LEVEL II MEMORANDUM

DATE:	April 11, 2018
TO:	Chief Academic Officers, Montana University System
FROM:	John Cech, Deputy Commissioner for Academic and Student Affairs
RE:	May 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 on May 9. Issues not resolved at that meeting should be submitted in writing to OCHE by noon on Friday, May 11, 2018. If no concerns are received, OCHE will assume that the proposals have your approval.

Level II Items

Flathead Valley Community College:
- Request for authorization to establish a C.A.S. in Practical Nursing
  Item #178-301-R0518 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan
- Request for authorization to offer a C.A.S. in Medical Assistant
  Item #178-302-R0518 | Academic Proposal Request Form | Curriculum Proposal Form

Dawson Community College:
- Request for authorization to establish an A.A.S. and Certificates in Rural Organization Employee Management Item #179-200-R0518 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan

Montana State University Billings:
- Request for authorization to establish a C.A.S. in Practical Nursing
  Item #179-2721-R0518 | Academic Proposal Request Form | Curriculum Proposal Form

Great Falls College Montana State University:
- Request for authorization to establish a C.A.S. in Practical Nursing
  Item #179-2901-R0518 | Academic Proposal Request Form | Curriculum Proposal Form
- Request for authorization to establish an A.A.S in Computer Programing
  Item #179-2902-R0518 | Academic Proposal Request Form | Curriculum Proposal Form | Attachment 1

The University of Montana Missoula:
- Request for authorization to establish a dual B.S./M.S. in Neuroscience
  Item #179-1001-R0518 | Academic Proposal Request Form | Curriculum Proposal Request Form | Intent to Plan Form
- Request for authorization to change the M.I.S. to a M.S. or M.A.

Item #179-1002-R0518 | Academic Proposal Request Form | Curriculum Proposal Request Form | Intent to Plan Form

Montana Tech of the University of Montana:

- Request to establish a M.S. in Materials Science & Engineering
  Item #179-1500-R0518 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan

Helena College University of Montana:

- Request for permanent authorization of the C.A.S. in Sheet Metal Apprenticeship
  Item #179-1901-R0518 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan

University of Montana Western

- Request for authorization to revise the B.S. in Environmental Interpretation
  Item #179-1600-R0518 | Academic Proposal Request Form | Curriculum Proposal Form | Intent to Plan | Attachment 1

May 24-25, 2018

ITEM 179-301-R0518

Item Name   Request for authorization to establish a C.A.S. Practical Nursing
_____

THAT   Flathead Valley Community College requests authorization from the Montana Board of Regents to establish a certificate of applied science in Practical Nursing.

_____

EXPLANATION   As part of the HealthCARE MT grant, FVCC is proposing a CAS in Practical Nursing program as three semesters, 43 credits, with new program learning outcomes, course names, course descriptions and course student learning outcomes that were redesigned to be current and evidence-based in terms of knowledge, skills, and values of today's practice for the LPN.

_____

ATTACHMENTS
  179-301-R0518_Curr
  179-301-R0518_RF
  179-301-R0518_IP

Montana Board of Regents
ACADEMIC PROPOSAL REQUEST FORM

ITEM **179-301-R0518**   Submission Month or Meeting: **May 24-25, 2018**

Institution: **Flathead Valley Community College**   CIP Code: **51.3901**

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

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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__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: As part of the HealthCARE MT grant, FVCC is proposing a Certificate of Applied Science degree in Practical Nursing. The Practical Nurse program is being changed from a 4-semester Associate of Applied Science program to a 3-semester Certificate of Applied Science program. This change was temporarily approved at the March 2016 Board of Regents meeting and is now being submitted for permanent approval.

Why: 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) IV grant 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 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. In order to create education access for rural/frontier communities the program is offered at three colleges as distance hybrid program.

Resources: No new resources necessary.

Relationship to similar MUS programs: The new CAS PN program, as was the previous AAS PN program, is a statewide curriculum and therefore 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 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 the option to which distance program is closest since there are times they must travel to campus for the mandatory attendance days.

Having 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 colleges offer the PN program provides an increase in the number of clinical sites available. The distance delivery of the program makes 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.

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ACADEMIC PROPOSAL REQUEST FORM

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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 Practical Nursing program has changed from a four-semester, 52-credit Associate of Applied Science Degree, to a three-semester, 42 or 43 credit Certificate of Applied Science Program depending on the campus. The greatest change to the curriculum is the revision of the required prerequisite courses to align with the LPN scope of practice. Anatomy & Physiology is a four-credit BIOH 104/105 and math is M 120 Mathematics with Healthcare Applications, which are more specific to the responsibilities of the LPN. The topic of Community Nursing has been added to Gerontology in order to meet changes in the LPN areas of 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) IV grant 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 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. In order 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 which are part of a pathway and transferable to other MUS ASN RN programs. 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.

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	3
Credits in institutional general education curriculum	11
Credits of free electives	0

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CURRICULUM PROPOSAL FORM

Total credits required to complete the program	43

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.

In order to meet the challenge of preparing nursing program graduates 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 as follows:

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.

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]*

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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 at their facilities. 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 programs 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.

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
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 therefore 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 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 the option to which distance program is closest since there are times they must travel to campus for the mandatory attendance days.

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Having 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 colleges offer the PN program provides an increase in the number of clinical sites available. The distance delivery of the program makes 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 when 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.

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_16-17__	AY_17-18_	AY_18-19	AY19-20	AY20-21	AY_16-17__	AY_17-18__	AY_18-19__	AY_19-20__	AY_20-21__
8	13	12	12	12	7	13	12	12	12

b. Describe the methodology and sources for determining the enrollment and graduation projections above. *[200 words]*
FVCC has been offering PN education since 2006 and used the previous PN program enrollment and graduation data to determine the new curriculum enrollment. We have added a cohort on the Lincoln County Campus in Libby.

c. What is the initial capacity for the program?
   • Flathead Valley Community College – 8 students spring 2017

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 number of students completing the program measured by retention, program completion and graduation rates. Success is measured in terms of a program performance

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on The Practical Nursing National Council Licensure Examination (PN-NCLEX), which students complete after graduation and must successfully pass before being licensed as an LPN. Each program is required to be approved by the Montana State Board of Nursing, which completes regular, comprehensive evaluations of each nursing program. Faculty and staff on each campus meet regularly and review data, evaluation plans, and to determine areas of strengths, opportunities for improvement and changes necessary.

The first cohorts of the new PN program graduated August 2017 providing too small of a performance sample to make changes at this time. Evaluation will continue and statewide changes will be made 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]*

Evaluation and assessment of program outcomes is 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, and occurs 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. Programs must maintain annual NCLEX pass rates for first-time test takers that are no less than ten percentage points below the national average. If a program's pass rate is ten percentage points or more below the national average pass rate, the program must submit a report analyzing the variance and a plan to meet the pass rate requirement.

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 students' ability to meet the learning outcomes and successfully complete 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 is 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 strength, 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.

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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).

National Accreditation is not legally mandated for programs. Entrance into a graduate program may be dependent upon national 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 national accreditation.

9. **Physical resources.**

a. Describe the <u>existing</u> 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]*

Currently, FVCC Nursing is located in the Broussard Center for Nursing and Health Sciences. Nursing has a dedicated skills lab and classroom with access to other classrooms in the building. The skills lab has adequate space to accommodate several different labs/classes through the week. There are three, high-fidelity simulators in dedicated simulation rooms along with other, lower-level patient manikins for general skills training.

There is a computer lab located in the building with 25 computers open to students. The college library also has computers for student access.

FVCC's Lincoln County Campus in Libby Montana, has a dedicated skills lab and classroom space. Students come to Kalispell at times to take advantage of the lab and equipment. Through grant funding and other college resources, improved ITV equipment was installed in Libby and Kalispell to support the distance delivery of classes.

The facilities and equipment are adequate to meet the need of the CAS PN program at this time.

b. List <u>needed</u> 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]*

There is no need for increase in facilities, equipment, or space at this time.

10. **Personnel resources.**

a. Describe the <u>existing</u> 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]*

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As we have been accepting students into the Practical Nurse program already, the existing resources are adequate for the numbers of students to be enrolled in the program.

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]*

We do not anticipate the need to hire any new personnel to continue offering this program.

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]*

There is adequate library and information resources 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]*

Existing student services are able to accommodate the program as we have had the Practical Nurse program since 2006. The number of students seeking admission to the program continues to be around 30 to 35 students and current level of services is meeting all needs.

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

The number of students and the budget to support the program has not impacted the financial situation of the college as the LPN program was started in 2007 and this is a change to the degree offered only.

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	752,839	752,839	752,839
Expenditures	752,839	752,839	752,839
Net Revenue (revenues-expenditures)	0	0	0

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

The LPN Program has been offered at FVCC since 2007. This is a change in degree from an Associate of Applied Science to and Certificate of Applied science which better reflects the curriculum and outcomes for the LPN program. There is no change in funding for this program.

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]*

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N/A

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.
N/A

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]*
The distance delivery portion of the program on the Libby Campus has been funded through the HealthCare Montana grant which ends March 30, 2018. FVCC plans to continue funding the nursing programs in Libby through the general fund budget as it does the programs on the FVCC main campus in Kalispell.

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 currently charge the Practical Nurse students a $500 per semester program fee for a total of $1000 for two semesters. We plan to continue to charge this fee. This is adequate to meet the cost of lab supplies, lab equipment and other program expenses.

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.

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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	4
WRIT 101 College Writing	3
M 120 Mathematics with Healthcare Applications	3
Total	14
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

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1. Library Resources

2. Equipment

Total Capital Outlay	$0	$0	$0	$0	$0	$0

	FY _____		FY _____		FY _____	
	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. Utilites

2. Maintenance & Repairs

3. Other: _____

Total Other Costs	$6,500	$0	$6,500	$0	$6,500	$0

TOTAL EXPENDITURES:	$752,839	$0	$752,839	$0	$752,839	$0
Net Income (Deficit)	$0	$0	$0	$0	$0	$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.

Beckie Christiaens

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

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1. FTE	8.6		8.6		8.6
2. Faculty	195,013		195,013		195,013
3. Adjunct Faculty	228,728		228,728		228,728
4. Graduate/Undergrad Assistants					
5. Research Personnel					
6. Directors/Administrators	80,913		80,913		80,913
7. Administrative Support Personnel	42,952		42,952		42,952
8. Fringe Benefits	198,733		198,733		198,733
9. Other:					
Total Personnel and Costs	**$746,339**	**$0**	**$746,339**	**$0**	**$746,339**	**$0**

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel	3,825		3,825		3,825	
2. Professional Services						
3. Other Services						
4. Communications						
5. Materials and Supplies	2,675		2,675		2,675	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	**$6,500**	**$0**	**$6,500**	**$0**	**$6,500**	**$0**

	FY		FY		FY	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay						

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CURRICULUM PROPOSAL FORM

Signature/Date

College or School Dean: _Myrna Redinow_

Chief Academic Officer: _____

Chief Executive Officer: _____

I. PROJECTED STUDENT ENROLLMENT

	FY 19		FY 20		FY 21	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	13	13	13	13	13	13

II. REVENUE

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
1. Appropriated Funding	511,339		511,339		511,339	
2. Institution Funds						
3. Federal						
4 Tuition Revenues	48,000		48,000		48,000	
5. Student Fees	6,500		6,500		6,500	
6. Other (i.e., Gifts, local levies)	187,000		187,000		187,000	
Total Revenue	$752,839	$0	$752,839	$0	$752,839	$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

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **C.A.S. in Practical Nursing**

Campus, School/Department: **Flathead Valley Community College**   **Expected Submission Date: May 2018**

Contact Name/Info: **Myrna Ridenour / mridenour@fvcc.edu**

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.

As part of the HealthCARE MT grant, FVCC is proposing a Certificate of Applied Science degree in Practical Nursing. The Practical Nurse program is being changed from a 4-semester Associate of Applied Science program to a 3-semester Certificate of Applied Science program. This program will allow students to meet industry standards for licensure with less time to completion, enabling students to enter the workforce more rapidly.

The new curriculum will have learning outcomes, course names, course descriptions and student learning outcomes redesigned to follow current and evidence-based standards in terms of knowledge, skills, and values of today's practice for the LPN.

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

One goal of this revision is to address Montana's nursing shortages by providing accelerated pathways to credential completion. The new CAS PN program development began with input from healthcare employers from Montana who identified LPNs as valuable employees at their facilities. 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 growth, adding 107 jobs per year through 2025. The new PN program provides LPNs to the workforce in a streamlined manner while maintaining the current quality of the program. This decrease in time will result in a decrease cost to students with an increase in the number of available LPNs. All nursing programs in Montana experience more applicants for the LPN and RN programs than can be accepted in each program. (MBON Annual Reports from Nursing Programs). By offering a CAS in Practical Nursing there is an opportunity to offer nursing education to more students.

Montana University System
INTENT TO PLAN FORM

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

FVCC Institutional Mission: Flathead Valley Community College promotes excellence in lifelong learning, focused on student success and community needs.

FVCC is committed to continuing to offer this program to support local employers by educating safe and competent nurses.

The new CAS PN program supports the goal of the HealthCare Montana grant: to advance healthcare education in Montana and create education access for rural/frontier communities. The intent of the grant supports FVCC's missions of lifelong learning, student success and community needs.

The communities FVCC serves have identified that LPNs are in need in long-term care and clinic settings, especially in the more rural areas. Libby Care Center in Libby, Montana has expressed the desire to hire graduates as they are currently staffing with some traveling LPNS. Facilities in the Flathead area are consistently recruiting for LPNs to fill their open positions.

Part of the HealthCare Montana grant was to conduct a statewide needs assessment addressing employer needs for LPNs and this report was important in guiding the development of the curriculum. The assessment consistently identified the need for more LPNs across Montana.

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

The new CAS PN program is a statewide curriculum and therefore the same on each campus. The previous PN curriculum has been 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. Distance delivery options are being added at City College, Flathead Valley Community College and Great Falls College. These colleges are demographically located to provide rural community students options to enroll in the closest program, since there are times they must travel to campus for the mandatory attendance days.

Having multiple sites offering the PN program is necessary to meet student demographic and nursing workforce needs. Having multiple college offerings of the PN program provides an increase in the number of available clinical sites and distance delivery makes it easier for students who are unable to travel far from their rural homes 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.

