LEVEL II MEMORANDUM

DATE: January 30, 2018

TO: Chief Academic Officers, Montana University System

FROM: John Cech, Deputy Commissioner for Academic, Research, and Student Affairs

RE: March 2018 Level II Proposals

The campuses of the Montana University System have proposed new academic programs or changes under the Level II approval process authorized by the Montana Board of Regents. The Level II 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 February 21. Issues not resolved at that meeting should be submitted in writing to OCHE by noon on Friday, February 23. If no concerns are received, OCHE will assume that the proposals have your approval.

Level II Items

Montana State University Bozeman:

- Request for authorization to establish a Bachelor of Science degree in Environmental Engineering
  Item #178-2010-R0318 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan | Attachment 1
- Request for authorization to establish a Bachelor of Science in Landscape Architecture
  Item #178-2011-R0318 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan | Attachment 1

Montana Tech of the University of Montana:

- Request for authorization to establish an AAS Precision Machining Technology Program
  Item #178-1500-R0318| Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan | Attachment 1

Helena College University of Montana:

Request for for permanent authorization of the Certificate in Licensed Practical Nursing
Item #178-1901-R0318| Academic Proposal Request Form | Curriculum Proposal Form

University of Montana Western:

Request for authorization for an Academic Affairs Administrative Restructure
Item #178-1600-R0318| Academic Proposal Request Form

March 2018

ITEM 178-2010-R0318

Request authorization to establish a Bachelor of Science degree in Environmental Engineering

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THAT

Request authorization for Montana State University to establish a Bachelor of Science degree in Environmental Engineering

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EXPLANATION

The Department of Civil Engineering seeks to replace the existing Bio-Resources (BREN) Option of the Bachelor of Science degree in Civil Engineering (BSCE) with a Bachelor of Science degree in Environmental Engineering (BS EENV). While the BREN option in Civil Engineering has been a good option for our environmentally directed students (approximately 120 in number), environmental engineering is a more readily recognized engineering expertise, both by students and employers. Environmental engineers have a vital role in ensuring a sustainable future - designing green treatment systems, remediating past contamination, and protecting natural ecosystems. In light of the nature and importance of environmental engineering, there is keen interest in this field among students, and high demand for their services in the marketplace.

The proposed degree program also will well complement MSU's internationally recognized Center for Biofilm Engineering, providing synergistic basic and applied research opportunities for its students. This program will strengthen MSU's existing graduate environmental engineering programs, namely, our MS in EENV and our Environmental Option of the PhD in Engineering, as some students are expected to pursue graduate studies before entering the workforce.

ATTACHMENTS

Academic Proposal Request Form
Curriculum Proposal Form
Intent to Plan
Attachment #1 – Letters of Support

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **178-2010-R0318** Submission Month or Meeting: **March, 2018**

Institution: **Montana State University** CIP Code: **14.1401**

Program/Center/Institute Title: **Bachelor of Science in Environmental Engineering**

Includes (please specify below): Online Offering _____ Options _____

Please mark the appropriate type of request and submit with an Item Template and any additional materials, including those listed in parentheses following the type of request. For more information pertaining to the types of requests listed below, how to complete an item request, or additional forms please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

____ A. Level I:

Campus Approvals

____ **1a. Placing a postsecondary educational program into moratorium** (Program Termination and Moratorium Form)

____ **1b. Withdrawing a postsecondary educational program from moratorium**

____ **2. Establishing, re-titling, terminating or revising a campus certificate of 29 credits or less**

____ **3. Establishing a B.A.S./A.A./A.S. area of study**

____ **4. Offering an existing postsecondary educational program via distance or online delivery**

OCHE Approvals

____ **5. Re-titling an existing postsecondary educational program**

____ **6. Terminating an existing postsecondary educational program** (Program Termination and Moratorium Form)

____ **7. Consolidating existing postsecondary educational programs** (Curriculum Proposal Form)

____ **8. Establishing a new minor where there is a major or an option in a major** (Curriculum Proposal Form)

____ **9. Revising a postsecondary educational program** (Curriculum Proposal Form)

____ **10. Establishing a temporary C.A.S. or A.A.S. degree program** *Approval limited to 2 years*

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ACADEMIC PROPOSAL REQUEST FORM

X B. Level II:

X **1. Establishing a new postsecondary educational program** (Curriculum Proposal and Completed Intent to Plan Form)

2. Exceeding the 120 credit maximum for baccalaureate degrees *Exception to policy 301.11*

3. Forming, eliminating or consolidating an academic, administrative, or research unit (Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating)

4. Re-titling an academic, administrative, or research unit

Proposal Summary [360 words maximum]

What: The Civil Engineering Department at MSU seeks to replace the Bio-Resources (BREN) Option of the Bachelor of Science degree in Civil Engineering (BSCE) with a Bachelor of Science degree in Environmental Engineering (BS EENV).

Why: A BS EENV degree will better serve the career goals of our students, enhance student recruitment by increasing visibility of established curriculum content, respond to demand from Montana and regional employers, and create new opportunities for success of CE faculty with expertise in this area.

Resources: The proposed BS EENV program replaces an existing program at MSU, and thus will be generally resource neutral. Initially, little change in student enrollment is expected, and the proposed program only includes two new courses. The two new courses will be covered through changes in faculty assignments internal to the CE Department, and coincide with programmed changes in departmental teaching capacity. Based on current student enquiries about EENV programs, enrollment is anticipated to increase (assumed rate of five percent/year), which if realized, will eventually require additional resources. The associated increase in tuition revenue will cover these increases in costs. Currently, no changes in space or department faculty are necessary. Some laboratory equipment will be required to teach EENV specific laboratory methods, with an estimated cost of $6,000 (to be paid from student program fees).

Relationship to similar MUS programs: MT Tech of the University of Montana currently offers an accredited undergraduate degree in environmental engineering. The proposed program at MSU has unique and complementary features: 1) it has a broad-based biological/microbiological process emphasis addressing contemporary environmental solutions including natural systems and innovations for treatment of produced water from the oil and gas industries, and 2) it provides a strong foundation in engineering mechanics with a unique focus in fluids and hydraulics. In addition, the program will embody the traditional physical, chemical and biological processes applied in water/wastewater treatment and groundwater contamination. The proposed program builds on long-standing technical strengths at MSU, specifically related to our staff and facilities, and will well serve Montana. Environmental engineering is a diverse field with room for multiple programs with differing foci - the success of the Bio-Resources option supports that contention.

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CURRICULUM PROPOSAL FORM

1. **Overview of the request and resulting changes.** Provide a one-paragraph description of the proposed program. Will this program be related or tied to other programs on campus? Describe any changes to existing program(s) that this program will replace or modify. *[100 words]*

   The MSU Civil Engineering Department seeks to replace the Bio-Resources (BREN) Option of the BS degree in Civil Engineering (BSCE) – current enrollment of ~130 students - with a BS degree in Environmental Engineering (BS EENV). Environmental engineering is a more widely recognized specialty than the current BREN option in CE. Thus, the EENV program will better serve career goals of students, enhance student recruitment, respond to employer needs, and create new opportunities for faculty. Incoming students in the BREN option are expected to switch to EENV, with the phased-out BREN water resources emphasis still effectively available through the CE program.

2. **Relation to institutional strategic goals.** Describe the nature and purpose of the new program in the context of the institution's mission and core themes. *[200 words]*

   This proposed undergraduate environmental engineering degree is consistent with the engineering charge of MSU's land-grant mission and well supports the goals of MSU as they are articulated in our strategic plan. Environmental engineering is a critical expertise in addressing all forms of environmental challenges encountered in contemporary society, from supplying clean drinking water, to renewing urban infrastructure, to managing the nitrogen cycle, and more. Environmental engineers have a vital role in ensuring a sustainable future - designing green treatment systems, remediating past contamination, and protecting natural ecosystems.

   Relative to MSU's strategic objectives in learning, discovery, engagement and integration, environmental engineering is by nature interdisciplinary, as the tools/knowledge base that is drawn upon to solve the complex problems of today includes chemistry, biology, engineering mechanics, and more. In the realm of discovery and integration, this program both well supports and will be well supported by MSU's Center for Biofilm Engineering, which offers many opportunities for EENV students to complement their curriculum with research activities. This program will strengthen MSU's existing graduate EENV programs, namely, our MS in EENV and the Environmental Option of our PhD in Engineering, as some students are expected to pursue graduate studies before entering the workforce.

3. **Process leading to submission.** Briefly detail the planning, development, and approval process of the program at the institution. *[100 words]*

   Activities thus far leading up to the submission of this request for EENV program approval consist of:

   1) faculty discussion of the concept in response to student and employer interest (2 years),
   2) department committee work developing a draft curriculum (1 year),
   4) External Advisory Board discussion and comment on the concept and draft curriculum (3 months),
   5) discussion with the Dean of the College of Engineering and COE department heads (3 months),
   6) submission of "Intent to Plan," July 2016,
   7) submission of formal proposal to MSU review process, July 2017, and
   8) progression through the MSU review process from department committee to MSU provost (4 months).

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4. **Program description.** Please include a complete listing of the proposed new curriculum in Appendix A of this document.

a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	50
Credits in required courses offered by other departments	48
Credits in institutional general education curriculum (Core 2.0)	30
Credits of free electives	0
Total credits required to complete the program	128

The proposed EENV program requires 128 credit hours to complete, similar to the BR Option in Civil Engineering that it replaces. A 128-credit hour program is consistent with EENV programs offered around the country and current national accreditation criteria, and is necessary to fully prepare students to meet professional expectations upon graduation.

b. List the program learning outcomes for the proposed program. Use learner-centered statements that indicate what students will know, be able to do, and/or value or appreciate because of completing the program.

Consistent with the outcomes specified by our current assessment plan, which reflect the requirements of our accreditation agency (ABET®), the proposed student outcomes for our environmental engineering program are:

a. an ability to apply knowledge of mathematics, science and engineering,
b. an ability to design and conduct experiments, as well as to analyze and interpret data,
c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability,
d. an ability to function on multidisciplinary teams,
e. an ability to identify, formulate, and solve engineering problems,
f. an understanding of professional and ethical responsibility,
g. an ability to communicate effectively, written and orally,
h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context,
i. a recognition of the need for, and an ability to engage in life-long learning,
j. a knowledge of contemporary issues, and
k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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5. **Need for the program.** To what specific student, regional, and statewide needs is the institution responding to with the proposed program? How will the proposed program meet those needs? Consider workforce, student, economic, societal, and transfer needs in your response as appropriate. *[250 words]*

Environmental engineers perform an essential function for society, working on a myriad of issues associated with the interface between the natural and built environments. There are, and will continue to be, strong career opportunities in this field both within and beyond Montana, considering ever expanding infrastructure needs coupled with the increasing importance of protecting our natural environments. MSU has a long history of educating outstanding engineers, and this proposed program will build upon existing strengths and opportunities.

In 2013, the Wall Street Journal reported the unemployment rate in environmental engineering was less than three percent. In the long term, the US Department of Labor, Bureau of Labor Statistics, predicts 12 percent growth in the environmental engineering profession between 2014 and 2024, contrasted with expected growth across all professions of only 7 percent.

Need for this program will periodically be re-assessed based on enrollment. Our appraisement indicates a minimum enrollment level of 80 - 90 students is projected to occur in AY 20 as BR Option students transition to this program and are joined by new EENV students (enrollment is projected to further increase as program transition is completed, see item 7a). If this enrollment is not realized, or if enrollment drops below this level in the future, the program's viability will be evaluated and appropriate action taken. This would include increased student recruitment and marketing, and re-evaluation of the alignment of workforce needs with the program structure. If these measures are not effective, then a termination plan would be developed.

6. **Similar programs.** Use the table below to identify and describe the relationship between any similar programs within the Montana University System.

Institution Name	Degree	Program Title
MT Tech of the University of Montana	BS	Environmental Engineering

a. If the proposed program substantially duplicates another program offered in the Montana University System, provide a rationale as to why any resulting duplication is a net benefit to the state and its citizens. *[200 words]*

MT Tech of the University of Montana currently offers an ABET accredited undergraduate degree in environmental engineering; this new program at MSU will complement rather than duplicate that program. The unique and complementary features of the MSU program are 1) it will have a broad-based biological/microbiological process emphasis addressing contemporary environmental problems including wetland treatment systems, treatment of produced water from oil and gas operations, and innovative solutions to resource extraction (coal bed methane and carbon sequestration), and 2) the MSU program will provide a strong foundation in engineering mechanics with a further focus in upper division classes specifically on fluid mechanics and hydraulics. In addition, the program will embody the traditional physical/chemical/biological processes applied specifically to environmental issues

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encountered in water and wastewater treatment and ground water contamination. This program emphasis builds on existing and long standing technical strengths at MSU, specifically related to our staff and facilities, constituting a distinctive environmental engineering program that will well serve Montana. Environmental engineering is a diverse field with room for multiple programs with differing foci - the success of the Bio-Resources option supports that contention.

b. Describe any efforts that were made to collaborate with similar programs at other institutions. If no efforts were made, please explain why. *[200 words]*

MSU's Civil Engineering Department Head, Dr. Jerry Stephens, discussed this proposed program with the Environmental Engineering Department Head at Montana Tech, Dr. Kumar Ganesan. The department heads agreed that this proposed program at MSU will expand the range of technical areas for students to study environmental engineering in the state of Montana, will serve workforce needs and will enhance the quality and quantity of applied research in the state and region. MSU and MT Tech will seek to pursue future collaborative opportunities in teaching and research to leverage unique areas of faculty expertise and specialized laboratory facilities at the two campuses.

7. **Implementation of the program.** When will the program be first offered? If implementation will occur in phases, please describe the phased implementation plans. *[100 words]*

We anticipate the initial migration of current Bio-Resources Option CE majors into the new Environmental Engineering major to begin in the Fall of 2018. At this time, no new students will be admitted to the BREN Option of CE, and incoming freshman and sophomores will be able to enroll in the EENV program. Complete migration to the EENV program (and attendant phase out of the BREN Option of CE) will then be completed by the end of AY20 (two-year transition period).

a. Complete the following table indicating the projected enrollments in and graduates from the proposed program.

Fall Headcount Enrollment					Graduates				
AY19	AY20	AY21	AY22	AY23	AY19	AY20	AY21	AY22	AY23
62	90	118	124	130	0	0	21	23	25

b. Describe the methodology and sources for determining the enrollment and graduation projections above. *[200 words]*

Once the EENV degree is approved, most new students entering MSU as freshman that would have pursued the BREN option of CE are expected to switch to the new program. Further, most existing sophomores (rising freshman) in the BREN option at this time are also expected to move to the new EENV program. No BREN juniors or seniors are expected to move to the new EENV program at the time of its approval, due to differences in the program curriculums starting in the sophomore year.

The projected program enrollment and number of graduates from AY19 - AY23 presented above are based on a) the above observations, b) the current enrollment in the BREN option of CE, and c) a growth rate of five percent /year in incoming freshman - with an allowance for attrition moving upward through the curriculum. Enrollment growth is difficult to predict. Statistics available nationally

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from the American Society of Engineering Education indicate that undergraduate EENV enrollments have been steady for the past few years. The Bureau of Labor Statistics projects considerable future job growth in this profession - which would be expected to translate into increased student enrollment in associated degree programs.

c. What is the initial capacity for the program?

150 students

8. **Program assessment.** How will success of the program be determined? What action would result if this definition of success is not met? *[150 words]*

Program success will be measured in terms of 1) our ability to achieve program educational objectives and student outcomes, and 2) the contribution the program makes to institutional goals and objectives. Item (1) is addressed below. Relative to item (2), a major goal of MSU is to prepare students for the challenges of the future. As previously mentioned, environmental engineering is essential to meeting ever present challenges in maintaining and improving quality of life while preserving the natural environment. Whether we are preparing students to work on truly important challenges is indicated in part by student demand for a program, and employer interest in its graduates. These metrics also reflect on the quality of our program. Thus, we will track enrollment, and the retention, graduation and employment rates of our EENV students. Negative trends in these and other outcome assessment measures (described below) will trigger program adjustment as appropriate.

a. Describe the assessment process that will be used to evaluate how well students are achieving the intended learning outcomes of the program. When will assessment activities occur and at what frequency? *[150 words]*

Assessment of student performance will be done following a process successfully used with our other engineering programs, which were developed in part to meet ABET® accreditation requirements. Program assessment will be done continuously, with the results formally discussed by the faculty at a meeting at the beginning of each year, followed by preparation of a Program Assessment Report describing the assessment process and documenting any identified issues and associated actions. Student performance will be assessed relative to the outcomes previously presented in Section 4.b of this proposal (which are the abilities/skills students are expected to have at the time of graduation), and the program educational objectives (which describe what students should be able to professionally achieve within a few years. The EENV program educational objectives effectively state that graduates are expected to make substantial contributions to the welfare and safety of the public, and to become leaders in the field.

b. What direct and indirect measures will be used to assess student learning? *[100 words]*

The following are the primary instruments that will be used and reviewed annually to assess the extent to which learning outcomes and program educational objectives are met:

- Results from the nationally standardized Fundamentals of Engineering exam, which all students will be required to take prior to graduation.
- Review of student work from selected classes by a group of faculty and the department's External Advisory Board.

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- Interviews with graduating seniors.
- External Advisory Board evaluation of student performance.
- CE faculty and Curriculum Committee input based on their direct classroom experience, interactions with students, and feedback from industry connections on graduate performance.

c. How will you ensure that the assessment findings will be used to ensure the quality of the program? *[100 words]*

To maintain national accreditation, which is critical to all engineering programs, assessment must be done, and the results must be used to drive continuous improvement. As is the case with our other engineering programs, the department head and program coordinator will be formally tasked with working with students, faculty and practitioners to conduct assessment and act on the results to improve program quality.

d. Where appropriate, describe applicable specialized accreditation and explain why you do or do not plan to seek accreditation. *[100 words]*

Undergraduate engineering programs, including environmental engineering, are almost universally accredited by ABET®, the Accreditation Board for Engineering and Technology, Inc. The College will seek ABET® accreditation for the environmental engineering program. The ABET® process for accreditation can be initiated upon graduation of the first student cohort (expected in Spring 2021), and if accredited, accreditation is grandfathered to all graduates in the interim. While we have significant experience with the accreditation process through our other undergraduate engineering programs, if accreditation is not granted, we will address any deficiencies and re-apply the following year.

9. Physical resources.

a. Describe the existing facilities, equipment, space, laboratory instruments, computer(s), or other physical equipment available to support the successful implementation of the program. What will be the impact on existing programs of increased use of physical resources by the proposed program? How will the increased use be accommodated? *[200 words]*

Existing department physical facilities that will support this program are the Kenneth Tait computer lab, the hydraulics lab, and the geotechnical engineering lab. These facilities will see modest increases in use (i.e., new students in addition to those formerly pursuing the Bio-Resources option). The CE surveying lab will see less use as the Bio-Resources option students phase out, as surveying courses are not required in the EENV program.

b. List needed facilities, equipment, space, laboratory instruments, etc., that must be obtained to support the proposed program. (Enter the costs of those physical resources into the budget sheet.) How will the need for these additional resources be met? *[150 words]*

One of the few new curricula demands needed to realize this program is instruction in laboratory procedures specific to environmental engineering. A lab component is being added to the existing Water Chemistry class. A physical facility has been identified (research space formerly dedicated to a specific CE grant-funded research project), and CE resources are sufficient to develop that new lab space (estimated cost, $6,000).

