Beginning in 1998 he served as director of the Technical

Communication MS program and later as Technical Communication department head. He chaired 29 graduate committees.

Pat was an organizer and charter member of the Montana Tech Faculty Association and served as vice-president, president, steward/grievance officer, and head of the bargaining team for 4 contracts. He wrote the “white paper” for the Faculty Merit Plan and led the process to implement it.

### **Scholarly Contributions**

Pat published more than 30 peer-reviewed articles, 2 books, and dozens of photos in publications ranging from *Montana Outdoors* magazine to field manuals on plant identification. He wrote dozens of articles for newsletters by the George Grant Chapter of Trout Unlimited, the Big Hole River Foundation, and Montana’s Natural Resource Damage Program.

Pat received two Fulbright awards to China, and held two additional visiting scholar appointments with universities in China. While there, he delivered guest lectures at 11 universities throughout the country and was an invited speaker at a U.S. Consulate and the U.S. Embassy.

### **Community Service**

Pat served as President and board member with the George Grant Chapter of Trout Unlimited where he won more than \$1 million in grants to fund environmental restoration. As a member of the Big Hole River Foundation’s executive council he helped lead the development and adoption of the Montana Fish, Wildlife, and Parks “rest/rotation plan” to limit guiding and outfitting on the Big Hole River and the 4-county planning rules to limit floodplain residential development. Pat was a governor appointee to the charter Montana Natural Resource Damage Program’s Citizen Advisory Council, where he helped develop policy and procedures for allocating the state’s \$215 million settlement from Arco and led efforts to insure funding for environmental education programs such as Montana Tech’s Clark Fork Watershed Education Program.

As a board member and President of Butte’s Mai Wah Society, Pat led grant writing and fund-raising efforts for more than \$200K for an exterior restoration of the Mai Wah/Wah Chong Tai museum building.

## CRC Meeting Agenda – Friday, February 14, 2025 3:00pm

Meeting via zoom:

<https://us06web.zoom.us/j/82246792693>

### Proposals

	College	Department	Program	Proposal	Vote
01	Highlands	Trades & Tech.	Pre-Apprentice Line Program	Create two new courses, rename two courses and adjust curriculum sheet	Approved
02	LCME	Mining Engineering	BS Mining Engineering	Curriculum Changes	Approved
03	GS/LCME	Metallurgical & Materials Eng.	Post-Bac Certificate	DPA – Extractive Metallurgy	Postponed
04	LCME	Civ & Mech Engineering	MS Mechanical Engineering & MS Civil Engineering	Request to Plan for separate MS degrees (currently still General Engineering Masters)	Does not need approval

### Discussion Items:

- CRC Form Update – Subcommittee: Chris Roos, Mary MacLaughlin, Nathan Huft, did I miss someone?
  - Etrieve?
- Course sequence changes only – last year this body opted to see ALL sequence changes
- Discussion/as a reminder – for any course changes, syllabi need to be included, even for “small” changes like prerequisite changes, course description, or credit adjustment
  - Please include all requested documentation on the request form

**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):
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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
- Other (for those that are considered in this level but otherwise not listed):
 

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  - 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)**
- Other (for those that are considered in this level but otherwise not listed):
 

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- Academic Proposal Request Form

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 of 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
  - Academic Proposal Request Form
  - Curriculum Proposal
  - 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
  - Curriculum Proposal
  - 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

**Date:** February 6, 2025  
**Dept. College:** Highlands College  
**Program:** Pre-Apprentice Line Program

**CRC Representative:** Linda Granger

**Description of Request:** This request includes name changes, credit changes, and the addition of a new course.

**Current Course or Program Information:** The pre-apprentice line program is a one-semester, 30 credit certificate, which must stay at that credit limit. New instructors within the program deemed the changes necessary in order to improve their program.

**Number (Assigned By CRC):** \_\_\_\_\_

**Proposed Change**

<u>Course #</u>	<u>Name</u>	<u>Credits</u>	<u>Pre-req.</u>
<b>Current Names/Credits:</b>			
Line 100	Introduction to the Utility Industry	4 credits	None
Line 120	Electrical for the Utility Industry	3 credits	None
Line 130	Safety & Certifications	3 credits	None
Line 140	Pole Yard	17 credits	None
M 111	Technical Math	3 credits	None
<b>Proposed Names/Credits:</b>			
Line 100	Line Industry General Knowledge	4 credits	None
Line 110	Math for the Utility Industry	3 credits	None
Line 120	Line Industry Electrical Theory	3 credits	None
Line 130	Safety & Certifications	3 credits	None
Line 140	Pole Yard	15 credits	None
Line 150	Line Industry Tools, Equipment & Material	2 credits	None

The items referenced above highlighted in yellow represent a name change. Those items highlighted in green represent a credit change, and the course highlighted in blue is a new course.

For those courses that have changed, attached you will find a separate sheet for each one, which gives you the course name, course description, the credit hours, and the outcomes.

**NOTE FOR CLARIFICATION: LIN 110 Math for the Utility Industry is a previous course, this proposal is to reactivate that course and replace M 111 in the Curriculum. Math Department has been consulted**

Date February 10, 2025

Dept./College: Highlands College

Program: Pre-Apprentice Line

CRC Representative: Linda Granger

Description of Request: We would like to change the name for a course within our program.

Current Course or Program Information: The pre-apprentice line program is a 30-credit, one-semester program, and our instructors believe that a name change with content change will benefit the program overall.

Number (Assigned By CRC): \_\_\_\_\_

**Proposed Change**

Course #	Name	Credits	Pre-req.
<b>Old Course Information:</b>			
Line 100	Introduction to the Line Industry	4	None
<b>New Course Information: Name Change:</b>			
Line 100	Line Industry General Knowledge	4	None
<b>New Course Description:</b> This course provides students with knowledge of basic and emerging principles that impact the energy industry including how the industry is organized and operates as a whole. The course will cover electric energy power generation, transmission and distribution. Students will be introduced to career opportunities in the industry including job entry requirements and educational pathways.			
<b>Course Outcomes:</b>			
<ul style="list-style-type: none"><li>• Explain the basic components of electrical generation transmission, substations, and distribution powerlines.</li><li>• Demonstrate an understanding of delta, grounded wye, and undergrounded wye circuitry.</li><li>• Demonstrate proficiency in Equipotential Zone Grounding (EPZ) setups and the ability to explain the importance and implementation of personal protective grounding.</li><li>• Explain the importance of tailboards, what is required and demonstrate how to conduct one.</li></ul>			

Date February 10, 2025

Dept./College: Highlands College

Program: Pre-Apprentice Line

CRC Representative: Linda Granger

Description of Request: We would like to change the name for a course within our program.