Signature/Date

College/School Dean: _Myrena Lydenoun MSN RN - Nursing Program Director_ 1/29/18

Chief Academic Officer: _[signature]_ 1-29-18

Chief Executive Officer: _[signature] For Jane Karas_ / 1 - 29 - 18

Date of Final Review:

May 24-25, 2018

ITEM 178-302-R0518

Request for authorization to offer a C.A.S. in Medical Assistant

THAT

Flathead Valley Community College request authorization from the Montana Board of Regents to offer a certificate of applied science in Medical Assistant.

EXPLANATION

A strong community need for Medical Assistants, combined with the fact that the current A.A.S. degree is not necessary to obtain employment in the field, precipitated this request. Offering a C.A.S. program will allow students to complete in three semesters, while still being adequately prepared to obtain American Association of Medical Assistant National Medical Assistant Certification.

ATTACHMENTS

178-302-R0518_RF
178-302-R0518_Curr

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM 178-302-R0518　　　　　　Submission Month or Meeting: **May 24-25, 2018**

Institution: **Flathead Valley Community College**　　　CIP Code: **51.0801**

Program/Center/Institute Title: **C.A.S. in Medical Assistant**

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

__X__ **B. Level II:**

    __X__   1. **Establishing a new postsecondary educational program** <u>(Curriculum Proposal and Completed Intent to Plan Form)</u>

    ____   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** <u>(Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating)</u>

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

Proposal Summary [360 words maximum]

What Flathead Valley Community College is requesting authorization to offer an C.A.S. in Medical Assistant.

Why A strong community need for Medical Assistants, combined with the fact that an A.A.S. degree is not necessary to obtain employment in the field, precipitated this request. Offering a C.A.S. program will allow students to complete in three semesters, while still being adequately prepared to obtain American Association of Medical Assistant National Medical Assistant Certification.

Resources N/A

Relationship to similar MUS programs Great Falls College MSU, Gallatin College, and Highlands College all offer programs in Medical Assistant.

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 proposal is to replace the existing Medical Assistant A.A.S. degree with a Medical Assistant C.A.S. degree. All Medical Assisting courses currently exist.

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]*

   Mission: Flathead Valley Community College promotes excellence in lifelong learning, focusing on student success and community needs.
   Core Themes: Transfer Preparation, Workforce Preparation, Developmental Education, Community Education
   Workforce Preparation Objectives:
   - Students are offered specific career and technical pathways and programs aligned for timely completion;
   - Students are offered workforce training aligned with community needs; and
   - Students have the skills necessary to be successful in their chosen occupations or careers.

   The Medical Assistant C.A.S. program directly relates to FVCC's institutional goal of providing workforce training to students. Graduates of the program will be able to sit for the national certification exam and take a job as an entry-level medical assistant.

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

   The Medical Assistant A.A.S. program has existed for 22 years. The process leading to a conversion to a C.A.S. has been discussed over the years, but the actual development and potential approval of the program began in January 2018. The first step in all new program proposals is preliminary approval by the Vice President of Academic and Student Affairs, which was granted in January 2018.

   The Medical Assisting advisory committee met on February 15, 2018 to review the proposed C.A.S. program. The committee supported the move. The Program Review Committee reviewed the proposal on February 23, 2018, and Division/Department feedback was gathered that same week. With support of these entities, the proposal went to Faculty Senate, which approved it on March 2, 2018. Curriculum Committee approved the C.A.S. program on March 9, 2018 and the FVCC Board of Trustees followed suit on March 19, 2018.

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

   See attached.

   a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	21
Credits in required courses offered by other departments	17
Credits in institutional general education curriculum	6

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Credits of free electives	18
Total credits required to complete the program	38

    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 successful completion of this program, students will have the knowledge and skills to perform:

- Computer applications such as scheduling appointments, updating patient demographics, correspondence, coding, billing and insurance;
- Patient reception, arranging for hospital admissions, laboratory services, and referrals;
- Professional communication when working with patients and staff in a medical office;
- Accurate patient medical histories and vital signs, prepare patients for examinations, assist with surgical treatments, collect and prepare laboratory specimens, perform basic laboratory tests, and electrocardiograms;
- Preparation, administration and documentation of medications and vaccines using safe practices as authorized by a licensed physician;
- Triage in the office by messaging or telephone calls;
- Safe blood drawing and specimen collection using correct techniques;
- Removal of sutures and changing dressings;
- Medical and surgical aseptic techniques; and
- Patient education and health coaching.

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]*

Medical Assistants are in great demand in the Flathead Valley and other Montana cities. The cross-training of Medical Assistants enables them to step into either a front or back medical clinic office position. A one-year program is more appealing to students who wish to enter the workforce as soon as they can.

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	C.A.S.	Medical Assisting
Missoula College	A.A.S.	Medical Assisting
Gallatin College	C.A.S.	Medical Assistant
Great Falls College	A.A.S.	Medical Assistant
Highlands College	A.A.S.	Medical Assistant

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Salish Kootenai College	A.A.S.	Medical Assistant

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]*

All medical assistant programs in Montana exist to address the need for these skilled employees in their specific medical communities.

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]*

All medical assistant programs in Montana exist to address the need for these skilled employees in their specific medical communities.

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 C.A.S. program will be first offered in Fall 2018. Since all courses currently exist because of the A.A.S. degree program, there is no need to implement the C.A.S. program in phases.

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_
6	8	10	12	12	6	8	10	12	12

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

There are currently five students enrolled in the program. Institutional research provided prior years' graduating numbers, which were used to determine projections: 2017 – 4, 2016 – 8, 2015 – 10, 2014 – 12. The capacity for the program is 12 students.

c. What is the initial capacity for the program?

12 students, same as the current A.A.S. degree 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 is assessed by means of periodic institutional program reviews as well as periodic visits by the accrediting agency, the Medical Assistant Educational Review Board. The most recent site visit was in 2015, at which time the program was again granted full accreditation pending some minor revisions, which have since taken place.

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]*

The Medical Assistant program is a competency-based program. There are 200+ competencies required by the accrediting agency. In order for the program to remain accredited, students must pass all competency tests with an accuracy of 80% or better.

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

Student learning is also assessed by traditional methods of testing, role-playing, and hands-on demonstration of skills.

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

The accrediting body, as well as institutional program review results, require the program director to use assessment results to continually monitor and improve the program.

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

N/A. The program has been accredited for 20 years. Its status will merely change from an A.A.S. program to a C.A.S. program.

9. **Physical resources.**

a. Describe the <u>existing</u> 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]*

All facilities, equipment, space, laboratory instruments, computers, and other physical equipment is already in place in a dedicated space, and is currently being used for the medical assistant degree program.

b. List <u>needed</u> 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]*

N/A. All facilities, equipment, space, laboratory instruments are already in place.   There will be no additional expenditures needed.

10. **Personnel resources.**

a. Describe the <u>existing</u> 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]*

Montana Board of Regents
CURRICULUM PROPOSAL FORM

N/A. All personnel resources for the program are already in place.

b. Identify <u>new</u> 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]*

N/A. No new personnel will be hired to support the proposed program.

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.

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]*

Yes.

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	104,408	104,408	104,408
Expenditures	104,408	104,408	104,408
Net Revenue (revenues-expenditures)			

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

N/A. No new expenses will be incurred with the implementation of the new program.

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]*

N/A

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.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

N/A

    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.

   There will be no change in student fees from what is currently in place.

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.

<u>Signature/Date</u>

College or School Dean: *CAO for Lori Elwell / 3-27-18*

Chief Academic Officer: *CAC / 3-27-18*

Chief Executive Officer: *Jim Ayaras*

Flagship Provost*: N/A

Flagship President*: N/A

*Not applicable to the Community Colleges.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	FY 19		FY 20		FY 21	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	8	8	10	10	12	12

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	101,008		97,608		94,208	
3. Federal						
4. New Tuition Revenues from Increased Enrollments	3,400		6,800		10,200	
5. Student Fees						
6. Other (i.e., Gifts)						
Total Revenue	$104,408	$0	$104,408	$0	$104,408	$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	2		2		2	
2. Faculty	48,000		48,000		48,000	
3. Adjunct Faculty	17,308		17,308		17,308	
4. Graduate/Undergrad Assistants						
5. Research Personnel						
6. Directors/Administrators						

Montana Board of Regents
CURRICULUM PROPOSAL FORM

7. Administrative Support Personnel						
8. Fringe Benefits	36,900		36,900		36,900	
9. Other:						
Total Personnel and Costs	**$102,208**	**$0**	**$102,208**	**$0**	**$102,208**	**$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	1200		1200		1200	
3. Other Services	200		200		200	
4. Communications						
5. Materials and Supplies	800		800		800	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	**$2200**	**$0**	**$2200**	**$0**	**$2200**	**$0**

	FY		FY		FY	
	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		FY		FY	
	On-going	One-time	On-going	One-time	On-going	One-time

Montana Board of Regents
CURRICULUM PROPOSAL FORM

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:	$104,408	$0	$104,408	$0	$104,408	$0
Net Income (Deficit)	$0	$0	$0	$0	$0	$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.

Beckie Christiaens

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

Required Courses-Fall Semester

Course No.	Title	Credits
• BIOH 104	Basic Human Biology	4
• AHMS144	Medical Terminology	3
• AHMS 220	Medical Office Procedures	4
• AHMA 201	Medical Assistant Clinical Procedures I	4
• AHMA 202	Medical Assistant Clinical Procedures Lab I	1
• AHMA 205	Medical Assisting Clinical Approaches I	1

First Semester Total Credits: 17

Spring Semester

Course No.	Title	Credits
• BMGT 205	Professional Business Communication	3
• M 120	Mathematics with Health Care Applications	3
• AHMA 230	Advanced Medical Office Procedures	4
• AHMA 203	Medical Assistant Clinical Procedures II	4
• AHMA 204	Medical Assistant Clinical Procedures Lab II	1
• AHMA 206	Medical Assisting Clinical Approaches II	1

Second Semester Total Credits: 16

Summer Semester

Course No.	Title	Credits
• AHMA 298	Medical Assisting Externship	4
• AHMA 280	Medical Assisting Examination Preparation	1

Third Semester Total Credits: 5

Total Program Credits: 38

May 2018

ITEM 179-200-R0518

Request authorization to establish an Associate of Applied Science and Certificates in Rural Organization Employee Management

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THAT

The Montana Board of Regents authorize Dawson Community College to establish an Associate of Applied Science and Certificates in Rural Organization Employee Management

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EXPLANATION

The management of employees is critical to the success of any business or organization, large or small. The proposed program will be an overview of employee management and human resources for rural organizations and personnel. As a result of this program, students will assimilate and synthesize the practical knowledge, skills and applications necessary to be a successful manager of the human capital within an organization. The certificate programs are designed to give participants a basic understanding of the business environment, interaction of people within that environment and strategies a manager can apply to assure efficiency and effectiveness.

ATTACHMENTS

    Academic Proposal Request Form
    Curriculum Proposal Form
    Intent to Plan

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 management of employees is critical to the success of any business or organization, large or small. The Rural Organization Employee Management (ROEM) program is designed for current owners, managers, supervisors or team leaders in rural organizations. It provides rural organizations the knowledge, skill and application opportunities to better manage people and lead their organizations to greater success.

   Courses from our business program give participants needed management skills while the newly developed human resources program will develop successful human resource generalists. ROEM will attract both traditional and nontraditional students using a laddered approach and by being offered hybrid and online.

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]*

   Dawson Community College (DCC) seeks to add the ROEM program to its degree offerings. This program was designed out of input and feedback from businesses located in rural, Eastern Montana (and Western Nebraska). The curriculum will be developed based on a DACUM and advisory meeting with these partners. The goal is to meet student and employer needs.

   There are three levels available with this program; the ROEM certificate (15 credits), Human Resources certificate (15 credits) and the Associate of Applied Science (62 credits). The stacked approach to the program will afford participants three options which build on one another.

   DCC's mission statement is "Dawson Community College provides affordable and open access to quality teaching and learning." This program addresses both the mission and multiple Core Themes. It primarily addresses Core Theme Two, but also provides for Core Themes One and Four:

   - Core Theme 2: Career & Technical Education: Provide programs and services that prepare learners for vocational and technical career entry, transition, and advancement
   - Core Theme 1: College Transfer Education: Provide programs and services that prepare learners for transition to and success in further degree programs
   - Core Theme 4: Provide programs and services that help address the professional, social, and personal enrichment needs of the region.

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

   A proposal for the ROEM program was submitted to President Mickelsen for review. The Intent to Plan form was completed and sent to the Teaching and Learning Committee, where it was approved. The curriculum developer visited DCC and met with the business instructor and business leaders. A DACUM was also conducted. Subsequently, updates have been made to the program description, program outcomes, and the course list. The Curriculum Proposal and program was approved by the Board of Trustees on December 18, 2017.

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	30
Credits in required courses offered by other departments	10
Credits in institutional general education curriculum	16
Credits of free electives	6
Total credits required to complete the program	62

   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 successful completion of the ROEM program:
   - Participants will demonstrate knowledge and use of available resources which answer, legal, ethical, process and practice questions encountered as they lead their organizations.
   - Participants will assimilate and synthesize the practical skills necessary to be a successful manager of the human capital within an organization.
   - Participants will demonstrate knowledge of the theories and concepts related to the study of organizations and human resource management.
   - Participants will apply what they are learning through a practicum and/or internship or simulations.

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]*

   Career and Technical programs and Workforce Development are key components of the mission of DCC. As such, the college must address future workforce needs. According to the 2016 Bureau Labor Statistics the average growth in jobs over all sectors will be 7% over the next ten years. Human Resource professionals will see a slightly higher increase (9%) in that same time frame. "Employment growth depends largely on the performance and growth of individual companies. As new companies form and organizations expand their operations, they will need more human resources managers to oversee and administer their programs. Human resources managers also will be needed to ensure that firms adhere to changing and complex employment laws regarding occupational safety and health, equal employment opportunity, healthcare, wages, and retirement plans"(www.bls.gov/ooh/management/mobile/human-resources-managers.htm, retrieved 11/13/2017). Regardless of size, organizations will need trained people to address these issues.

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CURRICULUM PROPOSAL FORM

The ROEM and Human Resource Certificates are reaching out to rural organizations, business owners and managers, and farmers and ranchers, to offer business and human resources training designed specifically for them. Additionally, an Associates of Applied Science degree is available for either traditional or nontraditional students who seek employment or are currently employed in these sectors. This program will be offered online to not only provide these services in rural Montana, but rurally nationwide. Although this is a career and technical program, it would also prepare a student for transfer. The general education and some business courses could be transferable, and others could transfer as possible electives.

