

REQUEST TO PLAN MEMORANDUM

DATE: April 27, 2021

TO: Chief Academic Officers, Montana University System

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

RE: May 2021 Request to Plan Proposals

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 on Wednesday, May 5, 2021. Issues not resolved at that meeting should be submitted in writing to OCHE by noon on Friday, May 7, 2021. If no concerns are received, OCHE will assume that the proposals have your approval.

Request to Plan Proposals

Montana State University – Bozeman:

- Request to Plan a Psychiatric Mental Health Nurse Practitioner Across the Life Span Certificate
[Item #194-2010-R0521](#)
- Request to Plan a Master of Engineering – Environmental Engineering Option
[Item #194-2013-R0521](#)
- Request to Plan a Master of Engineering – Manufacturing Engineering Option
[Item #194-2014-R0521](#)
- Request to Plan a Ph.D. in Indigenous and Rural Health
[Item #194-2015-R0521](#)
- Request to Plan a Master of Engineering – Civil Engineering Option
[Item #194-2016-R0521](#)

University of Montana – Missoula:

- Request to Plan an Online B.S. in Business
[Item #194-1001-R0521](#)

The University of Montana Western:

- Request to Plan Health and Human Performance A.A.S.
[Item #194-1600-R0521](#)

Montana University System
REQUEST TO PLAN FORM

ITEM XXX-2010-R0521

Meeting Date: May 2021

Item Name

Program/Center/Institute Title: **Psychiatric Mental Health Nurse Practitioner
Across the Life Span Certificate** Planned 6-digit CIP code: **51.3810**

Campus, School/Department: **Montana State University- College of Nursing** Expected Final Submission Date: **March BOR**

Contact Name/Info: **Susan Raph sraph@montana.edu**

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.

The CON currently offers an option in the Doctor of Nursing Practice (DNP) program to specialize as a psychiatric mental health nurse practitioner (PMHNP). This proposed certificate program would allow advanced practice registered nurses (APRN) already nationally certified in another specialty area (e.g., family nurse practitioner, midwifery, pediatric, adult-geriatric, etc) to become nationally certified as a psych-mental health nurse practitioner by completing 29-35 credits and 500+ hours of direct patient clinical contact. All courses for the proposed PMHNP certificate program currently exist in the CON DNP program. No new courses will need to be developed and no additional sections of courses will be taught. Enrollment in this certificate program would be limited to open "seats" in the existing psych-mental health DNP didactic courses and available PMHNP clinical preceptors. No additional funds are required for this program. Increased efficiency of existing course offerings is anticipated by fully enrolling didactic courses and clinical sections.

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).

There is a critical shortage of psychiatric-mental health providers in the State of Montana and across the U.S. This program will allow current APRNs to shift or expand their focus to include care of persons experiencing acute or chronic mental illness. The MSU CON receives frequent inquiries of interest regarding a PMHNP certificate program. Estimated number of interested applicants annually is 5-10 with an estimated annual enrollment limited to 2-6 students based on available space in didactic and/or clinical courses.

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

The college will need to reallocate funds internally to fund all, or a significant portion of this program. At this time, no additional institutional support has been identified or budgeted for the program and no new or additional faculty lines or GTA support are available from central sources to support this program. All courses required for this certificate program are currently being offered in the CON's DNP program. No new courses will be created. Certificate students will be limited to the number who can be accommodated within existing sections and clinical sites. Hence, no new resources are requested to launch or sustain this program.

Montana University System
REQUEST TO PLAN FORM

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).

Not applicable. All courses included within this certificate program are only offered by MSU College of Nursing.

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.

A Psychiatric Mental Health NP Certificate program aligns with the AY 20-21 MSU Academic Priorities and Planning Statement by specifically addressing MSU Strategic Plan goals 1.2: Expand high quality graduate education, and 3.2: Grow mutually beneficial partnerships across Montana.

| <u>Signature/Date</u> | |
|--|------------------------|
| Chief Academic Officer:  <small>DocuSigned by: 212A28411AC04BD...</small> | 2/2/2021 4:46 PM MST |
| Chief Research Officer*: | |
| Chief Executive Officer:  <small>DocuSigned by: 7D6A4CE96C3F415...</small> | 2/2/2021 4:46 PM MST |
| Flagship Provost**:  <small>DocuSigned by: 212A28411AC04BD...</small> | 2/2/2021 4:46 PM MST |
| Flagship President**:  <small>DocuSigned by: 7D6A4CE96C3F415...</small> | 2/2/2021 4:46 PM MST |
| <small>*Center/Institute Proposal only **Not applicable to the Community Colleges.</small> | |

Montana University System
REQUEST TO PLAN FORM

ITEM 194-2013-R0521**Meeting Date: May 21****Item Name: Request authorization to establish a Master of Engineering- Environmental Engineering Option**

| | | |
|---------------------------------|--|--|
| Program/Center/Institute Title: | Master of Engineering – Environmental Engineering Option | Planned 6-digit CIP code: 14.1401 |
| Campus, School/Department: | MSU Bozeman, Norm Asbjornson College of Engineering, Department of Civil Engineering | Expected Final Submission Date: Spring 21 |
| Contact Name/Info: | Craig Woolard, Ph.D., P.E., Professor and Department Head, craig.woolard@montana.edu, 406-994-7402 | |

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.