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10. Personnel resources.

a. Describe the existing instructional, support, and administrative resources available to support the successful implementation of the program. What will be the impact on existing programs of increased use of existing personnel resources by the proposed program? How will quality and productivity of existing programs be maintained? *[200 words]*

The existing BREN option in CE will be phased out as the EENV program moves forward. Due to similarities in the curriculums of these programs, only a few changes in coursework are necessary to affect this transition. EENV students will take more chemistry and biology as sophomores/juniors than BREN students (total of three classes), with these classes being drawn from courses already available at MSU. Adequate capacity exists in two of these classes to accommodate the EENV related enrollment. In the one remaining class (general microbiology class), the enrollment cap will have to be increased, or an additional section added, to accommodate the EENV enrollment.

Moving into their junior year, EENV students take two new courses that are foundational to this discipline. EENV students are also required to learn EENV laboratory methods, which will be accomplished by adding one credit of lab to a senior water chemistry class. Also as seniors, students will take a two-course capstone sequence, which will be co-convened with the parallel sequence in CE. All other discipline specific coursework is already being offered in the CE degree program (which has over 450 students, including the students in the BREN option).

b. Identify new personnel that must be hired to support the proposed program. (Enter the costs of those personnel resources into the budget sheet.) What are the anticipated sources or plans to secure the needed qualified faculty and staff? *[150 words]*

In the short term, nominal changes in personnel are necessary to support this program.

The manner in which the addition of 25 EENV students to the general microbiology class can be accommodated needs to be addressed (currently 240 students are enrolled annually). If a threshold of capacity has been reached, an additional section will be necessary. An estimated cost for an instructor for this section is included in the budget (starting in year two of the program).

The two new EENV courses, and the additional credit of lab added to the water chemistry class, will be covered through changes in faculty assignments internal to the CE Department, and happen to coincide with already programmed changes in the department's teaching capacity. The cost of a teaching assistant for these classes is included in the budget (starting in year two of the program).

These personnel should be readily found within the campus/community.

11. Other resources.

a. Are the available library and information resources adequate for the proposed program? If not, how will adequate resources be obtained? *[100 words]*

No additional resources are anticipated.

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b. Do existing student services have the capacity to accommodate the proposed program? What are the implications of the new program on services for the rest of the student body? *[150 words]*

No additional resources are anticipated.

12. Revenues and expenditures. Describe the implications of the new program on the financial situation of the institution. *[100 words]*

a. Please complete the following table of budget projections using the corresponding information from the budget template for the first three years of operation of the new program.

This budget has been completed based on the projected change in student enrollment transitioning from the existing BREN option in civil engineering to an environmental engineering program.

	Year 1	Year 2	Year 3
Revenues	$12,909	$26,801	$72,196
Expenditures	$7,701	$26,431	$26,431
Net Revenue (revenues-expenditures)	$5,207	$371	$45,765

b. Describe any expenses anticipated with the implementation of the new program. How will these expenses be met? *[200 words]*
As previously mentioned, an existing lab space will be equipped to support instruction in EENV laboratory methods. This expense will be met using existing program fees.

i. If funding is to come from the reallocation of existing state appropriated funds, please indicate the sources of the reallocation. What impact will the reallocation of funds in support of the program have on other programs? *[150 words]*

No reallocation of existing funds is anticipated.

ii. If an increase in base funding is required to fund the program, indicate the amount of additional base funding and the fiscal year when the institution plans to include the base funding in the department's budget.

No increase in base funding for the CE Department is anticipated.

iii. If the funding is to come from one-time sources such as a donation, indicate the sources of other funding. What are the institution's plans for sustaining the program when that funding ends? *[150 words]*

No one-time funding sources are involved with this program.

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iv. Describe the federal grant, other grant(s), special fee arrangements, or contract(s) that will be valid to fund the program. What does the institution propose to do with the program upon termination of those funds? *[150 words]*

No grants, fee arrangements or contracts are involved with this program.

13. Student fees. If the proposed program intends to impose new course, class, lab, or program fees, please list the type and amount of the fee.

No new fees will be imposed for this program.

14. Complete the budget template below with the following information:

- Indicate all resources needed including the planned FTE enrollment, projected revenues, and estimated expenditures for the first three fiscal years of the program.
- Include reallocation of existing personnel and resources and anticipated or requested new resources.
- Amounts should reconcile subsequent pages where budget explanations are provided.

Signature/Date

College or School Dean:

Chief Academic Officer:

for Robert Mokwa

Chief Executive Officer:

Flagship Provost*:

for Robert Mokwa

Flagship President*:

*Not applicable to the Community Colleges.

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I. PROJECTED STUDENT ENROLLMENT (change in enrollment BREN to EENV)

	FY 19		FY 20		FY 21	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	2	2	4	4	11	11

II. REVENUE

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request						
2. Institution Funds						
3. Federal						
4. New Tuition Revenues from Increased Enrollments	$12,909		$26,801		$72,196	
5. Student Fees (COE Program)	372		1,728		3,244	
6. Other (i.e., Gifts)						
Total Revenue	**$12,909**	**$0**	**$26,801**	**$0**	**$72,196**	**$0**

Ongoing is defined as ongoing operating budget for the program which will become part of the base.

One-time is defined as one-time funding in a fiscal year and not part of the base.

III. EXPENDITURES

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE			0.2		0.2	
2. Faculty						
3. Adjunct Faculty			$7,500		$7,500	
4. Graduate/Undergrad Assistants		$1,694	$16,938		$16,938	

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5. Research Personnel						
6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits		$7	$1,493		$1,493	
9. Other:						
Total Personnel and Costs	**$0**	**$1,701**	**$25,931**	**$0**	**$25,931**	**$0**

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel						
2. Professional Services						
3. Other Services						
4. Communications						
5. Materials and Supplies			500		500	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	**$0**	**$0**	**$500**	**$0**	**$500**	**$0**

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay						
1. Library Resources						
2. Equipment		$6,000				
Total Capital Outlay	**$0**	**$6,000**	**$0**	**$0**	**$0**	**$0**

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	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation						

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs						
1. Utilites						
2. Maintenance & Repairs						
3. Other: _____						
Total Other Costs	$0	$0	$0	$0	$0	$0
TOTAL EXPENDITURES:	$0	$7,701	$26,431	$0	$26,431	$0
Net Income (Deficit)	$12,909	($7,701)	$371	$0	$45,765	$0

The signature of the campus Chief Financial Officer signifies that he/she has reviewed and assessed the fiscal soundness of the proposal and provided his/her recommendations to the Chief Academic Officer as necessary.

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

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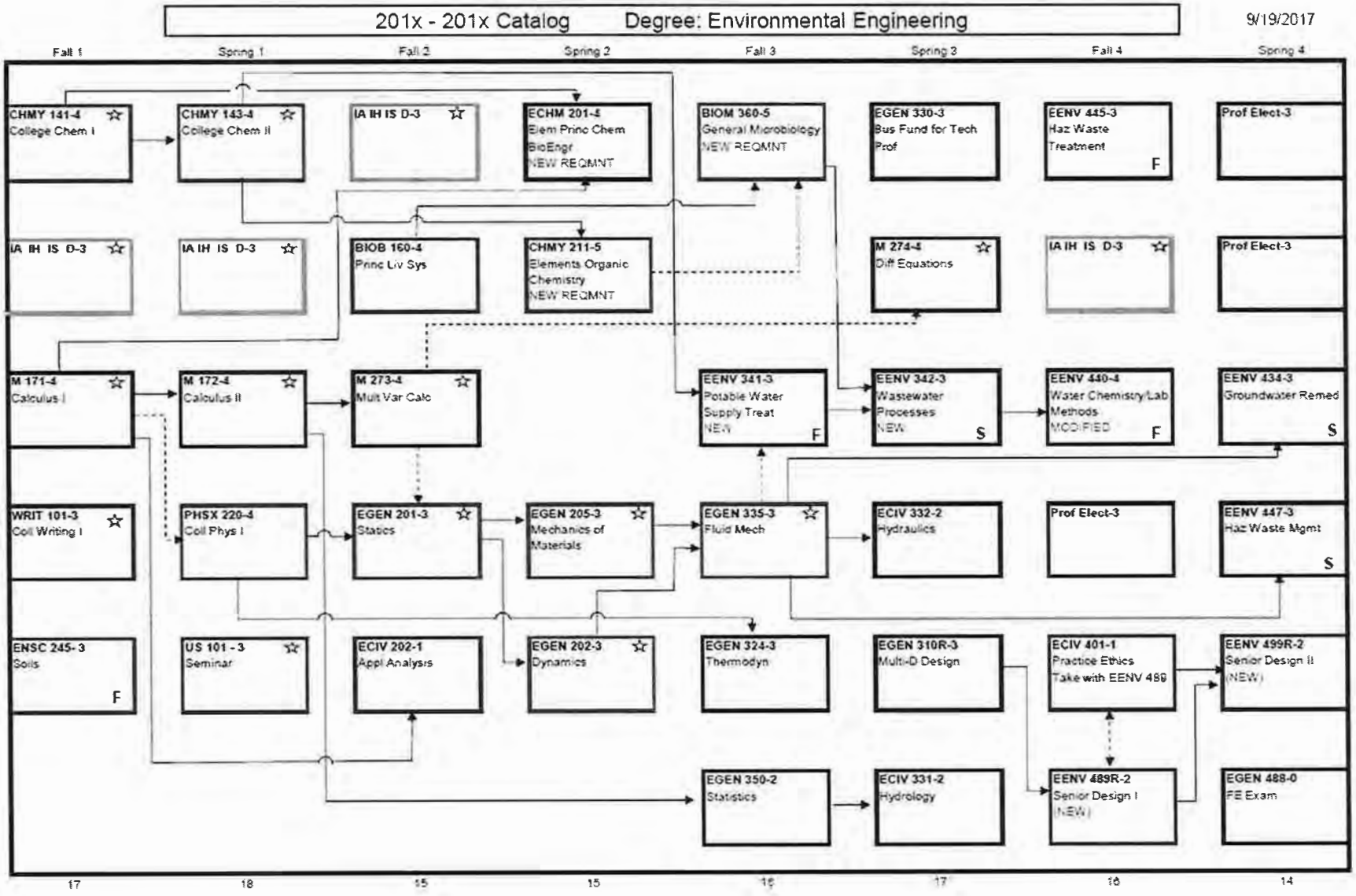
Appendix A – Proposed New Curriculum

ELEC 100IA	Elective	3
ELEC 100D	Elective	3
ELEC 100IS	Elective	3
ELEC 100IH	Elective	3
WRIT 101W	College Writing I	3
US 101US	First Year Seminar	3
M 171Q	Calculus I	4
M 172Q	Calculus II	4
M 273Q	Multivariable Calculus	4
M 274	Introduction to Differential Equation	4
CHMY 141	College Chemistry I	4
CHMY 143	College Chemistry II	4
CHMY 211	Elements of Organic Chemistry	5
PHSX 220	Physics I (w/ calculus)	4
BIOB 160	Principles of Living Systems	4
BIOM 360	General Microbiology	5
ENSC 245IN	Soils	3
ECHM 201	Elementary Principles of Chemical and Biological Engineering	4
EGEN 201	Engineering Mechanics--Statics	3
EGEN 202	Engineering Mechanics -- Dynamics	3
EGEN 205	Mechanics of Materials	3
EGEN 335	Fluid Mechanics	3
EGEN 350	Applied Engineering Data Analysis	2
EGEN 324	Applied Thermodynamics	3
EGEN 330	Business Fundamentals for Technical Professionals	3
EGEN 310R	Multidisciplinary Engineering Design	3
EGEN 488	Fundamentals of Engineer Exam	0
ECIV 202	Applied Analysis	1
ECIV 331	Engineering Hydrology	2
ECIV 332	Engineering Hydraulics	2
ECIV 401	Civil Eng Practice and Ethics	1
ECIV 489R	Civil Engineering Design I	2
ECIV 499R	Capstone: Civil Eng Design II	2
EENV 440	Water Chemistry for Envr Engr	4
EENV 447	Hazardous Waste Management	3
EENV 434	Groundwater Supply/Remediation	3
EENV 445	Hazardous Waste Treatment	3
EENV 341	Potable Water Supply/Treatment	3
EENV 342	Wastewater Processes	3
Take One Elective		3
ECIV 431	Open Channel Hydraulics (3 cr)	
ECIV 435	Closed-Conduit Hydraulics (3 cr)	
EGEN 435	Fluid Dynamics (3 cr)	
Take Two Electives		6
BIOM 430	Applied and Environmental Microbiology (4 cr)	
BIOM 452	Soil & Envirnmntl Microbiology (3 cr)	
ENSC 353	Environmental Biogeochemistry (3 cr)	
ENSC 460	Soil Remediation (3 cr)	
ENSC 444	Watershed Hydrology (3 cr)	
ECIV 320	Geotechnical Engineering (3 cr)	
EENV 432	Advanced Engineering Hydrology (3 cr)	
EENV 441	Natural Treatment Systems (3 cr)	
ECHM 405	Sustainable Energy (3 cr)	


201x - 201x Catalog Degree: Environmental Engineering
9/19/2017
Fall 1
Spring 1
Fall 2
Spring 2
Fall 3
Spring 3
Fall 4
Spring 4
CHMY 141-4 College Chem I
CHMY 143-4 College Chem II
IA IH IS D-3
ECHM 201-4 Elem Princ Chem BioEngr NEW REQMNT
BIOM 360-5 General Microbiology NEW REQMNT
EGEN 330-3 Bus Fund for Tech Prof
EENV 445-3 Haz Waste Treatment F
Prof Elect-3
IA IH IS D-3
IA IH IS D-3
BIOB 160-4 Princ Liv Sys
CHMY 211-5 Elements Organic Chemistry NEW REQMNT
M 274-4 Diff Equations
IA IH IS D-3
Prof Elect-3
M 171-4 Calculus I
M 172-4 Calculus II
M 273-4 Mult Var Calc
EENV 341-3 Potable Water Supply Treat NEW F
EENV 342-3 Wastewater Processes NEW S
EENV 440-4 Water Chemistry/Lab Methods MODIFIED F
EENV 434-3 Groundwater Remed S
WRIT 101-3 Coll Writing I
PHSX 220-4 Coll Phys I
EGEN 201-3 Statics
EGEN 205-3 Mechanics of Materials
EGEN 335-3 Fluid Mech
ECIV 332-2 Hydraulics
Prof Elect-3
EENV 447-3 Haz Waste Mgmt S
ENSC 245-3 Soils F
US 101 - 3 Seminar
ECIV 202-1 Appl Analysis
EGEN 202-3 Dynamics
EGEN 324-3 Thermodyn
EGEN 310R-3 Multi-D Design
ECIV 401-1 Practice Ethics Take with EENV 489
EENV 499R-2 Senior Design II (NEW)
EGEN 350-2 Statistics
ECIV 331-2 Hydrology
EENV 489R-2 Senior Design I (NEW)
EGEN 488-0 FE Exam
17
18
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17
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14

Montana University System

NOTICE OF INTENT TO PLAN

Program/Institute Title:	Environmental Engineering Program
Campus, School/Department:	MSU-Bz, Civil Engineering
Contact Name/Info:	Jerry Stephens, jerrys@montana.edu
Expected Submission Date:	NOV 2016
Mode of Delivery:	Face-to-Face

To increase communication, collaboration, and problem solving opportunities throughout the MUS in the program/center/institute development process, please complete this form not more than 18 months in advance of the anticipated date of submission of the proposed program/center/institute to the Board of Regents for approval.

For more information regarding the Intent to Plan process, please visit the Academic and Student Affairs Handbook.

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

The Department of Civil Engineering seeks to replace the Bio-Resources Engineering (BREN) Option of the B.S. degree in Civil Engineering with a Bachelor of Science degree in Environmental Engineering (BS EENV). This change will better serve the career goals of many students in the BREN option, enhance recruitment by increasing visibility of established curriculum content and create new opportunities for success of recent tenure-track faculty hires. Many of the current 82 students in the BREN option (Spring 2015 enrollment) would likely switch to the EENV degree and those wishing to remain on track for a BS in Civil Engineering can continue with their current BREN program of study without declaring it as a specific option. Many potential engineering students enroll elsewhere upon learning we do not offer the EENV degree at the BS level, while those interested only in an environmental focus within Civil Engineering could still pursue that path, thus overall enrollment in Civil Engineering administered programs would likely increase as a result of this transition. This change will compliment and likely enhance the enrollment of our successful graduate programs in Environmental Engineering (Master of Science in Environmental Engineering and the Environmental Engineering Option of the PhD in Engineering). Recent faculty hires with an Environmental Engineering focus will have the opportunity to fully integrate research and teaching with an undergraduate degree program better aligned with their research interests. Most of the courses and faculty expertise required to make the program successful are pre-existing thus we anticipate only a few resource-neutral changes to course offerings.

We will seek ABET® accreditation for the new BS EENV as soon as it is operational.

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

Environmental engineering has and continues to be a critical expertise in addressing all forms of environmental challenges encountered in contemporary society. Notably, fully one-third of the fourteen grand challenges in engineering in the 21st century identified by the National Academy of Engineering significantly involve environmental engineering, from supplying clean drinking water to all the world's inhabitants, to renewing our urban infrastructure, to managing the nitrogen cycle, to sequestering carbon. Environmental engineers have a vital role in ensuring a sustainable future - designing green treatment systems, remediating past contamination, and protecting natural ecosystems. Correspondingly, there is keen interest in this field among students, and high demand for their services in the marketplace. Eighty of the current civil engineering students at MSU have explicitly indicated their interest in environmental engineering through their pursuit of the Bio-Resources Option in the Civil Engineering program, with another group of students (admittedly difficult to estimate in size) that have elected to go to other institutions specifically offering an environmental engineering degree program. While the Bio-Resources Option in Civil Engineering has served our students well, environmental engineering is a more readily recognized engineering discipline, and the Civil Engineering Department is increasingly fielding enquiries/requests for this specific area of study from potential students. Relative to subsequent employment upon graduation, the US Department of Labor, Bureau of Labor Statistics predicts 12 percent growth in the environmental engineering profession between 2014 and 2024, contrasted with expected growth across all professions of only 7 percent.