Current Course or Program Information: The pre-apprentice line program is a 30-credit, one-semester program, and our instructors believe that a name change will benefit the program overall.

Number (Assigned By CRC): \_\_\_\_\_

**Proposed Change**

Course #	Name	Credits	Pre-req.
<b>Old Course Information:</b>			
M 111	Technical Math	3	None
<b>New Course Information: Name Change:</b>			
Line 110	Math for the Utility Industry	3	None
<p><b>Course Description:</b> The purpose of this course is to equip students with the math skills they will need to be successful in their respective trade. The course begins with deliberate and thorough coverage of the simplest topics, like whole numbers, fractions, basic algebra and geometry before delving into more advanced areas. The complex subjects include formula evaluation, exponents, logarithms, and trigonometry. Additionally, decimals, fractions, unit conversions, and measurements will be covered, along with scientific notation. Emphasis will be placed on practical examples that specifically address applications typically encountered in the electrical field.</p>			
<p><b>Course Outcomes:</b></p> <p>Students that are successful in this class will come away with a solid foundation in the specific math topics needed for success in their line career. Most employers require basic algebra and geometry skills. Some will require trigonometry.</p>			
<p><b>NOTE FOR CLARIFICATION:</b> LIN 110 Math for the Utility Industry is a previous course, this proposal is to reactivate that course and replace M 111 in the Curriculum. Math Department has been consulted</p>			

Date February 10, 2025

Dept./College: Highlands College

Program: Pre-Apprentice Line

CRC Representative: Linda Granger

Description of Request: We would like to change the name for a course within our program.

Current Course or Program Information: The pre-apprentice line program is a 30-credit, one-semester program, and our instructors believe that a name change will benefit the program overall.

Number (Assigned By CRC): \_\_\_\_\_

**Proposed Change**

Course #	Name	Credits	Pre-req.
<b>Old Course Information:</b>			
Line 120	Electrical for the Utility Industry	3	None
<b>New Course Information: Name Change:</b>			
Line 120	Line Industry Electrical Theory	3	None
<b>Course Description:</b> This course introduces students to electricity. Included is the proper use of meters to measure electrical quantities, completing basic circuit calculations and installation of electrical wiring. Electrical codes and standards will be reviewed.			
<b>Course Outcomes:</b>			
<ul style="list-style-type: none"><li>• Demonstrate an understanding of commonly used terms, symbols and principles within the line industry.</li><li>• Explain basic electrical theory, starting at the molecular level and finishing with practical industry applications.</li><li>• Recognize and solve series, parallel and combination DC circuits using circuit rules and Ohm's Law.</li><li>• Demonstrate a basic understanding of transformers, including: construction, principles related to their operation, proper implementation and related dangers/hazards.</li></ul>			

Date February 10, 2025

Dept./College: Highlands College

Program: Pre-Apprentice Line

CRC Representative: Linda Granger

Description of Request: We would like to change the number of credits in a course within our program.

Current Course or Program Information: The pre-apprentice line program is a 30-credit, one-semester program, and our instructors believe that a name change will benefit the program overall.

Number (Assigned By CRC): \_\_\_\_\_

**Proposed Change**

<u>Course #</u>	<u>Name</u>	<u>Credits</u>	<u>Pre-req.</u>
<b>Old Course Information:</b>			
Line 140	Pole Yard	17	None
<b>New Course Information: Credit Change:</b>			
Line 140	Pole Yard	15	None
<b>Course Description:</b> Hands-on experience in the use of and/or assembly of materials, tools, and equipment common to the line industry. Students will practice and perform multiple and varying tasks within the pole yard. Examples being: proper climbing technique, pole top rescue, EPZ grounding, proper rigging practices, working from both backer boards and ladders, pole setting and other tasks/skills required of line apprentices.			
<b>Course Outcomes:</b>			
<ul style="list-style-type: none"><li>• Demonstrate the ability to safely climb wood poles using proper form and techniques.</li><li>• Demonstrate the ability to work at various heights up to 70 feet above ground grade.</li><li>• Identify and correctly utilize the basic tools and equipment commonly found in the line trade.</li><li>• Successfully and safely perform within industry established time parameters the following tasks: pole top rescue, single cross arm install, suspension insulator change out, and install an Equal Potential Zone (EPZ) Ground set up.</li><li>• Demonstrate proficiency in tying various knots utilized in the line trade.</li></ul>			

Date February 10, 2025

Dept./College: Highlands College

Program: Pre-Apprentice Line

CRC Representative: Linda Granger

Description of Request: We would like to create a new class within our program.

Current Course or Program Information: The pre-apprentice line program is a 30-credit, one-semester program, and our instructors believe that a name change will benefit the program overall.

Number (Assigned By CRC): \_\_\_\_\_

**Proposed Change**

Course #	Name	Credits	Pre-req.
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**Proposed New Course Information:**

Line 150	Line Industry Tools, Equipment, & Material	2	None
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**Course Description:** This course introduces students to common tools, equipment and material used within the line industry. This course is largely image based. Exposing students, visually, to a broad spectrum of simple and specialized tools, basic underground and overhead construction, specialized line vehicles and equipment as well as most commonly used material.

**Course Outcomes:**

- Demonstrate an understanding of the terms, definitions and uses of commonly used items within the line industry.
- Explain basic system design principles and material uses, including how they are utilized within industry.
- Recognize various line vehicle and equipment types as well as their uses and general application.
- Demonstrate a basic understanding of how line/bucket trucks are physically set up and common tool/material locations within these vehicles.

**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):**

This is outlined in the descriptions shown above.

**Assessment Leading to Request:** Instructors feel that coursework is much more aligned with what is being taught within each course.

**Anticipated Impacts to “Other” Programs:** None.

**Impact on Library:** None.

**Date to take effect:** Fall of 2025.

**APPROVALS**

**Department Head Approval**

Linda Granger

**Date : 1/27/2025**

**Dean Approval**

Karen VanDaveer

**Date: 1/27/2025**

**Graduate Council Approval**

Date \_\_\_\_\_

\_\_\_\_\_

**CRC Approval**

Date 2/14/25



\_\_\_\_\_

**Faculty Senate Approval**

Date \_\_\_\_\_

\_\_\_\_\_

**VCAA Approval (see below)**

Date \_\_\_\_\_

\_\_\_\_\_

**Chancellor Approval (see below)**

Date \_\_\_\_\_

\_\_\_\_\_

**Pre-Apprentice Line Program  
Curriculum Sheet  
Fall 2024-2025**

<b>Course Number</b>	<b>Title</b>	<b>Credits</b>	<b>Semester Completed</b>
Line 100	Introduction to the Utility Industry	4	
Line 120	Electrical for the Utility Industry	3	
Line 130	Safety & Certifications	3	
Line 140	Pole Yard	17	
M 111	Technical Math	3	