The Department of Civil Engineering (the Department) is proposing a Master of Engineering degree in Environmental Engineering (M.Eng.-ENVE) option under the existing Masters of Engineering (M.Eng.) degree program offered through the Norm Asbjornson College of Engineering. The M.Eng.-ENVE option would be a 30 credit, course-work only program option with no thesis or professional paper required. The option would allow students to achieve specialization and advanced training in environmental engineering. The proposed option compliments the Department's Environmental Engineering Bachelor's degree.

The Department currently offers a Plan A (Thesis) and Plan B (Professional Paper) Master of Science in Environmental Engineering (MSENVE). The M.Eng.-ENVE augments this existing program to provide another option for students seeking advanced education a specific civil engineering subdiscipline.

The proposed M. Eng. – ENVE option allows students unable or uninterested in pursuing a thesis or professional paper graduate degree to pursue an advanced degree. The proposed M.Eng. – ENVE option will be attractive to recent graduates and working professionals who wish to pursue a course-based degree.

M.Eng. degree options are currently offered for Bioengineering, Chemical Engineering, Electrical Engineering and Mechanical 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).

Montana University System

REQUEST TO PLAN FORM

The Bureau of Labor Statistics (BLS) 2019-2029 employment projections project a 3% growth in employment for Environmental Engineers nationwide (3,700 job openings) and a 13% growth in employment for environmental engineers in Montana (40 job openings). Average annual salaries for environmental engineers are \$82,900 and \$88,860 in Montana and nationwide, respectively.

(<https://www.onetonline.org/link/localtrends/17-2051.00?st=MT&g=Go>)

Demand for environmental engineers and related professional positions is driven largely by construction activities. The Montana Department of Labor (DOL) and Industry project the professional, scientific and technical services linked to the construction industry will be the fastest growing professional services sector over the next 10 years growing at an annual rate of 1.8%.

(<http://lmi.mt.gov/Portals/193/Publications/LMI-Pubs/Labor%20Market%20Publications/Projections2018-28.pdf>)

The BLS and DOL job growth forecasts are supported by the graduate programs market analysis conducted by the Graduate School. Civil Engineering (CE) and Land Resources and Environmental Sciences (LRES) were identified as two of the top programs at MSU with a high and/or growing demand and few regional competitors. Environmental Engineering combines critical elements of CE and LRES programs suggesting that the demand for graduates will be strong. A study by the academic research firm, EAB, projected an 8% growth (118 job openings) in 2017-2020 regional job postings for CE's and a 6.8% growth (134 job openings) for LRES positions. The forecast for environmental engineering job growth should be in this range. (Graduate Portfolio Health Check, Market Insights Brief, EAB Global Inc., May 2020)

Employment data support the demand civil engineers with graduate degrees. The most recent MSU Career Destination Survey with available data (2018) showed a 100% placement of graduates from the MSENVE responding to the survey.

(<http://www.montana.edu/aycss/careers/planning/career-destinations.html>)

Finally, the graduate degree is becoming more common in the profession. The American Society of Civil Engineers (ASCE) states that the "most effective means of fulfilling the formal educational requirements of the civil engineering body of knowledge is by completing a baccalaureate degree in civil engineering from an Accreditation Board for Engineering and Technology, ABET-accredited program and a master's degree in civil engineering or a civil engineering specialty area." Environmental engineering is discipline within civil engineering that routinely requires an advanced degree for professional practice.

(<https://www.asce.org/issues-and-advocacy/public-policy/policy-statement-465---the-civil-engineering-body-of-knowledge-and-the-practice-of-civil-engineering/>).

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

Because the proposed M.Eng.-ENV will augment the existing MSENVE degree, no additional resources will be required. The faculty, staff and facilities are currently in place to deliver the MSCE program. The proposed M.Eng.-ENVE option will attract additional students with no associated increase in costs resulting in net income from additional graduate students who would otherwise not attend MSU.

Montana University System
REQUEST TO PLAN FORM



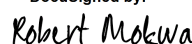

4) Describe any efforts or opportunities you have identified for collaboration either within the institution or between MUS institutions (i.e. articulation, course-sharing, research collaboration).

The proposal adds an option to an existing degree program and augments the Department’s existing MSENVE program. All of courses for the degree have been previously approved after review by other campuses. New courses would be approved through the existing curriculum approval processes. M.Eng.-ENVE students could apply courses from the upper division and graduate courses offered at Montana Tech to the program through existing articulation agreements.

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.

MSU’s Strategic plan GOAL 1.2 is: “Expand high-quality graduate education Montana State University will enroll and graduate more degree-seeking students at the graduate level and enhance the quality of graduate degree programs.” Having an additional, course only option will increase the number of students obtaining a master’s degree.