3) **Describe how the program/center/institute fits with the institutional mission, strategic plan, and existing institutional program array.**

An undergraduate environmental engineering degree program is consistent with the engineering charge of MSU's land-grant mission. Environmental engineering draws heavily from the civil and chemical engineering disciplines. MSU has strong programs in each of these two areas, which will be leveraged in offering this new degree program - as has been done for the Bio-Resource Option in Civil Engineering, which will be phased out as the environmental engineering program moves forward. A distinguishing feature of MSU's academic environment is the integration of learning, discovery and engagement. MSU's internationally recognized Center for Biofilm Engineering is rich in opportunities for environmental engineering students to complement their classroom curriculum with both basic and applied research activities. Further, this program will strengthen MSU's existing graduate environmental engineering programs, namely, our MS in Environmental Engineering and our Environmental Option of the PhD in Engineering, as some students are expected to pursue graduate studies before entering the workforce. As for most engineering disciplines, the value of graduate study, certainly at the MS level and to some extent including at the PhD level, is well recognized by industry, in light of the increasingly complex technological challenges before us.

4) How does the proposed program/center/institute fit within the MUS system?

An undergraduate degree program in environmental engineering directly supports the MUS goals of providing Montanan's access to educational opportunities that will lead to good and rewarding jobs in a technological field critical to sustainably moving forward Montana, the nation and the world. The program is expected to have a robust enrollment, populated immediately by most of the eighty students already at MSU pursuing the Bio-Resource Option in Civil Engineering (which will be phased out), and joined by additional students more specifically in pursuit of an environmental engineering degree. MT Tech of the University of Montana currently offers an ABET accredited undergraduate degree in environmental engineering, and this new program at MSU will complement rather than duplicate that program. The unique and complementary features of the MSU program are 1) it will have a broad-based biological/microbiological process emphasis which addresses a contemporary environmental problems including wetland treatment systems and treatment of produced water from oil and gas operations (i.e. fracking), and 2) , the MSU program will provide a strong foundation in engineering mechanics with a further focus in upper division classes specifically on fluid mechanics and hydraulics, which underpin analysis and design of many environmental engineering solutions. In addition the program will embody the traditional physical/chemical/biological processes applied specifically to environmental issues encountered in water and wastewater treatment and ground water contamination. This MSU program emphasis builds on existing and long standing technical strengths specifically with the staff and facilities at MSU, constituting a distinctive environmental engineering program that will well serve our students.

Signatures

Intent to Plan

Program/Institute/Center Title: Environmental Engineering Program

Campus: MSU-Bz, Civil Engineering

Expected Submission Date: NOV 2016

Signature/Date

College/School Dean:	DocuSigned by: Brett Kunning 3E122B977D064AC...	6/28/2016
Graduate Dean: (Graduate academic programs only)		
Vice President Research: (Research centers/institutes only)		
Chief Academic Officer:	DocuSigned by: Robert Mokwa 9EDD74A82C3A419...	7/6/2016
Chief Executive Officer:	DocuSigned by: 7D6A4CE96C3F415...	7/11/2016
Flagship Provost:	DocuSigned by: Robert Mokwa 9EDD74A82C3A419...	7/6/2016
Flagship President:	DocuSigned by: 7D6A4CE96C3F415...	7/11/2016

Date of Final Review: September 15, 2016

When submitting the proposal to the BOR, include this signed form with the Level II request.

Morrison Maierle
engineers • surveyors • planners • scientists

1 ENGINEERING PLACE • P.O. BOX 6147 • HELENA, MT 59604
406.442.3050 • www.m-m.net

July 11, 2017

Jerry Stephens, PhD, PE
Professor and Department Head
Montana State University – Department of Civil Engineering
205 Cobleigh Hall
P.O. Box 173900
Bozeman, MT 59717-3900

RE: Support for Environmental Engineering Bachelor of Science Degrees at Montana State

Dear Dr. Stephens:

As the President/CEO of Morrison-Maierle, I am writing on our firm's behalf in support of granting Bachelor of Science in Environmental Engineering degrees from Montana State University.

Our firm has had great success hiring students from Montana State University's Civil Engineering program, including many with the Bio-Resources Engineering Option. In our firm they work side-by-side with graduates from other schools with an Environmental Engineering degree, addressing engineering issues in the built environment and natural world. With human's impact on the environment growing, the importance of healthy land, water and air is never more important. We predict Environmental Engineers will be in greater demand in the future and it will be good to have the Montana State University students we and others hire have degree titles that more closely match the work they perform. With this change, I believe MSU can attract even more students to the engineering program without harming enrollment in other programs.

Additionally, the granting of these degrees can provide tangible and direct benefit to Montana State in their pursuit of research grants by simply having degree programs that match those from the other universities that they are competing with.

Finally, as a graduate of Montana State University with a B.S. and a M.S. in Civil Engineering, and a Board Certified Environmental Engineer working in the environmental engineering field for 35 year, I personally support this change.

Sincerely,

Morrison-Maierle

Scott B. Murphy, PE, BCEE
President/CEO

We create solutions that build better communities.

HELENA
PO Box 4817 ▪ 2501 Belt View Drive
Helena, MT 59604
406.449.8627 ▪ Fax 406.449.8631
www.greatwesteng.com

July 10, 2017

Jerry Stephens, PhD, PE
Professor & Department Head
Civil Engineering Department
Montana State University
Bozeman, MT 59717

RE: Environmental Engineering Program Proposal

Dear Dr. Stephens:

On behalf of Great West Engineering, Inc., we would like to express support for the proposed Environmental Engineering undergraduate degree program at Montana State University (MSU). It is our understanding that the program will replace the current BioResource option in Civil Engineering degree. The BioResource Option is not a commonly recognized degree and may be a source of confusion among prospective students and employers. Environmental Engineering is a commonly recognized degree understood to focus on biological processes within the scope of civil engineering.

Graduates of Montana schools form the foundation of Great West Engineering's work force and we are a strong advocate of the Civil Engineering program at MSU. We have found MSU's Civil Engineering graduates to be high quality engineers capable of contributing to project delivery upon joining our firm. We look forward to adding Environmental Engineering graduates to our workforce in the future.

Increasingly stringent state and federal regulations for wastewater and water treatment, in conjunction with Montana's growth in population and industry, will create a robust job market for civil engineers in the foreseeable future. Graduates of the proposed Environmental Engineering program, with the emphasis on water and wastewater treatment and processes, will experience a strong demand for their services.

At Great West Engineering, we strongly believe that the development of an Environmental Engineering undergraduate program within the Civil Engineering

BILLINGS
6780 Trade Center Ave.
Billings, MT 59101
406.652.5000
Fax 406.248.1363

BOISE
3363 N. Lakeharbor Ln
Boise, ID 83703
208.576.6646

MISSOULA
112 W. Front Street
Missoula, MT 59802
406.493.0312

Department at MSU will service a need for treatment engineers within our state and region. We fully the support this proposal.

Sincerely,

Great West Engineering, Inc.

Daniel M. McCauley, PE
President

Bill Lloyd, PE
Senior Vice President

234 East Babcock Street
Suite 3
Bozeman, MT 59715

406.586.0277
tdhengineering.com

July 11, 2017

Jerry Stephens, PhD, PE
Civil Engineering Department Head
Montana State University
Bozeman, MT 59717

RE: ENVIRONMENTAL ENGINEERING PROGRAM AT MSU

Dear Jerry,

As an alumnus of the civil engineering department at MSU, and as a current member of the advisory board to the department, I have seen firsthand the success of your program. I graduated from MSU with a bachelor's of science degree in civil engineering in 1985, and a master's of science degree in 1987, and have worked in private consulting doing civil engineering since then. In the firms I've worked for in my career, we have hired many MSU civil engineering graduates.

When I attended MSU, there was a track for environmental engineers, in addition to many other options. I chose a water resources emphasis. Today the bio-resources option exposes students to many of the same kinds of courses we used to call environmental engineering, but the bio-resources name causes some confusion in the industry.

I support the department's proposal to return to offering the environmental engineering program, because I know our industry needs engineers whose focus is more in traditional environmental engineering coursework. That includes, among other things, biology, chemistry, wastewater treatment and water treatment. The change will also clear up the confusion the name bio-resources engineering has tended to cause.

Please let me know how I can further support your efforts. I appreciate your hard work and the quality of graduates coming from your programs. Thank you.

Sincerely,

David J. Crawford *PE*
President/CEO
TD&H ENGINEERING

M:\Corporate\MSU Civil Engineering Advisory Board\2017\Letter of Support.doc

March, 2018

ITEM 178-2011-R0318

Request authorization to establish a Bachelor of Science in Landscape Architecture

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THAT

Request approval from the Montana Board of Regents to allow the College of Agriculture, Department of Plant Sciences and Plant Pathology at Montana State University requests review and approval of the new proposed program Bachelor of Science in Landscape Architecture.

EXPLANATION

This program will establish an accredited educational program (by the American Society of Landscape Architects/Landscape Architectural Accreditation Board- LAAB) leading to a first professional degree at the Bachelor of Science level in Landscape Architecture (BSLA). This accreditation will enable students to pursue licensure and prepare graduates to be leaders in the field and profession of landscape architecture and research in various aspects of the field. Includes instruction in project and site planning; landscape design, history, and theory; environmental design; grading and drainage, horticultural elements; applicable law and regulations; and professional responsibilities and standards. This program further develops the existing Landscape Design option in Environmental Horticulture in the Plant Sciences and Plant Pathology Department at MSU.

ATTACHMENTS

Intent to Plan
Academic Proposal Request Form
Curriculum Proposal Form
Internal & External Letters of Support

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **178-2011-R0318** Submission Month or Meeting: **March, 2018**

Institution: **Montana State University** CIP Code: **04.0601**

Program/Center/Institute Title: **Bachelor of Science in Landscape Architecture**

Includes (please specify below): Online Offering ____ Options ____

Please mark the appropriate type of request and submit with an Item Template and any additional materials, including those listed in parentheses following the type of request. For more information pertaining to the types of requests listed below, how to complete an item request, or additional forms please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

____ **A. Level I:**

Campus Approvals

____ **1a. Placing a postsecondary educational program into moratorium** (Program Termination and Moratorium Form)

____ **1b. Withdrawing a postsecondary educational program from moratorium**

____ **2. Establishing, re-titling, terminating or revising a campus certificate of 29 credits or less**

____ **3. Establishing a B.A.S./A.A./A.S. area of study**

____ **4. Offering an existing postsecondary educational program via distance or online delivery**

OCHE Approvals

____ **5. Re-titling an existing postsecondary educational program**

____ **6. Terminating an existing postsecondary educational program** (Program Termination and Moratorium Form)

____ **7. Consolidating existing postsecondary educational programs** (Curriculum Proposal Form)

____ **8. Establishing a new minor where there is a major or an option in a major** (Curriculum Proposal Form)

____ **9. Revising a postsecondary educational program** (Curriculum Proposal Form)

____ **10. Establishing a temporary C.A.S. or A.A.S. degree program** *Approval limited to 2 years*

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

X **B. Level II:**

X **1. Establishing a new postsecondary educational program** (Curriculum Proposal and Completed Intent to Plan Form)

____ **2. Exceeding the 120 credit maximum for baccalaureate degrees** *Exception to policy 301.11*

____ **3. Forming, eliminating or consolidating an academic, administrative, or research unit** (Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating)

____ **4. Re-titling an academic, administrative, or research unit**

Proposal Summary [360 words maximum]

What

The College of Agriculture, Department of Plant Sciences and Plant Pathology at Montana State University requests review and approval of the new proposed program Bachelor of Science in Landscape Architecture.

Why

This program will establish an accredited educational program
(by the American Society of Landscape Architects/Landscape Architectural Accreditation Board- LAAB) leading to a first professional degree at the Bachelors of Science level in Landscape Architecture (BSLA). This accreditation will enable students to pursue licensure and prepare graduates to be leaders in the field and profession of landscape architecture and research in various aspects of the field. Includes instruction in project and site planning; landscape design, history, and theory; environmental design; grading and drainage, horticultural elements; applicable law and regulations; and professional responsibilities and standards. This program further develops the existing Landscape Design option in Environmental Horticulture in the Plant Sciences and Plant Pathology Department at MSU.

Resources

We have the majority of course/faculty/facilities resources already in place in the Environmental Horticulture Landscape Design option. To move the current program towards national accreditation we will require these additional resources:

1. One FTE that can be either tenure-track or adjunct (at 30 credits taught per FTE at the minimum we will require one FTE faculty). 22 new credits x 2k= 44k additional funding once Freshman to Senior year curriculum is fully established.

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

2. In 5 years' time, after the initial accreditation, we will require an additional two FTE for a total of five instructors. This comprises three tenure-track professors and two FTE's that can be either tenure-track or adjunct.

3. Program Director appointment= 2 months' summer salary

4. LAAB process fees:
   At Candidacy level: a $500 application fee, a $1000 annual sustaining fee and the cost of transportation and hosting one visiting evaluator for 3 days at the time of candidacy.
   At Initial/full accreditation level: $1500 annual sustaining fee and the cost of transportation and hosting a 3 person team of visiting evaluators for 3-days and thereafter on a 5-year review cycle.

Relationship to similar MUS programs:

There are no other existing programs at MSU specific to Landscape Architecture. This program will be the first and only accredited degree program in the MUS system.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

1. **Overview of the request and resulting changes.** Provide a one-paragraph description of the proposed program. Will this program be related or tied to other programs on campus? Describe any changes to existing program(s) that this program will replace or modify. *[100 words]*

This program will establish an accredited educational program (Landscape Architectural Accreditation Board-LAAB) leading to a first professional degree, Bachelors of Science, in Landscape Architecture (BSLA). This accreditation will enable students to pursue licensure preparing graduates to be leaders in the profession of landscape architecture in various aspects of the field. Includes instruction in project and site planning; landscape design, history, and theory; environmental design; grading and drainage, horticultural elements; applicable law and regulations; and professional responsibilities and standards. With 7 new classes, this program further develops the Environmental Horticulture's Landscape Design option in the Plant Sciences and Plant Pathology Department at MSU.

Current Environmental Horticulture, Landscape Design option students must remain in the Landscape Design Option until the program is accredited and will be automatically folded into the new Landscape Architecture degree once we have Initial Accreditation. The existing Landscape Design option will then be put in moratorium after the accreditation. The new Landscape Architecture program will remain in Plant Sciences and Plant Pathology, College of Agriculture. (Please note: per LAAB standards and procedures we cannot name a program "Landscape Architecture" until accreditation is conferred and review for Initial Accreditation cannot happen until we graduate a class with the full curriculum.)

2. **Relation to institutional strategic goals.** Describe the nature and purpose of the new program in the context of the institution's mission and core themes. *[200 words]*

Establishment of a BSLA at MSU will result in the first LAAB accredited Landscape Architecture program in the MUS system. To monitor and advance academic quality within the program and institution we will align our program with MSU's strategic plan.

Learning & Access: The professional curriculum will provide an education for critical knowledge and skills in the field of landscape architecture. In recruiting students and job placement the programs studio classes, developed as "areas of interest" relevant to the profession and mission of a land grant university, will equip students for their careers and further education.

Discovery & Integration: The program will provide students with an introduction to research and scholarly methods. Students will advance their skills through exposure to faculty active in creative activity and research as well as faculty who are established licensed professionals.

Engagement & Sustainability: The program will strive to establish an effective relationship with the institution, communities, alumni, practitioners, and the public at large to provide a source of service learning opportunities for students, scholarly development for faculty, and professional guidance. This will include successful outreach efforts to enhance the image of the program and to educate constituencies regarding the program and profession of Landscape Architecture. Curriculum will include opportunities for students to participate in internships, off-campus studies, research assistantships, or practicum experiences.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

3. **Process leading to submission.** Briefly detail the planning, development, and approval process of the program at the institution. *[100 words]*

Outline of our process:
1. 2009: Feasibility study through the Landscape Architecture Accreditation Board from which we derived the 7 additional classes which will be required for accreditation.
2. 2010: Upgraded/renovated space in Linfield Hall for studio and lecture space
3. 2010-2013: Hiring of two tenure-track faculty (to fill existing lines)
4. 2010-present: Built computer lab and studio space with required equipment.
5. 2015: Setup Advisory Committee, inaugural meeting, and subsequent meetings each semester
6. 2015: Requested report for a Market Demand for Bachelor of Science in Landscape Architecture
7. 2016: Professor Jennifer Britton received tenure, placed in Program Director position
8. 2016: Submitted Intent to plan
9. 1/2017: Submitted Program Proposal to CiM system
10. 6/2017: Submitted first freshman class proposal HORT 120 Intro to LD
11. 10/2017: Budget and BOR forms completed
12. 12/2017: Revisions per Provost

4. **Program description.** Please include a complete listing of the proposed new curriculum in Appendix A of this document.

The seven new classes are listed in Appendix A. Note: Current classes are already taught by existing Landscape Design option faculty positions. Once approved, we plan to phase in seven additional courses, starting with the freshman year at which point we will simultaneously begin the accreditation process. Per the LAAB requirement, course enrollments are limited to a 15:1 student/instructor ratio. Thus, we anticipate our max capacity at 15 students per grade year, or approximately 60 total.

a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	66 (to 72)*
Credits in required courses offered by other departments	24 (to 30)*
Credits in institutional general education curriculum	12**
Credits of free electives	12
Total credits required to complete the program	114

* Students may complete 6 units of Senior electives in the department through HORT 492/490R Independent Study/Research, HORT 491 Special Topic National/International Study, HORT 498 Internship, or they can opt for a specialization track outside of the department. **Note 17 core credits are required in the program curriculum, an additional 12 credits are required to complete MSU core.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

b. List the program learning outcomes for the proposed program. Use learner-centered statements that indicate what students will know, be able to do, and/or value or appreciate as a result of completing the program.

Program Learning Outcomes. Students will:
1. Have the knowledge of important communication traditions and theories in landscape architecture/design.
2. Have the skills needed in design principals, elements, and process as they relate to communication & design.
3. Have the knowledge of common landscape materials, qualities and limitations, and their applications in landscapes.
4. Understand the professional basics of landscape construction, including an understanding of construction document preparation in conformance with standard industry standards.
5. Develop an understanding of landscape performance.
6. Be able to analyze data (biological, physical, cultural) to develop landscape designs at multiple scales.

5. **Need for the program.** To what specific student, regional, and statewide needs is the institution responding to with the proposed program? How will the proposed program meet those needs? Consider workforce, student, economic, societal, and transfer needs in your response as appropriate. *[250 words]*

Since Montana does not have a Landscape Architecture program that has achieved accreditation or candidacy status from LAAB, Montana residents and nonresident students (32% nonresident MSU enrollment in 2015) do not have access at MSU to the professional degree, an essential qualification. Students must attend school out of state or transfer from MSU to gain an accredited degree. Regionally, the closest accredited programs are Bachelors in Landscape Architecture (BLA) at the University of Idaho, Moscow; North Dakota State University, Fargo; and South Dakota State University, Brookings. The adjoining state of Wyoming and Canadian province of Alberta do not have accredited programs. Our proposed degree, a Bachelor's of Science in Landscape Architecture (BSLA), will enable MSU to grow our current program in Landscape Design (not accredited by LAAB) to increase our student's competitiveness in the marketplace both regionally and nationally. An accredited degree will allow our students flexibility in the job market as well, increasing their ability to relocate with the necessary qualifications.