Pre-Apprentice Line Program  
Curriculum Sheet  
Fall 2025-2026

Course Number	Title	Credits	Semester Completed
<b>Line 100</b>	Line Industry General Knowledge	4	
<b>Line 110</b>	Math for the Utility Industry	3	
<b>Line 120</b>	Line Industry Electrical Theory	3	
<b>Line 130</b>	Safety & Certifications	3	
<b>Line 140</b>	Pole Yard	15	
<b>Line 150</b>	Line Industry Tools, Equipment & Material	2	

**LINE 100 Line Industry General Knowledge**  
**Spring Semester 2025**  
**Days: Monday -Thursday**  
**Time: TBD**

Instructor(s): Brandon Cassidy  
John Harvey  
James Pearston

**Course Description – 4 credits**

This course provides students with knowledge of basic and emerging principles that impact the energy industry including how the industry is organized and operates as a whole. The course will cover electric energy power generation, transmission and distribution. Students will be introduced to career opportunities in the industry including job entry requirements and educational pathways.

**Course Outcomes**

Upon completion of this course students will be able to:

- Explain the basic components of electrical generation, transmission, substations, and distribution powerlines
- Demonstrate an understanding of delta, grounded wye, and undergrounded wye circuitry
- Demonstrate proficiency in Equipotential Zone Grounding (EPZ) setups and the ability to explain the importance and implementation of personal protective grounding
- Explain the importance of tailboards, what is required and demonstrate how to conduct one

**Required Materials:**

Highlands College Pre-Apprentice Workbook (provided)

**Course Organization**

The course consists of:

- 10 modules with lectures and reading assignments
- 10 module exams
- Final exam

**Course Policies and Procedures**

Academic Honor Code and Academic Honesty

Violations of the code of academic integrity will not be tolerated. Everything assigned in this course (unless otherwise directed by the professor) is to be done individually. Any indication of copied work could result in a failure of the course. Anyone who violates the academic integrity code will be disciplined according

to the policies set forth by Montana Tech 2023-2024 Course Catalog. Students are expected to uphold the school's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. *The guiding principle of academic integrity shall be that a student's submitted work must be that of the student's own work. Students shall be guilty of violating the honor code if they:*

- *Represent the work of others as their own*
- *Use or obtain unauthorized assistance in any academic work*
- *Give unauthorized assistance to other students*
- *Misrepresent the content of submitted work*

***The student has full responsibility for the content and integrity of all academic work submitted. Ignorance of a rule does not constitute a basis for waiving the rule or the consequences of that rule. Students unclear about a specific situation should ask their instructors or academic staff, who will explain what is and is not acceptable in their classes or on campus. For full access to the Academic Dishonesty policy please refer to the Montana Tech 2023-2024 Catalog:***

[https://catalog.mtech.edu/content.php?catoid=15&navoid=1553#ACADEMIC\\_DISHONESTY](https://catalog.mtech.edu/content.php?catoid=15&navoid=1553#ACADEMIC_DISHONESTY)

### Student Responsibilities and Expectations

*Cell Phones & Other Electronic Devices*

### **Students with Disabilities**

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Disabilities Services Office at (406) 496-3730 or online

<https://www.mtech.edu/academics/services/disability/index.html> at the earliest possible date.

### **Assignments and Assessments**

There will be a total of six (6 exams) and a comprehensive final exam. Exams will be graded and averaged for the final grade for the course. In order to pass, students must have a minimum of 80% for a final grade per industry requirements.

### **Grade Scale**

A	94-100%
B	93.99-90%
B-	89.99-87%
C	86.99-83%
C-	82.99-80%
D+	79.99-77.5%
D	77.49-76%

F	75.99-75% Please Note: Below 80% does not meet Industry Required Standards for Passing; therefore, you will not pass the class with a grade below 80%.
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**Important Dates**

Date	Deadline
January 13, 2025	First Day of Classes
January 20, 2025	Martin Luther King Jr. Day – No Class
February 17, 2025	President’s Day – No Class
March 17 – 21, 2025	Spring Break – No Class
April 18, 2025	Spring mini-break (Easter) – No Class
May 5 – 9, 2025	Final Exams
May 9, 2025	Line Rodeo
May 10, 2025	Graduation

# HIGHLANDS COLLEGE

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O F M O N T A N A T E C H

## Syllabus for Line 110 Math for the Utility Industry Spring 2025

**Instructor** Tami Kissell  
**Email** [tkissell@mtech.edu](mailto:tkissell@mtech.edu)  
**Phone** (406) 498-9478  
**Class Meets** T-TH 7–8:50 am, Highlands College, Room 132  
**Office Hours** By appointment, call or text about scheduling a time if needed

### Course Description

The purpose of this course is to equip students with the math skills they will need to be successful in their respective trade. The course begins with deliberate and thorough coverage of the simplest topics, like whole numbers, fractions, basic algebra and geometry before delving into more advanced areas. The complex subjects include formula evaluation, exponents, logarithms, and trigonometry. Additionally, decimals, fractions, unit conversions, and measurements will be covered, along with scientific notation. Emphasis will be placed on practical examples that specifically address applications typically encountered in the electrical field.

### Student Performance Outcomes

Students that are successful in this class will come away with a solid foundation in the specific math topics needed for success in their line career. Most employers require basic algebra and geometry skills. Some will require trigonometry.

### During Class Time

The format for time in class will be pretty conventional. It will generally consist of lecture/notes followed by working problems together as a class. Additional problems may be worked in class, with instructor support, individually, or perhaps in small groups. All work must be shown and justified. Participation in class discussions and group work is an important component of this course.

### Outside of Class

Problem sets already worked in class should be reviewed. Lecture notes should be reviewed, and usually re-written. Prior to each exam, a practice problem set will be given. Working through these problems prior to checking them over in class is one key to success in this class. Connecting with your peers, and meeting outside class to work practice problems, is encouraged.

### **Conduct**

Class time is valuable, and students deserve a good learning environment. Attitudes of mutual respect and professionalism go a long way towards your success. Please do not allow your phone or device to become disruptive. Disruptive students may be asked to leave the classroom; any further problems would be dealt with by the provost. I actively monitor for cheating via a number of methods and pursue disciplinary measures if detected. For further information on this topic, refer to the student handbook for policies related to Academic Dishonesty.

### **Textbook**

The workbook for this course is "Building a Foundation in Mathematics, NJATC" NJATC Apprenticeship. This book can only be purchased through the Montana Tech bookstore.