The Norm Asbjornson College of Engineering (NACOE) strategic plan also call for expanded high-quality graduate education. Creation of the M.Eng.-ENVE option is part of the NACOE graduate program review look for efficiencies and opportunities to increase graduate education quality and enrollment. The proposed program will move toward standardization of degrees from each department within the NACOE and allow a broader group of students to pursue and advanced degree.

| <u>Signature/Date</u> | |
|--|---|
| Chief Academic Officer: | DocuSigned by:  9EDD74A82C3A419... |
| Chief Research Officer*: | |
| Chief Executive Officer: | DocuSigned by:  7D6A4CE96C3F415... |
| Flagship Provost**: | DocuSigned by:  9EDD74A82C3A419... |
| Flagship President**: | DocuSigned by:  7D6A4CE96C3F415... |
| *Center/Institute Proposal only **Not applicable to the Community Colleges. | |

Montana University System
REQUEST TO PLAN FORM

ITEM 194-2014-R0521**Meeting Date: May 2021****Item Name: Request authorization to establish a Master of Engineering- Manufacturing Engineering Option**

Program/Center/Institute Title: **Masters of Engineering - Manufacturing Engineering Option** Planned 6-digit CIP code: **14.3601**

Campus, School/Department: **MSU-Bozeman: Mechanical and Industrial Engineering Department** Expected Final Submission Date: **1/2022**

Contact Name/Info: **David Miller, davidmiller@montana.edu**

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 Master of Engineering option in Manufacturing Engineering is under consideration to prepare students from multiple disciplines to enter the workforce in an advanced manufacturing position. Additionally, it can provide training to professionals with a desire to build their skills in advanced manufacturing to advance in their professional careers. The program will focus on building advanced skills in the science of manufacturing processes across a wide spectrum of topics. Most notably, topics include automation, quality, efficiency, and management systems, thus enabling integration of complicated manufacturing systems. The recommendation is that the MUS pursue the addition of the Masters of Engineering in Manufacturing Engineering option into the M&IE Department at MSU.

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).

Impact, Need, and Potential Employers

Companies from across Montana, and the surrounding region, who recruit from MSU have been informally queried as to the need and potential impact of such a program. While certainly not exhaustive, the resulting answers indicate that MSU graduates with additional knowledge in manufacturing specific technologies would be strong candidates as for future employment. It was recognized by those employers with heavy manufacturing volume that MSU graduates are deficient in direct experience and knowledge related to the manufacturing environment. However, employers have still found those students to be successful and trainable for their needs. Employers recognize that additional training prior to employment, such as that in a Masters of Engineering in Manufacturing Engineering, would produce a more productive employee at the time of hire. More importantly, they would be willing to offer a higher starting salary to those students entering employment with the additional degree and training. Companies also recognize the potential in supporting current employees to return to MSU for additional education in the form of a Masters of Engineering.

Montana University System
REQUEST TO PLAN FORM

The Montana Manufacturing Extension Center (MMEC) is an MSU organization within the Norm Asbjornson College of Engineering whose mission is to grow Montana's economy by helping manufacturers succeed. The MMEC is a statewide manufacturing outreach and assistance center staffed by full-time professionals with extensive experience in manufacturing and business in a variety of industries. A strong relationship between the Manufacturing Masters and MMEC can ensure the program meets state workforce demands in the manufacturing sector.

A specific example of potential employees is Los Alamos National Laboratory (LANL). LANL has targeted MSU for recruitment and has hired 48 MT graduates in the past 5 years (2016-2020). Additionally, LANL and MSU have begun formal conversations to solidify a long-term research collaboration and partnership, enabled by a significant support from Montana's congressional delegation. It is envisioned that the relationship will be tied to both LANL milestones and deliverables for national science and technology programs, and pipeline development for future workforce needs. LANL anticipates the need for manufacturing engineers to be in the hundreds over the next ten years.

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

The new resource for this curricular option is the development of additional courses and assignment of faculty to teach said courses. The program is heavily leveraged by existing courses within ME, MET, and IMSE; therefore, those courses are already supported by the institution. However, these existing courses are often at capacity, and the addition of a new program may require additional sections to be supported by the college. Additional facilities would be required to house manufacturing hardware and systems that would add-to and complement the current undergraduate laboratories. The LANL partnership has identified multiple manufacturing systems to be implemented at MSU and housing them in the Undergraduate laboratories would not be appropriate. Additional courses could be taught by adjunct appointments from LANL staff, and staff members of the Montana Manufacturing Extension Center (MMEC). MMEC has shown support for this program and can be formally provided later. The Mechanical Engineering program and the Mechanical Engineering Technology program have both recently lost faculty members for which a direct replacement hire has not been accomplished. These openings could provide an opportunity to hire faculty with expertise to support this program.

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).