By offering an accredited Landscape Architecture degree program students will be prepared to enter the job market or/and postgraduate study. Their education will prepare them to pursue Landscape Architecture licensure and to practice in serving public safety, health, and welfare. This qualification of knowledge and ability to sustainably shape the urban and rural landscape will enable our students to provide valuable service to the Landscape Architecture profession, industry, and government.

6. **Similar programs.** Use the table below to identify and describe the relationship between any similar programs within the Montana University System.

This proposed Landscape Architecture program further develops the existing Landscape Design program in Environmental Horticulture in the Plant Sciences and Plant Pathology Department. There are no other existing programs at MSU specific to Landscape Architecture. The closest allied fields are Architecture (not accredited at the undergraduate level and Engineering, both at MSU.

Institution Name	Degree	Program Title
MSU	Env Design	Architecture

Montana Board of Regents
CURRICULUM PROPOSAL FORM

MSU	M. Arch	Architecture
MSU	B.S.	Civil Engineering
MSU	M.S.	Civil Engineering

a. If the proposed program substantially duplicates another program offered in the Montana University System, provide a rationale as to why any resulting duplication is a net benefit to the state and its citizens. *[200 words]*

There are no other existing programs at MSU specific to an accredited Landscape Architecture program.

b. Describe any efforts that were made to collaborate with similar programs at other institutions. If no efforts were made, please explain why. *[200 words]*

There are no other existing programs at MSU specific to an accredited Landscape Architecture program.

7. **Implementation of the program.** When will the program be first offered? If implementation will occur in phases, please describe the phased implementation plans. *[100 words]*

The LAAB accreditation candidacy is a 5-year process, after which the period of initial accreditation is determined by the LAAB through their official review of the proposed program, this initial accreditation period can be an additional 1-6 years. After the initial accreditation period, a program must move into full accreditation. Current classes are already taught by existing faculty positions. We plan to offer the beginning freshman class with an adjunct instructor Spring 2018. The first graduating class with complete curricula for accreditation application will be the Spring 2021 class.

a. Complete the following table indicating the projected enrollments in and graduates from the proposed program.

Fall Headcount Enrollment					Graduates				
AY2018	AY2019	AY2020	AY2021	AY2022	AY2018	AY2019	AY2020	AY2021	AY2022
12	18	24	30	36	10	14	19	24	29

b. Describe the methodology and sources for determining the enrollment and graduation projections above. *[200 words]*
We anticipate our current enrollment in Environmental Horticulture Landscape Design (currently we have 29 students in the program) to grow over the next 5 years with regional job growth and accreditation candidacy as we anticipate attracting students from Montana, and the western and northeastern United States. The numbers in the chart above are our target enrollment numbers. Our graduation projections are based off our current rate of 80%.

c. What is the initial capacity for the program? Per the LAAB requirement, courses are not allowed over a 15:1 student/instructor ratio. Thus, we anticipate our max capacity at 15 students per grade year, or approximately 60 total.

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8. **Program assessment.** How will success of the program be determined? What action would result if this definition of success is not met? *[150 words]*

The success of the program will be measured using both internal and external mechanisms. Internally, we have developed our MSU Assessment plan to measure curricula learning objectives for existing courses. This entails the Program Learning Outcomes, Curriculum Map, Thresholds, and Assessment Schedules. These established metrics will be applied to new courses as they are added per each calendar year.

In addition, LAAB accreditation requires rigorous ongoing measurement of programmatic goals and objectives through self-assessments and external review teams (see attached LAAB documents). Accreditation is a non-governmental, voluntary system of self-regulation. Its core is the concept of self-evaluation. The Landscape Architectural Accreditation Board (LAAB) accreditation process evaluates each program based on its stated objectives and compliance to externally mandated minimum standards. The program conducts a self-study to evaluate how well it is meeting its educational goals. LAAB then provides an independent assessment, which determines if a program meets accreditation requirements. We anticipate a yearly assessment of learning objects and program directives with the LAAB as required per the Candidacy, Initial and Full Accreditation status.

We further anticipate an MSU Departmental/College/Provost/Budget Office internal assessment in Spring of 2020 and again in Fall of 2023 to review enrollment and budget targets as they relate to success and sustained feasibility of program. Specifically, the 2023 review will determine if the program will move forward with the new tenure-track position outlined in the LAAB requirements. This determination will happen prior to any advertisement of such position.

a. Describe the assessment process that will be used to evaluate how well students are achieving the intended learning outcomes of the program. When will assessment activities occur and at what frequency? *[150 words]*

Internally, we have a MSU Program Assessment Plan in place to measure curricula learning objectives. This entails Program Learning Outcomes, Curriculum Map, Thresholds, and Assessment Schedules. These established metrics will be applied to courses as they are added each calendar year. These charts are available per request and have been submitted as a part of the CiM Program proposal.

In addition, LAAB accreditation requires rigorous ongoing measurement of programmatic goals and objectives through self-assessments and external review teams. Accreditation is a non-governmental, voluntary system of self-regulation. Its core is the concept of self-evaluation. The Landscape Architectural Accreditation Board (LAAB) accreditation process evaluates each program based on its stated objectives and compliance to externally mandated minimum standards. The program conducts a self-study to evaluate how well it is meeting its educational goals. LAAB then provides an independent assessment, which determines if a program meets accreditation requirements.

b. What direct and indirect measures will be used to assess student learning? *[100 words]*

We are measuring learning outcomes per class, on multiple assignments with review from LAAB as we work toward, and receive/retain, accreditation. From our annual MSU and LAAB assessments we will modify/enhance our curriculum as necessary to meet the identified learning objectives.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

c. How will you ensure that the assessment findings will be used to ensure the quality of the program? *[100 words]* Continuous assessment and reporting will enable us to check if implemented modifications/enhancements improve students learning experience.

d. Where appropriate, describe applicable specialized accreditation and explain why you do or do not plan to seek accreditation. *[100 words]*

We plan to seek accreditation. Our current program graduates students for the profession of landscape design, an unaccredited degree that depending upon employment location one cannot practice or engage in activities conflicting with state regulated Landscape Architecture practice and title acts. These regulations are administered by state licensure boards and adhere to public safety, health and welfare. To become a licensed Landscape Architect in 46 states, one must obtain an accredited Landscape Architecture degree, have employment verification under a licensed Landscape Architect, and sit for four exams. Montana requires employment verification and exams but does not yet require an accredited degree; however, the trend across the nation is the incorporation of an educational requirement and we anticipate Montana could add this at any time.

9. Physical resources.

a. Describe the existing facilities, equipment, space, laboratory instruments, computer(s), or other physical equipment available to support the successful implementation of the program. What will be the impact on existing programs of increased use of physical resources by the proposed program? How will the increased use be accommodated? *[200 words]*

We currently have lecture, studio, and computer lab space with all the necessary equipment. We anticipate impact will be nominal since the student lecture, studio, and computing space classroom are not yet filled to capacity. However, to grow to the full anticipated student body we do have some anticipated costs listed below.

b. List needed facilities, equipment, space, laboratory instruments, etc., that must be obtained to support the proposed program. (Enter the costs of those physical resources into the budget sheet.) How will the need for these additional resources be met? *[150 words]*

To be fully established the program will require some redesign of our existing classrooms to allow for adequate permanent desks for students. We already have a masterplan approved through facilities for these future space improvements that incorporate LAAB requirements. We may also be required to upgrade adjacent bathroom facilities to meet accreditation ADA compliance requirements. Funding will be similar to those sources mentioned above in addition to MSU facilities and planning maintenance monies. Also, due to additional usage (wear and tear) we anticipate a quicker attrition rate on plotting/printing equipment which we have accounted for in program fees.

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10. Personnel resources.

a. Describe the existing instructional, support, and administrative resources available to support the successful implementation of the program. What will be the impact on existing programs of increased use of existing personnel resources by the proposed program? How will quality and productivity of existing programs be maintained? *[200 words]*

Current classes are already taught by existing faculty positions. This includes administrative resources and facilities. We will gradually build-in additional classes to meet LAAB requirements over the next five years and will require the following:

To meet the increased curriculum demand and LAAB requirements this program will need a total of three professors: two tenure-track, which we currently have, and one FTE that can be either tenure-track or adjunct (at 30 credits taught per FTE at the minimum we will require one FTE faculty). The LAAB accreditation candidacy is a 5-year process, after which the period of initial accreditation is determined by the LAAB through their official review of the proposed program, this initial accreditation period can be additional 1-6 years.

After the initial accreditation period, a program must move into full accreditation at which time this program will require an additional two FTE for a total of five instructors to meet LAAB requirements. This comprises three tenure-track professors and two FTE's that can be either tenure-track or adjunct. We have also included in our budget a two month summer salary for the current Program Director appointment.

b. Identify new personnel that must be hired to support the proposed program. (Enter the costs of those personnel resources into the budget sheet.) What are the anticipated sources or plans to secure the needed qualified faculty and staff? *[150 words]*

Please see above and budget sheet for anticipated costs leading to accreditation. We plan to build our one FTE from available local professionals and have already secured a licensed LA with the terminal Masters of Landscape Architecture degree for our spring course offering. We also anticipate we would have a search for any tenure-track positions.

11. Other resources.

a. Are the available library and information resources adequate for the proposed program? If not, how will adequate resources be obtained? *[100 words]*

Yes we have adequate library resources and will continue to work with our library liaison specifically to build the Landscape Architecture related source material such as books and periodicals.

b. Do existing student services have the capacity to accommodate the proposed program? What are the implications of the new program on services for the rest of the student body? *[150 words]*

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Over the last 6 years, the College of Agriculture and Dept. of PSPP have continuously supported planning, renovations, and equipment/computing needs for the landscape design option. These funds have been secured by the existing tenure-track faculty in collaboration with College of Agriculture and MSU IT. We estimate this financial support to date at $150,000 for facilities planning and renovations to Linfield Hall, as well as a total of $80,000 in MSU EFAC/CFAC grants. We anticipate this level of internal continued support moving forward.

12. **Revenues and expenditures.** Describe the implications of the new program on the financial situation of the institution. *[100 words]*

a. Please complete the following table of budget projections using the corresponding information from the budget template for the first three years of operation of the new program.

	Year 1	Year 2	Year 3
Revenues	30,935	82,014	135,973
Expenditures	29,852	44,841	58,454
Net Revenue (revenues-expenditures)	1,084	37,173	77,519

b. Describe any expenses anticipated with the implementation of the new program. How will these expenses be met? *[200 words]*

To meet the increased curriculum demand and LAAB requirements this program will require one FTE that can be either tenure-track or adjunct (at 30 credits taught per FTE at the minimum we will require one additional FTE faculty). After the initial accreditation period, a program must move into full accreditation at which time will require an additional two FTE for a total of five instructors to meet LAAB requirements. This comprises three tenure-track professors and two FTE's (either tenure-track or adjunct). We also included a two month summer salary for a Program Director appointment. We anticipate increased enrollment to help offset this cost.

To be fully established the program will require some redesign of our existing classrooms to allow for adequate permanent desks for students. We already have a masterplan approved through facilities for these future space improvements that incorporate LAAB requirements. We may also be required to upgrade adjacent bathroom facilities to meet accreditation ADA compliance requirements. Funding will be similar to those sources mentioned above in addition to MSU facilities and planning maintenance monies. Also, due to additional usage (wear and tear) we anticipate a quicker attrition rate on plotting/printing equipment which we have accounted for in program fees. Please note these costs are accounted for in year three as startup capital.

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i. If funding is to come from the reallocation of existing state appropriated funds, please indicate the sources of the reallocation. What impact will the reallocation of funds in support of the program have on other programs? *[150 words]*

We do not anticipate reallocation of existing state appropriated funds for accreditation.

ii. If an increase in base funding is required to fund the program, indicate the amount of additional base funding and the fiscal year when the institution plans to include the base funding in the department's budget.

We do anticipate an increase in base funding, and allocations have already been made this year for the freshman level class. We anticipate the College of Agriculture to accommodate the increased FTE costs as we build in the additional classes per year.

iii. If the funding is to come from one-time sources such as a donation, indicate the sources of other funding. What are the institution's plans for sustaining the program when that funding ends? *[150 words]* N/A

iv. Describe the federal grant, other grant(s), special fee arrangements, or contract(s) that will be valid to fund the program. What does the institution propose to do with the program upon termination of those funds? *[150 words]* N/A

13. Student fees. If the proposed program intends to impose new course, class, lab, or program fees, please list the type and amount of the fee.

We have proposed a program fee for Sophomore through Seniors to offset three items: specialty ink/paper; equipment; and field trips. These are items beyond typical operations for education in the program such as plotting, plotter and scanning equipment, out-of-state field trips to significant landscapes architecture projects. The yearly program fees are as follows: year1- $250; year2-$275; year3-$325; year4-$475; year5-$550.

14. Complete the budget template below with the following information:

- Indicate all resources needed including the planned FTE enrollment, projected revenues, and estimated expenditures for the first three fiscal years of the program.
- Include reallocation of existing personnel and resources and anticipated or requested new resources.
- Amounts should reconcile subsequent pages where budget explanations are provided.

Signature/Date

College or School Dean: Charles Boyer 1/10/18

Chief Academic Officer: [signature] 1/23/18

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Chief Executive Officer: 1/23/18

Flagship Provost*: 1/23/18

Flagship President*:

*Not applicable to the Community Colleges.

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CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	12	18	24
	FY 2018	FY 2019	FY 2020
	FTE / Headcount	FTE / Headcount	FTE / Headcount
Projected enrollments	**3.6 / 12**	**7.2 / 18**	**10.4 / 24**

II. REVENUE

	FY On-going	FY One-time	FY On-going	FY One-time	FY On-going	FY One-time
1. New Appropriated Funding Request						
2. Institution Funds						
3. Federal						
4. New Tuition Revenues from Increased Enrollments	30,215		80,754		130,933	
5. Student Fees	720		1,440		5,040	
6. Other (i.e., Gifts)						
Total Revenue	**$30,935**	**$0**	**$82,014**	**$0**	**$135,973**	**$0**

Ongoing is defined as ongoing operating budget for the program which will become part of the base.

One-time is defined as one-time funding in a fiscal year and not part of the base.

III. EXPENDITURES

	FY On-going	FY One-time	FY On-going	FY One-time	FY On-going	FY One-time
A. Personnel Costs						
1. FTE	.1		.3		.43	
2. Faculty	15,556		15,556		15,556	
3. Adjunct Faculty	6,000		18,000		26,000	
4. Graduate/Undergrad Assistants						
5. Research Personnel						
6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits	4,076		6,345		7,858	
9. Other:						
Total Personnel and Costs	**$25,632**	**$0**	**39,901**	**$0**	**49,414**	**$0**

	FY On-going	FY One-time	FY On-going	FY One-time	FY On-going	FY One-time
B. Operating Expenditures						

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CURRICULUM PROPOSAL FORM

1. Travel	2,000		2,500		5,000	
2. Professional Services						
3. Other Services					500	
4. Communications						
5. Materials and Supplies	720		1,440		2,540	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other: LAAB FEES	1,500		1000		1000	
Total Operating Expenditures	**$4,220**		**$4,940**		**$9,040**	

	FY On-going	FY One-time	FY On-going	FY One-time	FY On-going	FY One-time
C. Capital Outlay						
1. Library Resources						
2. Equipment						
Total Capital Outlay	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

	FY On-going	FY One-time	FY On-going	FY One-time	FY On-going	FY One-time
D. Capital Facilities Construction or Major Renovation						125,000

	FY On-going	FY One-time	FY On-going	FY One-time	FY On-going	FY One-time
E. Other Costs						
1. Utilities						
2. Maintenance & Repairs						
3. Other:						
Total Other Costs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL EXPENDITURES:	**$29,852**	**$0**	**$44,841**	**$0**	**$58,454**	**$0**
Net Income (Deficit)	**$1,084**	**$0**	**$37,173**	**$0**	**$77,519**	**$0**

The signature of the campus Chief Financial Officer signifies that he/she has reviewed and assessed the fiscal soundness of the proposal and provided his/her recommendations to the Chief Academic Officer as necessary.

Campus CFO

Montana Board of Regents
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Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

***LARC 120 Landscape Design Studio/3/S**

***LARC 201 Landscape Design Studio/3/F**
***LARC 202 Landscape Design Studio/3/S**

***LARC 301 Design Studio/4/F**

***LARC 401 Landscape Design Studio/4/F**

***LARC 410 Professional Practice/2/F**
***LARC 437 Portfolio Development/3/Su**

Montana University System

NOTICE OF INTENT TO PLAN

Program/Institute Title:	BS Landscape Architecture
Campus, School/Department:	MSU-Bz, PSPP
Contact Name/Info:	John Sherwood, sherwood@montana.edu
Expected Submission Date:	JAN 2017/MAR 2017
Mode of Delivery:	Face-to-Face

To increase communication, collaboration, and problem solving opportunities throughout the MUS in the program/center/institute development process, please complete this form not more than 18 months in advance of the anticipated date of submission of the proposed program/center/institute to the Board of Regents for approval.

For more information regarding the Intent to Plan process, please visit the Academic and Student Affairs Handbook.

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

   A fully accredited educational program (by the American Society of Landscape Architects/Landscape Architectural Accreditation Board-LAAB) leading to a first professional degree at the bachelor's level in Landscape Architecture.

   This program would prepare graduates to be leaders in the field and profession of landscape architecture by integrating student learning with faculty research and creative pursuits and engaging with partners in communities and other disciplines.

   This program would be a further development of the already well-established Landscape Design option in Environmental Horticulture in the Plant Sciences and Plant Pathology Department.

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

   The Bureau of Labor Statistics (BLS) suggests that employment for landscape architecture professionals will grow by five percent from 2014 to 2024, which is the average growth expected for all landscape architecture occupations (see attached Education Advisory Board EAB research). In addition,

environmental concerns and increased demand for sustainably designed landscapes and open spaces will spur demand for the services of landscape architects. For example landscape architects will be needed to design plans to manage storm-water runoff in order to conserve water resources and avoid polluting waterways. This is especially useful in areas prone to drought. Furthermore, in light of Montana's population projections (anticipated 14.1% from 2013-2043) communities would greatly benefit from landscape architectural services for the purpose of understanding, planning and developing regional growth policies.

Montana does not have a landscape architecture program that has achieved accreditation or candidacy status from LAAB. Montana residents thus do not have access to the professional degree, a qualification often required for state licensure. Students must attend school out of state in order to gain a degree from an accredited program. Regionally, the closest accredited program is at U. of Idaho, Moscow. Likewise, the nonresident students, 32% of MSU enrollment in 2015, do not have access to an accredited degree, which makes our students less competitive in the marketplace than they could be both regionally and nationally.

3) Describe how the program/center/institute fits with the institutional mission, strategic plan, and existing institutional program array.

An LAAB accredited landscape architecture program must maintain and monitor – and strive to advance – academic quality within the program and institution. Thus this proposed program would foster and support the universities strategic plan with innovation and integration of learning, discovery, and engagement while also preparing students for professional practice.