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
City College	AS	Human Resource Associate of Science Program of Study in General Applied Emphasis

   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 human resource management courses or programs, there are not any that are designed with terminal certificates and degrees that are meant to be beneficial to our rural areas of the state. This program is offered with businesses and organizations in mind that are started by entrepreneurs and families, who don't necessarily have a background in business management, human resources, organizational behavior, employee staffing, management and success, administration of compensation and benefits and ethical, social and legal issues. These individuals can invest in themselves or employees by taking courses online and implementing changes during the program. A Practicum course was developed as a capstone course for those participants seeking direct hands on experience in human resources.

   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]*

   A review was done of the program and course outcomes at City College and the ROEM program was found to have no more than 25 percent of congruent learning outcomes for any course.

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 is scheduled to begin Fall 2018. New courses will be offered in both the Fall and Spring. The courses for the certificates will be offered in two semesters as we anticipate this program providing a need for part-time students. Six new courses will be developed following approval of the program.

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

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CURRICULUM PROPOSAL FORM

Fall Headcount Enrollment					Graduates				
AY18/19	AY19/20	AY20/21	AY21/22	AY22/23	AY18/19	AY19/20	AY20/21	AY21/22	AY22/23
8	17	21	22	22	0	6	11	14	15

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

Anticipating the marketing we will direct to business owners locally and regionally, we expect to recruit half (8) the maximum number of students (15) in the first year. Both the certificates and associate's program primarily target nontraditional students who may be unable to take a full load of classes each semester. This along with encouraging students to earn both certificates and continue into the associate's program makes it challenging to predict the number of graduates each year. Reflected in the chart above and considering an estimated graduation percentage of about 70% there could be six graduates by the academic year of 2019-2020.

c. What is the initial capacity for the program?

The initial capacity of each certificate will be 15 per year. Each academic year there will be students starting, continuing, and finishing the programs. To begin there will be two instructors (the current business instructor and an adjunct) to administer, recruit, advise, and teach each certificate. To have a quality program the number of students should be carefully monitored and additional staff be added as needed.

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]*
Success of the programs will be determined by the student learning outcomes completed each semester, as well as curriculum mapping and an annual report that will be evaluated and reviewed by the Assessment Committee. Program review for a new program will be completed every year for the first three years. After the third year there are three actions that can be taken: program continuance; additional information with an action plan; program discontinuance.

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]*

Faculty and adjuncts will use a template for identification of SLO's, the direct measure for assessment and a benchmark of success for each outcome. The report conforms to the college template and contains:
a. The list of SLO's by course
b. The assessment measure used for each SLO
c. Assessment results - student progress towards achieving the SLO
d. An explanation of how the results are used to improve student learning

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SLO reports are due by January 15 for fall courses and by June 15 for spring courses. The reports are compiled and submitted to the Assistant Vice President of Academics (AVP) to evaluate results and assist faculty in improving outcomes, if necessary.

The DCC assessment committee will then be responsible for reviewing the annual report which documents the number of SLO's assessed, the number of SLO's which ranked below three on the indirect measure, and the percentage of courses which were assessed for SLO's.

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

The direct measure of assessment will be the assessment reports on the student learning outcomes which are completed by faculty and adjuncts each semester. An indirect measure will be the student evaluation of instruction that are completed for each class each semester.

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

The assessment reports are first compiled by faculty and adjuncts, which allows them to see the data first. It will then be reviewed by the AVP and Assessment/Accreditation Committee. Faculty will also see a summary of the student evaluation of instruction to determine areas of improvement.

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

N/A

9. **Physical resources.**

a. Describe the <u>existing</u> 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]*

As this is a program that will be offered online, there are minimal physical resources that will be needed. If there are students who are on-campus that would like to take this program, they will have access to all of the current resources, with no additional needed. DCC has three computer labs, plus computers in the library that can be utilized for the online courses. Classroom space is already designated for the general education and business courses that could be taken on-campus.

b. List <u>needed</u> 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]*

At this time, no additional physical resources have been identified for this program.

10. **Personnel resources.**

a. Describe the <u>existing</u> instructional, support, and administrative resources available to support the successful implementation of the program. What will be the impact on existing programs of increased

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use of existing personnel resources by the proposed program? How will quality and productivity of existing programs be maintained? *[200 words]*

Conversations have been started surrounding the process of submitting the new program and courses to Board of Regents (BOR) and Common Course Numbering (CCN), into Banner, and what is needed by all departments at DCC. The business instructor has met with the curriculum developer to review existing courses and programs, and to discuss the needs of each. The business instructor will start developing the needed courses for online starting next fall. As enrollment for the first year is evaluated, the needs will be as well. At this time, there aren't any concerns over the quality and productivity of existing 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]*

DCC has entered into a contract for the development of the new curriculum for this program. This individual will also become an adjunct or part-time instructor to teach the ROEM courses online for DCC. Transcripts have already been submitted for evaluation of credentials. At this time, no other personnel needs have been identified.

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]*

DCC's library provides easy access to quality information, including books and ebooks; magazine, newspaper, and journal articles; audiovisual materials; a variety of other learning resources, and is searchable via an intuitive and easy-to-use online platform (Primo).

We are a partner in the Montana academic library consortium, TRAILS, which brings together 23 academic libraries to share resources, as well as the Primo interface to search 17 Montana academic libraries' collections.

DCC on-campus and distance students have access to all of the electronic materials via an authentication system, as well as physical items that can be shipped anywhere within the United States.

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 are no implications for the existing student body at DCC. This provides another program option for potential students. There are currently classroom space and dorm rooms available if students would like to take general education and business classes on-campus. Current designated individuals will be able to help with student services if needed for online students.

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

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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	0	42,000	89,950
Expenditures	11,592	10,000	19,442
Net Revenue (revenues-expenditures)	(11,592)	32,000	70,508

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

There will be expenses for developing the curriculum of this new program which includes six courses. Travel for the curriculum developer to meet with academic personnel, the business instructor, as well as local businesses on the program, are related expenses that have already been incurred.

   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]*

   N/A

   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.

   For the first year of development of the courses for this program, investment funds will be used. In year 2, 2018-2019, $6,000 will be added to the base funding.

   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.

At this time, there are no expected course fees.

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

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CURRICULUM PROPOSAL FORM

- 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/School Dean/Chief Academic Officer:

Traci Nasan   4/4/18

Chief Executive Officer:

Seorped Mukut   4/3/18

Flagship Provost*:

Flagship President*:

*Not applicable to the Community Colleges.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	FY 18		FY 19		FY 20	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	0	0	16	8	34.26	17

II. REVENUE

	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request	0	0	0	0	0	0
2. Institution Funds	0	0	0	0	0	0
3. Federal	0	0	0	0	0	0
4. New Tuition Revenues from Increased Enrollments	0	0	0	29,040	0	62,194
5. Student Fees	0	0	0	12,960	0	27,756
6. Other (i.e., Gifts)	0	0	0	0	0	0
Total Revenue	$0	$0	$0	$42,000	$0	$89,950

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 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE	0	0	0	0	0	0
2. Faculty	0	0	0	0	0	0
3. Adjunct Faculty	0	0	10,000	0	10,500	0
4. Graduate/Undergrad Assistants	0	0	0	0	0	0
5. Research Personnel	0	0	0	0	0	0

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6. Directors/Administrators	0	0	0	0	0	0
7. Administrative Support Personnel	0	0	0	0	0	0
8. Fringe Benefits	0	0	0	0	8,942	0
9. Other:	0	0	0	0	0	0
Total Personnel and Costs	$0	$0	$10,000	$0	$19,442	$0

	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel	0	0	0	0	0	0
2. Professional Services	0	11,592	0	0	0	0
3. Other Services	0	0	0	0	0	0
4. Communications	0	0	0	0	0	0
5. Materials and Supplies	0	0	0	0	0	0
6. Rentals	0	0	0	0	0	0
7. Materials & Goods for Manufacture & Resale	0	0	0	0	0	0
8. Other:	0	0	0	0	0	0
Total Operating Expenditures	$0	$11,592	$0	$0	$0	$0

	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay						
1. Library Resources	0	0	0	0	0	0
2. Equipment	0	0	0	0	0	0
Total Capital Outlay	$0	$0	$0	$0	$0	$0

	FY 18	FY 19	FY 20

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	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation	0	0	0	0	0	0

	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs						
1. Utilites	0	0	0	0	0	0
2. Maintenance & Repairs	0	0	0	0	0	0
3. Other:	0	0	0	0	0	0
Total Other Costs	$0	$0	$0	$0	$0	$0
TOTAL EXPENDITURES:	$0	$0	$0	$0	$0	$0
Net Income (Deficit)	$0	$(11,592)	$0	$32,000	$0	$70,508

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.

Jennifer Elkins
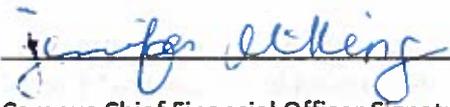
Campus Chief Financial Officer Signature

Chief Financial Officer comments:

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CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

Rural Organization Employee Management Certificate – 15 credits

The Certificate in ROEM is designed to give participants a basic understanding of the business environment, interaction of people within that environment and strategies a manager can apply to assure efficiency and effectiveness.

Course Outcomes	Hours
BMGT 210 Small Business Entrepreneurship Through the study of the problems and procedures involved in organizing, planning, directing, and controlling a small business participants will demonstrate an understanding of small business. Writing a business plan is central to this course.	3
PSYX 100 Intro to Psychology Upon completion of this course participants will demonstrate an understanding of methods of study in psychology, cognitive science, and neuroscience, including an overview of physiological aspects of behavior, sensation, perception, research methodology, statistics, learning principles, motivation, intelligence, cognition, abnormal behavior, personality, therapy, and social psychology.	3
BMGT 237 Human Relations in Business The study of the interaction of people in work and life situations is the focus of this course. Upon completion participants will demonstrate an acquaintance with organizational issues, the ability to work with people and how to deal with problems rationally. The course also deals with how to develop a greater sensitivity toward behavioral patterns, distinct ways of thinking, feeling and acting.	3
XXXX Introduction of Organizational Behavior The relationships between individuals, groups, and organizations are explored, how organizational factors contribute to individual behavior, and how individuals affect groups and organizational functioning. Emphasis is on work motivation, job satisfaction and other attitudes, leadership, communication, socialization, and organization design.	3
BMGT 215 Human Resources Management Participants will develop and demonstrate knowledge of the major legislation affecting the management of people including the topics of discrimination, sexual harassment, employment at will, and the Americans with Disabilities Act. The course also covers the topics of hiring and firing employees, discipline, evaluation processes, compensation, and business ethics.	3
Total credit hours to complete Certificate	15

Rural Organization Employee Management Human Resources Certificate – 15 credits

Upon completion of the certificate program participants may decide to continue their education. The next phase of the program builds on what they have already accomplished and takes approximately one - two additional semesters beyond the certificate.

Course Outcomes	Hours
CAPP 131 Basic MS Office	3
XXXX: Employee Staffing & Selection for Rural Business This course addresses the core concepts of staffing, strategy, and systems while supporting the idea that it is people who drive an organization to sustainable competitive advantage. Recruitment and selection are introduced from both the organizational and applicant perspective to ensure that new employees have the experience necessary to reduce costs and staff turnover and achieve desired outcomes.	3
XXXX: Employee Management & Success Organizations with motivated, talented employees that offer outstanding customer service are more likely to pull ahead of the competition. Successful performance management, job analysis, and training and development are just a few of the strategies used to gain this competitive edge in business. Leaders who reflect strong employee management skills contribute to the success of their organizations.	3

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XXXX: Administration of Compensation & Benefits This course will focus on wage and salary administration in organizations; total compensation systems; interrelationship among employee performance, intrinsic and extrinsic rewards, internal and external pay equity, and employee satisfaction; employee benefits; and employee incentive programs.	3
XXXX: Ethical, Social and Legal Issues for Human Resources This course focuses on the ethical, social and legal issues managed by the human resources personnel. Knowledge and understanding of these issues will help assure legal compliance of local, state and federal law. Additionally, professional organizations may provide ethical and social standards that are in the best interest of both the client and the business.	3
Total credit hours to complete the Human Resources Certificate	15

Rural Organization Employee Management Associate of Applied Science – 61 to 62 credits

Participants seeking an Associates of Applied Science degree must complete the following courses in addition to the ROEM certificate (15 credit hours), the ROEM Human Resources Certificate (15 credit hours) for a total of 61-62 credit hours.

Course	Hours
Dawson Success Course	1
WRIT 101 College Writing I, **AND**	3
COMX 111 Introduction to Public Speaking, **AND**	3
WRIT 121 Introduction to Technical Writing, OR	3
WRIT 122 Introduction to Business Writing	
PHL 110 Introduction to Ethics	3
SOCI 101 Introduction to Sociology	3
STAT 216 Introduction to Statistics	4
ACTG101 Accounting Procedures	3
RO6: Practicum I in Human Resource Management	3
Electives: take two courses from the list below 　BGEN291: Special Topics in Human Resource (3 credit hours) 　SPAN 101 Elementary Spanish (4 credit hours) 　BGEN235 Business Law I (3 credit hours) 　BMKT225 Marketing (3 credit hours) 　CAPP158 MS Access (3 credit hours) 　ECNS201 Principles of Microeconomics (3 credit hours) 　ECNS202 Principles of Macroeconomics (3 credit hours)	6
Total credit hours	**32**

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **179-200-R0518**   Submission Month or Meeting: **April 2018**

Institution: **Dawson Community College**   CIP Code: **52.1001**

Program/Center/Institute Title: **Associate of Applied Science in Rural Organization Employee Management (ROEM) and embedded Certificates in ROEM and Human Resources**

Includes (please specify below):   Online Offering   **X**   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 Dawson Community College requests approval of the proposed Rural Organization Employee Management (ROEM) Certificates and Associate of Applied Science degree program. Students will have the opportunity to take all classes online or a portion online and a portion on-campus.

Why The employment of Human Resource Specialists/Generalists is projected to grow 7 percent and training and development managers is projected to grow 10 percent in the next 8 years. In 2014, Montana small businesses employed 239,910 people, or 66 percent of the private workforce and 99.3 percent of Montana businesses were considered small businesses. "Employment growth depends largely on the performance and growth of individual companies. As new companies form and organizations expand their operations, they will need more human resources managers to oversee and administer their programs. Human resources managers also will be needed to ensure that firms adhere to changing and complex employment laws regarding occupational safety and health, equal employment opportunity, healthcare, wages, and retirement plans"(www.bls.gov/ooh/management/mobile/human-resources-managers.htm, retrieved 11/13/2017).