There are no identified collaborations within the institution. Opportunities exist for collaborations with Montana Tech – Mechanical Engineering for course-sharing and research collaboration, and MSU-Northern precision agriculture.

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.

Montana University System REQUEST TO PLAN FORM

The Manufacturing Engineering option strongly aligns with the University priorities identified in the Choosing Promise Strategic Plan. These priorities include Goal 1.2: Expand high-quality graduate education, Goal 2.1: Enhance the significance and impact of scholarship, and Goal 3.2: Grow mutually beneficial partnerships across Montana. Implementation of this program has the ability to improve local, state, and national prominence for both scholarship and educational outcomes.

Manufacturing engineering is a multidisciplinary program that is proposed to confer the degree of Master of Engineering and is designed to produce graduates capable of responding to the needs of both small and large manufacturing operations. These graduates should be able to design and operate manufacturing systems made up of people, materials, machinery and information systems.

Course work in the program will train students in traditional manufacturing engineering topics, such as materials and manufacturing processes, product and assembly engineering, manufacturing systems and operations, and manufacturing competitiveness. Additional courses will include modern technologies such as 3D printing and system-level concepts of integrated product and process design, applications of modern information technology to design and manufacturing, hands-on laboratories using advanced manufacturing equipment and commercial software, and innovation and entrepreneurship.

| <u>Signature/Date</u> | |
|--|---|
| Chief Academic Officer: | <p>DocuSigned by: <i>Robert Mokuwa</i> 9EDD74A82C3A419...</p> |
| Chief Research Officer*: | |
| Chief Executive Officer: | <p>DocuSigned by: <i>[Signature]</i> 7D6A4CE96C3F415...</p> |
| Flagship Provost**: | <p>DocuSigned by: <i>Robert Mokuwa</i> 9EDD74A82C3A419...</p> |
| Flagship President**: | <p>DocuSigned by: <i>[Signature]</i> 7D6A4CE96C3F415...</p> |
| <p>*Center/Institute Proposal only **Not applicable to the Community Colleges.</p> | |

Montana University System
REQUEST TO PLAN FORM

ITEM 194-2015-R0521**Meeting Date: May, 2021****Item Name: Request for authorization to establish a PhD in Indigenous and Rural Health**Program/Center/Institute Title: **PhD in Indigenous and Rural Health**Planned 6-digit CIP code: **51.2208**Campus, School/Department: **MSU-Bozeman, Colleges of EHHD, CLS, CON,
COA, Health and Human Development Dept**Expected Final Submission Date: **June 2021**Contact Name/Info: **Suzanne Held, Suzanne@montana.edu**

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.

By leveraging interdisciplinary knowledge across the university, this doctoral program will prepare professionals equipped to lead the development, implementation, and evaluation of health systems, programs and policies; direct research programs; and educate and train the next generation of health professionals. Students will learn to apply best practice including Indigenous research methods, community engagement, health care systems and policy, public health infrastructure, environmental health, social determinants of health, Indigenous wellness knowledge preservation and interdisciplinary and mixed qualitative and quantitative methods. We intend for this program to be available to students both at a distance and onsite in Bozeman through a blended teaching modality. The goal is to develop scholars, educators and practitioners who can address the health concerns and needs of Indigenous and rural communities in Montana and beyond.

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).

The Montana Healthcare Workforce Advisory Committee's (MHWAC) statewide strategic plan¹ cites a need to transform the workforce to meet the state's unique health-related challenges through academic degree programs tailored to meet demonstrated state and regional needs. They cite the need for research, policy development, and health systems development that will address existing health disparities in the state. These needs can be directly addressed by graduates of this interdisciplinary PhD program.

MHWAC's strategic plan also suggests utilizing the best practice of "growing your own" as a method to meet workforce demands and of providing academic programs to those in rural and underserved areas. With the options of distance and onsite learning, workers who are in tribal, county, and state health departments and tribal and other college and university health programs can advance their training. This includes those in nursing, as there is a lack of PhD programs for this audience. Professionals in these positions from other states can also take advantage of this program.

PhD-prepared health scientists are needed to solve health issues faced by Montana. For example, there is a disparity in median age at death between whites and American Indians in the state with American Indians having life expectancies that are 18 years shorter than white—this equates to American Indians having approximately three quarters the typical life expectancy of whites². Another challenge Montana faces is reducing the highest per capita suicide rate in the nation,

Montana University System
REQUEST TO PLAN FORM

which has risen 38% in the last decade to nearly double the national average³. Additionally, the state faces unique economic challenges as the average household income consistently trends \$7,000 or more below the national average with housing, food, and healthcare costs comparable to or higher than national average^{4,5}. Altering these statistics calls for innovative, multi-disciplinary and collaborative solutions generated by the research of emerging health scientists.

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

Beginning in year 1, approximately .1 FTE of an existing faculty member's workload will be allocated by the Department of Health and Human Development to serve as the Program Director and .2 FTE of an existing staff member's time will be allocated for recruiting students, managing applications, and supporting students through the program. By year 2, or depending on enrollment, the allocation of a staff member's time may increase to .3 FTE. As a faculty line becomes available, this will be allocated to the program within the Department of Health and Human Development or another collaborating department to provide program and student support and coordination.