Learning: In addition to the professional curriculum, a first professional degree program at the bachelor's level shall provide an educational context enriched by other disciplines, including but not limited to: liberal and fine arts, natural sciences, and social sciences, as well as opportunities for students to develop other areas of interest. In recruiting students and job placement these "areas of interest" or academic strengths would reflect Montana State University's unique culture: landscape architecture situated in the department of plant sciences and in the opportunities of study in the unique geographic location.

Discovery: The program would provide students with an introduction to research and scholarly methods. Faculty would continuously engaged in activities leading to their professional growth and advancement, the advancement of the profession, and the effectiveness of the program. To enhance professional development, students would have exposure to faculty active in research and creative activity.

Engagement: The program would strive to establish an effective relationship with the institution, communities, alumni, practitioners and the public at large in order to provide a source of service learning opportunities for students, scholarly development for faculty, and professional guidance. Documentation and dissemination of successful outreach efforts would enhance the image of the

program and educate its constituencies regarding the program and the profession of landscape architecture. The program would plan to provide opportunities for students to participate in internships, off campus studies, research assistantships, or practicum experiences.

4) How does the proposed program/center/institute fit within the MUS system?

As mentioned above, Montana does not have a landscape architecture program that has achieved accreditation or candidacy status from LAAB. This program would be the first and only accredited degree program in the MUS system. Regionally, there are no programs in the adjacent state of either Wyoming or in in the Canadian province of Alberta.

For insight into desired workforce competencies we have formed an advisory committee of dedicated professionals from private firms and staff at Montana's National Parks and higher learning campus planning. In addition to identifying the need of this academic program, this enthusiastic group has advised us on programmatic and curricula objectives for accreditation.

Signatures

Intent to Plan

Program/Institute/Center Title: BS Landscape Architecture

Campus: MSU-Bz

Expected Submission Date: JAN 2017/MAR 2017

Signature/Date

Associate Provost: (procedural, not approval)	DocuSigned by: Ron Larsen E9B7047DE1CA414...	6/7/2016
College/School Dean:	DocuSigned by: Charles Boyer F0955DA5F88442B...	6/7/2016
Graduate Dean: (Graduate academic programs only)		
Vice President Research: (Research centers/institutes only)		
Chief Academic Officer:	DocuSigned by: Martha Potvin 43A1A78D200F474...	6/7/2016
Chief Executive Officer:	DocuSigned by: 7D6A4CE96C3F415...	6/7/2016
Flagship Provost:	DocuSigned by: Martha Potvin 43A1A78D200F474...	6/7/2016
Flagship President:	DocuSigned by: 7D6A4CE96C3F415...	6/7/2016

Date of Final Review: September 15, 2016

When submitting the proposal to the BOR, include this signed form with the Level II request.

October 31, 2017

To: Dr. Charles Boyer, VP, Dean and Director, College of Ag.
From: Mike Giroux, Plant Sciences and Plant Pathology Interim Head

Dear Dr. Boyer,

This letter is being sent to express my support for the proposal to develop a Landscape Architecture (LA) program. The development of an accredited LA program would be significant in several ways. First, it would allow us to fully develop the Landscape Design option we offer within the Environmental Horticulture major in the Department of Plant Sciences. Being able to offer students the option of the LA degree would lead to increased enrollments and the ability to integrate student learning with faculty research. Students with LA degrees also have different career options and more students would enroll at Montana State if LA was available. Note that the nearest accredited Landscape Architecture is at the University of Idaho and there are no such programs in South Dakota or Wyoming.

The LA program would benefit the MSU community and Montana by integrating student learning into the community. Note that current Landscape Design faculty, Jennifer Britton and Rebekah VanWieren are active in the local community by conducting service projects. This tradition would expand with the development of the LA program which would lead to increased enrollment, and increased service learning projects. The full development of service learning projects involves students working with leaders in the LA profession and community members to carry out projects that fill an identified need.

The development of an accredited LA program is fully consistent with the goal of the Plant Sciences and Plant Pathology Department and the College of Agriculture to ensure that a diversity of programs and research is available for students to enrich the greater community. The LA program will be developed in concert with an advisory committee consisting of LA professionals from private firms, local and national parks, and community planning.

In summary, I feel that the development of the LA degree is important since it will prove valuable to students in terms of career options and make a positive impact upon MSU, Bozeman, and MT.

Best regards,

Michael D. Giroux

Mike Giroux
Professor and Interim Head

BOZEMAN MT
Stormwater Division

November 7, 2017

Dr. Charles Boyer, Vice President
Dean of the College of Agriculture
Montana State University
P.O. Box 172860
Bozeman, MT 59717-2860

Re: Letter of Support for Landscape Architecture Program at MSU

Dear Dr. Charles Boyer,

I would like to express my support for the growth and accreditation of the Landscape Architecture Program at MSU. I have had the privilege of working with Mrs. VanWieren and her students through numerous class presentations and a semester-long service-learning project and have been impressed by the quality, value, and applicability of the content presented.

Cities across the country face significant urban stormwater runoff challenges, especially as development footprints, population densities, and environmental impacts grow. One tool municipal program managers are using to combat these issues is the integration of low impact development, green infrastructure, and strategic land use planning requirements into design standards. These modern design approaches compel engineers and landscape professionals to design greener and more efficient urban development, improving flood attenuation, waterway health, and quality of life. As such, it thrills me to hear that MSU is proposing to expand their Landscape Architecture offerings to students whom one day will be working on these types of projects in Montana and beyond.

In addition, the prospect of being able to work increasingly with MSU faculty and students to achieve common goals is exciting. Especially, as stormwater regulations push current technology limits and typical design boundaries. Graduate-level research, undergraduate scholar opportunities, and participation in national events, such as the EPA's Rain Works Challenge, are all collaborative opportunities the City would appreciate the chance to explore and develop with MSU.

Please feel free to contact me if you have any questions or would like to brainstorm potential opportunities. I wish you success as you further build your Landscape Architecture Program.

Sincerely,

Kyle Mehrens
Stormwater Program Coordinator, City of Bozeman

(A) 20 East Olive Street | (M) P.O. Box 1230 Bozeman, MT 59771-1230 | (P) 406-582-2270 | (F) 406-582-2263 | www.bozeman.net

TDD: 406-582-2301

November 2, 2017

TO: Charles Boyer, Vice President of Agriculture

FR: John Sherwood, Emeritus Professor 

RE: Landscape Architecture Program support letter

It is my pleasure to provide a letter of support for the establishment of an accredited program in Landscape Architecture at MSU. The groundwork for this initiative has been ongoing for more than a decade, but due to faculty and administration turnover, we were not in a position to move forward. However, in the meantime we had a feasibly study done a number of years ago by an external Landscape Architect with close ties to the accreditation society, and another done more recently through MSU. Both studies indicated that there was a strong need for an accredited program in Landscape Architecture in MT. We have hired two incredibly talented faculty members to support our long-standing program in Landscape Design (Jennifer Britton and Rebekah VanWieren) and now that Jennifer is tenured, we felt we were finally in a position to move forward.

During this waiting period, we have not been idle. The College of Ag, which has strongly supported our efforts to move forward with this program, and the department have used available resources to build and renovate an outstanding studio and computer lab facility in the basement of Linfield Hall. We have slowly been upgrading this space when funds have been available. We have also established an external advisory committee made up of Landscape Architects in the region to advise us on how to best proceed to meet our ultimate goal of accreditation and how to best have our faculty and students interact with professionals in the region.

We understand that a new program at this time will be met with some reluctance, especially when we cannot guarantee that enrollment will be large enough to “pay” for itself (although the feasibility studies were optimistic). In reality the cost is relatively minor, and we are deliberately beginning with only a BSLA degree to confirm that the numbers of students would justify adding an MLA degree in the future. The MLA degree would require considerably more resources.

In conclusion, I strongly believe in this program and have been fighting to establish it for most of my 14 year tenure as Head of PSPP. I believe it is important to MSU, Montana and the northern Rocky region. My only regret is that I retired without seeing it in place. If I have not fully addressed your concerns, please feel free to get in touch with me.

MONTANA STATE UNIVERSITY
College of AGRICULTURE & MONTANA AGRICULTURAL EXPERIMENT STATION

TO: Bob Mokwa
Executive VP for Academic Affairs and Provost

FROM: Charles Boyer
Vice President of Agriculture

DATE: October 31, 2017

RE: Landscape Architecture program proposal

Agricultural Economics and Economics

Agricultural Education

Animal and Range Sciences

Microbiology and Immunology

Land Resources and Environmental Sciences

Plant Sciences and Plant Pathology

Research Centers

WIMU Regional Program in Veterinary Medicine

I am pleased to add my support to the proposal to develop a Landscape Architecture (LA) program at Montana State University. The proposed program is a natural step in serving the needs of Montana within the umbrella of Environmental Horticulture, one of our academic programs in the department of Plant Sciences and Plant Pathology.

Our Landscape Design option within Environmental Horticulture has provided important opportunities for our students. The proposed LA program is the next logical step. As an accredited program through the American Society of Landscape Architecture, it will attract additional students and provide the first LA program in Montana. Graduates trained in the use of native and other appropriate plant materials will provide important enhancement to public lands including national parks, residential projects and the expanding experiential-based tourism business in our state. These skills will be enhanced by building on the experiential student learning approach already used in the Landscape Design option.

The accredited LA program continues to build on the role of our College of Agriculture as a foundation for our land-grant mission. We accomplish integration of teaching, scholarship and service in the people's interest through engagement with advisory boards from the communities we serve. The LA program proposal has grown from the landscape architect community and reflects a true partnership. I am confident that the program will make a difference in Montana and beyond and be one of distinction and pride.

Please feel free to contact me if you need additional input at this time.

Office of the Vice President, Dean and Director

202 Linfield Hall
P.O. Box 172860
Bozeman, MT 59717-2860

Tel (406) 994-3681
Fax (406) 994-6579
http://agriculture.montana.edu

March 2018

ITEM 178-1500-R0318

Request for authorization to establish an AAS Precision Machining Technology Program

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THAT

The board of Regents of Higher Education authorizes Montana Tech of the University of Montana to establish an A.A.S. Precision Machining Technology program.

EXPLANATION

The proposed program will expand and rename the current Machining Technology Program to a two-year AAs to be called Precision Machining Technology. Students who enter this program may opt to complete a one year certification in machining, continue in one year of welding technology and earn an AAS in Metals Fabrication, or continue into the second year of machining to complete the AAS in Precision Machining Technology. In theory, students will be able to complete two AAS degrees in three years.

ATTACHMENTS

Curriculum Proposal Form
Academic Proposal Request Form
Letters of Support

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **178-1500-R0318** Submission Month or Meeting: **March, 2018**

Institution: **Highlands College of MT Tech** CIP Code: _____

Program/Center/Institute Title: **A.A.S. Precision Machining Technology**

Includes (please specify below): Online Offering ____ Options _____

Please mark the appropriate type of request and submit with an Item Template and any additional materials, including those listed in parentheses following the type of request. For more information pertaining to the types of requests listed below, how to complete an item request, or additional forms please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

____ **A. Level I:**

Campus Approvals

____ **1a. Placing a postsecondary educational program into moratorium** (Program Termination and Moratorium Form)

____ **1b. Withdrawing a postsecondary educational program from moratorium**

____ **2. Establishing, re-titling, terminating or revising a campus certificate of 29 credits or less**

____ **3. Establishing a B.A.S./A.A./A.S. area of study**

____ **4. Offering an existing postsecondary educational program via distance or online delivery**

OCHE Approvals

____ **5. Re-titling an existing postsecondary educational program**

____ **6. Terminating an existing postsecondary educational program** (Program Termination and Moratorium Form)

____ **7. Consolidating existing postsecondary educational programs** (Curriculum Proposal Form)

____ **8. Establishing a new minor where there is a major or an option in a major** (Curriculum Proposal Form)

____ **9. Revising a postsecondary educational program** (Curriculum Proposal Form)

____ **10. Establishing a temporary C.A.S. or A.A.S. degree program** *Approval limited to 2 years*

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ACADEMIC PROPOSAL REQUEST FORM

B. Level II:

X **1. Establishing a new postsecondary educational program** (Curriculum Proposal and Completed Intent to Plan Form)

2. Exceeding the 120 credit maximum for baccalaureate degrees *Exception to policy 301.11*

3. Forming, eliminating or consolidating an academic, administrative, or research unit (Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating)

4. Re-titling an academic, administrative, or research unit

Proposal Summary [360 words maximum]

What: The proposed program will expand and rename the current Machining Technology Program to a two-year AAS to be called Precision Machining Technology. Students who enter this program may opt to complete a one year certificate in machining, continue in one year of welding technology and earn an AAS in Metals Fabrication, or continue into the second year of machining to complete the AAS in Precision Machining Technology. In theory, students will be able to complete two AAS degrees in three years.

Why: Today our students are not receiving enough education and training to be fully trained machinists with the current one year programs. An additional year of advanced CNC operator training, along with programming and training on a 5^{th} axis machine is needed. Manufacturing is returning to the United States at a fast pace and there are positions available that require well-trained machinists. As positions return to the United States from places like China, there will be a true American manufacturing renaissance and it will take more than a few thousand jobs to reverse the trend of decades of offshoring and heavy reliance on foreign imports. Over the last five years roughly 22,000 jobs have been brought back to this country. Growth in the manufacturing industry and the need to replace an aging workforce is expected to provide opportunities for our graduates. In Montana, employment of CNC machinists is projected to increase by 44% between 2010 and 2020.

Resources: No additional physical resources (building, equipment, lab space, etc.) are needed to accommodate this proposed program. One adjunct instructor will be hired who will teach up to 17 credit hours per year.

Relationship to similar MUS programs: There are currently two existing two-year programs in Montana; however, both of these institutions have expressed their support for our program. Flathead Valley Community College has written a letter of support and Helena College verbally expressed their support.

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1. **Overview of the request and resulting changes.** Provide a one-paragraph description of the proposed program. Will this program be related or tied to other programs on campus? Describe any changes to existing program(s) that this program will replace or modify. *[100 words]*

   Expand and rename the current Machining Technology Program to a two-year AAS to be called Precision Machining Technology. Students who enter this program may opt to complete a one year certificate in machining, continue in one year of welding technology and earn an AAS in Metals Fabrication, or continue into the second year of machining to complete an AAS in Precision Machining Technology. The first two semesters of the revised Machining program will become the first year of the AAS in Metals Fabrication (machining portion).

2. **Relation to institutional strategic goals.** Describe the nature and purpose of the new program in the context of the institution's mission and core themes. *[200 words]*

   This program would "offer courses that enable students to acquire knowledge and skills essential to employment and success in their field and profession" along with "offering a quality program that serve societal, employer, and student needs, blending theory with practice" (mtech.edu, 2016, Strategic Plan: Core Themes).

3. **Process leading to submission.** Briefly detail the planning, development, and approval process of the program at the institution. *[100 words]*

   This program has been developed by the Trades and Technical Department Head, Tony Patrick, with the support of his staff to plan and develop this program. The program has been approved by Montana Tech Curriculum Review Committee and the Montana Tech Faculty Senate. Lastly, the program will be presented to the Board of Regents for their approval.

4. **Program description.** Please include a complete listing of the proposed new curriculum in Appendix A of this document.

   The Associate of Applied Science Degree in Precision Machining Technology offers a broad training experience that prepares individuals for employment in the precision manufacturing industry. Students will learn to operate a variety of conventional machine tools, computer numerical control (CNC) machines, read and analyze engineering drawings and use precision measuring inspection instruments. The new computer automated manufacturing (CAM) lab uses Mastercam software to program CNC equipment. Students develop the skills required for employment in this highly technical field with this program.

   a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	53
Credits in required courses offered by other departments	3
Credits in institutional general education curriculum	20
Credits of free electives	0
Total credits required to complete the program	76

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b. List the program learning outcomes for the proposed program. Use learner-centered statements that indicate what students will know, be able to do, and/or value or appreciate as a result of completing the program.

Upon completion of the Associate of Applied Science in Precision Machining Technology the graduate is prepared to:

1. Demonstrate entry level skills utilizing conventional and computer numerical control equipment in a modern manufacturing setting.
2. Interpret engineering drawings utilizing current standards set by ANSI.
3. Produce a part that meets print specifications utilizing the appropriate measuring and gauging instruments to insure quality control.
4. Apply occupational health and safety standards related to the precision manufacturing Machine Tool Industry.
5. Integrate all learning experiences gained from general education courses to the practice of the precision manufacturing machine tool trade.
6. Demonstrate a commitment to life-long learning through formal education, on the job, in-service, or independent participation in other technical/trade resources.

5. **Need for the program.** To what specific student, regional, and statewide needs is the institution responding to with the proposed program? How will the proposed program meet those needs? Consider workforce, student, economic, societal, and transfer needs in your response as appropriate. *[250 words]*

Today, our students are not receiving enough education and training to be fully trained machinists in the current one year program. An additional year of advanced CNC operator training, along with programming and training on a 5th-axis machine, is needed. Highlands is lagging behind other colleges in providing a two-year program such as Helena College and Flathead Valley Community College where the two-year program is the norm. Manufacturing is returning to the United States at a fast pace and currently there are approximately 24,527 positions posted available across the country that are needing well-trained machinists. On March 13, 2017, there were over 24,527 positions posted: glassdoor.com (12,543 positions); linkedin.com (3,837 positions); and simplyhired.com (8,147 positions). Additional positions will be returning to the United States from places such as China where the extent to which these factory openings are truly a sign of an American manufacturing renaissance. One certainty is that it will take more than a few thousand jobs to reverse the trend of decades of offshoring and heavy reliance on foreign imports. The roughly 22,000 jobs these companies have brought back to the country over the last five years is not insignificant (USA Today, Manufacturers Bringing the Most Jobs Back to America). Along with these positions, growth in the manufacturing industry and the need to replace an aging workforce is expected to provide opportunities for graduates (Machinist Technician IV, FVC.edu). In Montana, employment of CNC machinists is projected to increase by 44% between 2010 and 2020. Both state and national projected employment growth exceeds the rate of overall projected employment growth (Machinist Technician IV, fvcc.edu).

6. **Similar programs.** Use the table below to identify and describe the relationship between any similar programs within the Montana University System.

Institution Name	Degree	Program Title
Helena College	AAS	Computer Aided Manufacturing

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Flathead Valley CC	AAS	Industrial Machine Technology

a. If the proposed program substantially duplicates another program offered in the Montana University System, provide a rationale as to why any resulting duplication is a net benefit to the state and its citizens. *[200 words]*

Although there are a number of course duplications in the current two-year programs and this proposed program, this new program has a number of differences that will make this program beneficial to the students it will attract. The major differences are: a minimum of eight NIMS certifications are required to be earned over the two years; introduction to CNC machining begins in the first semester of the program; the program will offer multi-axis CNC machining; there is an additional semester of advanced math; two CAD software programs will be taught and used (Mastercam and Solidworks); and Geometric Dimensioning and Tolerancing will include instruction using the CMM machine.

b. Describe any efforts that were made to collaborate with similar programs at other institutions. If no efforts were made, please explain why. *[200 words]*

Letters of support for this program have been received by Flathead Valley Community College, Missoula College and Gallatin. Helena College has expressed verbal support of this program. We have letters of support from current students in the one year program as well as former students who have stated they will return or stay another year to obtain this degree should it be offered at Highlands College.