### **Calculator**

A basic calculator with trigonometric functions (SIN, COS, TAN) will eventually be needed. Cell phones are absolutely not allowed to be used as your calculator. Texas Instruments TI-30xa (~\$9, battery) or TI-30xIIs (~\$13, solar) are fine, and readily available. Many other calculators are also suitable.

### **Attendance**

Attendance is absolutely critical to your success. Let me know if you are facing difficult circumstances, and I will work with you, but fundamentally, it has to be your priority to show up. Conflicts with work schedules are not valid excuses. Students that don't attend class regularly are rarely successful.

### **Missing Work**

Missed assignments due to an absence **MUST be completed and turned in prior to the test.** Missing work will be scored a zero, until it is turned in.

### **Exams**

You are expected to be in class on exam day. Each exam is paper-based and taken during regular class time. Some uses of calculators are allowed and encouraged; cell phones will never be allowed to be used as your calculator. Dates of these tests will be communicated a few days prior. If you miss an exam, unless a doctor's note is provided, there is an automatic 15% deduction. You are expected to make it up **before class** on the next meeting day. Example – you miss Tuesdays exam, make up is Thursday morning at 6:30.

### **Final Exam**

The final exam is a comprehensive paper test, taken in class, and will be held in our regular classroom. Refer to Montana Tech's home page, under Final Exams, for the time and date. It is not when the class normally meets. Please plan ahead to avoid any scheduling conflicts.

### **Grading**

Practice Problems	20%
Exams	60%
Final	20%

**LINE 120 Line Industry Electrical Theory**  
**Spring Semester 2025**  
**Days: Monday - Thursday**  
**Time: TBD**

Instructor(s): Brandon Cassidy  
John Harvey  
James Pearston

**Course Description – 3 credits**

This course introduces students to electricity. Included is the proper use of meters to measure electrical quantities, completing basic circuit calculations and installation of electrical wiring. Electrical codes and standards will be reviewed.

**Course Outcomes**

Upon completion of this course students will be able to:

- Demonstrate an understanding of commonly used terms, symbols and principles within the line industry
- Explain basic electrical theory, starting at the molecular level and finishing with practical industry applications
- Recognize and solve series, parallel and combination DC circuits using circuit rules and Ohm's Law.
- Demonstrate a basic understanding of transformers, including: construction, principles related to their operation, proper implementation and related dangers/hazards.

**Required Materials:**

Highlands College Pre-Apprentice Workbook (provided)

**Course Organization**

The course consists of:

- 10 modules with lectures and reading assignments
- 10 module exams
- Final Exam

**Course Policies and Procedures**

Academic Honor Code and Academic Honesty

Violations of the code of academic integrity will not be tolerated. Everything assigned in this course (unless otherwise directed by the professor) is to be done individually. Any indication of copied work could result in a failure of the course. Anyone who violates the academic integrity code will be disciplined according to the policies set forth by Montana Tech 2023-2024 Course Catalog. Students are expected to uphold the

school's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. *The guiding principle of academic integrity shall be that a student's submitted work must be that of the student's own work. Students shall be guilty of violating the honor code if they:*

- Represent the work of others as their own
- Use or obtain unauthorized assistance in any academic work
- Give unauthorized assistance to other students
- Misrepresent the content of submitted work

***The student has full responsibility for the content and integrity of all academic work submitted. Ignorance of a rule does not constitute a basis for waiving the rule or the consequences of that rule. Students unclear about a specific situation should ask their instructors or academic staff, who will explain what is and is not acceptable in their classes or on campus. For full access to the Academic Dishonesty policy please refer to the Montana Tech Catalog: <https://catalog.mtech.edu/index.php>***

Student Responsibilities and Expectations

*Cell Phones & Other Electronic Devices*

**Students with Disabilities**

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Disabilities Services Office at (406) 496-3730 or online <https://www.mtech.edu/academics/services/disability/index.html> at the earliest possible date.

**Assignments and Assessments**

There will be a total of six (6 exams) and a comprehensive final exam. Exams will be graded and averaged for the final grade for the course. In order to pass, students must have a minimum of 80% for a final grade per industry requirements.

**Grade Scale**

A	94-100%
B	93.99-90%
B-	89.99-87%
C	86.99-83%
C-	82.99-80%
D+	79.99-77.5%
D	77.49-76%
F	75.99-75%

	<b>Please Note: Below 80% does not meet Industry Required Standards for Passing; therefore, you will not pass the class with a grade below 80%.</b>
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**Important Dates**

<b>Date</b>	<b>Deadline</b>
January 13, 2025	First Day of Classes
January 20, 2025	Martin Luther King Jr. Day – No Class
February 17, 2025	President’s Day – No Class
March 17 – 21, 2025	Spring Break – No Class
April 18, 2025	Spring mini-break (Easter) – No Class
May 5 – 9, 2025	Final Exams
May 9, 2025	Line Rodeo
May 10, 2025	Graduation

**LINE 140 Pole Yard**  
**Spring Semester 2025**  
**Days: Monday-Thursday**  
**Time: TBD**

Instructor(s): Brandon Cassidy  
John Harvey  
James Pearston

**Course Description – 15 credits**

Hands-on experience in the use of and/or assembly of materials, tools, and equipment common to the line industry. Students will practice and perform multiple and varying tasks within the pole yard. Examples being: proper climbing technique, pole top rescue, EPZ grounding, proper rigging practices, working from both backer boards and ladders, pole setting and others tasks/skills required of line apprentices.

**Course Outcomes**

Upon completion of this course students will be required to:

- Demonstrate the ability to safely climb wood poles using proper form and techniques.
- Demonstrate the ability to work at various heights up to 70 feet above ground grade.
- Identify and correctly utilize the basic tools and equipment commonly found in the line trade.
- Successfully and safely perform within industry established time parameters the following tasks: pole top rescue, single cross arm install, suspension insulator change out, and install an Equal Potential Zone (EPZ) Ground set up.
- Demonstrate proficiency in tying various knots utilized in the line trade.

**Required Materials:**

- Appropriate Boots (adequate heel and appropriate sole)
- Leather gloves
- Long-sleeve shirt and pants
- Safety glasses, hard hat, climbing bag and tools (provided by program)

**Course Organization**

Normal pole yard hours are typically 1:00 pm to approx. 4:30 pm. Pole yard times do vary, students can be expected to be in the pole yard at varying times Monday-Thursday, between 7:00am and 5:30pm.