Resources No additional physical resources are needed to accommodate this proposed program. A learning management system is already in place for the newly created online courses.

Relationship to similar MUS programs City College has an Associate of Science degree in Human Resources. A review has been done of DCC's newly proposed curriculum and there is no more than 25 percent overlap in learning outcomes in any course. DCC's courses would be added as new courses to CCN.

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **Rural Organization Employee Management (ROEM) AAS/Certificates**

Campus, School/Department: **Dawson Community College**

Expected Submission Date: **January 2018**

Contact Name/Info: **Traci Masau, AVP Academics**

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 and embedded certificates in Rural Organization Employee Management (ROEM) are designed for current and future owners, managers, supervisors or team leaders in rural organizations. It provides the knowledge, skill and application opportunities to better manage people and lead their organizations to greater success. Courses from our business program gives participants needed management skill while the newly developed human resources program will develop successful human resource generalists. ROEM will attract both traditional and nontraditional students using a laddered approach and by being offered online.

   There are three levels available with this program; the ROEM certificate (15 credits), Human Resources certificate (15 credits) and the Associates of Applied Science (61 credits). The stacked approach to the program will afford participants three options which build on one another.

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

   As a result of this program, students will assimilate and synthesize the practical skills necessary to be a successful manager of the human capital within an organization. Students will demonstrate knowledge of the theories, concepts and compliance related to the study of organizational management and human resources.

   Employment of training and development managers is projected to grow 10 percent from 2016 to 2026, about as fast as the average for all occupations. Job prospects should be very good, particularly in industries with a lot of regulation, like finance and insurance. Additionally, employment of Human Resource Specialists/Generalists is projected to grow 7 percent from 2016 to 2026. [1]

   A DACUM was conducted with small business owners, human resource managers and large corporation managers operating in a rural setting, and all agreed this program would be beneficial for both current employees/managers who want to learn new skills and to students who want to work in human resources and rural management.

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[1] U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook; Training and Development Managers, https://www.bls.gov/ooh/management/training-and-development-managers.htm; Human Resource Specialists, https://www.bls.gov/ooh/business-and-financial/human-resources-specialists.htm

Montana University System
INTENT TO PLAN FORM

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

This program and embedded certificates fit within our mission: providing affordable and open access to quality teaching and learning. It will provide a workforce for Eastern Montana and rural areas - 80 percent of the businesses in Montana employee less than 10 employees. Additionally, as an online program it will increase accessibility to meet needs in rural areas.

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

Although there are some institutions who offer human resource management courses, there does not appear to be a specific program within the university system. Most programs offered HR management and organizational behavior under Business Management or Political Science, and not designed as terminal certificates and degrees. Already existing business courses and general education courses will be built into the program, and would allow for expansion of the degree.

Signature/Date

College/School Dean/Chief Academic Officer: _Traci Hagan_   12/20/2017

Chief Executive Officer: _Scott pad Mut_   12/20/17

Flagship Provost*:

Flagship President*:

*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.

May 24-25, 2018

ITEM 179-2721-R0518

<u>**Request for authorization to establish a Certificate of Applied Science (C.A.S.) Practical Nursing**</u>

THAT: City College at Montana State University- Billings requests authorization from the Montana Board of Regents to establish a Certificate of Applied Science in Practical Nursing.

EXPLANATION 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 College MSU, and Helena College. As part of the HealthCARE MT grant, we are proposing a C.A.S. in Practical Nursing program as three semesters, 42 credits with new program learning outcomes, course names, course descriptions and course student learning outcomes that were redesigned to be current and evidence-based in terms of knowledge, skills, and values of todays practice for the LPN.

ATTACHMENTS
    ACADEMIC PROPOSAL FORM
    CURRICULUM PROPOSAL FORM

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.

   This aligns with Montana State University Billings Mission that characterizes support for individual learning and engagement in civic responsibility. It also aligns with Core Theme Three Promoting and Engaging in Civic Responsibility C which states "Opportunity to achieve: Strengthen MSU Billings as a well-recognized, regionally-engaged institution.

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.

   The approval process at Montana State University Billings started with the nursing faculty and nursing director discussing and putting together the paperwork for submission. The new program proposal was then submitted to the City College Curriculum Committee, Undergraduate Curriculum Committee, and finally Academic Senate. It was approved by all committees. It then was submitted to Provost Dr. Hoar who approved it and it then became a Board of Regents item.

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CURRICULUM PROPOSAL FORM

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.

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.

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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.

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.

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

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CURRICULUM PROPOSAL FORM

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.

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]*

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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.

	Spring Headcount Enrollment				Graduates				
AY17/18	AY18/19	AY19/20	AY20/21	AY21/22	AY17/18	AY18/19	AY19/20	AY20/21	AY21/22
15	15	20	20	20	10	15	15	20	20

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

City College has been offering PN education since 1989. Originally the PN program was affiliated with School District 2.

City College and the other colleges used their previous PN program enrollment and graduation data to determine the new curriculum enrollment for their campus.

c. What is the initial capacity for the program?
Fifteen students were admitted in Spring of 2017 which is the capacity.

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 first cohorts of the new PN program graduated July 2017 from Great Falls College providing too small of a performance sample to make changes at this time. Evaluation will continue and statewide changes will be made as appropriate.

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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. Programs must maintain annual NCLEX pass rates for first-time test takers that are no less than ten percentage points below the national average. If a program's pass rate is ten percentage points or more below the national average pass rate, the program must submit a report analyzing the variance and a plan to meet the pass rate requirement.

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.

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

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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). City College's CAS in Practical Nursing is approved by the Montana State Board of Nursing.

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]

This program will not impact the use of the physical resources since it is replacing the previous AAS in Practical Nursing Program.

The Nursing Department uses classrooms throughout the Health Sciences Building. Each classroom contains an Elmo overhead projector, Web access, DVD/VCR, whiteboards, and bulletin boards. The classrooms seat an average of 30 students, depending on the table configuration. The core nursing classes have a maximum of 20 students. Most classrooms in the Health Sciences Building have been equipped with Smart Board Technology. Nursing students also have access to the computer lab near the administrative assistant's office, with designated computer class room time for nursing students.

The practice laboratory and simulator laboratory areas are important components of nursing education at MSU Billings City College. There are ten beds with manikins and three high-fidelity human simulator labs. Students practice beginning skills and are evaluated in clinical competencies in the nursing lab and Sims labs. Critical thinking activities take place in the simulator labs on a weekly basis and each student group is rotated through the Simulator labs as part of their clinical experience. The equipment for the nursing labs has been purchased with funds from Perkins, Provost equipment money, and student fees. There are two medication systems that have scanning ability with name badges and medications.

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 physical resources are needed to support this program.

Montana Board of Regents

CURRICULUM PROPOSAL FORM

10. Personnel resources.

a. Describe the <u>existing</u> 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]*

Due to changing the nursing curriculum and completing the previous programs, fall of 2017 has too many credits for five faculty. A part-time adjunct faculty person has been hired to teach five credits in the new RN program. This person will continue to be hired semester to semester on an as needed basis. After fall of 2017 the previous RN program will be completed and all of the courses in the new RN program will be taught every semester. Students are accepted into the RN program every fall and spring semester. The new PN program has one semester of the program at a time and accepts students every spring semester.

Currently there are four clinical resource registered nurses, 5 full-time faculty, a nursing director, and a half-time program assistant that is shared by five other programs. These resources are shared between the ASN Registered Nursing Program and the CAS Practical Nursing Program.

Once the previous programs are completed there will not be an added impact on the personnel resources.

b. Identify <u>new</u> 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 part-time faculty that was hired to teach 5 credits is currently teaching in the ASN Registered Nursing Program. No new personnel need to be hired for the CAS Practical Nursing Program.

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 and information resources are adequate for the CAS in Practical Nursing Program as it is replacing a previous AAS in Practical Nursing Program.

Due to the CAS program being offered in an online format money from the Montana HealthCare Grant was used for faculty education in online teaching. An instructional designer from the IT department also was utilized to assist faculty.

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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]

Initially there was upfront education with student services on the needs of the CAS students. The new CAS program does not increase the number of students.

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

The nursing program is already fully funded at a deficit through the university budget. The change in the PN program does not require additional funding to support the changes. The revenues below do not include amounts for state support for the FTE generated by the nursing program

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 *assumes the program is full, all students are full-time, tuition is flat, and the percentage of instate students to out of state students is 94% and 6% respectively	160,364	162,448	163,794
Expenditures **expenditures for the PN program are shared with the nursing department RN program	160,364	162,448	163,794
Net Revenue (revenues-expenditures)	0	0	0

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

The nursing program is already fully funded at a deficit through the university budget. The change in the PN program does not require additional funding to support the changes.

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]

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CURRICULUM PROPOSAL FORM

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.

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]

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] The MT Health care grant provided the necessary funding for the planning and development of the new CAS PN 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 following classes in the PN program have course fees to pay for consumable supplies in the lab portion of the program:
Nursing 130 Fundamentals of Nursing - $100
Nursing 136 Pharmacology for PN lab - $50
Additionally, all online courses have a $20 technology fee.

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: *Uzmk Grant*   3/13/18

Chief Academic Officer: *R Hou*   3/13/18

Montana Board of Regents

CURRICULUM PROPOSAL FORM

Chief Executive Officer: _Roald W Las_ ___ $3/13/18$

Flagship Provost*: _R L McDua_ 3-27-18

Flagship President*: _[signature]_ March 27, 2018

*Not applicable to the Community Colleges.

I. PROJECTED STUDENT ENROLLMENT

	FY 18		FY 19		FY 20	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	15	15	15	15	20	20

II. REVENUE

	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request						
2. Institution Funds	119,292		96429		78045	
3. Federal						
4. New Tuition Revenues from Increased Enrollments *assumes the program is full, all students are full-time, tuition is flat for instate, and the percentage of instate students to out of state students is 94% and 6% respectively	34608 4214	Nursing course tuition revenue	34608 7374	Nursing course tuition revenue	46968 7374	Nursing course tuition revenue
			17350 3687	*tuition rev from prereq courses	24720 3687	*tuition rev from prereq courses
5. Student Fees	2250		3000		3000	
6. Other (i.e., Gifts)						
Total Revenue	**$160364**		**$162,448**		**$163,794**	

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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 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs *assumes an increase of 1% in salaries in FY19 and 20*						
1. FTE	1.25		1.25		1.25	
2. Faculty Sue Winn $60568 Other faculty (.25FTE) $12750	73318		74051		74792	
3. Adjunct Faculty						
4. Graduate/Undergrad Assistants						
5. Research Personnel						
6. Directors/Administrators $72717	36359		36725		37090	
7. Administrative Support Personnel	2228		2250		2273	

$11139
Salary is
split
between
five
programs

Montana Board of Regents

CURRICULUM PROPOSAL FORM

8. Fringe Benefits 19.26% Insurance for 1.95FTE	21553 24656		21768 24656		21983 24656	
9. Other:						
Total Personnel and Costs	$158114	$0	$159448	$0	$160794	$0

	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures *assumes 50% of nursing program costs						
1. Travel						
2. Professional Services						
3. Other Services						
4. Communications						
5. Materials and Supplies $6550	2250		3000		3000	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	$2250	$0	$3000	$0	$3000	$0

	FY 18		FY 19		FY 20	
	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

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	FY 18		FY 19		FY 20	
	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation						

	FY 18		FY 19		FY 20	
	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:	$160,364	$0	$162448	$0	$163794	$0
Net Income (Deficit)	$0	$0	$0	$0	$0	$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.

Trudy Collins

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

Montana Board of Regents
ACADEMIC PROPOSAL REQUEST FORM

ITEM: **179-2721-R0518**   Submission Month or Meeting: **May 24-25, 2018**

Institution: **City College, Montana State University Billings, Dept. of Health and Public Safety**   CIP Code: **51.3901**

Program/Center/Institute Title: **Certificate of Applied Science in Practical Nursing**

Includes (please specify below):   Online Offering   X   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 offered has changed from a four semester, 52 credit Associate of Applied Science Degree, to a three semester, 42 credit Certificate of Applied Science 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.

Why: 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. (named HealthCARE Montana), to advance healthcare education in Montana and create education access for rural/frontier communities. The new PN program addresses Montana's nursing shortage by providing quicker entry into the workforce and better aligns with the LPN scope of practice and employer needs.

Resources: The new PN program is being offered at City College, Flathead Valley Community College, Helena College, and Great Falls College, who previously provided a PN program and therefore will utilize existing faculty, facilities, equipment, space, laboratory instruments, computer(s), and other physical equipment to support the successful implementation of the program. HealthCARE Montana assisted with the financial resources to develop the new curriculum, along with the purchasing of new equipment and supplies needed by colleges, especially for the distance delivery of the program.

Relationship to similar MUS programs: The new CAS PN program is a statewide curriculum and therefor the same on each campus. The new PN curriculum is being offered at four MUS colleges and one Tribal college, 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.

May 24-25, 2018

ITEM 179-2901-R0518

<u>**Request for authorization to establish a Certificate of Applied Science, (C.A.S.) Practical Nursing**</u>

THAT
Great Falls College MSU is notifying the Montana Board of Regents its intent to establish a 42 credit certificate of applied science in Practical Nursing.

EXPLANATION
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 College MSU, and Helena College. As part of the HealthCARE MT grant, we are proposing a C.A.S. in Practical Nursing program as three semesters, 42 credits with new program learning outcomes, course names, course descriptions and course student learning outcomes that were redesigned to be current and evidence-based in terms of knowledge, skills, and values of todays practice for the LPN.

ATTACHMENTS
    Academic Proposal Form
    Curriculum Proposal Form

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 College MSU, and Helena College.

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.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

	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.

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.

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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.

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

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CURRICULUM PROPOSAL FORM

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.

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 MSU, with students applying to a PN program and then starting the nursing courses spring semester 2017. Helena College started the PN program spring semester 2018.

a. Complete the following table indicating the projected enrollments in and graduates from the proposed program. The initial intake of students took place January 2017. This was the only spring intake, all others will be fall intakes.

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CURRICULUM PROPOSAL FORM

Spring Headcount Enrollment					Graduates				
AY 17	AY N/A	AY N/A	AY N/A	AYN/A	AY 17	AY N/A	AY N/A	AY N/A	AY N/A
20	N/A	N/A	N/A	N/A	14	N/A	N/A	N/A	N/A

Fall Headcount Enrollment					Graduates				
AY 17	AY 18	AY 19	AY 20	AY 21	AY 17	AY 18	AY 19	AY 20	AY 21
19	30	30	30	30	N/A	21	21	21	21

b. Describe the methodology and sources for determining the enrollment and graduation projections above.