Existing faculty and staff in the Department of Health and Human Development will assume the roles described above. The faculty member committing .1 FTE will have expertise in community and Indigenous health. The staff member will be one who is accustomed to working with graduate programs and whose responsibilities will be adjusted to accommodate new tasks. As a faculty line becomes available, and depending on program enrollment, an appropriate national search will be conducted for someone who is a leader in the area of Indigenous and/or rural health. Start-up for the faculty member will come from grant resources. The new faculty member will take responsibility for the new core coursework of the program.

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).

Faculty from four colleges, four centers, and the University of Washington School of Medicine regional medical school in Montana (WWAMI program), including MSU Extension specialists, with support from multiple health-related agencies are creating this interdisciplinary doctoral program in the social, behavioral, health and natural sciences. Faculty currently involved in planning are from disciplines including agriculture, anthropology, business, community health, engineering, graphic design, Native American Studies, sociology, nutrition, psychology, nursing, environmental health, microbiology, medicine, and as well as WWAMI, and four centers working in this area: IDeA Network of Biomedical Research Excellence (INBRE), the Center for American Indian and Rural Health Equity, the Center for Mental Health Research and Recovery, and the American Indian/Alaska Native Center for Translational Research. Planning members also represent relevant health-related agencies including Montana's Office of Rural Health, the Montana Area Health Education Center, the Montana Healthcare Foundation, the Rocky Mountain Tribal Leaders Council–Epidemiology Center and the Billings Area Indian Health Service.

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.

This program will align with MSU's mission to integrate education, knowledge creation, and service to communities. This program addresses the intentional focus areas outlined in MSU's 2019 "Choosing Promise" Strategic plan and aligns with several priorities in the MSU Academic Priority and Planning Statement:

Montana University System REQUEST TO PLAN FORM





Intentional Focus 1: This program will support MSU's goal to "expand high-quality graduate education" both in terms of balancing our portfolio of degrees offered (goal 1.2.1) and increasing the number of research doctoral degrees awarded annually (goals 1.2.3).

Intentional Focus 2: This program will support MSU to reach its goal of enhancing "the significance and impact of scholarship." Students affiliated with this program will engage in interdisciplinary scholarship that addresses "access and equity in education and health outcomes" thus "promoting wellness in our Montana communities" (goal 2.1.1; and a "Grant Challenges" topic area). In addition, this PhD program will help enhance the education of "graduation students through increased participation in research" (goal 2.1.3).

Intentional Focus 3: This program will support MSU to "increase mutually beneficial collaborations with tribal nations and partners." This program will "improve and increase tribal partnerships with mutually defined outcomes" (goal 3.2.1) and is "tailored to demonstrate state and region needs with attention to national trends (goal 3.4.2).

References:

1. Montana Healthcare Workforce Advisory Committee, Montana Office of Rural Health, Area Health Education Center. (2016). *Montana Healthcare Workforce: Statewide Strategic Plan*
2. Montana Department of Public Health and Human Services (2018). *2016 Montana Vital Statistics*. Public Health and Safety Division, Office of Epidemiology and Scientific Support.
3. Centers for Disease Control and Prevention (2017). National Center for Health Statistics: suicide mortality by state. Retrieved from <https://www.cdc.gov/nchs/pressroom/sosmap/suicide-mortality/suicide.htm>
4. US Bureau of Labor Statistics (2019, February 21). Economy at a glance: Montana. retrieved from <https://www.bls.gov/eag/eag.mt.htm>
5. Department of Numbers (2017). Montana household income. Retrieved from <https://www.deptofnumbers.com/income/montana/>

| Signature/Date | |
|---|---|
| Chief Academic Officer: | <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <small>DocuSigned by:</small>  <small>9EED74A82C3A419...</small> </div> |
| Chief Research Officer*: | |
| Chief Executive Officer: | <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <small>DocuSigned by:</small>  <small>7D8A4CE96C3F415...</small> </div> |
| Flagship Provost**: | <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <small>DocuSigned by:</small>  <small>9EED74A82C3A419...</small> </div> |
| Flagship President**: | <div style="border: 1px solid black; border-radius: 10px; padding: 5px; display: inline-block;"> <small>DocuSigned by:</small>  <small>7D8A4CE96C3F415...</small> </div> |
| <small>*Center/Institute Proposal only **Not applicable to the Community Colleges.</small> | |

Montana University System
REQUEST TO PLAN FORM

ITEM 194-201-R0521**Meeting Date: May 2021****Item Name: Request authorization to establish a Master of Engineering- Civil Engineering Option**

| | | | |
|---------------------------------|--|---------------------------------|------------------|
| Program/Center/Institute Title: | Master of Engineering – Civil Engineering Option | Planned 6-digit CIP code: | 14.0801 |
| Campus, School/Department: | MSU Bozeman, Norm Asbjornson College of Engineering, Department of Civil Engineering | Expected Final Submission Date: | Spring 21 |
| Contact Name/Info: | Craig Woolard, Ph.D., P.E., Professor and Department Head, craig.woolard@montana.edu, 406-994-7402 | | |

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.