**Course Policies and Procedures**

Academic Honor Code and Academic Honesty

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in a failure of the course. Anyone who violates the academic integrity code will be disciplined according to the policies set forth by Montana Tech 2023-2024 Course Catalog. Students are expected to uphold the school's standard of conduct relating to academic honesty. Students assume full responsibility for the content and integrity of the academic work they submit. *The guiding principle of academic integrity shall be that a student's submitted work must be that of the student's own work. Students shall be guilty of violating the honor code if they:*

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### Students with Disabilities

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Disabilities Services Office at (406) 496-3730 or online <https://www.mtech.edu/academics/services/disability/index.html> at the earliest possible date.

### Assessments

Knot Tying Exam – students will need to be able to correctly demonstrate 10 instructor selected knots (4 points possible)

#### Timed Skills/Tasks

- Pole top rescue – students must be able to correctly perform in under 3:00 minutes (4 points possible)
- Single cross arm install – students must be able to correctly perform in under 9 minutes (4 points possible)
- Suspension insulator change out – students must be able to correctly perform in under 8 minutes (4 points possible)
- EPZ Ground set up – students must be able to correctly perform in under 15 minutes (4 points possible)

### Grade Scale

Total Points	Grade
20 – 16	A
15.9-11	B
10.9-8.6	C
8.5	C-
<b>A POINT TOTAL BELOW 8.5 REFLECTS TIMES AND ASSESSMENT RESULTS BELOW INDUSTRY STANDARD AND IS CONSIDERED A FAILING GRADE.</b>	

## Assessment Dates

Skills assessments in the pole yard will occur on Thursdays. Students will have multiple opportunities to practice and improve the skills/task times. **THE LOWEST SKILLS/TASK TIMES THROUGHOUT THE SEMESTER WILL BE USED AS THE FINAL GRADE POINT TOTAL.**

## Skill Descriptions

### *Pole Top Rescue*

- Climber will begin with tools off. Time will begin as climber assesses the situation, delegate the calling of 911 and for someone to retrieve the AED. Climber will don their tools and ascend pole to rescue the practice dummy. Handline will already be secured to crossarm. Climber will call for either the hook or the snap, untie the handline, drop the block (in the hole) throw their rope over the crossarm, tie three half hitches around the dummy's chest, and provide a friction wrap on the outside of the crossarm against the arm pin insulator. Climber will then retain tension, cur the dummy's skid, put away their knife, and lower the practice dummy in a controlled fashion.
- Climber will be graded by time and by knot quality and placement. The knot must be on the practice dummy's chest with rope underneath the armpits, the three half hitches must not exceed a closed fist between the knot and the practice dummy's chest while under tension. An infraction will result in a 15 second addition to the climber's total time. All infractions are accumulative.
- **DROPPING THE PRACTICE DUMMY IS AN AUTOMATIC FAIL.**
- Climber must climb in a controlled manner. If two feet gaff out of the pole the climber will have 15 seconds added to the climber's original time.

Climber will be graded as follows:

1:10 and under	A
1:11-1:20	B
1:21-1:35	C
1:36-2:45	C-
2:46 and beyond is a Fail	

### *Cross Arm Install*

- Student will begin with their tools on at the base of the pole, handline must be together and on their belt.
- Time starts and student will climb to the top of the pole, secure their handline, and call for the cross arm.
- Crossarm will be rigged with a clove hitch on the bottom, and a picking string knot on the top.
- After cross arm is installed, handline will be milked down to groundman and the time stops when the handline is put back together (DO NOT RUN HANDLINE).
- Student will be graded on if the arm is installed correctly, all hardware is square and tight. Student shall have 15 seconds added to their time per loose hardware and/or unsquared hardware found. Also, each item or tool that climber accidentally drops will add 15 seconds to total time.
- **DROPPING OF THE ARM IS AN AUTOMATIC FAIL.**
- Student must climb in a controlled manner. If two feet gaff out of the pole climber will have 15 seconds added to their time.

- All infractions are accumulative adding to a combined total of time in addition to climber's original time.

Climber will be graded as follows:

3:40 and under	A
3:41-4:15	B
4:16-5:00	C
5:01-6:00	C-
6:01 and beyond is a Fail	

*Suspension Insulator Replacement*

- Student will begin with tools on at the base of the pole, handline must be together and on their belt. Time starts and student will climb to the top of the pole, secure their handline, and tie a clove hitch to insulator.
- Student will unpin insulator, insulator will be lowered to ground, untied by groundman, retied by groundman and sent back up the handline. Climber will re-pin insulator, untie clove hitch, milk handline to the ground, handline **MUST** be put back together. Climber will run handline and the time stops when the handline hits the ground.
- Any tool or equipment that falls will add 15 seconds to climber's completed time. Dropped items will accumulate to the climber's final time.
- **IF THE INSULATOR IS DROPPED IT IS AN AUTOMATIC FAIL.**
- If a climber breaks a bell, it is a 15 second addition to completion time.
- Students must climb in a controlled manner. If two feet gaff out of the pole the climber will have 15 seconds added to time.
- All infractions are accumulative adding to a combined total time in addition to climber's original time.

Climber will be graded as follows:

1:45 and under	A
1:46-2:15	B
2:16-3:00	C
3:01-4:30	C-
4:31 and beyond is a Fail	

**Important Dates**

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March 17 – 21, 2025	Spring Break – No Class
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May 5 – 9, 2025	Final Exams
May 9, 2025	Line Rodeo
May 10, 2025	Graduation

**LINE 150 Line Industry Tools, Equipment & Material**  
**Spring Semester 2025**  
**Days: Monday - Thursday**  
**Time: TBD**

Instructor(s): Brandon Cassidy  
John Harvey  
James Pearston

**Course Description – 2 credits**

This course introduces students to common tools, equipment and material used within the line industry. This course is largely image based. Exposing students, visually, to a broad spectrum of simple and specialized tools, basic underground and overhead construction, specialized line vehicles and equipment as well as most commonly used material.

**Course Outcomes**

Upon completion of this course students will be able to:

- Demonstrate an understanding of the terms, definitions and uses of commonly used items within the line industry.
- Explain basic system design principals and material uses, including how they are utilized within industry.
- Recognize various line vehicle and equipment types as well as their uses and general application.
- Demonstrate a basic understanding of how line/bucket trucks are physically set up and common tool/material locations within these vehicles.

**Required Materials:**

Highlands College Pre-Apprentice Workbook (provided)

**Course Organization**

The course consists of:

- 10 modules with lectures and reading assignments
- 10 module exams
- Final Exam

**Course Policies and Procedures**

Academic Honor Code and Academic Honesty

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### Student Responsibilities and Expectations

*Cell Phones & Other Electronic Devices*

### **Students with Disabilities**

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Disabilities Services Office at (406) 496-3730 or online <https://www.mtech.edu/academics/services/disability/index.html> at the earliest possible date.