The maximum cohort size is 30 and therefore the fall headcount enrollment is set equal to that. The Graduate amount based off the 30% attrition rate that took place in the initial year of the program.

The colleges offering the New PN program have been offering PN education for years as follows:
- City College since
- Flathead Valley Community College since
- Great Falls College since 1969
- Helena College since 1960

Each college used their previous PN program enrollment and graduation data to determine the new curriculum enrollment for their campus.

c. What is the initial capacity for the program?
- City College – 20 students spring 2017
- Flathead Valley Community College – 17 students spring 2017
- Great Falls College – 30 students spring 2017
- Helena College – will admit first cohort of 8 in spring 2018

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 first cohorts of the new PN program graduated July 2017 providing too small of a performance sample to make changes at this time. Evaluation will continue and statewide changes will be made as appropriate.

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. Programs must maintain annual NCLEX pass rates for first-time test takers that are no less than ten percentage points below the national average. If a program's pass rate is ten percentage points or more below the national average pass rate, the program must submit a report analyzing the variance and a plan to meet the pass rate requirement.

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.

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

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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 <u>existing</u> 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]*

      Adequate disposable supplies and equipment are on hand for practice and competency testing. The general skills lab is furnished with infant, child and adult Vital Sims manikins that have auditory assessment options for students to assess lung, heart, and abdominal sounds. The labs simulate a health care setting with sinks, locked and unlocked storage areas, bedside cabinets and tables, simulated headwalls and a central nurse's station.

      The simulator labs are furnished with Sim Man, a high fidelity simulator, Pedi Sim a high fidelity pediatric simulator and Noelle an OB/GYN simulators. Headwall is available for use in any area of the lab as well as non-functional headwalls in each patient care area. In the Nursing simulation labs, dedicated software and a camera system are available to support the Sim Man simulator. All classrooms, the conference/debriefing room and the Nursing skills lab have audio visual capabilities and a work station with a computer for use with PowerPoints, Smart boards, DVDs, and internet access.

      Students on the Great Falls College MSU campus have access to computer labs located in the GFCMSU library for student use. Each lab has an installed software base supporting word processing, spreadsheet and database applications.

   b. List <u>needed</u> 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]*

      All facilities, equipment, space, laboratory instruments, etc. are already available at Great Falls College – MSU.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

10. Personnel resources.

   a. Describe the <u>existing</u> 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]*

Great Falls College – MSU Nursing Program has a sufficient number of academically and clinically qualified faculty to meet the purposes and objectives of the PN Program. The Program Director is a Masters level nurse and they are supported by two other Master prepared nurses and two Bachler prepared nurses.

Full time faculty are responsible and accountable for the clinical and didactic courses they teach. Specialty course areas such as Obstetrics, Maternal – Child, Pediatrics and Intensive Care have both full time faculty and Clinical Resource Registered Nurses (CRRN's) with real world experience in these areas that are responsible for them. Collaboration between nursing faculty promotes a team environment and promotes consistent communication and delivery of educational material. Collaboration is also used to select the most appropriate learning activities in the classroom, lab, simulation and clinical setting to meet course objectives.

   b. Identify <u>new</u> 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]*

No new personnel will need to be hired to support the proposed program.

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 mission of the Weaver Library at Great Falls College - Montana State University is to support and enhance instruction and learning in a manner that is consistent with the institution's philosophy and evolving programs. The library serves as the major information resource on campus. It contributes to the educational process and assists students in achieving success by maintaining a well-balanced collection of materials in a variety of formats and by providing knowledgeable staff to help patrons with their information needs. More than 50 medical or nursing based journals are available through the Weaver Library as are more than 25 reference / eBooks to help support nursing students.

   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]*
Existing student services have the capacity to accommodate the PN program. Because abundant student services are currently in place there are no additional stressors on them.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

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	835,800	699,500	707,900
Expenditures	688,850	629,900	632,700
Net Revenue (revenues-expenditures)	146,950	69,600	75,200

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

In development of the distance PN there were several expenses. These consisted of purchasing computers, general computer equipment, web cameras for both the distance locations and on the campus of Great Falls College – MSU. This equipment consisted of 3 sets of the following: A laptop computer, computer stand, monitor, keyboard, mouse, web camera and power surge protector were purchased and are used by distance students. A microphone array with sound mixing equipment was purchased to improve the quality of sound being broadcast to distance students from the live classroom. This also improved the accuracy of closed captioning for the recorded classes. These initial costs were paid for by HealthCARE MT. No new expenses are anticipated.

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]*

Annual campus-wide prioritization process eliminates under-performing programs and uses those funds to pay for expenses in expanding program, such as Nursing.

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.

$65,000 base funding increase in fiscal year 2019 (7/1/18—6/30/19)

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

Montana Board of Regents
CURRICULUM PROPOSAL FORM

    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]*

The College will fully fund the faculty position when it comes off of the HealthCare MT Grant.

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 course fees. Current nursing program fee is $90/semester to cover costs of consumables and other instructional materials.

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

Montana Board of Regents
CURRICULUM PROPOSAL FORM

College or School Dean: *Frankie Lyons* 1-4-18

Chief Academic Officer: *Heidi Pasek* 1-2-18

Chief Executive Officer: 1-2-18

Flagship Provost*: 3-27-18

Flagship President*: March 27, 2018

*Not applicable to the Community Colleges.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	FY 2019		FY 2020		FY 2021	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	30	30	30	30	30	30

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	230,000		230,000		230,000	
3. Federal						
4. New Tuition Revenues from Increased Enrollments						
5. Student Fees	6,000		6,000		6,000	
6. Other (i.e., Gifts)						
Total Revenue	**$236,000**		**$236,000**		**$236,000**	

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	1.75		1.75		1.75	
2. Faculty	54,200		55,000		55,700	
3. Adjunct Faculty	42,000		42,000		42,000	
4. Graduate/Undergrad Assistants						
5. Research Personnel						
6. Directors/Administrators	25,100		25,250		25,400	
7. Administrative Support Personnel						
8. Fringe Benefits	43,800		43,800		45,800	
9. Other:						
Total Personnel and Costs	**$165,100**		**$166,050**	**$0**	**$168,900**	**$0**

Montana Board of Regents
CURRICULUM PROPOSAL FORM

	FY 2019		FY 2020		FY 2021	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel	570		570		570	
2. Professional Services	600		600		600	
3. Other Services	300		300		300	
4. Communications	525		525		525	
5. Materials and Supplies	1,000		1,000		1,000	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	$2,995		$2,995		$2,995	$0
C. Capital Outlay						
1. Library Resources						
2. Equipment						
Total Capital Outlay	$0	$0	$0	$0	$0	$0
D. Capital Facilities Construction or Major Renovation						
E. Other Costs						
1. Utilites						
2. Maintenance & Repairs						
3. Other: Overhead Calc.	41,000		41,000		41,000	
Total Other Costs	$41,000		$41,000		$41,000	
TOTAL EXPENDITURES:	$209,095		$210,045		$212,895	
Net Income (Deficit)	$26,905		$25,955		$17,105	

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.

[signature]

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**

Montana Board of Regents
ACADEMIC PROPOSAL REQUEST FORM

ITEM **179-2901-R0518**   Submission Month or Meeting: **May 24-25, 2018**

Institution: **Great Falls College MSU**   CIP Code: **51.3901**

Program/Center/Institute Title: **C.A.S. in Practical Nursing**

Includes (please specify below):   Online Offering **X**   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

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 offered has changed from a four semester, 52 credit A.A.S., to a three semester, 42 credit C.A.S. Program. At the March 2016 Board of Regents meeting, a Temporary Level I C.A.S. in Practical Nursing was approved for City College, Flathead Valley Community College, Great Falls, and Helena College.

Why: The nature and purpose of the new C.A.S. PN program began in 2014 when Montana was awarded a $15 Million Trade Adjustment Assistance Community College and Career Training (TAACCCT) 4 U.S. (named HealthCARE Montana), to advance healthcare education in Montana and create education access for rural/frontier communities. The new PN program addresses Montana's nursing shortage by providing quicker entry into the workforce and better aligns with the LPN scope of practice and employer needs.

Resources: The new PN program is being offered at City College, Flathead Valley Community College, Helena College, and Great Falls College, who previously provided a PN program and therefore will utilize existing faculty, facilities, equipment, space, laboratory instruments, computer(s), and other physical equipment to support the successful implementation of the program. HealthCARE Montana assisted with the financial resources to develop the new curriculum, along with the purchasing of new equipment and supplies needed by colleges, especially for the distance delivery of the program.

ationship to similar MUS programs: The new C.A.S. PN program is a statewide curriculum and therefor the same on each campus. The new PN curriculum is being offered at four MUS colleges and one Tribal college, 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.

May 24-25, 2018

ITEM 179-2902-R0518

Request for Authorization to Establish an A.A.S. in Computer Programming

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THAT

GFC MSU is requesting authorization to establish a 62 credit associate of applied science in Computer Programming.

EXPLANATION

There is a need for trained computer programmers with an emphasis in database web application development. Virtually every business operating today uses software to manage its business operations. While many solutions are purchased "off the shelf", there remains a persistent need to tailor applications to specific businesses. The business areas represented in the Great Falls area include the growth industries of health care, manufacturing, telecommunications and financial services. This program was initially approved as a Level I in January 2016 for a Fall 2016 start date. The program had its first graduates Spring 2017.

ATTACHMENTS

Academic Proposal Request Form
Curriculum Proposal Form
Attachment 1

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **179-2902-R0518**   Submission Month or Meeting: **May 24-25, 2018**

Institution: **Great Falls College MSU**   CIP Code: **11.0201**

Program/Center/Institute Title: **Computer Programming Associate of Applied Scienc (AAS)**

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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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 GFC MSU is requesting authorization to establish a 62 credit associate of applied science in Computer Programming.

Why There is a need for trained computer programmers with an emphasis in database web application development. Virtually every business operating today uses software to manage its business operations. While many solutions are purchased "off the shelf", there remains a persistent need to tailor applications to specific businesses. The business areas represented in the Great Falls area include the growth industries of health care, manufacturing, telecommunications and financial services. This program was initially approved as a Level I in January 2016 for a Fall 2016 start date. The program had its first graduates Spring 2017.

Resources   As the program has been offered since Fall 2016, all resources have been identified and addressed. An additional faculty was hired with Perkins Grant Funds, The increase in enrollments in the program are supporting the additional faculty member.

Relationship to similar MUS programs

    Helena College UM's programming degree is somewhat focused on the Microsoft programming stack (specifically, C# and .NET) due to the demand for that technology in state government. This demand does not exist in the Great Falls area nor is it a dominant technology in the region. GFC MSU's program focuses more on industry-standard technology stacks and those employed in the Great Falls area. City College MSU Billings offerings are quite similar; however, students in the Great Falls region require a local option so they can remain here and raise their families in the Great Falls community.

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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]*

   A Computer Programming Associate of Applied Science (AAS) addresses the need for trained computer programmers with an emphasis in database web application development. It was a pilot program Fall 2016 and does not replace but complements existing Computer Technology programs. Enrollment has been strong, with the first 9 students graduating May 2018, so GFC MSU would like to make the program permanent. Virtually every business uses software to manage its operations. While many solutions are purchased "off the shelf," a need exists to tailor applications to specific businesses, such as health care, manufacturing, telecommunications and financial services in the Great Falls area.

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 Computer Programming AAS aligns with GFC MSU's strategic goals as follows:

Increase Transfer Student Participation: The design of each course in this program conforms to the MUS common course numbers and closely follows the objectives of each course so that students can transfer coursework to other institutions.

Increase Adult Student Participation: This degree is well-suited to adult students currently working in businesses wishing to leverage their existing workplace knowledge by adding computer programming to their skillset. Our plan to eventually offer the entire curriculum on-line will make this more attractive to working adults.

Increase High School Participation: Introductory program courses are available for dual credit. In addition, faculty from GFC MSU are available to GFPS teachers to offer technical assistance and ensure alignment and continuity of courses. We have had tremendous success with full credentials being offered to students via dual credit and see this degree as one more option to help students earn a degree that will give them a foundation to earn a living wage job and still remain in the Great Falls area and the state of Montana.

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

   The decision to create this offering was the result of discussions with current students, informal discussions with CIT faculty and the desires of the CIT advisory board. Additionally, the experience of the Program Director, having worked as an applications developer for the State of Montana's Department of Administration, further highlighted the need for, and lack of, qualified applicants to fill programming positions. The program was approved by the GFC MSU Curriculum Committee on October 2, 2015 and implemented as a pilot Fall 2016.

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

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CURRICULUM PROPOSAL FORM

a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	45
Credits in required courses offered by other departments	16-17
Credits in institutional general education curriculum	16-17
Credits of free electives	0
Total credits required to complete the program	61-62

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.

Graduates are prepared to:

- Understand the fundamentals of computer programming and data structures.

- Understand the languages for web and enterprise applications such as Java, Python, PHP, and JavaScript.

- Understand data modeling, database design, and structured query language (SQL).

- Have proficiency in web server administration and application development environments.

- Understand the software life-cycle, classical and current methodologies and best practices

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]*

Several meetings with local industry via the existing CIT program advisory board occurred. In these meetings, it was determined that the need to support emerging industry in the Great Falls region is critical. Having a credential such as the Computer Programming AAS will not only support existing need, it will attract new business and industry to our area.

The Montana Department of Labor and Industry's report *Montana Job Projections 2012-2022* projects the increase in demand for software developers to be 30.8% through 2022 and for Web developers to increase by 21%. Median annual salary for software developers with an Associate degree was cited as $44,200. If those students choose to continue on to the baccalaureate, the wages jumped to $78,200 per year.

In addition, Great Falls Public Schools indicated during the curriculum development phase that there is significant interest being expressed in a dual credit option for this program. That option would allow students to complete the first year of this program during their junior and senior years of high school and complete the degree in one

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year upon successfully graduating from high school and enrolling at the college. Estimates provided to GFC MSU during the curriculum development phase indicated that over 40 students have a strong interest in enrolling in such a program. Future plans include a 1+3 or 2+2 articulation with 4-year universities.