7. **Implementation of the program.** When will the program be first offered? If implementation will occur in phases, please describe the phased implementation plans. *[100 words]*

The program will be first offered during the Fall, 2018 academic year. This will be in conjunction with the 1st year Machining Program already in progress at the college.

a. Complete the following table indicating the projected enrollments in and graduates from the proposed program.

Fall Headcount Enrollment					Graduates				
AY 18	AY 19	AY 20	AY 21	AY 22	AY 19	AY 20	AY 21	AY 22	AY 23
30	30	30	30	30	15	15	15	15	15

b. Describe the methodology and sources for determining the enrollment and graduation projections above. *[200 words]*

The current one year program accepts 15 new students each fall semester. Based on the support of current and former students (see letters of support) beginning fall 2018 semester, there would be 15 second year students admitted to the new two-year program for a total of 30 students in the machining program. Spring semester would see 15 second year students graduate. For a number of the graduates,

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this will be their second two year degree as they will have already completed the Metals Fabrication program.

c. What is the initial capacity for the program?

The initial capacity for this class will be 30 students (15 first year students and 15 second year students), the maximum number of students allowed to meet health and safety standards for this program.

8. **Program assessment.** How will success of the program be determined? What action would result if this definition of success is not met? *[150 words]*

The success of the program will be measured by the number of students who begin the program and the number of students who complete both years of the program with satisfactory grades in all of the courses offered, complete the required certifications and graduate. Assessment of the program will be made by reviewing the student evaluations, student portfolios, Noel-Levitz Student Satisfaction Survey, and the graduate placement survey. Should the numbers of graduates not reflect our goals for this program, the same assessments will be used to determine any deficiencies in the program. Conversations with the advisory board will be important in determining if changes to the program should be made.

a. Describe the assessment process that will be used to evaluate how well students are achieving the intended learning outcomes of the program. When will assessment activities occur and at what frequency? *[150 words]*

Formed in 1995 by the metalworking trade associations to develop and maintain a globally competitive American workforce, the National Institute for Metalworking Skills (NIMS) sets skills standards for the industry, certifies individual skills against the standards and accredits training programs that meet NIMS quality requirements. Two NIMS certifications are required to be completed each semester of the program. The projects associated with the certifications will be required to be within certain allowable tolerances. Testing dates with a proctor will be scheduled and listed in the syllabus. End of unit (chapter) testing will take place according to the dates shown in the syllabus. The online Mastercam lessons are required to be completed by certain noted dates and include four drawings and the production of two parts from the drawings.

b. What direct and indirect measures will be used to assess student learning? *[100 words]*

Testing and lab practices will be the direct measures that will be used to assess student learning.

c. How will you ensure that the assessment findings will be used to ensure the quality of the program? *[100 words]*

Students will be expected to pass each course in the program with a 70% or higher average.

d. Where appropriate, describe applicable specialized accreditation and explain why you do or do not plan to seek accreditation. *[100 words]*

NIMS accreditation is the United States' only distinction for excellence in metalworking training as based on NIMS industry-written, industry-approved skills standards. Accreditation secures notable improvements across several quality areas.

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Advantages to Education/Training Institutions: Achieving NIMS accreditations is also a great tool for educational institutions and also conveys an important message about the quality of the school to parents, the local governing body, state and federal partners, foundations, future students, industry and the local community.

9. Physical resources.

a. Describe the existing facilities, equipment, space, laboratory instruments, computer(s), or other physical equipment available to support the successful implementation of the program. What will be the impact on existing programs of increased use of physical resources by the proposed program? How will the increased use be accommodated? *[200 words]*

The existing equipment in the machining lab includes: 15 manual lathes; 4 manual mills; 2 – ST10 CNC Lathes; 2 CNC Mini Mills; 1 VF1 CMC Mill; 1 VF2 CNC Mill with 5th axis; 1 Zeiss CMM, 2 Surface Grinders; 1 Drill Press; 1 Plasma Table; 2 Hardness Testers; 1 Band Saw; 16 computers; 24 Mastercam Software Packages.

There should be little to no impact on the existing program's resources with this additional program.

b. List needed facilities, equipment, space, laboratory instruments, etc., that must be obtained to support the proposed program. (Enter the costs of those physical resources into the budget sheet.) How will the need for these additional resources be met? *[150 words]*

No new equipment is needed to start this program.

10. Personnel resources.

a. Describe the existing instructional, support, and administrative resources available to support the successful implementation of the program. What will be the impact on existing programs of increased use of existing personnel resources by the proposed program? How will quality and productivity of existing programs be maintained? *[200 words]*

The existing instructional resource consists of one full time machining instructor. Other existing supports include the instructors of the general education components of the current program (math, writing, communications, and computer courses). Administrative supports include the Highlands College dean, an enrollment services specialist, and the administrative assistant. There should be little to no impact on any existing programs as the faculty who provide the general education components and one of the new course offerings will be able to provide seats in their classes by increasing the caps in these classes and/or by filling empty seats in low enrollment sections.

b. Identify new personnel that must be hired to support the proposed program. (Enter the costs of those personnel resources into the budget sheet.) What are the anticipated sources or plans to secure the needed qualified faculty and staff? *[150 words]*

The proposed program will hire one adjunct faculty who will teach up to 17 credit hours per year. This adjunct position will be secured from the current pool of qualified adjunct applicants or if not available from this resource, applications will be accepted through various advertising sources. This position will be funded through the existing part-time fund allocated for Highlands. Qualified faculty are already in place for the general education requirements and one of the new course offerings.

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11. Other resources.

a. Are the available library and information resources adequate for the proposed program? If not, how will adequate resources be obtained? *[100 words]*

The Montana Tech Library Director has indicated that adequate resources currently exist to serve the proposed new program and that additional resources are not needed or anticipated at this time.

b. Do existing student services have the capacity to accommodate the proposed program? What are the implications of the new program on services for the rest of the student body? *[150 words]*

There will be little to no impact so any existing student services. One area in particular, Enrollment Services, has stated that there is adequate staffing to handle the additional students that this proposed program will add to the campus. The students in the current one year program live in the immediate area or rent private housing thereby eliminating the need for additional student housing on campus. The proposed program is housed at Montana Tech's south campus and there will be no impact to any students on the main campus. The Enrollment Services personnel at Highlands has stated that there will be no negative implications to the student body at this campus.

12. Revenues and expenditures. Describe the implications of the new program on the financial situation of the institution. *[100 words]*

a. Please complete the following table of budget projections using the corresponding information from the budget template for the first three years of operation of the new program.

	Year 1	Year 2	Year 3
Revenues	49,255	102,445	107,567
Expenditures	3,270	3,270	3,270
Net Revenue (revenues-expenditures)	45,985	99,175	104,297

b. Describe any expenses anticipated with the implementation of the new program. How will these expenses be met? *[200 words]*

There will be an expenditure for the adjunct instructor which will be covered by student tuition and the portion of this money that is directed to the Highlands College part-time budget. The additional supplies and materials to be used by the students will come from the program fee that each student will pay each semester of the program. Any marketing or advertising expenses will be absorbed into other marketing and advertising allocated to other programs at Highlands.

i. If funding is to come from the reallocation of existing state appropriated funds, please indicate the sources of the reallocation. What impact will the reallocation of funds in support of the program have on other programs? *[150 words]*

Not applicable to this program.

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ii. If an increase in base funding is required to fund the program, indicate the amount of additional base funding and the fiscal year when the institution plans to include the base funding in the department's budget.

Not applicable to this program.

iii. If the funding is to come from one-time sources such as a donation, indicate the sources of other funding. What are the institution's plans for sustaining the program when that funding ends? *[150 words]*

Not applicable to this program.

iv. Describe the federal grant, other grant(s), special fee arrangements, or contract(s) that will be valid to fund the program. What does the institution propose to do with the program upon termination of those funds? *[150 words]*

Not applicable to this program.

13. Student fees. If the proposed program intends to impose new course, class, lab, or program fees, please list the type and amount of the fee.

The current program fee for the one year program is $300.00 per semester. No change to this fee is needed at this time.

14. Complete the budget template below with the following information:

- Indicate all resources needed including the planned FTE enrollment, projected revenues, and estimated expenditures for the first three fiscal years of the program.
- Include reallocation of existing personnel and resources and anticipated or requested new resources.
- Amounts should reconcile subsequent pages where budget explanations are provided.

Signature/Date

College or School Dean: 1-18-18

Chief Academic Officer: Douglas M. Abbott 1/18/18

Chief Executive Officer: Donald M. Blackketter 1/18/18

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Flagship Provost*: N\A

Flagship President*: N\A

*Not applicable to the Community Colleges.

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I. PROJECTED STUDENT ENROLLMENT

	FY 19		FY 20		FY 21	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	30	30	30	30	30	30

II. REVENUE

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request						
2. Institution Funds						
3. Federal						
4. New Tuition Revenues from Increased Enrollments	40,255		84,445		88,667	
5. Student Fees	9,000		18,000		18,900	
6. Other (i.e., Gifts)						
Total Revenue	**$49,255**	**$0**	**$102,445**	**$0**	**$107,567**	**$0**

Ongoing is defined as ongoing operating budget for the program which will become part of the base.

One-time is defined as one-time funding in a fiscal year and not part of the base.

III. EXPENDITURES

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE	.5		.5		.5	
2. Faculty						
3. Adjunct Faculty	3,000		3,000		3,000	
4. Graduate/Undergrad Assistants						
5. Research Personnel						

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6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits	270		270		270	
9. Other:						
Total Personnel and Costs	**$3,270**	**$0**	**$3,270**	**$0**	**$3,270**	**$0**

	FY		FY		FY	
B. Operating Expenditures	On-going	One-time	On-going	One-time	On-going	One-time
1. Travel						
2. Professional Services						
3. Other Services						
4. Communications						
5. Materials and Supplies						
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

	FY		FY		FY	
C. Capital Outlay	On-going	One-time	On-going	One-time	On-going	One-time
1. Library Resources						
2. Equipment						
Total Capital Outlay	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

	FY		FY		FY	

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	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation						
	FY		**FY**		**FY**	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs						
1. Utilities						
2. Maintenance & Repairs						
3. Other:						
Total Other Costs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL EXPENDITURES:	**$3,270**	**$0**	**$3,270**	**$0**	**$3,270**	**$0**
Net Income (Deficit)	**$45,985**	**$0**	**$99,175**	**$0**	**$104,297**	**$0**

The signature of the campus Chief Financial Officer signifies that he/she has reviewed and assessed the fiscal soundness of the proposal and provided his/her recommendations to the Chief Academic Officer as necessary.

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

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Appendix A – Proposed New Curriculum

A.A.S. - Precision Machining Technology - Fall Entry Only

Course Number	Course Title	Credits	CRN
	First Semester		
MCH 268	Introduction to CNC Milling	3	74930
MCH 120	Blueprint Reading & Interpretation for Machining	3	74931
MCH 160	Machine Shop I	3	74933
MCH 245	Shop Practices	3	74934
MCH 129	Machine Quality Control & Precision Measurement	3	74935
M 111	Technical Mathematics	3	74897
	Total Credits (Fall)	**18**	
	Second Semester		
MCH 260	Machine Shop II	3	35585
MCH 235	CNC Milling II	3	33587
MCH 231	CNC Turning Operations Level I	3	35587
MCH 230	Tooling & Fixtures Used in CNC	3	New #
MCH 141	Tool Geometry & Grinding	3	New #
WRIT 100	Composing Mindfully: Writing Fundamentals	3	35746
COMX 115	Interpersonal Communication	3	35459
	Total Credits (Spring)	**21**	
	Third Semester		
MCH 265	Advanced Machining & Manufacturing	4	New #
MCH 240	Metallurgy	3	New #
MCH 131	CNC Milling Programming	3	New #
MCH 220	Geometric Dimensioning & Tolerancing	3	New #

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DDSN 135	Solidworks	3	74986
CAPP 131	Basic MS Office	3	72492
	Total Credits (Fall)	**19**	
	Fourth Semester		
MCH 280	Multi Axis CNC Milling	3	New #
MCH 232	CNC Turning Programming	3	New #
MCH 291	Special Project	4	34014
MT 220	Employment Strategies	2	35393
WRIT 101	College Writing I	3	34297
M 114	Extended Technical Math	3	35827
	Total Credits (Spring)	**18**	
	TOTAL CREDITS	**76**	

Montana University System

INTENT TO PLAN FORM

Program/Center/Institute Title: **AAS Precision Machining Technology**

Campus, School/Department: **Highlands College of MT Tech, Trades and Technology** Expected Submission Date: **Spring,2018**

Contact Name/Info: **Tony Patrick, Instructor-Machining Technology and Department Head-Trades and Technology**

To increase communication, collaboration, and problem solving opportunities throughout the MUS in the program/center/institute development process, please complete this form not more than 18 months in advance of the anticipated date of submission of the proposed program/center/institute to the Board of Regents for approval. The completed form should not be more than 2-3 pages. For more information regarding the Intent to Plan process, please visit http://mus.edu/che/arsa/academicproposals.asp.

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

   The Associate of Applied Science (AAS) in Precision Machining Technology offers a broad training experience that prepares individuals for employment in the precision manufacturing industry. Students will learn to operate a variety of conventional machine tools, computer numerical control (CNC) machines, read and analyze engineering drawings and use precision measuring inspection instruments. The new computer automated manufacturing (CAM) lab uses Mastercam software to program CNC equipment. Students will leave the program with highly developed machining skills which are required for employment in this extremely technical field.

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

   Currently, our students in the one year program are not receiving enough education and training to be fully trained machinists. An additional year of advanced CNC operator training, along with programming and training on a 5th axis machine is needed. Highlands College is lagging behind other colleges in providing a two-year program. At Helena College and Flathead Valley Community College a two-year program is the norm. Manufacturing is returning to the United States at a fast pace. On March 13, 2017 there were over 24,527 positions posted across the country for well-trained machinists: glassdoor.com (12,543 positions); linkedin.com (3,837 positions); and simplyhired.com (8,147 positions). The extent of these factory openings are truly a sign of an American manufacturing renaissance. Additional positions will also be returning to the United States from places such as China. One certainty is that it will take more than a few thousand jobs to reverse the trend of decades of offshoring and heavy reliance on foreign imports. The roughly 22,000 jobs these companies have brought back to the country over the last five years is not insignificant (USA Today, Manufacturers Bringing the Most Jobs Back to America). Additionally, growth in the manufacturing industry as well as the need to replace an aging workforce is expected to provide opportunities for graduates (Machinist Technician IV, FVC.edu). In Montana, employment of CNC machinists is projected to increase by 44% between 2010 and 2020. Both state and national projected employment growth exceeds the rate of overall projected employment growth (Machinist Technician IV, fvcc.edu).

3) **Describe how the program/center/institute fits with the institutional mission, strategic plan, and existing institutional program array.**

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This program would "offer courses that enable students to acquire knowledge and skills essential to employment and success in their field and profession" along with "offering a quality program that serves societal, employer and student needs, blending theory with practice" (mtech.edu, 2016, Strategic Plan: Core Themes).

4) Describe how the program/center/institute overlaps, compliments, or duplicates existing efforts in the MUS.

Although there are a number of course duplications in the current two-year programs, this proposed program has a substantial number of differences that will make it unique and a benefit to the students that it will attract. The major differences are: a minimum of eight NIMS certifications are required to be earned over the two years; introduction to CNC machining begins in the first semester of the program; it will be the only program to offer multi-axis CNC machining; there is an additional semester of advanced math; two CAD software programs will be taught and used (Mastercam and Solidworks); and Geometric Dimensioning and Tolerancing will include instruction using the CMM machine.

A letter of support for this program has been received from Flathead Valley Community College. Helena College and Missoula College have also been contacted to request their support. Helena College has indicated a willingness to enter into further discussion. They are concerned that our AAS in Precision Machining Technology would take students away from their program. Missoula College has not responded to our request as of this date. Letters of support have been received by students who are currently enrolled in the one year program. In addition, former students have stated they would return to Highlands College to obtain this degree if it is offered.

Signature/Date

College/School Dean: [signature]

Chief Academic Officer: Douglas M. Abbott 11/27/17

Chief Executive Officer: Donald M. Blackketter

Flagship Provost*: N/A

Flagship President*: N/A

*Not applicable to the Community Colleges.

Date of Final Review:

When submitting the proposal to the BOR, include this signed form with the Level II request.

Flathead Valley Community College

777 Grandview Drive | Kalispell, Montana 59901

October 4, 2017

Dr. Don Blackketter
Chancellor
Montana Tech
1300 West Park
Butte, MT 59701

Dear Dr. Blackketter,

Re: Two-year Machining Program at Highlands College

This letter is written in support of the proposed two-year Machining Program at Highlands College of Montana Tech.

This new 2-year program will:

- Increase instruction time for Advanced Manual Machining (cutting gears, splines, etc.)
- Increase instruction time for CNC machining, (4^{th} & 5^{th} axis, etc.)
- add classroom instruction in Solid Works and increase classroom instruction in Mastercam programming

The Highlands College Machining Program has already shown a significant increase in the number of students who attend and complete a two-year degree at Highlands College of Montana Tech. The additional year of this program will strengthen the learning of its students and the existing program.

The Machining Program at Flathead Valley Community College is in full support of this program and the changes it will bring to Montana colleges.

Sincerely,

Lloyd Haugen
Coordinator,
Industrial Machining Technology
Flathead Valley Community College

Patrick, Marilyn

From: Patrick, Anton
Sent: Wednesday, December 20, 2017 10:46 AM
To: Gurchiek, David; Patrick, Marilyn
Subject: Fw: AAS in Precision Machining Technology

More good news!!
Tony

From: Maki, Sarah <sarah.maki1@montana.edu>
Sent: Wednesday, December 20, 2017 10:07 AM
To: Patrick, Anton; Abbott, Doug
Subject: AAS in Precision Machining Technology

Hi Tony and Doug,

Thank you for sharing your Intent to Plan an AAS in Precision Machining Technology via the CAO Call yesterday.

I am emailing to confirm that Gallatin College is in support of your pursuit of this degree. We have a one-year (CAS) in CNC Machining currently where we focus more on CNC, Solidworks, Mastercam, and Gibbs than manual machining, so it sounds similar to what you intend to add as a second year.

At any point, please reach out to us with questions if needed.

Best wishes!

Sarah Maki
Associate Dean
Gallatin College
Montana State University
101 Hamilton Hall
P.O. Box 170515
Bozeman, MT 59717
Desk: 406.994.6234
sarah.maki1@montana.edu
www.gallatin.montana.edu

GALLATIN COLLEGE
MONTANA STATE UNIVERSITY

Still registering students in:

- Culinary Arts
- Design Drafting
- Network Technology

We look forward to meeting you!