### **Assignments and Assessments**

There will be a total of six (6 exams) and a comprehensive final exam. Exams will be graded and averaged for the final grade for the course. In order to pass, students must have a minimum of 80% for a final grade per industry requirements.

### **Grade Scale**

A	94-100%
B	93.99-90%
B-	89.99-87%
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May 10, 2025	Graduation

**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 fewer.  
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 of 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

Date \_\_\_\_\_

Dept. \_\_\_\_\_

Program \_\_\_\_\_

College \_\_\_\_\_

CRC Representative \_\_\_\_\_

Description of Request: \_\_\_\_\_

Current Course or Program Information: \_\_\_\_\_

Number (Assigned By CRC): \_\_\_\_\_

**Proposed Change**

<b>Course #</b>	<b>Name</b>	<b>Credits</b>	<b>Pre-req.</b>
<p><b>This should include what will appear in the catalog, exactly. New course require course outcomes listed in this area.</b></p>			

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

## 2025/2026 Advising Sheet for Mining Engineering

	Course Number	Course Title	Date Completed	Credits	Total		
Year 1 - Fall	CHMY 141	College Chemistry I		3	17		
	CHMY 191	CHMY 141 Recitation		0			
	CHMY 142	College Chemistry Lab I		1			
	CHMY 142	CHMY 142 Lecture		0			
	EGEN 101	Intro to Eng. Calc & Prob. Sol.		3			
	EGEN 101	Intro to Eng. Calc & Prob. Sol. - Lab		0			
	EGEN 194	Engineering Seminar		1			
	HSS	Social Science Elective		3			
	M 171	Calculus I		3			
	WRIT 121	Intro to Tech Writing		3			
Year 1 - Spring	GEO 101	Introduction to Physical Geology		3	15		
	GEO 101	Introduction to Physical Geology Lab		0			
	M 172	Calculus II		3			
	MIN 105	Introduction to Mining		3			
	PHSX 234	General Physics-Mechanics		3			
	HSS	Humanities Elective		3			
Year 2 - Fall	EGEN 201	Engineering Mechanics-Statics		3	14		
	M 273	Multivariable Calculus		4			
	MIN 210	Plane Surveying		3			
	MIN 210	Plane Surveying-Lab		0			
	MIN 216	Mine Surveying & Data Analysis 1		1			
	MIN 205	Mining & Construction Equipment		3			
	BGEN 363	Business Ethics and Decision Making		3			
Year 2 - Spring	EGEN 202	Engineering Mechanics-Dynamics		3	16		
	GEO 204	Intro to Mineralogy-Petrology		3			
	GEO 204	Intro to Mineralogy-Petrology-Lab		0			
	M 274	Intro to Differential Equations		3			
	PHSX 237	General Physics-Elect/Magnet/Wave		3			
	MIN 217	Mine Surveying & Data Analysis 2		1			
	EGEN 324	Applied Thermodynamics		3			
Year 3 - Fall	EGEN 325	Engr. Economic Analysis		3	16		
	MIN 320	Mining Data Analytics		3			
	MIN 300	Mining Technology		3			
	MIN 230	Miner Safety Management		3			
	MIN 140/298	Practical Underground or Internship		1			
	EMET 232	Introduction to Mineral Processing		2			
Year 3 - Spring	EMET 234	Mineral Processing Lab		1	16		
	MIN 305	Mine Plant Design		3			
	MIN 411	Advanced Mining Method Selection		3			
	MIN 456	Mine Ventilation		3			
	MIN 457	Mine Ventilation Lab		1			
	WRIT 321	Advanced Technical Writing		3			
	EGEN 305	Mechanics of Materials		3			
Year 4 - Fall	EGEN 488	Fundamentals of Engineering Exam		1	15		
	MIN 400	Economics of the Mineral Industries		3			OR ECNS 201, 202, or 203
	MIN	Mining and Tech Elective		3			
	MIN 412	Applied Mine Design 1		2			
	MIN 408	Valuation of Mineral Properties		3			
Year 4 - Spring	MIN	Mining and Tech Elective		3	17		
	MIN 413	Applied Mine Design 2		2			
	MIN 444	Environmental Mgt & Design Of Mines		3			
	MIN 467	Geomechanics I		3			
	MIN 467	Geomechanics I-Lab		0			
	MIN 458	Mine Management		3			
	MIN 499W	Mine Design Project		3			OR GEOE 499W
Total				126	126		

**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 \_\_\_\_\_

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**Dean Approval**

Date \_\_\_\_\_

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**Graduate Council Approval**

Date \_\_\_\_\_

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**CRC Approval**

Date \_\_\_\_\_

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**Faculty Senate Approval**

Date \_\_\_\_\_

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**VCAA Approval (see below)**

Date \_\_\_\_\_

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**Chancellor Approval (see below)**

Date \_\_\_\_\_

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Montana University System  
REQUEST TO PLAN FORM

ITEM XXX-XXX-XXXXX

Meeting Date

Item Name

Program/Center/Institute Title: **M.S. Mechanical Engineering,  
M.S. Civil Engineering** Planned 6-digit CIP code: **14.1901**

Campus, School/Department: **Montana Technological University, Lance  
College of Mines and Engineering** Expected Final Submission Date: **November  
2025**

Contact Name/Info: **Rick LaDouceur, [rladouceur@mtech.edu](mailto:rladouceur@mtech.edu), 406-496-4186  
Mary MacLaughlin, [mmaclaughlin@mtech.edu](mailto:mmaclaughlin@mtech.edu), 406-496-4655**

This form is meant to increase communication, collaboration, and problem-solving opportunities throughout the MUS in the program/center/institute development process. The completed form should not be more than 2-3 pages. For more information regarding the program/center/institute approval process, please visit <http://mus.edu/che/arsa/academicproposals.asp>.

**1) Provide a description of the program/center/institute.**

Montana Tech's existing M.S. degree in General Engineering has two options – Mechanical Engineering and Civil Engineering. The proposed new program is to instead offer standalone M.S. degrees in Mechanical Engineering and Civil Engineering that would replace the General Engineering – Mechanical Option M.S. degree and the General Engineering – Civil Option M.S. degree. Replacing the General Engineering M.S. Options with separate Mechanical Engineering and Civil Engineering M.S. degrees is consistent with changes made at the B.S. level in 2018. Like the General Engineering M.S. degree, the Mechanical Engineering and Civil Engineering M.S. degrees would have thesis and non-thesis options.