The Department of Civil Engineering is proposing a Master of Engineering degree in Civil Engineering (M.Eng.-CE) option under the existing Masters of Engineering (M.Eng.) degree program offered through the Norm Asbjornson College of Engineering. The M.Eng.-CE option would be a 30 credit, course-work only program option with no thesis or professional paper required. The option would allow students to achieve specialization in the disciplines offered within the Department of Civil Engineering (structures, geotechnical, water resources and transportation). The proposed option compliments the Department's Civil Engineering Bachelor's degree.

The Department currently offers a Plan A (Thesis) and Plan B (Professional Paper) Master of Science in Civil Engineering (MSCE). The M.Eng.-CE augments these existing programs to provide another option for students seeking advanced education in a specific civil engineering subdiscipline.

The proposed M. Eng.-CE option allows students unable or uninterested in pursuing a thesis or professional paper graduate degree to pursue an advanced degree. The proposed M.Eng.-CE option will be attractive to recent graduates and working professionals who wish to pursue a course-based degree.

M.Eng. degree options are currently offered for Bioengineering, Chemical Engineering, Electrical Engineering and Mechanical 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).

The Bureau of Labor Statistics (BLS) 2019-2029 employment projections project a 2% growth in employment for Civil Engineers nationwide (22,900 job openings) and a 12% growth in employment for

Montana University System REQUEST TO PLAN FORM

civil engineers in Montana (130 job openings). Average annual salaries for CE's are \$75,620 and \$87,060 in Montana and nationwide, respectively.

(<https://www.onetonline.org/link/localtrends/17-2051.00?st=MT&g=Go>)

Demand for CE's and related professional positions is driven largely by construction activities. The Montana Department of Labor (DOL) and Industry project the professional, scientific and technical services linked to the construction industry will be the fastest growing professional services sector over the next 10 years growing at an annual rate of 1.8%.

(<http://lmi.mt.gov/Portals/193/Publications/LMI-Pubs/Labor%20Market%20Publications/Projections2018-28.pdf>)

The BLS and DOL job growth forecasts are supported by the graduate programs market analysis conducted by the Graduate School. Civil Engineering was identified as one of the top programs at MSU with a high and/or growing demand and few regional competitors. A study by the academic research firm, EAB, projected an 8% growth (118 job openings) in the 2017-2020 regional job posting. (Graduate Portfolio Health Check, Market Insights Brief, EAB Global Inc., May 2020)

Employment data support the demand civil engineers with graduate degrees. The most recent (2019) MSU Career Destination Survey showed a 100% placement of graduates from the MSCE responding to the survey, up from 83% in 2018 and 57% in 2017.

(<http://www.montana.edu/aycss/careers/planning/career-destinations.html>)

Finally, the graduate degree is becoming more common in the profession. The American Society of Civil Engineers (ASCE) states that the "most effective means of fulfilling the formal educational requirements of the civil engineering body of knowledge is by completing a baccalaureate degree in civil engineering from an ABET-accredited program and a master's degree in civil engineering or a civil engineering specialty area." (<https://www.asce.org/issues-and-advocacy/public-policy/policy-statement-465--the-civil-engineering-body-of-knowledge-and-the-practice-of-civil-engineering/>).

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

Because the proposed M.Eng.-CE will augment the existing MSCE degree, no additional resources will be required. The faculty, staff and facilities are currently in place to deliver the MSCE program. The proposed M.Eng.-CE option will attract additional students with no associated increase in costs resulting in net income from additional graduate students who would otherwise not attend MSU.

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).

The proposal adds an option to an existing degree program and augments the Department's existing MSCE program. All of courses for the degree have been previously approved after review by other campuses. New courses would be approved through the existing curriculum approval processes.

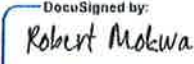

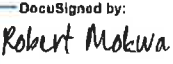

Montana University System
REQUEST TO PLAN FORM

M.Eng.-CE students could apply courses from the upper division and graduate courses offered at Montana Tech to the program through existing articulation agreements.

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.

MSU's Strategic plan GOAL 1.2 is: "Expand high-quality graduate education Montana State University will enroll and graduate more degree-seeking students at the graduate level and enhance the quality of graduate degree programs." Having an additional, course-only option will increase the number of students obtaining a master's degree.