To Whom it may concern,

I am writing this letter on behalf of the Highlands College Machining Class of 2018. We were asked as a group whether or not we would be interested in a second year of Precision Machining if it was made available at the college, and the general consensus amongst the class as a whole was very positive. We feel that a second year focusing on CAD/CAM software and advanced techniques would better prepare us for the future of the machining industry. It would open more job opportunities both across the state and across the nation for graduates of the program, while also providing better trained, more capable employees to businesses looking at hiring Highlands College Graduates. In conclusion we, as a class, are very interested in attending a second year in Precision Machining and would hope that you take this into consideration while making your decision. Thank you in advance for your time and thought in this matter.

Sincerely,

The Highlands College Machining Class of 2018

Reply all | Delete Junk |

2 Year Letter

MM McCormack, Michael
Today, 11:11 AM
Patrick, Anton

Reply all |

Mike McCormack

8 Honey Lane Sheridan, MT 59749
406-842-7386
mmccormack@mtech.edu

September 7, 2017

To Whom It May Concern,

My name is Mike McCormack. I am currently enrolled in the Metals Fabrication program at Highlands College. Having completed the machining portion, I am working on the welding section. This letter is to make you aware of my very strong interest in a second year of Precision Machining. The first year of machining provided us with a good base knowledge that could be used to get an entry-level position. I believe, that what we would learn in a second year would greatly increase our desirability to employers and our potential for higher wages.

My attending college is made possible through The Workforce Investment Act. I have already cleared with my caseworker to attend an additional year, if the Precision Machining program is extended to two years.

In conversations with fellow classmates, I have learned that I am not alone in my desire for extended education in the areas of machining and CAD/CAM software. I really hope these views are considered and help in making the two-year machining program a reality.

Thank You for your time.

Warmest Regards,
Mike McCormack

To Whom It May Concern,

It is my recommendation to expand the machining and computer numeric control (CNC) portion of the Metal Fabrication course at Highlands College into a two year option. I attended the program during the 2016-2017 school year under Tony Patrick's instruction. While I still gained a working knowledge of machining and CNC programming/operation, proficiency at the CNC portion would better developed over a more in-depth approach that the current one year course lacks. It is my opinion that the extra two semesters will better prepare students to enter the growing machining workforce with the skills and knowledge needed to have more successful careers and to keep Highland's graduates IN DEMAND, like the school advertises. Tony is a more than capable instructor and I would be interested in taking the additional year to grow my skill in a field I am already passionate about.

Sincerely,

Cole Henrekin

Cole Henrekin

To whom it may concern,

My name is Wyatt Anderson. I have taken the machining course that Highlands College provides. I learned a lot from the one year class, but I believe that I didn't learn enough to go into the work force. Another year would help with getting the information and technical skills that is required for the work force in today's time. I have taken a two year welding course at Dawson Community College I believe those two years gave me enough technical skills to get a welding job.

Talking to my friends that are currently enrolled in the welding portion of the metals fabrication degree, they show interest in taking another year of machining. I am very interested in taking that second year of machining. I believe that a second year will give more knowledge and experience that employer's desire. I hope this helps in making machining become a two year program.

Thank you for your time.

Sincerely,

Wyatt Anderson

Wyatt Anderson

Terry L. Clark

502 South Idaho St

Dillon, MT 59725

To: Whom it may concern

Subject: Letter of support regarding extension of Metals Fabrication Program; Highlands College of Montana Tech

The Metals Fabrication Program is currently a two year duration comprised of one academic year focused on manual and CNC machining with an additional year of welding instruction. Both of these programs are well-organized and executed by competent staff members. The challenge concerning the program centers around the complexity and volume of knowledge/skills/abilities associated with Metals Fabrication.

In the program's current format, students graduate with only a rudimentary level of competency. This is especially true of the machining portion of the program. There are many aspects of actual work that occur in a "real world" machine shop or metals fabrication setting that are not and likely cannot be addressed in the program within the span of two years. For instance, many machine shops re-build hydraulic cylinders and other parts... In this process, shops combine the skills of machining and welding when a worn down part is surface-welded to build up material and then is machined down to correct tolerances enabling the part to become serviceable again. There is literally a plethora of other examples that could be illustrated in support of this line of thinking.

I strongly advocate for extending the overall program. Four years would be ideal and three years would be an absolute minimum. An example of a potential program structure is as follows:

- One year Machining: Follow current syllabus
- One year Welding: Follow current syllabus
- One or two years: Introduce more advanced elements of both areas and execute real-world projects that require the skills of both disciplines to accomplish.

The current approach simply does not provide students with the skills to be successful in this field of endeavor. I appreciate your consideration in this matter and support of an industry that is of great importance to our Nation.

Thank you,

Terry L. Clark

To Whom It may concern,

I took machining last year fall of 2016. I believe it would best serve us students to take two years of machining as one year just touches the basics. Two years would benefit us going into or applying for a job with much more confidence of doing or getting the job. I would definitely come back to Highlands for a second year of machining. I just don't believe one year is enough time to master the trade. I really hope you put machining into a two year program. Thank you.

Sincerely,

Johnny Lopez

March 8-9, 2018

ITEM 178-1901-R0318

Request for permanent authorization of the Certificate in Licensed Practical Nursing; Helena College

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THAT

Helena College University of Montana requests permanent authorization from the Montana Board of Regents of Higher Education to continue offering a Certificate in Practical Nursing following the temporary approval as per the May 2016 Board of Regents meeting.

EXPLANATION

The Practical Nursing program is changing from the current four (4) semester, fifty-one (51) credit Associate of Applied Science Degree, to a three (3) semester, forty-two (42) credit Certificate Program. The PN program will be delivered at City College Montana State University, Flathead Valley Community College, Great Falls College Montana State University, and Helena College University of Montana. The greatest change to the curriculum was revision of the required prerequisite courses to align with the LPN scope of practice. Anatomy & Physiology is now a four (4) credit BIOH 104/105 and math is now M 120 Mathematics with Healthcare Applications, which is specific to the responsibilities of the LPN. Community nursing was added to Gerontology in order to be current in meeting the changing need in LPN employment.

This Certificate was temporarily approved by the Office of the Commissioner of Higher Education via the March 2016 Level I Memorandum, and the Montana Board of Regents was notified at the May 2016 meeting. Helena College will be placing the PN AAS degree into moratorium at a later date.

ATTACHMENTS

Academic Proposal Request Form
Curriculum Proposal Form

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **178-1901-R0318** Submission Month or Meeting: **March 2018**

Institution: **Helena College** CIP Code: **513901**

Program/Center/Institute Title: **Practical Nursing Certificate**

Includes (please specify below): Online Offering _____ Options _____

Please mark the appropriate type of request and submit with an Item Template and any additional materials, including those listed in parentheses following the type of request. For more information pertaining to the types of requests listed below, how to complete an item request, or additional forms please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

____ A. Level I:

Campus Approvals

____ **1a. Placing a postsecondary educational program into moratorium** (Program Termination and Moratorium Form)

____ **1b. Withdrawing a postsecondary educational program from moratorium**

____ **2. Establishing, re-titling, terminating or revising a campus certificate of 29 credits or less**

____ **3. Establishing a B.A.S./A.A./A.S. area of study**

____ **4. Offering an existing postsecondary educational program via distance or online delivery**

OCHE Approvals

____ **5. Re-titling an existing postsecondary educational program**

____ **6. Terminating an existing postsecondary educational program** (Program Termination and Moratorium Form)

____ **7. Consolidating existing postsecondary educational programs** (Curriculum Proposal Form)

____ **8. Establishing a new minor where there is a major or an option in a major** (Curriculum Proposal Form)

____ **9. Revising a postsecondary educational program** (Curriculum Proposal Form)

____ **10. Establishing a temporary C.A.S. or A.A.S. degree program** *Approval limited to 2 years*

Montana Board of Regents
ACADEMIC PROPOSAL REQUEST FORM

X B. Level II:

X **1. Establishing a new postsecondary educational program** (Curriculum Proposal and Completed Intent to Plan Form)

2. Exceeding the 120 credit maximum for baccalaureate degrees *Exception to policy 301.11*

3. Forming, eliminating or consolidating an academic, administrative, or research unit (Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating)

4. Re-titling an academic, administrative, or research unit

Proposal Summary [360 words maximum]

What

The Practical Nursing program is changing from the current four (4) semester, fifty-one (51) credit Associate of Applied Science Degree, to a three (3) semester, forty-two (42) credit Certificate Program.

Why

The greatest change to the curriculum was revision of the required prerequisite courses to align with the LPN scope of practice. Anatomy & Physiology is now a four (4) credit BIOH 104/105 and math is now M 120 Mathematics with Healthcare Applications, which is specific to the responsibilities of the LPN. Community nursing was added to Gerontology in order to be current in meeting the changing need in LPN employment.

This Certificate was temporarily approved by the Office of the Commissioner of Higher Education via the March 2016 Level I Memorandum, and the Montana Board of Regents was notified at the May 2016 meeting. Helena College will be placing the PN AAS degree into moratorium at a later date.

Resources

No additional resources at this time.

Relationship to similar MUS programs

The PN program will be delivered at City College Montana State University, Flathead Valley Community College, Great Falls College Montana State University, and Helena College University of Montana.

Montana Board of Regents

CURRICULUM PROPOSAL FORM

1. **Overview of the request and resulting changes.** Provide a one-paragraph description of the proposed program. Will this program be related or tied to other programs on campus? Describe any changes to existing program(s) that this program will replace or modify. *[100 words]*

   The Practical Nursing program has changed from a four semester, 52 credit Associate of Applied Science Degree, to a three semester, 42 credit Certificate of Applied Science Program. The greatest change to the curriculum was the revision of the required prerequisite courses to align with the LPN scope of practice. Anatomy & Physiology is now a four credit BIOH 104/105 and math is now M 120 Mathematics with Healthcare Applications, which are more specific to the responsibilities of the LPN. Community nursing was added to Gerontology in order to be current in meeting the changing need of LPN employment.

2. **Relation to institutional strategic goals.** Describe the nature and purpose of the new program in the context of the institution's mission and core themes. *[200 words]*

   The nature and purpose of the new CAS PN program began in 2014 when Montana was awarded a $15 Million Trade Adjustment Assistance Community College and Career Training (TAACCCT) 4 U.S. to advance healthcare education in Montana and create education access for rural/frontier communities.

   The grant project was titled HealthCARE Montana and has been working to address shortages in nursing by creating efficient educational pathways so that students can enter and exit programs quickly and gain employment. Creating a separate PN credential for students desiring quicker entry into the workforce was one of the grant deliverables. A statewide needs assessment addressing employer needs for LPNs also guided the development of the curriculum. To create education access for rural/frontier communities the program is offered at three colleges as distance hybrid program.

3. **Process leading to submission.** Briefly detail the planning, development, and approval process of the program at the institution. *[100 words]*

   To better align nursing workforce and employer needs with nursing education, the planning and development of the new CAS PN program began with a creating a nursing faculty and employer led committee. The committee completed the redesign of the PN program creating current and evidence-based student learning outcomes, prerequisite courses and practical nurse courses that are part of a pathway and transferable to any MUS, ASN RN program.

   At the March 2016 Board of Regents meeting, a Temporary Level I Certificate of Applied Science in Practical Nursing was approved for City College, Flathead Valley Community College, Great Falls, and Helena College.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

4. **Program description.** Please include a complete listing of the proposed new curriculum in Appendix A of this document.

a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	29
Credits in required courses offered by other departments	0
Credits in institutional general education curriculum	13
Credits of free electives	0
Total credits required to complete the program	42

- List the program learning outcomes for the proposed program. Use learner-centered statements that indicate what students will know, be able to do, and/or value or appreciate as a result of completing the program.

In order to meet the challenge of preparing graduate nursing students who will have the knowledge, skills and abilities necessary to continuously improve the quality and safety of the Montana healthcare needs, The BSN Essentials, Institute of Medicine (IOM) Future of Nursing Report recommendations, and the Quality and Safety Education for Nurses (QSEN) competencies, were used to develop the statewide PN, ASN and RN-BSN Program Student Learning Outcomes. The student learning outcome categories remains the same within the PN, ASN and RN-BSN programs. The specific student learning outcomes within the categories advance in complexity as a student articulates from the PN to the ASN to the RN-BSN program. Nursing faculty and employer partners collaborated on identifying the competencies which served as guides in the curricular development. At the PN level, the program student learning outcomes are:

Patient-Centered Care (IOM 1, QSEN 1, BSN 7)

- PN – Implements health promotion and disease prevention that is cost effective, comprehensive and coordinated. Engages patient and families as partners in evidenced-based, ethical care, while respecting individual preference.

Evidence-Based Care (IOM 3, QSEN 3, BSN 3)

- PN - Integrates current research findings, expert opinion, clinical reasoning, and patient preferences in implementing a plan of care

Interdisciplinary Care (IOM 2, QSEN 2, BSN 6)

- PN - Demonstrates cooperation, coordination, and communication among team members, patients, and community populations to improve quality and enhance patient safety.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Quality Improvement (IOM 4, QSEN 4, BSN 2 & 5)

- PN – Recognizes and assists in ongoing assessment of patient and systems with the goal of providing the highest level of patient care and outcomes.

Informatics or Information Technology (IOM 5, QSEN 5, BSN 4)

- PN – Participates in utilization of technology as a member of the care team, to gather data, manage information, and improve communication to support clinical decisions.

Patient Safety (IOM 4, QSEN 6, BSN 2)

- PN - Recognizes basic safety principles and utilizes safety enhancing technology to reduce risk of harm to self and others.

5. **Need for the program.** To what specific student, regional, and statewide needs is the institution responding to with the proposed program? How will the proposed program meet those needs? Consider workforce, student, economic, societal, and transfer needs in your response as appropriate. *[250 words]*

The goal for nursing revision was to address Montana's nursing shortages by providing accelerated pathways to credential completion for adult learners. The new CAS PN program development began planning and development with input from healthcare employers who identified LPNs as valuable, excellent and needed employees to their facility. The need for LPNs is especially true for rural/frontier communities where the nursing shortage is the greatest. The Department of Labor and Industry's 2016 Nursing Workforce in Montana report identifies that LPN employment is estimated to experience a large employment growth adding 107 jobs per year through 2025 (page 4). The new PN program provide LPNs to the workforce sooner at less cost to the student. It will increase the number of LPNs in Montana, as the program is designed for students who desire to be an LPN and will not be applying directly to an ASN program.

The previous nursing program was a 1+1 of two semesters of PN education and last two semesters of RN education which prepared students to advance to an ASN program, not practice as an LPN. The advancement to the ASN program is what most students chose leaving a great LPN workforce shortage. Students desired an expedited separate PN education route that teaches to the scope of practice of the LPN. The PN program was separated from the ASN program and is now three semesters instead of four. A pathway to ASN education exists for the LPN who desires to advance to RN.

Providing the distance PN programs (part online, part on campus) allows more rural/frontier areas of MT nursing education opportunities.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

6. **Similar programs.** Use the table below to identify and describe the relationship between any similar programs within the Montana University System.

The Practical Nursing Program is a statewide curriculum offered at four MUS colleges:

Institution Name	Degree	Program Title
City College at Montana State University Billings	CAS	Practical Nursing
Flathead Valley Community College	CAS	Practical Nursing
Great Falls College Montana State University	CAS	Practical Nursing
Helena College University of Montana	CAS	Practical Nursing

a. If the proposed program substantially duplicates another program offered in the Montana University System, provide a rationale as to why any resulting duplication is a net benefit to the state and its citizens. *[200 words]*

The new CAS PN program, as was the previous AAS PN program, is a statewide curriculum and therefor the same on each campus. The previous PN curriculum was taught on five MUS colleges and one Tribal college. Missoula College will no longer offer the PN program. The new PN curriculum is being offered at four MUS colleges with distance delivery at City College, Flathead Valley Community College and Great Falls College. These colleges are demographically located providing rural community students options to which distance program is closest since there are times they must travel to campus for the mandatory attendance days.

Multiple sites offering the PN program is necessary to meet student demographic and nursing workforce needs. Finding a sufficient amount of clinical education sites for students to complete the learning outcome is also difficult. Having multiple college offerings of the PN program provides an increase in the number of clinical sites available. The distance delivery of the program is to make it easier for students who are unable to travel far from their rural homes for reasons of money or family obligations to have access to nursing education. It is also a benefit to the rural community because they gain an educated nursing workforce to provide direct care and community health services.

b. Describe any efforts that were made to collaborate with similar programs at other institutions. If no efforts were made, please explain why. *[200 words]*

The new CAS PN program is a statewide curriculum and therefore the same on each campus. The collaboration occurred with nursing education faculty from the four MUS and one Tribal colleges offering the PN program, met with employer partners and together designed the program student learning outcomes, competencies and curriculum. The PN Curriculum Committee was co-chaired by a nursing faculty and an employer partner. The community met regularly for a year designing the statewide CAS PN program.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

7. **Implementation of the program.** When will the program be first offered? If implementation will occur in phases, please describe the phased implementation plans. *[100 words]*

The new PN prerequisite courses began fall semester 2016 at City College, Flathead Valley Community College and Great Falls College, with students applying to a PN program and then starting the nursing courses spring semester 2017. Helena College will start the PN program spring semester 2018.

a. Complete the following table indicating the projected enrollments in and graduates from the proposed program.

Fall Headcount Enrollment					Graduates				
AY 2018	AY 2019	AY 2020	AY 2021	AY 2022	AY 2018	AY 2019	AY 2020	AY 2021	AY 2022
8	8	8	8	8	8	8	8	8	8

b. Describe the methodology and sources for determining the enrollment and graduation projections above. *[200 words]*

Helena College has offered the LPN program since 1960. The projected enrollment and graduation data was determined by looking at the past enrollment and graduation data from the old LPN program. Previously, we would admit and graduate 32 LPN's per year and 24 of those 32 would apply for the RN program, leaving 8 LPN's per year out in the community to work. Using this information, Helena College determined that we would maintain the 8 LPN's for the community thus our yearly enrollment for the program is 8.

The first cohort of 8 will be admitted in the Spring of 2018 and every Spring thereafter.

c. What is the initial capacity for the program?

8

8. **Program assessment.** How will success of the program be determined? What action would result if this definition of success is not met? *[150 words]*

Each PN program uses multiple student evaluation methods to measure student performance in classroom, lab and clinical. Program success is determined by students completing the program measured by retention, program completion and graduation rates. Success is also measured in terms of a program performance on The Practical Nursing National Council Licensure Examination (PN-NCLEX), which students complete after graduation and must successful pass before being licensed as an LPN. Each program is required to be approved by the Montana State Board of Nursing who complete regular comprehensive evaluations of each nursing program. Faculty and staff on each campus meet regularly and review data and their evaluation plans to determine areas of strengths, opportunities for improvement and making necessary changes.