**2) Describe the need for the program/center/institute. Specifically, how the program/center/institute meets current student, state, and workforce demands. (Please cite sources).**

Offering standalone Mechanical Engineering and Civil Engineering M.S. degrees instead of the current General Engineering – Mechanical M.S. degree better meets the needs of students, industry, and Montana Tech. The name of the degree (Mechanical Engineering or Civil Engineering, as opposed to General Engineering) is important in job applications and job descriptions. Graduates are sometimes overlooked by prospective employers, because job postings frequently specify Mechanical Engineering or Civil Engineering as the degree requirement and do not list General Engineering. Replacing the General Engineering M.S. – Mechanical Option and Civil Option with a properly named Mechanical Engineering M.S. degree and Civil Engineering M.S. degree would enable graduates and prospective employers to more effectively connect with one another. Montana Tech is also expected to benefit from the change because prospective students will be more effectively recruited into named Mechanical Engineering and Civil Engineering programs than into a General Engineering program.

**3) Describe any significant new resources (financial, staff, facility, new curricula) needed to launch and sustain the program/center/institute.**

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None. Because the new program is essentially a renaming of an existing program, the curricula, courses, library, faculty, and research infrastructure are in place.

**4) Describe any efforts or opportunities you have identified for collaboration either within the institution or between MUS institutions (i.e. articulation, course-sharing, research collaboration).**

Past and current research collaborations in the Mechanical Engineering department are numerous between and among Montana Tech departments, the University of Montana-Missoula, Montana State University-Bozeman, and the Montana Bureau of Mines and Geology, and these collaborations will continue. The Civil Engineering department has a number of new faculty eager to build research collaborations within and external to Montana Tech. No new courses are required, and existing course sharing and research collaborations are expected to continue.

**5) Describe how the program/center/institute fits with the institutional mission, strategic plan, existing institutional program array, and academic priorities as described in the most recent Academic Priorities and Planning Statement.**

The proposed M.S. degrees in Mechanical Engineering and Civil Engineering fits Montana Tech's mission. The curriculum exists and is successful. Creating Mechanical Engineering M.S. and Civil Engineering M.S. aligns the B.S. and M.S. degree names and facilitates obtaining employment for mechanical engineering graduates. Like the current General Engineering M.S., the Mechanical Engineering and Civil Engineering M.S. will contribute to exemplary graduate education and research, blending theory with practice to enable program graduates to significantly impact their profession.

<u>Signature/Date</u>
<b>Chief Academic Officer:</b>
<b>Chief Research Officer*:</b>
<b>Chief Executive Officer:</b>
<b>Flagship Provost**:</b>
<b>Flagship President**:</b>
<small>*Center/Institute Proposal only **Not applicable to the Community Colleges.</small>

## Notes

The original grade appeals document has been edited. Anything in black is the original and anything highlighted are the edits. Nothing was removed from the original.

### Grade Appeals

When a student believes a faculty member has improperly recorded a final grade, the student needs to follow the procedural steps for an informal and/or formal grade appeal. **The “burden of proof” in the grade appeals process shall rest with the student.**

#### *Informal Grade Appeal*

1. Regardless of the circumstance, the student must attempt to resolve the matter via a personal conference with the course instructor within 14 days after receiving the semester grade. (Nursing Department grade appeal process outlined in Nursing Student Handbook)
2. If the student is unable to arrange a conference, or if the student & the instructor cannot reach a mutually satisfactory resolution to the problem, then the student may request in writing that the Department Head convene a meeting with the student and the course instructor within 14 days of the written request. The student’s request must include a written explanation of the circumstances the student believes justifies an appeal to change a final grade for a course.

If a Department Head or Dean is the instructor involved in the appeal, the student may request in writing that the Vice Chancellor for Academic Affairs appoint another Department Head or Dean to convene the informal meeting.

The Department Head will submit both the student’s written explanation of their grade appeal and a written report describing the informal attempt to resolve the issue to the Vice Chancellor for Academic Affairs.

3. If the grade issue is not resolved at this meeting, the student may request a formal grade appeal.

**Formal Grade appeals initiated *after the first 30 days of the start of the next regular semester* are not accepted.** (Nursing Department grade appeal process outlined in Nursing Student Handbook). **Any grade change submitted after conclusion of the subsequent semester requires the specific classes department head and dean approval.**

#### *Formal Grade Appeal - Committee Hearing*

1. An appeal for a formal grade review must be submitted to the Vice Chancellor for Academic Affairs within 14 academic days after the informal grade appeal process has failed. The request must include a written explanation of the circumstances that the student believes justifies an appeal to change a final grade for a course, and a written statement describing the informal attempt to resolve the issue.

2. If the Vice Chancellor for Academic Affairs determines that grounds for a formal grade appeal exist, he or she will request the Academic Standards Committee to review the issues and will request appropriate course materials and records from the student and from the course instructor.

A summary of the student's written explanation of the circumstances that the student believes justifies an appeal to change a final grade for a course will be sent to the course instructor at least a week before the formal appeal meeting.

3. The Academic Standards Committee shall examine all evidence (verbal and/or written) that the student and instructor present and will determine whether to recommend a final grade change. The primary consideration afforded the student will be whether or not the student was dealt with fairly with respect to other students in similar circumstances.
4. By majority vote, the Committee shall recommend letting the final grade remain unchanged, shall recommend the assignment of a new letter grade, or recommend alternative action(s) necessary to resolve the grade appeal.
5. The Committee shall prepare a written report on their decision. At minimum, the written report must contain the following:
  - I. A summary of the student's justification for the grade appeal.
  - II. The Committee's decision, their recommendation, and why they believe their decision ensures the student was dealt with fairly with respect to other students in similar circumstances.
  - III. A statement of the evidence that the committee found relevant to their decision.
6. If a new final grade or alternative action(s) is/are recommended by the Academic Standards Committee, the Vice Chancellor for Academic Affairs will meet with the involved faculty member to review the recommended action. A summary of the Committee's written report shall be made available to the faculty at this time for review.
7. The Vice Chancellor for Academic Affairs will make a final decision.

Every attempt will be made to complete the entire appeal process within **30 days** of the initiation of the formal appeal process.

The review by the Academic Standards Committee and Vice Chancellor for Academic Affairs shall be the final campus appeal for the assignment of a final grade. (Approved at April 21, 1994 Faculty Meeting).

## A Proposed Resolution

Whereas,

Montana Tech continuously embraces innovative instructional support technologies such as Canvas,

Faculty require support to effectively leverage resources conducive to student success and teaching quality, and

Interruptions to faculty support services can undermine academic excellence and a sense of shared governance;

The Faculty Senate of Montana Technological University requests:

Clarification regarding the scope of duties and responsibilities of the Center for Academic Innovation in AY 2025-26;

Greater shared governance opportunities in the creation and cultivation of all academic support units, such as by inviting faculty feedback to set or measure outcomes for those units or draft charge statements.