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 UM	AAS	Computer Technology, Concentration: Programming
City College	AAS	Computer Programming and Application Development
Missoula College UM	AAS	Information Technology, Concentration: Programming & App Development
Flathead Valley Community College	AAS	Programming and Game Development

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]*

Helena College UM's programming degree is somewhat focused on the Microsoft programming stack (specifically, C# and .NET) due to the demand for that technology in state government. This demand does not exist in the Great Falls area nor is it a dominant technology in the region. GFC MSU's program focuses more on industry-standard technology stacks and those employed in the Great Falls area. City College MSU Billings offerings are quite similar; however, students in the Great Falls region require a local option so they can remain here and raise their families in the Great Falls community.

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]*

Throughout the planning stage, information about this degree was shared with those attending the MUS Computer Summit meetings.

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 was implemented as a pilot Fall 2016.

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

Fall Headcount Enrollment					Graduates				
AY16-17	AY17-18	AY18-19	AY19-20	AY20-21	AY17-18	AY18-19	AY19-20	AY20-21	AY21-22
15	36	45	47	47	9	16	16	17	17

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

The projections were based on feedback from Great Falls Public School and enrollment patterns in other CIT programs.

c. What is the initial capacity for the program?

It was 25 students total; however, when the initial projection was exceeded, Perkins Grant funds were used to hire a second faculty member for AY2017-18 to meet the demand. The program can now manage 25 first-year students and 25 second-year students for a total of 50.

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]*

   GFC MSU employs a data-driven, annual program review through its "program snapshots." The snapshots include enrollment, graduation, and employment data. Programming is evaluated according to that process. If students are not enrolling, graduating or finding employment with wages that offset the cost of earning the degree, then the program will be placed on an improvement plan. If not improved, the degree will be placed in moratorium, according to the campus' prioritization process.

   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]*

   Currently, course and program outcomes are assessed each semester through the campus' assessment process, which includes faculty and program directors setting benchmarks for each outcome, identifying an appropriate assessment tool, recording the results of student attainment, and reflecting on changes for future semesters. The data is recorded on the campus' Learning Outcomes Assessment Form.

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

   The assessment measures are direct, as described in the answer to the above question. Assessments include assignments, projects, tests, and hands-on skills assessment.

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

   GFC MSU has an established outcomes assessment process, internal program review, prioritization process, faculty evaluation system, and student evaluations that will be followed to ensure quality.

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

   No accrediting body exists for computer programming.

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9. **Physical resources.**

   a. Describe the <u>existing</u> 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]*

   No additional resources are required to ensure the success of the proposed program. Current classroom space and lab is sufficient. Existing Chromebook carts can be used if necessary to accommodate future growth by turning any classroom into a computer classroom or lab. However, the vast majority of programming students have their own laptops that they use in class and for assignments.

   b. List <u>needed</u> 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]*

   N/A – see above.

10. **Personnel resources.**

    a. Describe the <u>existing</u> 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 Computer Technology department and this program are supported by the General Studies Division Director and a division administrative assistant. Existing programs have not been impacted. Internal program review and student evaluations are monitored to ensure quality of the other programs are maintained.

    b. Identify <u>new</u> 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]*

    As mentioned previously, a second faculty member was hired for AY2017-18 using Perkins Grant funds. Currently, the increased enrollment in the program is supporting the additional faculty member. Adjunct instructors have been hired to teach some courses, and the enrollment in those courses are covering the cost of the adjunct instructor compensation.

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.

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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]*

Yes.

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

To date, the AAS in Programming has helped increase enrollment in the Compute Technology programs. The expenses have been offset by the FTE. As demonstrated in the table below, there has been a net gain in revenue for the AAS in Programming, which is a significant reason GFC MSU is applying to move the program out of the pilot stage of implementation.

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	$140,593	$341,655	$350,321
Expenditures	$81,635	$115,365	$137,070
Net Revenue (revenues-expenditures)	$58,958	$226,290	$213,251

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

The expenses have already been met. The expenses involved hiring a new faculty member using Perkins Grant funds.

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]*

Tuition from student enrollments is adequate to replace the Perkins funding as the new faculty member's salary rolls off of the grant in incremental amounts for the next three years. No other programs are affected.

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.

Compensation for adjunct instructors is already included in the department budget as the percentage of the 2nd faculty member's portion of compensation rolling off the Perkins grant.

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

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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]*

As mentioned previously, Perkins Grant funds were used to initially fund the 2nd faculty position. Student enrollment tuition will replace the percentage of the salary coming off the grant in incremental amounts for the next three years.

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.

N/A

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: Heidi Pasek

Chief Executive Officer: Susan Wolff

Flagship Provost*: R. Mokwa   3-27-18

Flagship President*: Waded Cruzado   March 27, 2018

*Not applicable to the Community Colleges.

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CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	FY 2017		FY 2018		FY 2019	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	15		30		31	

II. REVENUE

	FY 2017		FY 2018		FY 2019	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request						
2. Institution Funds	98,603		197,630		201,451	
3. Federal		4,300	64,700		47,000	16,970
4. New Tuition Revenues from Increased Enrollments	37,690		79,325		84,900	
5. Student Fees						
6. Other (i.e., Gifts)						
Total Revenue	**$136,293**	**$4,300**	**$341,655**	**$0**	**$333,351**	**$16,970**

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 2017		FY 2018		FY 2019	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE						
2. Faculty	31,815		50,625		51,800	
3. Adjunct Faculty	25,600		34,640		38,000	
4. Graduate/Undergrad Assistants						
5. Research Personnel						
6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits	19,500		28,000		28,600	
9. Other:						
Total Personnel and Costs	**$76,915**	**$0**	**$113,265**	**$0**	**$118,400**	**$0**

	FY 2017		FY 2018		FY 2019	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel			200		400	16,970
2. Professional Services	270		550		550	
3. Other Services						
4. Communications	95		325		325	
5. Materials and Supplies	75	4,300	1,025		425	
6. Rentals						

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7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	$440	$4,300	$2,100	$0	$1,700	$16,970

	FY 2017		FY 2018		FY 2019	
	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 2017		FY 2018		FY 2019	
	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation						

	FY 2017		FY 2018		FY 2019	
	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:	$77,335	$4,300	$115,365	$0	$120,100	$16,970
Net Income (Deficit)	$58,958	$0	$226,290	$0	$213,251	$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.

(signature)

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

Computer Programming AAS, Great Falls College MSU Catalog 2017-2018, 02/23/18 11:25 AM 1

Computer Programming AAS

Overview

Associate of Applied Science Degree

Program Director: Steve Robinett

This degree prepares students for employment as a computer programmer developing web, desktop and enterprise applications.

Outcomes

Graduates are prepared to:

- Understand the fundamentals of computer programming and data structures.
- Understand the languages for web and enterprise applications such as Java, Python, PHP, and JavaScript.
- Understand data modeling, database design, and structured query language (SQL).
- Have proficiency in web server administration and application development environments.
- Understand the software life-cycle, classical and current methodologies and best practices.

Estimated Cost

Estimated Resident Program Cost*

Tuition and Fees	$6,510
Application Fee	$30
Books/Supplies	$2,193
Total	$8,733

* Fall 2017 MUS Student Health Insurance Premiums will be changing. Please check the Health Insurance website (http://students.gfcmsu.edu/insurance.html) and/or Student Central for confirmed premium rates. Students will be charged an additional fee of $21 per credit for online/hybrid courses.

Program Requirements

Many students need preliminary math and writing courses before enrolling in the program requirements. These courses may increase the total number of program credits. Students should review their math and writing placement before planning out their full program schedules.

GFC MSU Additional Graduation Requirement

Course	Title	Credits	Grade/Sem
CCLS 103	Becoming a Successful Student *	1	_____

Course	Title	Credits	Grade/Sem
First Year			
Fall			
CSCI 100	Intro to Programming *	3	_____
CSCI 105	Computer Fluency *	3	_____
MART 231	Interactive Web I *	4	_____
One of the following			
WRIT 101	College Writing I ***	3	_____
WRIT 121	Intro to Technical Writing ***	3	_____
One of the following:			
M 121	College Algebra ***	3	_____
M 108	Business Mathematics ***	4	_____
	Credits	16-17	
Spring			
BGEN 105	Introduction to Business *	3	_____
CSCI 111	Programming with Java I **	3	_____
ITS 210	Network OS - Desktop **	3	_____
CAPP 156	MS Excel **	3	_____
CSCI 240	Databases and SQL **	3	_____
	Credits	15	
Second Year			
Fall			
CSCI 132	Basic Data Structures and Algorithms **	4	_____
CSCI 211	Client Side Programming **	3	_____
STAT 216	Introduction to Statistics **	4	_____
COMX 115	Intro to Interpersonal Communic *	3	_____
	Credits	14	
Spring			
CSCI 214	Server-Side Web Programming & Administration **	3	_____
CSCI 223	Software Development **	3	_____
CSCI 299	Programming Capstone **	3	_____
CSCI 213	Web Programming Techniques **	3	_____
ITS 224	Introduction To Linux **	4	_____
	Credits	16	
	Total Credits	61-62	

Total Program Credits: 61-62

* Indicates prerequisites needed.
** Placement in course(s) is determined by placement assessment.
* A grade of C- or above is required for graduation.

Computer Programming AAS

Program Director: Steve Robinett

Overview:

This degree prepares students for employment as a computer programmer developing web, desktop and enterprise applications.

Outcomes:

Graduates are prepared to:

- Understand the fundamentals of computer programming and data structures.
- Understand the languages for web and enterprise applications such as Java, Python, PHP, and JavaScript.
- Understand data Modeling, Database design and Structured Query Language (SQL).
- Have proficiency in web server administration and application development environments.
- Understand the software life-cycle, classical and current methodologies and best practices.

Program Requirements:

Many students need preliminary math and writing courses before enrolling in the program requirements. These courses may increase the total number of program credits. Students should review their math and writing placement before planning out their full program schedules.

GFC MSU Additional Graduation Requirement

COLS	103	Becoming a Successful Student +	1
		First Year Fall	
SUBJ	**No**	**TITLE**	**CR**
CSCI	100	Intro to Programming +	3
MART	231	Interactive Web I +	4
CAPP	120	Intro to Computers +	3
WRIT	101	College Writing **,+ *OR*	
WRIT	121	Intro to Technical Writing **,+	3
M	108	Business Mathematics **,+ OR	
M	121	College Algebra **,+	3-4

		Total	15 - 16

		First Year Spring	
SUBJ	**No**	**TITLE**	**CR**
BGEN	105	Introduction to Business +	3
CSCI	111	Programming with Java I *,+	3
ITS	210	Network OS – Desktop *,+	3
CAPP	156	MS Excel *,+	3
CSCI	240	Databases and SQL *,+	3 NEW
		Total	**15**
		Second Year Fall	
SUBJ	**No**	**TITLE**	**CR**
CSCI	132	Bsc Data Structures/Algorithms *,+	4 NEW
CSCI	211	Client Side Programming *,+	3 NEW
STAT`	216	Intro to Statistics **,+	4
COMX	115	Intro to Interpersonal Communications +	3
		Total	**14**
		Second Year Spring	
SUBJ	**No**	**TITLE**	**CR**
CSCI	214	Server Web Programming & Admin *,+	3 NEW
CSCI	223	Software Development *,+	3 NEW
CSCI	299	Programming Capstone *, +	3 NEW
CSCI	213	Web Programming Techniques*,+	3 NEW
ITS	224	Intro To Linux *,+	4
		Total	**16**
		Program Total	**61- 62**

*   Indicates prerequisites needed.

** Placement in course(s) is determined by placement assessment.

+   A grade of C- or above is required for graduation.

May 24-25, 2018

ITEM 179-1001-R0518

<u>**Request for authorization to establish a dual B.S./M.S. in Neuroscience – University of Montana-Missoula**</u>

THAT

The University of Montana-Missoula requests authorization from the Montana Board of Regents to establish a dual B.S./M.S. in Neuroscience.

EXPLANATION

The proposed 5-year BS/MS in Cellular and Molecular Neuroscience will leverage existing programs and resources to create an accelerated dual degree program that will attract and enhance the competitiveness of top neuroscience undergraduates for career pathways in graduate and medical schools, as well as in private sector areas of biotech and pharma. These students will also add desired critical mass that will positively impact the biomedical research enterprise at UM.

ATTACHMENTS

Academic Proposal Request Form
Curriculum Proposal Request Form
Intent to Plan Form

Montana Board of Regents
ACADEMIC PROPOSAL REQUEST FORM

ITEM: **179-1001-R0518**　　　　　Submission Month or Meeting: **May 24-25, 2018**

Institution: **University of Montana-Missoula**　　　　CIP Code: **26.1501**

Program/Center/Institute Title: **Dual B.S./M.S. Neuroscience**

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**

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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 proposed 5-year dual B.S./M.S. program in Cellular and Molecular Neuroscience leverages courses and faculty from ongoing undergraduate and graduate programs in neuroscience to create an accelerated curricular path that allows top students interested in advanced research training to obtain both degrees in five years, rather than six. It does not merge or replace either parent program. Owing to an accelerated pace, the proposed curriculum will require that a number of graduate course credits count toward both the B.S. and M.S degrees.

Why

The dual BS/MS will enhance student coursework with the "hands-on" experiential research training that emphasizes critical thinking, team-based science, experimental design and interpretation, information technology, and science communication associated with an independent M.S.-level research project. The result will be students who are better prepared to further their research and/or clinical education (graduate school, medical school, etc.) and address the cause and treatment of the neurological disease that have become a national priority. Alternatively, these students will enter the private sector, meeting the growing demands in the health care fields, and be better prepared for a "knowledge economy" that will require the same innovation skills that are integral to the research and discovery process.

Resources

Given the number of students that will be accepted into the program, it will have a minimum impact on existing educational resources. No additional personnel, facilities, space, equipment or laboratory instrumentation will be needed, other than that which is already in place.

Relationship to similar MUS programs

A 5-year dual B.S/M.S degree in Neuroscience is not presently available within the MUS. While MSU does offer a B.S. in Cell Biology and Neuroscience, the B.S. degrees in Cellular & Molecular Neuroscience and Cognitive and Behavioral Neuroscience at UM remain distinct with respect to their depth of focus and curriculum. Similarly, both UM and MSU offer Ph.D. and M.S. degrees in Neuroscience, as do most research-intensive universities in the country. Importantly, neither program offers the proposed 5-year dual B.S/M.S degree in Cellular and Molecular Neuroscience.

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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]*

The proposed 5-year dual B.S./M.S. program in Cellular and Molecular Neuroscience leverages courses and faculty from ongoing undergraduate and graduate programs in neuroscience to create an accelerated curricular path that allows top students interested in advanced research training to obtain both degrees in five years, rather than six. It does not merge or replace either parent program. Owing to an accelerated pace, the proposed curriculum will require that a number of graduate course credits (maximum of 16) count toward both the B.S. and M.S degrees. (UM's B.S./M.S in Athletic Training provides a precedent for such an accommodation.)