The Helena College nursing program has a Systematic Plan for Evaluation in place based on the ACEN standards. This plan is an ongoing evaluation of the nursing program which culminates in a yearly report which identifies any actions that need to take place after evaluating the data. Changes are made as a result of this evaluation. This evaluation will capture all areas of the LPN program.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

a. Describe the assessment process that will be used to evaluate how well students are achieving the intended learning outcomes of the program. When will assessment activities occur and at what frequency? *[150 words]*

Evaluation and assessment of program outcomes in an ongoing process for each PN program. It involves input from nursing faculty, students, college administration, Nursing Advisory Board, clinical site staff, graduates and employers, occurring informally throughout the year with formal evaluation occurring annually. Each program keeps trended data for program outcomes which guides the ongoing program development, maintenance, and revision of curriculum and the overall program. Under The Montana State Board of Nursing (BON) rule 24.159.630, nursing programs are evaluated for achievement of program outcomes through annual reports and periodic site visits.

The PN-NCLEX pass rates is an important assessment tool used to evaluate student achievement of program learning outcomes. The program results can be no less than ten percentage points below the national average or the program must submit to the BON a report analyzing the variance and a plan to meet the pass rate requirement.

Helena College has maintained an LPN NCLEX pass rate of between 96%-100% over the last ten years. Even with the change in curriculum, this pass rate is expected to be maintained going forward.

b. What direct and indirect measures will be used to assess student learning? *[100 words]*

Ongoing course examinations, case studies, assignments, simulation, lab and clinical evaluations are used to assess if students have met the learning outcomes and successfully completed the course. The didactic, lab and clinical components of each course must be successfully completed before a student can advance to the next semester of the program.

Data regarding PN-NCLEX performance rates for first-time test takers is a direct measure evaluating student learning and program success.

Student evaluations of the course, faculty and available resources along with graduate and employer surveys are used to evaluate student learning.

c. How will you ensure that the assessment findings will be used to ensure the quality of the program? *[100 words]*

As previously noted, evaluation and assessment of program outcomes in an ongoing process for each PN program. Faculty and staff on each campus and statewide nursing directors meet regularly to review data, determine areas of strengths, opportunities for improvement and make changes as needed. Minutes of these meetings along with the ongoing program evaluation process are evidence of changes made to ensure the quality of the program. The evaluation of the program's annual report by the BON includes describing any substantive changes made, and progress made by the program on improvements recommended by the board for the past academic year.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

d. Where appropriate, describe applicable specialized accreditation and explain why you do or do not plan to seek accreditation. *[100 words]*

As required by law for a nursing school to enroll, administer courses, and graduate students, all PN programs have Montana State Board of Nursing approval. This approval is also important since a school must be approved for a student to be able to take the National Council Licensure Examination (NCLEX) for licensed practical nurses (LPNs).

Accreditation is not legally mandated. Entrance into a graduate program may be dependent upon accreditation of the student's undergraduate nursing program. The CAS PN program advances to an ASN or BSN degree and not a graduate program. It is not necessary for PN programs to obtain accreditation.

9. Physical resources.

a. Describe the existing facilities, equipment, space, laboratory instruments, computer(s), or other physical equipment available to support the successful implementation of the program. What will be the impact on existing programs of increased use of physical resources by the proposed program? How will the increased use be accommodated? *[200 words]*

The Helena College Nursing Department has two nursing laboratories that house one simulation station. This simulation station includes a one-way window for faculty to observe students. Two Sim-man, 2 Assessment Annie's, Sim child and kid and 6 manikins from various manufacturers, OB & Pediatric specific manikins, an IV simulator, EKG machine with Doppler, and various DVD's are available to students during regularly scheduled lab periods and simulation labs. Open labs with faculty support are scheduled each semester to enhance the learning of the students.

Each lab consists of 4/5 hospital beds with full medical equipment to simulate a patient room. Equipment includes IV poles and pumps, wall mounted sharps/glove compartments, mock O2 and suction wall panels, bedside stands and bedside tables. Teaching aids in each lab include drop-down monitors and overhead projectors. A storage room is located in room 109 with various storage cabinets through-out the lab.

Classrooms

When the previously mentioned rooms are not being used as labs, they are used as lecture rooms with full availability of white boards, tables and chairs for students, overhead projectors, access to wireless internet services, and DVD/video equipment. Classes not requiring laboratory equipment (e.g. Pathophysiology) are scheduled by the Registrar in a regular classroom such as room 114. The two labs are divided by a moveable divider and have the ability to open into one large room, when necessary.

Office Space

In addition to the labs, the Nursing Department has an office space that accommodates 4 full time faculty, adjunct faculty, the program director and the administrative assistant. The offices are located in Room 107. The offices have been designed by the nursing faculty to allow for a private conference room for student advising and a pod for student testing and adjunct working space. Mailboxes for both students and faculty are located in the nursing offices reception area. A lounge area with microwave, refrigerator and table and chairs are located in the offices for faculty use.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

b. List needed facilities, equipment, space, laboratory instruments, etc., that must be obtained to support the proposed program. (Enter the costs of those physical resources into the budget sheet.) How will the need for these additional resources be met? *[150 words]*

The last graduating cohort of LPN's was in May of 2017. The facilities, equipment, space and laboratory have not changed and are ready for the incoming Spring, 2018 cohort. Essentially, we have maintained the LPN program and needs of that program and do not require any additional resources.

10. Personnel resources.

a. Describe the existing instructional, support, and administrative resources available to support the successful implementation of the program. What will be the impact on existing programs of increased use of existing personnel resources by the proposed program? How will quality and productivity of existing programs be maintained? *[200 words]*

Helena College's Nursing Department currently employs 4 full-time master's prepared faculty. The nursing faculty is qualified to accomplish the nursing education unit's purposes and strengthen its educational effectiveness. Faculty members are academically and experientially qualified and maintain expertise in their area of responsibility. The number and use of faculty meet the educational unit's needs, and faculty performance is evaluated to assure ongoing development and competence.

The Nursing Department employs one ¾ time Administrative Associate who is responsible for the administrative, financial, and office duties of the department. The Administrative Associate meets the needs of the students, faculty, and program. A performance review is conducted annually by the Director, with input from various sources.

Helena College Nursing department also has a full time Director who is also a master's prepared educator with the necessary experience to run the nursing programs.

b. Identify new personnel that must be hired to support the proposed program. (Enter the costs of those personnel resources into the budget sheet.) What are the anticipated sources or plans to secure the needed qualified faculty and staff? *[150 words]*

Because the second semester of the LPN program in Helena College is given in the summer, faculty who are off contract will be given additional contracts to teach in the summer. The faculty working in the summer will be from the pool of faculty who work during the regular academic year, which include full time faculty, part-time faculty and clinical faculty.

11. Other resources.

a. Are the available library and information resources adequate for the proposed program? If not, how will adequate resources be obtained? *[100 words]*

The Library purchases, houses and manages video recordings, books, newspapers, reference materials, and periodicals, in both physical and digital formats. The library print holdings include over 10,000 books, 857 video recordings, and 93 current journal subscriptions. The digital holdings include over 300,000 electronic books and over 48,000 full-text electronic journals and newspapers, including thousands in health nursing, and the biological sciences.

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CURRICULUM PROPOSAL FORM

Electronic resources are accessible to all Helena College students and faculty from our website 24/7. The Donaldson Library, our main library, is open 45 hours per week, and provides a wonderful place for quiet study and research. Five study tables, two laptop tables, eleven carrels, ten easy chairs, five computers, two printers, a copier, a scanner, and a group study room with monitor and whiteboard are available for student and faculty use.

b. Do existing student services have the capacity to accommodate the proposed program? What are the implications of the new program on services for the rest of the student body? *[150 words]*

The following is the services offered to all nursing students. Since the LPN program is a continuation of the old program, student services have the capacity of accommodate the new LPN program.

The Student Support Center provides academic support services for Helena College students. This is done through a fully networked computer lab and a full staff of tutors who are available during all hours of operation. Our tutors are highly qualified students and staff who receive training on an ongoing basis. They maintain high standards of academic integrity and customer service. Tutoring services are free to students.

Academic Advising assists first semester students by helping them learn about the programs at Helena College, focus their educational and career goals, choose classes for their first semester at Helena College, and register for their classes via MyHC.

Career Services exists to help students and alumni acquire skills and information regarding employment. Career Services provides access to regularly updated job listings, personalized assistance with resume writing, interviewing, job searching, exploring career choices, and occupational trend information.

12. Revenues and expenditures. Describe the implications of the new program on the financial situation of the institution. *[100 words]*

a. Please complete the following table of budget projections using the corresponding information from the budget template for the first three years of operation of the new program.

	Year 1	Year 2	Year 3
Revenues	40,997	40,997	40,997
Expenditures	17,639	17,639	17,639
Net Revenue (revenues-expenditures)	$23,358	$23,358	$23,358

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CURRICULUM PROPOSAL FORM

b. Describe any expenses anticipated with the implementation of the new program. How will these expenses be met? *[200 words]*

See below.

i. If funding is to come from the reallocation of existing state appropriated funds, please indicate the sources of the reallocation. What impact will the reallocation of funds in support of the program have on other programs? *[150 words]*

It is estimated that the program will be fully funded by the increase in tuition.

ii. If an increase in base funding is required to fund the program, indicate the amount of additional base funding and the fiscal year when the institution plans to include the base funding in the department's budget.

No increase in base funding will be requested due to the addition of these eight students.

iii. If the funding is to come from one-time sources such as a donation, indicate the sources of other funding. What are the institution's plans for sustaining the program when that funding ends? *[150 words]*

NA

iv. Describe the federal grant, other grant(s), special fee arrangements, or contract(s) that will be valid to fund the program. What does the institution propose to do with the program upon termination of those funds? *[150 words]*

NA

13. Student fees. If the proposed program intends to impose new course, class, lab, or program fees, please list the type and amount of the fee.

New Curriculum LPN Cohort

Course #	Course Name/or Program Materials	Fee	Description
Program Fee at Registration	Laundry and Replacement Linen	$5	Laundry and replacement of linen
	Insurance	$9.95	Liability insurance
NRSG 131 Fundamentals Lab	Fundamental of Nursing Lab	$50	This course now includes Pharmacology and IV instruction as well as basic fundamentals which requires many supplies.
NRSG 130 Fundamentals	Sim Chart (nursing software)	$121 total	Documentation software which works into all courses

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	ATI tests	$650	Test materials that include tests, books, computer access and web page information that prepares students to take NLCEX as well as remediate in all courses. Includes a comprehensive predictor test at the end of the program as well as Virtual ATI upon graduation which prepares them to take NCLEX
NRSG 136 Pharm Lab	Supplies for Lab	$50	Supplies needed for Lab
NRSG 152 Gerontology	Nursing Name tags	$12	Name tags used during clinical rotations
NRSG 148 PN2	Class Pin	$36	Nursing pin given to student upon graduation from the program

14. Complete the budget template below with the following information:

- Indicate all resources needed including the planned FTE enrollment, projected revenues, and estimated expenditures for the first three fiscal years of the program.
- Include reallocation of existing personnel and resources and anticipated or requested new resources.
- Amounts should reconcile subsequent pages where budget explanations are provided.

Signature/Date

College or School Dean:

Chief Academic Officer: 

Chief Executive Officer: 

Flagship Provost*:

Flagship President*:

*Not applicable to the Community Colleges.

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CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	FY 2019		FY 2020		FY 2021	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	**7.5**	**8**	**7.5**	**8**		**8**

II. REVENUE

	FY 2019		FY 2020		FY 2021	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request						
2. Institution Funds						
3. Federal						
4. New Tuition Revenues from Increased Enrollments	40,063		40,063		40,063	
5. Student Fees	934		934		934	
6. Other (i.e., Gifts)						
Total Revenue	**$40,997**	**$0**	**$40,997**	**$0**	**$40,997**	**$0**

Ongoing is defined as ongoing operating budget for the program which will become part of the base.

One-time is defined as one-time funding in a fiscal year and not part of the base.

III. EXPENDITURES

	FY 2019		FY 2020		FY 2021	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE						
2. Faculty						
3. Adjunct Faculty	14,950		14,950		14,950	
4. Graduate/Undergrad Assistants						
5. Research Personnel						

Montana Board of Regents
CURRICULUM PROPOSAL FORM

6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits						
9. Other:						
Total Personnel and Costs	**$14,950**	**$0**	**$14,950**	**$0**	**$14,950**	**$0**

	FY 2019		FY 2020		FY 2021	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel						
2. Professional Services						
3. Other Services	163		163		163	
4. Communications	11		11		11	
5. Materials and Supplies	1,139		1,139		1,139	
6. Rentals	113		113		113	
7. Materials & Goods for Manufacture & Resale						
8. Other:	1,263		1,263		1,263	
Total Operating Expenditures	**$2,689**	**$0**	**$2,689**	**$0**	**$2,689**	**$0**

	FY 2019		FY 2020		FY 2021	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay						
1. Library Resources						
2. Equipment						
Total Capital Outlay	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

FY 2019	FY 2020	FY 2021

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CURRICULUM PROPOSAL FORM

	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation						

	FY 2019		FY 2020		FY 2021	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs						
1. Utilites						
2. Maintenance & Repairs						
3. Other:						
Total Other Costs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL EXPENDITURES:	**$17,639**	**$0**	**$17,639**	**$0**	**$17,639**	**$0**
Net Income (Deficit)	**$23,358**	**$0**	**$23,358**	**$0**	**$23,358**	**$0**

The signature of the campus Chief Financial Officer signifies that he/she has reviewed and assessed the fiscal soundness of the proposal and provided his/her recommendations to the Chief Academic Officer as necessary.

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana Board of Regents

CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

New Practical Nursing Program Curriculum	
Semester I (Prerequisites)	
Course	**Credits**
BIOH 104 Basic Human Biology	3
BIOH 105 Basic Human Biology Lab	1
PSYX 100 Introduction to Psychology	3
WRIT 101 College Writing	3
M 120 Mathematics with Healthcare Applications	3
Total	**13**
Semester 2 (Application to PN Program)	
NRSG 130 Fundamentals of Nursing	**3**
NRSG 131 Fundamentals of Nursing Lab	**3**
NRSG 135 Pharmacology for Practical Nurses	3
NRSG 136 Pharmacology for Practical Nurses Lab	2
NRSG 152 Gerontology and Community Nursing	2
NRSG 153 Gerontology and Community Nursing Clinical	2
Total	**15**
Semester 3	
NRSG 140 Adult Health Nursing	4
NRSG 141 Adult Health Nursing Clinical	3
NRSG 142 Nursing Care of Women and Children	3
NRSG 143 Nursing Care of Women and Children Clinical	1
NRSG 148 Leadership Issues for Practical Nurse	2
NRSG 149 Leadership Issues for Practical Nurse Clinical	1
Graduation Total	**14**

March 8-9, 2018

ITEM 178-1600-R0318

Item Name

Request for approval of the University of Montana Western Academic Affairs Administrative Restructure

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THAT

The Board of Regents of Higher Education approves the UMW Academic Affairs Administrative Restructure

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EXPLANATION

The University of Montana Western has developed an Academic Affairs administrative structure. Academic Affairs is restructuring to locate departments within four administrative divisions:

The **Division of Business, Technology, Equine Studies and Health and Human Performance** consisting of the Business and Technology Department, Equine Studies Department and Health and Human Performance Department

The **Division of Education** consisting of the Education Department

The **Division of Humanities and Social Sciences** consisting of the English Department, the Fine Arts Department, and the History, Philosophy and Social Sciences Department

The **Division of Mathematics and Natural Sciences** consisting of the Mathematics Department, Biology Department, and the Environmental Sciences Department

In the current structure, as reflected in the UMW Collective Bargaining Agreement, Department Chairs do not have the authority to make decisions, provide supervision, or conduct evaluations and reviews. During fall semester, five restructure proposals were submitted to Faculty Senate and the Administration. It was announced on December 20 that Academic Affairs will proceed with four divisions with division chairs effective July 1, 2018. Departments will maintain status within each Division. Division chairs will have authority to make decisions, provide supervision, or conduct evaluations and reviews.

ATTACHMENTS

Academic Proposal Request Form

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **178-1600-R0318** Submission Month or Meeting: **March 8-9, 2018**

Institution: **University of Montana Western** CIP Code: _____

Program/Center/Institute Title: **Academic Affairs Administrative Restructure**

Includes (please specify below): Online Offering _____ Options _____

Please mark the appropriate type of request and submit with an Item Template and any additional materials, including those listed in parentheses following the type of request. For more information pertaining to the types of requests listed below, how to complete an item request, or additional forms please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

____ A. Level I:

Campus Approvals

____ **1a. Placing a postsecondary educational program into moratorium** (Program Termination and Moratorium Form)

____ **1b. Withdrawing a postsecondary educational program from moratorium**

____ **2. Establishing, re-titling, terminating or revising a campus certificate of 29 credits or less**

____ **3. Establishing a B.A.S./A.A./A.S. area of study**

____ **4. Offering an existing postsecondary educational program via distance or online delivery**

OCHE Approvals

____ **5. Re-titling an existing postsecondary educational program**

____ **6. Terminating an existing postsecondary educational program** (Program Termination and Moratorium Form)

____ **7. Consolidating existing postsecondary educational programs** (Curriculum Proposal Form)

____ **8. Establishing a new minor where there is a major or an option in a major** (Curriculum Proposal Form)

____ **9. Revising a postsecondary educational program** (Curriculum Proposal Form)

____ **10. Establishing a temporary C.A.S. or A.A.S. degree program** *Approval limited to 2 years*

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ACADEMIC PROPOSAL REQUEST FORM

X B. Level II:

1. **Establishing a new postsecondary educational program** (Curriculum Proposal and Completed Intent to Plan Form)
2. **Exceeding the 120 credit maximum for baccalaureate degrees** *Exception to policy 301.11*
3. **Forming, eliminating or consolidating an academic, administrative, or research unit** (Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating) — X
4. **Re-titling an academic, administrative, or research unit**

Proposal Summary [360 words maximum]

What

The University of Montana Western has developed an Academic Affairs administrative structure. Academic Affairs is restructuring to locate departments within four administrative divisions:

The **Division of Business, Technology, Equine Studies and Health and Human Performance** consisting of the Business and Technology Department, Equine Studies Department and Health and Human Performance Department

The **Division of Education** consisting of the Education Department

The **Division of Humanities and Social Sciences** consisting of the English Department, the Fine Arts Department, and the History, Philosophy and Social Sciences Department

The **Division of Mathematics and Natural Sciences** consisting of the Mathematics Department, Biology Department, and the Environmental Sciences Department

Why

In the current structure, as reflected in the UMW Collective Bargaining Agreement, Department Chairs do not have the authority to make decisions, provide supervision, or conduct evaluations and reviews. During fall semester, five restructure proposals were submitted to Faculty Senate and the Administration. It was announced on December 20 that Academic Affairs will proceed with four divisions with division chairs effective July 1, 2018. Departments will maintain status within each Division. Division chairs will have authority to make decisions, provide supervision, or conduct evaluations and reviews.

Resources

Funding is available for Division Chair stipends

Relationship to similar MUS programs

This request is for a restructure of Academic Affairs. It is not a program proposal.