Changes to FSH 303 and 304 due to non-action on previously approved FSH changes. Adds deadlines to accept, reject, and publish changes, and other clarification.

Current Language:

### **303 POLICY FOR CHANGING FACULTY/STAFF HANDBOOK**

Changes in the Faculty/Staff Handbook can come as new or changed policy from the Board of Regents, or may be proposed by faculty members, the Faculty Senate, staff, or the Administration.

Proposed changes will be discussed in open meetings with the affected parties and the Administration before recommendations are forwarded to the Chancellor.

Normally, all institutional policies are reviewed by the Executive Team, Deans Council, and ASMT. Additionally, the Faculty Senate reviews matters pertinent to their responsibilities.

All proposed changes directly involving academic issues will be carried in writing, either by a faculty member, the Faculty Senate, or by the Administration, to the Faculty Senate and followed by a discussion in a faculty meeting. A

recommendation will require an affirmative vote at a general faculty meeting.

The Chancellor must approve all changes to the Faculty/Staff Handbook. It is expected that the Chancellor will discuss with the affected parties the reason for disapproval of a proposed change or insertion of new items to the Faculty/Staff Handbook. (Policy approved at May 6, 1992 Faculty Meeting.)

### **304 POLICY MATTERS PRESENTED AT FACULTY MEETINGS**

Any motion that affects policy matters concerning academic affairs, or matters of interest to the faculty, must be presented to the faculty at least 48 hours prior to the Faculty Meeting. (Faculty action taken January 6, 1977.)

Those in attendance will constitute a quorum, given that there has been proper notification of the meeting and that it occurs during the normal academic year.

Proposed change: Need deadlines to act, respond, and PUBLISH AND IMPLEMENT!

Changes **bold underline red** to add, ~~**strike through red bold**~~ to delete.

### **303 POLICY FOR CHANGING FACULTY/STAFF HANDBOOK**

Changes in the Faculty/Staff Handbook can come as new or changed policy from the Board of Regents, or may be proposed by faculty members, the Faculty Senate, staff, or the Administration.

Proposed changes ~~**will**~~ **shall** be discussed in open meetings with the affected parties and the Administration before recommendations are forwarded to the Chancellor. **Representatives of the Administration are encouraged to attend faculty senate and general faculty meetings where proposals to change faculty staff handbook changes are discussed, and to provide input. The faculty senate and general faculty may close its meeting during final voting.** Normally, all institutional policies are reviewed by the Executive Team, Deans Council, and ASMT. Additionally, the Faculty Senate reviews matters pertinent to their responsibilities.

**To the greatest extent possible, policies of the faculty staff handbook pertaining to employment matters and actions shall be harmonized with the analogous policies, and procedures of the current collective bargaining agreement, so that all employees are treated in a similar manner, whether they are members of a bargaining unit or not. Policies and proposed changes that differ substantially and or in a manner that measurably advantages or disadvantages, or have disparate treatment of members and non-members of collectively bargaining units, or of individual or small groups of employees, are discouraged.**

All proposed changes directly involving academic issues will be carried in writing, either by a faculty member, the Faculty Senate, or by the Administration, to the Faculty Senate and **to the Provost.** ~~**followed by a discussion in a faculty meeting.**~~ **The proposed change shall be discussed in a faculty senate meeting no sooner than the greater of two weeks or the next scheduled faculty senate meeting after submission, and no later than the lesser of four weeks or the 2<sup>nd</sup> following scheduled faculty senate meeting. If the proposed change is intended to take effect before the next academic year, it must be an emergency change, and the proposal shall state the dates that it shall take effect and be published. Faculty senate shall determine by vote, and state in its minutes whether the proposal shall be advanced as an emergency change or an ordinary change.**

Amendments and modifications to the proposal are considered germane if they are relevant, appropriate, and logically related to the proposed changes. The proposed change may be approved as proposed, or with germane modifications, or be rejected by the faculty senate. If approved, the language and applicable information shall be documented in the faculty senate meeting minutes, and then be submitted for action at the next scheduled general faculty meeting. The general faculty meeting may by majority vote, approve as submitted, approve with germane modifications, or reject. If approved, the change and relevant details shall be documented in the general faculty meeting minutes and forwarded to the chancellor within five business days of this action. A recommendation will require an affirmative vote at a general faculty meeting.

The Chancellor shall approve or disapprove the change within five business days of receipt. If the Chancellor takes no action within five business days, the proposal shall be adopted and published. Except in cases of emergency, or directives from the board of regents, or by other legal authority, approved changes shall take effect at the beginning of the next academic year. The faculty staff handbook shall be published with the changed language, and shall state to dates of approval by faculty senate, general faculty, and chancellor. In case of an emergency change or one mandated by the board of regents or other legal authority, the change shall take effect and be published as mandated by those entities. must approve all changes to the Faculty/Staff Handbook. It is expected that the Chancellor will discuss with the affected parties the reason for disapproval of a proposed change or insertion of new items to the Faculty/Staff Handbook.

Beginning with the Faculty Staff Handbook for the 2025-2026 Academic Year, the handbook shall add an appendix listing and describing changes and their dates of adoption. Records of older editions of the Faculty Staff Handbook shall be archived and publicly accessible. (Policy approved at May 6, 1992 Faculty Meeting.)

### **304 POLICY MATTERS PRESENTED AT FACULTY MEETINGS**

Any motion that affects policy matters concerning academic affairs, or matters of interest to the faculty, must be presented to the faculty at least 48 hours prior to the Faculty Meeting. (Faculty action taken January 6, 1977.) Exception: Policy matters related to changes to the faculty staff handbook shall also follow and comply with the processes of section 303 POLICY FOR CHANGING FACULTY/STAFF HANDBOOK.

Those in attendance will constitute a quorum, given that there has been proper notification of the meeting and that it occurs during the normal academic year.

\*\*\*\*\* End of Proposed Change \*\*\*\*\*

The above should add affirmative deadlines to the process for adoption or changes and publication thereof. The **“If the Chancellor takes no action within five business days, the proposal shall be adopted and published.”** Is analogous to several states’ laws where bills can become law w/o governor signature, and prevents delays.

A possible point of faculty debate, do we want to add a “veto override” provision where faculty can vote in a change, over administrative objection with a supermajority?

Includes administration feedback and attendance when discussed. Also allows us to ask non-faculty senators, or non-faculty to leave if there are concerns over their presence.

Also provides that changes to proposed changes must be germane. No proposing a change in one section and then voting to add a surprise change to an unrelated section, using the proposal as a “vehicle” for this.

Also affirms that all faculty are to be treated the same to the extent possible, especially in employment-related matters, whether in a union or not, or by individual or small groups. Deadlines, processes, etc. should be as similar as possible for all.