The Norm Asbjornson College of Engineering (NACOE) strategic plan also call for expanded high-quality graduate education. Creation of the M.Eng.-CE option is part of the NACOE graduate program review look for efficiencies and opportunities to increase graduate education quality and enrollment. The proposed program will move toward standardization of degrees from each department within the NACOE and allow a broader group of students to pursue and advanced degree.

| <u>Signature/Date</u> | |
|--|---|
| Chief Academic Officer: | DocuSigned by:  9EED74A82C3A419... |
| Chief Research Officer*: | |
| Chief Executive Officer: | DocuSigned by:  7D8A4CE96C3F415... |
| Flagship Provost**: | DocuSigned by:  9EED74A82C3A419... |
| Flagship President**: | DocuSigned by:  7D8A4CE96C3F415... |
| *Center/Institute Proposal only **Not applicable to the Community Colleges. | |

Montana University System
REQUEST TO PLAN FORM

ITEM 194-1001-R0521

May 2021

Request for authorization to plan an online B.S. in Business

Program/Center/Institute Title: **Business B.S.**

Planned 6-digit CIP code: **52.0201**

Campus, School/Department: **College of Business, University of Montana-
Missoula**

Expected Final Submission Date: **November
2021**

Contact Name/Info: **Klaus Uhlenbruck, Klaus.uhlenbruck@mso.umt.edu**

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.

We are requesting to plan for an online general undergraduate business degree. For several years now, UM and COB have considered options to offer degrees online. With our OPM partner Wiley, this might become possible as they provide technical, administrative and marketing support. Wiley has identified a general bachelor degree in business as a financially viable opportunity.

The curriculum will likely build on the current core curriculum for BS degrees in COB. Many of our core courses already offer some sections online. Additional courses for this program are expected to largely follow the curriculum for the management major as the most general of our majors. Thus, this program will require little if any new courses. Rather, existing courses will need to be offered online.

Currently, we anticipate that students take 69 of the 120 credits needed for the degree in COB. The remaining 51 come from outside COB, some of which required for business majors, such as economics, some General Education credits, some electives.

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).

COB has experienced the need for general business education delivered online in Montana with our graduate programs for the MBA and MSBA degree. We moved the MBA to a Flex delivery—combining online and Zoom delivery— in 2017 and the MSBA in 2019. We expect that the increased demand we experienced on the graduate level to exist also on the undergraduate level.

Workforce demands are evident from a market analysis the academic consulting firm EAB provided for UM in October 2020. EAB found that the demand for undergraduate business education is strong. Also, EAB found that the educational demand in business is not as well served as other fields. A parallel labor projections study by consultants Ruffalo Noel Levitz, based on student demand and employer needs) came to similar results and identifies business as a program with highest distance education demand.

Montana University System
REQUEST TO PLAN FORM

UM's OPM partner Wiley, in their market analysis, comes to the same conclusion. They predict that an online, general business degree offered by UM would admit 90 students per year five years after starting the program, with a retention rate of 90 percent.

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

As stated above, students in this program take 69 credits at COB. The 200 students would generate approx. 3,800 SCH per year by year 5 in COB. Each COB faculty member can teach approx. 630 SCH p.a. Our accreditation requires a minimum of 40 percent of all courses be taught by tenure track faculty, which is 1,520 of the 3,800 SCH. Thus, COB would need to hire at least 2.5 FTE in new TT faculty, given the faculty capacity is fully utilized currently. The instruction of all other business courses could be done by adjunct faculty. Yearly costs for the tenure track faculty would be approx. \$400,000, nearly one quarter of expected revenue of the program. COB also would have to hire approx. 0.5 FTE in staff and 0.5 FTE in technical support personnel. No new facility or curricula costs would occur. We expect that in the short term, UM innovation support would provide this funding, but long-term, the program is expected to be self-sufficient financially.

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).

Of the 120 credits students will need for the degree, 51 will be taken outside of COB. Accordingly, we will need to cooperate with UM's College of Humanities and Sciences and other colleges where students take the remaining credits. Existing undergraduate online programs on campus confirm that a sufficient number of online courses, outside of the major, are available, for instance, online gen ed courses. Because the program will be offered online, faculty at other MUS institutions might become instructors in this program also.

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 University Design Team (UDT) recognizes that while "[p]lace is one of UM's truly distinctive assets but with learning moving increasingly online (exacerbated by COVID) and with some new segments of learners no longer looking for a traditional 4-year campus experience", we need to establish accessible, flexible learning pathways (<https://www.umontana.edu/president/udt/initiatives.php>). The proposed program is innovative (PFA 2) and allows us to deepen our impact in Montana (PFA 4, partnering with place) and the region by making business education accessible as well as attracting and serving a broader array of learners, in full alignment with UM's strategic plan. As a business degree, the proposed program fits with UM's community of excellence in Business & Entrepreneurship (see UM-Missoula Academic Priorities and Planning Statement, AY 2021).

