

## REQUEST TO PLAN MEMORANDUM

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**DATE:** April 13, 2020

**TO:** Chief Academic Officers, Montana University System

**FROM:** Brock Tessman, Deputy Commissioner for Academic, Research, and Student Affairs

**RE:** May 2020 Request to Plan Proposals

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The campuses of the Montana University System have proposed new academic programs or changes under the Request to Plan process authorized by the Montana Board of Regents. The proposals are being sent to you for your review and approval. If you have concerns about a particular proposal, you should share those concerns with your colleagues at that institution and try to come to some understanding. If you cannot resolve your concerns, raise them at the Chief Academic Officer's conference call May 6<sup>th</sup>. Issues not resolved at that meeting should be submitted in writing to OCHE by noon on Friday, May 8<sup>th</sup>. If no concerns are received, OCHE will assume that the proposals have your approval.

### **Requests to Plan**

#### **Montana Technological University:**

- Request to plan Engineering Geology option in the Geoscience M.S.  
[Item # 1501-R0520](#)

**Montana University System**  
**REQUEST TO PLAN FORM**

**ITEM XXX-1501-R0520**

**Meeting Date**

**Item Name**

Program/Center/Institute Title: **Engineering Geology Option in Geoscience M.S.**

Planned 6-digit CIP code: **40.06.99**

Campus, School/Department: **Montana Technological University**

Expected Final Submission Date: **April 2020**

Contact Name/Info: **Larry Smith, [lsmith@mtech.edu](mailto:lsmith@mtech.edu), 406-496-4859**

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.**

A new option in engineering geology is proposed to be added to Montana Tech's Master of Science in Geoscience. This option would join existing options in geochemistry, geology, geological engineering, geophysical engineering, hydrogeology, and hydrogeological engineering

**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).**

Student interest and the need for geoscientists trained in geologic hazards by employers in Montana and throughout western North America has shown that a mix of geological sciences and engineering is in high demand in the private and government sectors. Registration programs for Professional Geologists or Engineering Geologists have expanded in the western US, and in other regions of the country. Many students entering the Geoscience M.S. at Montana Tech would like to be trained in Engineering Geology, but do not have the extensive engineering background for a fully engineering-focused Master's program, and this option would provide them with a credential that would allow them to become registered in several states (Montana does not offer this registration).

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

None.



**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).**

Collaborations in geoscience and engineering research 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 will continue. Course-sharing options discussed for the Ph.D. programs in the earth and geoscience fields will be applicable to this option.

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- 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 option in Engineering Geology within Montana Tech's long-standing and successful Geoscience M.S. program fits Montana Tech's mission by enabling exemplary graduate education and research, blending theory with practice to support responsible development and sustainable use of natural resources. It especially complements and fills a gap between the existing options in Geology and Geological Engineering in the Geoscience M.S.

<u>Signature/Date</u>	
Chief Academic Officer:	 4/18/2020
Chief Research Officer*:	
Chief Executive Officer:	 4/7/20
Flagship Provost**:	
Flagship President**:	

\*Center/Institute Proposal only  
\*\*Not applicable to the Community Colleges.

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**FOR OCHE USE**

**Labor market outlook**

Engineering Geology is a sub-discipline of Geosciences that overlaps with Civil and Geological Engineering. Public sources do not report on labor demand for engineering geologists alone, but instead tracks larger occupational categories.

<b>Occupational demand projections in Montana, all levels of education</b>			
	<b>Annual Openings</b>	<b>Growth 2018-28</b>	<b>Median Wage</b>
Mining and Geological Engineers	10	-3%	\$92,250
Geoscientists	30	+16%	\$85,780

Source: O\*NET

**Related programs / centers / institutes**

No other campus in the Montana University System offers a specific graduate degree option in engineering geology. Montana State University offers an M.S. in Earth Sciences with concentrations in Geology and Geography. MSU's M.S. in Civil Engineering could also allow students to accumulate some similar coursework, though in a less focused manner. The University of Montana offers an M.S. in Geosciences.

<b>MUS Geosciences / Earth Science M.S. graduates 2017-2019</b>			
	<b>2019</b>	<b>2018</b>	<b>2017</b>
Montana Technological University	11	12	15
Montana State University	6	9	13
The University of Montana	7	8	4
<b>TOTAL</b>	<b>24</b>	<b>29</b>	<b>32</b>

Source: MUS Student Data Warehouse

**CAO discussion and follow-up**

**ARSA/BOR comment and direction for Level II proposal**