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 proposed B.S./M.S. program will allow exceptional neuroscience students to seamlessly build on their undergraduate coursework with an independent M.S.-level research project. The intentions and aims of this program are numerous and align well with goals outlined in *UM Strategic Vision 1.1,* especially:

Engage students where they are: The core of this effort lies not in the classroom, but in getting students into productive research labs where they will learn both the process and rewards of scientific discovery. Beginning in their third year, this experiential training affords students not only with "hands-on" research in a "real-lab" setting, but also the opportunity for valuable "multiple level mentoring" by faculty, post-docs, graduate students, senior undergraduates, and technicians. It is not uncommon for the mentoring relationship that is established between the student and research mentor to last beyond the student's career at UM.

Foster Knowledge Creation and Innovation: Again, students conducting research projects in neuroscience labs will participate first-hand in the innovative process of experimental design and the discovery of new knowledge. Almost as important, the student will also gain experience in conveying that knowledge as they prepare poster presentation and contribute to the publications generated in the lab.

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

Planning began in earnest among several DBS, BMED and PSYCH faculty in Fall 2016 during regular CSFN meetings. It was viewed as an exciting effort to enhance the learning options of UM's top students and increase student numbers in our neuroscience labs and graduate courses. Efforts continued with garnering advice from similar programs at other research universities (e.g., Brandeis, Georgia St., Johns Hopkins) and adapting them to our curriculum. Discussions also occurred among faculty from both degree options and with Deans and Chairs in CHPBS and CHS. Based upon the enthusiasm, commitment and approval of the participating faculty and administrators the present proposal was prepared.

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

Documentation and Tables are included in the Appendix.

    a. List the program requirements using the following table.

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

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.

Within the context of neuroscience, students who complete the proposed 5-year dual B.S./M.S. in Cellular and Molecular Neuroscience will:
- have an understanding of neuroanatomy and the structure of the brain and spinal cord
- understand the biophysical and molecular basis of neuronal communication and synaptic transmission
- have a basic understanding of the molecular and cellular mechanisms underlying higher cognitive functions, such as learning and memory
- understand the molecular pharmacology of the various neurotransmitter systems
- understand the inherent vulnerability of neurons to injury and how that relates to underlying mechanisms of neurological diseases
- develop an appreciation for the importance of multidisciplinary research in advancing our understanding of the brain
- understand the elements of experimental design and hypothesis-driven research
- be able to use specialized instrumentation needed to conduct experiments as dictated by their research projects (e.g., electrophysiology, protein structure & functions, microscopy, gene and protein expression, behavioral assessment, neurochemistry, pharmacology, etc.)
- know how to maintain a laboratory notebook
- know how to independently design and carry out experimental protocols related to their research project.
- know how to critically read, review and discuss primary research articles in the neuroscience fields
- be able to prepare and give a scientific presentation (poster, seminar)
- be able to write a thesis
- be able to significantly contribute to the design, writing, and submission of scientific publications
- develop an appreciation for the process of scientific funding and advocacy for research

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 study of our nervous system and the brain is both an established area of scientific inquiry and yet an emerging area of intense focus, especially as related to devastating neurological conditions such as Alzheimer's, Parkinson's, traumatic brain injury, PTSD, addiction, schizophrenia, depression, etc. The Cellular and Molecular Neuroscience BS program at UM continues to respond to the increasing attention and need to understand brain

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structure and function under both physiological and pathological conditions by educating enthusiastic students from across the state of Montana, the US and the world. The dual BS/MS will further meet this need by enhancing student coursework with the "hands-on" experiential research training that emphasizes critical thinking, team-based science, experimental design and interpretation, information technology, and science communication associated with an independent M.S.-level research project. The result will be students who are better prepared to further their research and/or clinical education (graduate school, medical school, etc.) and address the cause and treatment of the neurological disease that have become a national priority. Alternatively, these students will enter the private sector, meeting the growing demands in the health care fields, and be better prepared for a "knowledge economy" that will require the same innovation skills that are integral to the research and discovery process.

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

A 5-year dual B.S/M.S degree in Neuroscience is not presently available within the MUS system. While MSU does offer a B.S. in Cell Biology and Neuroscience, the B.S. degrees in Cellular & Molecular Neuroscience and Cognitive and Behavioral Neuroscience at UM remain distinct with respect to their depth of focus and curriculum. Similarly, both UM and MSU offer Ph.D. and M.S. degrees in Neuroscience, as do most research-intensive universities in the country. Importantly, neither program currently offers the proposed 5-year dual B.S/M.S degree in Cellular and Molecular Neuroscience.

During the course of planning for this proposal a national survey of 5-year dual B.S/M.S degree programs in Neuroscience was undertaken to garner information and insight to program design and operation. This process revealed that while a number of research intensive (Johns Hopkins, Brandeis, Georgia State, Morehouse) and non-research intensive (Wesleyan, Trinity College) had 5-year dual B.S./M.S programs in neuroscience, none were identified in the northwest region of the US. This presents an exceptional opportunity for UM to take a leadership role in developing and offering a potentially high-profile program to interested students.

Institution Name	Degree	Program Title

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]*

A 5-year dual B.S/M.S degree in Neuroscience is not presently available within the MUS system.

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]*

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While a number of research intensive (Johns Hopkins, Brandeis, Georgia State, Morehouse) and non-research intensive (Wesleyan, Trinity College) had similar programs in place, the research focus areas, as well as the distance separating the institutions are too great to develop any collaborative efforts. That being said, several of the directors of these 5-year dual B.S/M.S Neuroscience degree tracks expressed a genuine interest in helping our program develop and then sharing best practices.

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]*

   As currently designed, students in the ongoing B.S. program in Cellular and Molecular Neuroscience will apply to the dual B.S./M.S. program during the Fall semester of their third year and be notified of acceptance (see **8a** below) by the end of following Spring. Thus, while it is proposed that the program begin in the Fall of 2018 with program announcements and promotions, the first student would not be accepted into the degree track until the Spring of 2019 and formally enter into the program in the Fall of 2019.

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

Fall Headcount Enrollment					Graduates				
AY 19-20	AY 20-21	AY 21-22	AY 22-23	AY 23-24	AY 20-21	AY 21-22	AY 22-23	AY 24-25	AY 25-26
3-6	3-6	4-8	6-10	6-10	3-6	3-6	4-8	6-10	6-10

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

   The estimated enrollments listed above are based upon a combination of: *i*) the number of Cellular & Molecular Neuroscience majors, *ii*) the number of undergraduates that typically pursue independent research projects (i.e., BMED 390/490, BIOB 390/490, BCH 390/490) in the faculty laboratory groups affiliated with the CSFN and *iii*) the capacity of the lab groups to train students. The first two entering classes into the Cellular & Molecular option averaged about 30 students/year and we anticipate significant growth as the regional awareness for the program increases. Given that the program is intended to attract top students, the estimated numbers reflect 10-20% of the enrollment. These numbers also are consistent with the number of students (≈ 30 undergraduate and graduate) being mentored annually by the core group of about 20 faculty affiliated with the CSFN.

   c. What is the initial capacity for the program?

   The capacity of the program is dependent, not upon classroom resources, but on both the number of faculty who can mentor graduate students and the number of students that can be accommodated in a specific lab. Given a cohort of 20 faculty, the capacity for accommodating students is estimated at 30-40 students per year, of which 5-10 would be B.S./M.S 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]*

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Logistically, the B.S./M.S program represents an alternative path by which students can enter our ongoing graduate program to obtain their M.S., albeit at an accelerated pace. Consequently, success is defined in the same ways it would be for the existing M.S. program, including:
  • degree completion
  • scientific presentations and publications
  • post-graduate placement in an advanced academic program or related job in the private sector

Of particular relevance to assessment will be a comparison of the success of the students who enter the graduate program through the dual B.S./M.S program versus those who enter the program after completing a traditional B.S. degree. If there is a markedly lower success rate for the students in the dual program the preparation/performance in the third and fourth years of the program will be re-examined in combination with program selection criteria to increase the likelihood of success.

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]*

Beyond the standard assessment that occurs during their normal coursework, students will be assessed prior to being accepted into the dual B.S./M.S degree program on the basis of multiple factors, including; science course GPA, research experience, letters of recommendation, and proposed project & mentor. Following acceptance into the program, the student will assemble a M.S. committee that typically has 3-4 members, including the mentor and an external member. This committee meets at least twice a year to assess student progress, approve a plan of study, and conduct the final assessment at the thesis examination/defense.

b. What direct and indirect measures will be used to assess student learning? *[100 words]*
Direct assessment measures include:
      • coursework grades
      • research progress reports to M.S. committee
      • publications
      • thesis defense
Indirect assessment measures include:
      • faculty evaluations of scientific presentations
      • student evaluations of instruction
      • committee evaluation of research progress
      • academic or job placement after graduation

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

The assessment finds will be shared and analyzed by the program directors, CSFN directors, graduate faculty and the appropriate departmental chairs. As the time invested in mentoring graduate students is significant, all of the faculty have a vested interest in continuing to improve the program, train motivated students, and advance their research. Further, the continued (assessment-driven) improvement of the program will be required in any future grant proposals that are submitted to support student research programs, such as training grants.

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

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Specialized accreditation is not appropriate for the Neuroscience Graduate Program. That being said, the graduate programs within the Department of Biomedical & Pharmaceutical Sciences are assessed as part of accreditation review of the Skaggs School of Pharmacy (every 7-8 years). This process includes a self-study, a distinct external review of graduate programs, and a site-visit team from the Accreditation Council for Pharmacy Education. The next review will be 2019, with the self-study starting shortly.

9. **Physical resources.**

a. Describe the <u>existing</u> 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]*

Faculty affiliated with the CSFN will serve as mentors for the dual B.S./M.S. students. These faculty come from numerous departments across campus, including: Biomedical & Pharmaceutical Sciences, Math, Chemistry and Biology. The majority of these faculty and centers are found in four large adjacent science buildings on the south end of the UM campus: the Chemistry Bldg. (47,800 sq. ft.), Integrated Sciences Bldg. (61,500 sq. ft.), Health Sciences Bldg. (63,000 sq. ft.), and the Skaggs Health Professions and Biomedical Sciences Bldg. (179,775 sq. ft.). The faculty laboratories are all designed for "wet bench" research and are specifically equipped for their disciplines. In addition to the equipment found in individual labs or groups, all of the mentors and students will have access to several core instrument facilities located in the 3 adjacent science buildings. These core facilities include; Molecular Histology and Fluorescence Imaging Core, Biospectroscopy Core Facility, NMR Core, Molecular X-ray Diffraction Facility, Molecular Computational Core Facility, Mass Spectrometry and Proteomics Tissue Culture Facility: Core Centrifuge Facility, Murdock DNA Sequencing Facility and the Laboratory Animal Resources (LAR) facilities.

b. List <u>needed</u> 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 additional facilities, space, equipment or laboratory instrumentation will specifically be needed for the 5-year dual B.S./M.S program in Cellular & Molecular Neuroscience other than that which is already in place for the Neuroscience Graduate Program.

10. **Personnel resources.**

a. Describe the <u>existing</u> 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]*

As described above, participating students will already be enrolled in the B.S. degree program in in Cellular & Molecular Neuroscience. If accepted into the dual program, they will then join the existing Neuroscience Graduate program, which presently has about 20 faculty from the departments of Biomedical & Pharmaceutical Sciences, Biology, Chemistry and Psychology. At present the College of Health Professions and Biomedical Sciences is providing administrative support for the Neuroscience Graduate Program that is shared with its three other graduate programs. Resource support is also provided by the CSFN. Given the number of students that will be accepted into the dual B.S/M.S/ program, it will have a minimum impact on existing educational resources. Indeed, the addition of the new students to the M.S. program is

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expected to enhance the instructional quality of the graduate program by increasing the critical mass of students participating in coursework, discussions, presentations and seminars.

b. Identify <u>new</u> 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]*

New personnel will not need to be hired to specifically meet the needs of the small number of students that will participate in proposed dual B.S/M.S. degree program.

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]*

As long as the library and information resources are maintained at a level required for the success of the existing undergraduate and graduate neuroscience programs, they will be sufficient for the projected number (6-10) of students that will participate in proposed dual B.S/M.S. degree program.

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 projected number (6-10) of students that will participate in proposed dual B.S/M.S. degree program will not impact student services.

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

The proposed dual B.S/M.S. degree track should positively impact the financial institution in three significant ways:
  • An additional year of graduate tuition will be generated as students, who are already enrolled as Neuroscience majors, complete their accelerated M.S. degree. Revenue will depend upon the mix of resident and non-resident students.
  • As awareness of program increases, it should serve to facilitate recruitment of additional freshman and transfers into the Neuroscience major.
  • Increasing the number of research-productive students working in neuroscience labs should positively impact the quantity and quality of grants submitted by the faculty and yield an increase in extramural funding.

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.

The estimates below and in Revenue Table II are based upon an average of the expected enrollment: Y1 4 for (3-6), Y2 6 for (4-8) and Y3 8 for (6-10). Similarly, revenue estimates are based upon a mix of resident and non resident students: Y1 3R/1NR, Y2 4R/2NR, and Y3 5R/3NR. It should be noted that this may represent an underestimate as NR make up almost 50% of the Neuroscience BS majors.

	Year 1	Year 2	Year 3
Revenues	$43,490	$73,114	$103,280

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Expenditures	$0	$0	$0
Net Revenue (revenues-expenditures)	$43,490	$73,114	$103,280

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

The projected number (6-10) of students that will participate in proposed dual B.S/M.S. degree program will not impact student services

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

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

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

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]*

The operation of dual B.S/M.S. degree in Cellular and Molecular Neuroscience will not be dependent upon any extramural support, so the termination of such funds will not be an issue. That being said, the CSFN and Program Directors continue to seek extramural funding to support student research. Potential opportunities exist through NIH and NSF training grants, as well as philanthropic organizations. Funds generated from these efforts would typically go toward student stipend and or tuition awards. Thus, funds may be garnered that could support students or defray portions of their tuition, but these would provide "added-value" and are not required for the program to operate.

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 student fees will be imposed.

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.

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- 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:

1/16/18

Chief Academic Officer:

NA

Chief Executive Officer:

NA

Flagship Provost*:

2/28/18

Flagship President*:

*Not applicable to the Community Colleges.