Signature/Date

Chief Academic Officer:

Chief Research Officer*:

Montana University System
REQUEST TO PLAN FORM

Chief Executive Officer:

Flagship Provost:** Approved in Coursedog

Provost

Status: *Approved*

Deadline: *No deadline*

Flagship President:** Approved in Coursedog

President

Status: *Approved*

Deadline: *No deadline*

*Center/Institute Proposal only

**Not applicable to the Community Colleges.

Montana University System
REQUEST TO PLAN FORM

ITEM XXX-1600-R0521

Meeting Date May 2021

Item NameProgram Title: **Health and Human Performance, AAS**Planned 6-digit CIP code: **31.0501**Campus,
School/Department: **University of Montana Western**Expected Final Submission
Date: **July 2021**Contact Name/Info: **Janelle Handlos, Department Chair of HHP.**

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.

Provide an AAS degree designed to prepare students for earning certification in personal training or fitness instruction. AAS: Health & Human Performance degree could also be a bridge to the existing Bachelor of Applied Science, Health and Human Performance Option.

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).

Physical activity and fitness have played an increasingly critical role in modern healthcare. Heralded, in part, by the American College of Sports Medicine's Exercise is Medicine program [1], the healthcare industry continues to rely on exercise prescription in diverse medical populations [2]. As exercise training facilitation is beyond the scope of practice of most medical practitioners, this paradigmatic shift has driven the increasing demand for certified exercise and fitness trainers. Notably, the Bureau of Labor Statistics predicts this labor market will expand by 15% over the course of the next decade, outpacing the general personal care and service occupational group by nearly double, and all occupational groups by nearly four times the predicted rates [3]. Growth rates are predicted to be marginally higher in Montana than across the nation [4].

Accredited certifications in this workforce present an interesting dichotomy, however. At a higher level, management positions in this industry are expected to employ bachelor's or graduate degree holders with certifications such as the National Strength and Conditioning Association's Strength and Conditioning Specialist certification (of which many bachelor's programs in Kinesiology, including the University of Montana Western's, intentionally prepare their graduates to successfully complete). In contrast, the more basic, accredited personal trainer certifications generally only require a high school diploma [5]. As identified by the Bureau of Labor Statistics, certified trainers will likely need college courses to remain competitive in this expanding job market, notably identifying the potential role that an Associate's of Science degree can encompass in this setting [3].

Currently, the University of Montana Western does not offer a Kinesiology-specific degree at the Associates level; instead, the only alternative options for potential students rests in a general Associates of Science electing to include Kinesiology courses or an Associates of Applied Science in Business with a Fitness Specialist option. Both choices drastically reduce the available credits associated with Kinesiology training necessary for this fitness trainer

Montana University System
REQUEST TO PLAN FORM

career track and accredited certification [2]. A devoted applied associate of science in Health and Human Performance will allow students to complete the comprehensive Kinesiology core curriculum and practical, hands-on coaching courses to maximize their efficacy as coaches and competitive ability to secure employment in this rapidly expanding labor market.

1. Exercise is Medicine, American College of Sports Medicine, Physical activity in healthcare, at https://www.exerciseismedicine.org/support_page.php/physical-activity-in-health-care/ (visited December 06, 2020).
2. Posadzki, P., Pieper, D., Bajpai, R., Makaruk, H., Kongseng, N., Neuhaus, A.L., and Semwal, M. (2020). Exercise/physical activity and health outcomes: an overview of Cochrane systematic reviews. BMC Public Health 20, 1724. <https://doi.org/10.1186/s12889-020-09855-3>
3. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Fitness Trainers and Instructors, at <https://www.bls.gov/ooh/personal-care-and-service/fitness-trainers-and-instructors.htm> (visited December 06, 2020).
4. Projections Central, U.S. Department of Labor, Employment and Training Administration, Long-term Projections (2018-2028), at <https://www.projectionscentral.com/Projections/LongTerm> (visited December 06, 2020).
5. Sands, W.A., Wurth, J.J., and Hewitt, J.K. (2012). Basics of strength and conditioning manual. National Strength and Conditioning Association, at <https://www.nasca.com/education/tools-and-resources/basics-of-strength-and-conditioning-manual/> (visited December 06, 2020).

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

The existing faculty of the UMW HHP Department are already offering all courses required in this degree. Current course enrollments would allow an increase of approximately 5 students per course without a need for increasing sections of the course offered each year.

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).

Our HHP department has sought out opportunities to collaborate with both UM and MSU to provide access to health and performance assessment equipment not available in our community. FVCC offers a Certificate program similar to this proposed AAS: HHP but there does not appear to be an opportunity for shared resources.

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 AAS: Health & Human Performance degree aligns with the ongoing emphasis on providing Montanans with affordable career education and training opportunities. Increasing the opportunities for students to complete a degree in a specific area within two years contributes to campus efforts to increase recruitment, retention, and graduation rates. The AAS: Health & Human Performance program is unique across the university system and will allow students from all areas to experience the benefits of the Experience One scheduling model and the UMW value of providing equitable, inclusive student success.

Montana University System
REQUEST TO PLAN FORM

Signature/Date

Chief Academic Officer:

Jerry McNulty

2/24/2021

Chief Executive Officer:

B. Weatherly

2/25/21

Flagship Provost**:

Flagship President**:

*Center/Institute Proposal only

**Not applicable to the Community Colleges.