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I. PROJECTED STUDENT ENROLLMENT

	FY 20		FY 21		FY 22	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	4 (3R/1NR)	4	6 (4R/2NR)	6	8 (5R/3NR)	8

II. REVENUE

	FY 20		FY 21		FY 22	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request	0	0	0	0	0	0
2. Institution Funds	0	0	0	0	0	0
3. Federal	0	0	0	0	0	0
4. New Tuition Revenues from Increased Enrollments	36,198	0	62,146	0	88,634	0
5. Student Fees	7,292	0	10,968	0	14,646	0
6. Other (i.e., Gifts)	0	0	0	0		0
Total Revenue	**$43,490**	**$0**	**$73,114**	**$0**	**$103,280**	**$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 20		FY 21		FY 22	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE	0	0	0	0	0	0
2. Faculty	0	0	0	0	0	0
3. Adjunct Faculty	0	0	0	0	0	0
4. Graduate/Undergrad Assistants	0	0	0	0	0	0
5. Research Personnel	0	0	0	0	0	0

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

	FY 20		FY 21		FY 22	
	On-going	One-time	On-going	One-time	On-going	One-time

B. Operating Expenditures

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

	FY 20		FY 21		FY 22	
	On-going	One-time	On-going	One-time	On-going	One-time

C. Capital Outlay

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

	FY 20	FY 21	FY 22

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	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation	0	0	0	0	0	0

	FY 20		FY 21		FY 22	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs						
1. Utilites	0	00	0	0	0	0
2. Maintenance & Repairs	0		0	0	00	0
3. Other:	0	0	0	0	0	0
Total Other Costs	$0	$0	$0	$0	$0	$0
TOTAL EXPENDITURES:	$0	$0	$0	$0	$0	$0
Net Income (Deficit)	$43,490	$0	$73,114	$0	$103,280	$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.

Rozi C Keller

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

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Appendix A – Proposed New Curriculum

The motivation for the dual-degree was based upon our desire to offer a program that would provide students with advanced research training and a commensurate M.S. degree, while at the same time retaining the most productive students working in our neuroscience labs. Undergraduates conducting independent research projects in our labs are almost always excellent students, with high GPAs, who are determined to pursue post-graduate pathways in the biomedical sciences after they graduate from UM. As has been demonstrated in similar programs at other research intensive universities, offering these students the opportunity to complete an advanced degree at an accelerated pace represents an option that many find very appealing. By investing an additional year at UM it allows them to maintain the momentum they have already established as an undergraduate research student, complement their continued research with graduate courses, and earn an M.S. degree; all of which will increase their competitiveness for whatever career step they next decide to pursue. It is also reasonable to assume that in addition to those students already enrolled in the major, the availability of this dual-degree program would appeal to and be a deciding factor for talented students who are comparing various Neuroscience programs and deciding which to attend.

UM's current BS degree will remain in place, unchanged, as will the Neuroscience Graduate Program (NGP), which offers traditional MS and PhD degrees. It is envisioned, however, that the students in the 5 yr. dual degree program would be doing some of their coursework during the last two years of the track with students in the Neuroscience Graduate Program. Advantageously, increasing student numbers in these courses should enhance quality, as many are discussion based and often involve student "teams" to present a paper, design an experimental approach, or solve a research question.

Acceptance into the program will be dependent upon a number of factors (all of which would be included in the application), including: science courses taken, science course grades, GPA, research experience, letters of recommendation, statement of career goals, and a summary of proposed project and mentor. The mentor must also endorse the application, meaning that they: have room in their lab groups, have assessed the project as appropriate, and have the resources necessary to support the research (e.g., equipment, supplies, possible salary support, etc.). In this respect, it is not a "blind" application by the students, but rather a collaborative effort that involves both the student and their mentor.

The curricular plan for the program (detailed in table form below) is essentially a "4+1" program.

• Students who are already enrolled in the BS degree track in CMN and have carried out research in the lab of one of the CMN faculty, would apply to the program during the Fall Semester of their 3rd year. They would be **provisionally** accepted (i.e., pending the successful completion of the 4th yr curriculum) into the dual-degree BS/MS program before the completion of the Spring Semester of their 3rd yr.

• Students **provisionally** accepted into the dual-degree program would take a mixture of UG and G courses during their 4th year and, upon successful completion, be awarded a BS degree in CMN. A maximum of 16 G course credits could be counted toward the 120 credits required for graduation. (Actual course planning suggests that 13 G credits should be sufficient, although we are requesting that a minimum of 16 be approved to allow for some student and curricular variation)

   - Importantly, this would allow students to follow a typical 4-year UG timeline and retain their existing financial aid. This would marked simplify the FA process and be particularly valuable for Pell recipients.

   - Further, if a student did not successfully complete the 4th yr G course requirements, it is quite likely they would still have sufficient credits to complete the B.S. degree. For example, a student must earn a grade of C- or better G-

Montana Board of Regents
CURRICULUM PROPOSAL FORM

courses to have them count toward their M.S. degree. Thus, it is conceivable that a student earning a lesser grade could decide to withdraw from the dual degree, but still use those credits to complete the B.S. Such scenarios would be much more complicated if both degrees were awarded simultaneously after 5 years of study.

- Students would also pay UG tuition during their 4th year. This is attractive to the students, while the loss to the University with respect to the difference between UG and G tuition appears minimal. It is also worth considering that if the students did not enter the program, students would still pay 4th year tuition as part of the BS track, but not the 5th year G tuition required of the dual program. In those instances where the presence of the dual degree option actually made a difference in recruiting the neuroscience student to UM, the University would benefit from 4 years of UG tuition and 1 year of G tuition, rather than lose the student entirely.

• Students who are **provisionally** accepted into the dual degree program and successfully complete their 4th yr G curriculum will enter the 5th of the program as a graduate student. They will complete the remainder of their coursework and research requirements during this 5th yr to earn their M.S. To meet the 30 credit requirement of the M.S. in CMN the students need to be allowed to count a maximum of 16 G credits that were completed during their 4yr.

-Importantly, this does not "dilute" the quality or rigor of the M.S. program, as all of these credits were earned in neuroscience grad courses. Indeed, the total G credits to be completed are identical to a typical M.S. degree. The only "double-dipping" is that some of these G course (maximum 16) are also allowed to "count" toward their B.S. degree. In some ways, similar "double-dipping" at the UG level currently occurs when one GenEd course is allowed to count for two GenEd categories. We envision this as the only way the dual-degree can be fit within a 5-year timeline and still maintain the rigor of our M.S. program.

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CURRICULUM PROPOSAL FORM

Detailed Curricular Plan for 5-year dual B.S/M.S in Cellular & Molecular Neuroscience

Critical components of the dual degree time line are highlighted in **orange**

Graduate courses are highlighted in **green**

Graduate courses for which credits count toward both B.S. and M.S. are in blue font. While the curricular plan list the 13 minimum credits 13 credits that will count toward both degree, this proposal requests that a maximum of 16 be allowed to accommodate potential variation in individual plans of study.

This plan of study has the B.S. awarded at the end of the 4th year. This allows students to maintain undergraduate financial aid. They will need to apply for graduate financial aid during their 5th year.

	Cr	Course Name	Sem.	Comments
Year 1, Fall	*15*			
CHMY 141N	5	College Chemistry I	Au/Sp	Group XI (N) CHMY 143
M162:	4	Applied Calculus	Au/Sp	Group II, Math 162
PSXX 100S	3	Intro to Psych	Au/Sp	Group VII (S)
WRIT 101 Or	3	College Writing I	Au/Sp	Group I requirement: WRIT 101
Gen Ed	3	A, L, H, E, X, or Y	Au/Sp	A, or Double (L, H, E, X, or Y)
Year 1, Spring	**16**			
CHMY 143	5	College Chemistry II	Sp/Su	Group XI (N) CHMY 143
STAT 216 Or	4	Intro to Statistics	Au/Sp	Group III: Symbolic System STATS 216
PSYX 222	3	Psycological Statistics	Au/Sp/Su	Group III: Symbolic System PSYX 222
BIOB 160/160N Or	4	Princ. Of Living Sys. + Lab	Au/Su	
BCH 110/111	4	Intro. Bio. of Biochem. + Lab	Sp	
WRIT 101 Or	3	College Writing I		Group I requirement: WRIT 101
Gen Ed	3	A, L, H, E, X, or Y	Au/Sp	A, or Double (L, H, E, X, or Y)
Year 2, Fall	*15*			
CHMY 221;	3	Org Chem I	Au	
CHMY 222;	2	Org Chem lab I	Au	
BIOB 260;	4	Cellular & Molecular Biol.	Au/Su	
PSXY 250N	3	Fund. Biol. Psychology	Au/Sp/Su	
Gen Ed	3	A, L, H, E, X, or Y		A, or Double (L, H, E, X, or Y)
Year 2, Spring	*15+*			
CHMY 223;	3	Org Chem II	Sp	
BIOB 272	4	Genetics & Evolution	Sp	
BIOH 280	3	Fund. of Neuroscience	Sp	
BIOB 406 Or	3	Behavior & Evolution	Au	
DANC 345	1,R4	Dance & Disabilities	Au/Sp	Upper division elective
ECNS 451	3	Behav/Expt Economics	intermit	
HTH 430	3	Hlth & Mind, Body Spirit	Au	
LIT 491	3	Poetry, Cognition & Brain	intermit	
LSH 389E	3	Placebo: Power of Words	Au	
PSYX 233	3	Fund. Psych. Of Aging	intermit	
BMED 390 Or	≥ 2	Indepnt Research	Sp	**Recommended** to establish a research track
BIOB 390	"	"	"	record with a neuroscience program mentor
BCH 390	"	"	"	

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CURRICULUM PROPOSAL FORM

Year 3, Fall	17+			
PHSX 205N/206N	5	College Physics I & Lab	Au/Sp	
BIOH 458W	4	Neuroscience Tech. Lab	Au	Group I requirement: 2/3 Upper-div writing
Gen Ed	3	A, L, H, E, X, or Y		A, or Double (L, H, E, X, or Y)
CSD 411 OR	3	Neuroanatomy of Comm. Dis.		
BIOL 435	3	Comp. Anim. Physiol	Sp	
BIOB 301	3	Developmental Biol.	Sp	Upper division elective
BIOH 365	3	Human Anat. & Physiol. I	Au	
			Au/Su	
BMED 390 Or	≥ 2	Indepent Research	Au	
BIOB 390	"	"	"	**Required** to establish a research track
BCH 390	"	"	"	record with a neuroscience program mentor
MUST APPLY TO BS/MS PROGRAM with MENTOR & PROJECT INDENTIFIED				
Year 3, Spring	16+			
BIOH 380W	3	Cell & Molec Neuroscience	Sp	Group I requirement:1/3 Upper-div writing
PHSX 207N/208N	5	College Physics II & Lab	Au/Sp	
Gen Ed	3	A, L, H, E, X, or Y		A or remaining L, H, E, X, or Y
KIN 330	3	Motor Control & Learning	Au/Sp	
PSYX 356	3	Human Neuropsychology	Sp	Upper division elective
BIOB 468	3	Endocrinology	intermit	
BIOB 375	3	General Genetics	Sp	
BMED 390 Or	≥ 2	Indepent Research	Sp	
BIOB 390	"	"	"	**Required** to maintain a research track
BCH 390	"	"	"	record with a neuroscience program mentor
Accepted Into BS/MS PROGRAM with MENTOR & PROJECT INDENTIFIED				
Year 3, Summer		Research,	Su	Expected with financial support from mentor
Year 4, Fall	16+			
BCH 480;	3	Adv. Biochemistry I	Au	
BIOH 441*	3	CNS Diseases	Au	
BMED 490 Or	≥ 2	Indepent Research	Au	
BIOB 490	"	"	"	**Required** to maintain a research track
BCH 490	"	"	"	record with a neuroscience program mentor
BMED 661	4	Neuroscience 1	Au	**Counts for both BS/MS**
BMED 609 Or	3	Biomed Stats	Au	
PSYX 520	3	Adv Psych Stat I	Au	**Counts for both BS/MS**
BMED 594 And/Or	1	BMED Seminar	Au	
BMED 667	1	CSFN Group Seminar		**Counts for both BS/MS**

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Year 4, Spring	14+			
BCH 480;	3	Adv Biochemistry II	Sp	
BIOB 425	3	Adv Cell & Molec. Biol	Sp	
BMED 490 Or	≥3	Indepent Research		**Required** to maintain a research track record with a neuroscience program mentor
BIOB 490	"	"		
BCH 490	"	"		
BMED 662	4	Neuroscience 1I	Sp	**Counts for both BS/MS**
BMED 594 And/Or	1	BMED Seminar	Au/Sp	
BMED 667-04	1	CSFN Group Seminar	Au/Sp	**Counts for both BS/MS**
BMED 605	1	Research Ethics	Sp	
BS In Neuroscience Awarded				
Year 4 Summer	0	Research,	Su	Expected financial with support from mentor

Year 5, Fall	9+			
BMED 610 And/Or	3	Neuropharmacology	Au	
BMED 646	3	Neurotoxicology	Sp	Or another neruo grad topics course
BMED 667-03	3	CNS Diseases	Au	
BMED 594 And/Or	1	BMED Seminar	Au/Sp	Credit only when presenting in semester w/o elective
BMED 667-04	1	CSFN Group Seminar	Au/Sp	
BMED 605	1	Research Ethics	Sp	
BMED 597	5	Research	Sp	
Year 5, Spring	9+			
BMED 594 OR	1	BMED Seminar	Au/Sp	Credit only when presenting in semester w/o elective
BMED 667-04	1	CSFN Group Seminar	Au/Sp	
BMED 605	1	Research Ethics	Sp	
BMED 610 OR	3	Neuropharmacology	Au	
BMED 646	3	Neurotoxicology	Sp	Or another neruo grad topics course
BMED 667-03	3	CNS Diseases	Au	
BMED 599	5	Thesis	Sp	

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Summary Table from 4a above.

	UG BS Credit	Dual BS/MS Credit	Grad MS Credit	Total
Credits in the required courses offered by the department offering the program				
Biological Sci.	18			18
Biomedical & Pharm. Sci.	17	13	18+	48
Psychology	6			6
Credits in required courses offered by other departments				
Chemistry & Biochemistry	24			24
Math	8			8
Physics	10			10
Credits in institutional general education curriculum	15			15
Credits of free electives	12			12
Total Credits required to complete the program	110	13	18	**141**

Course & Credit Summary for existing B.S. in Cellular & Molecular Neuroscience

Required Major Courses	credits	semester	grade
Biology/Psychology Core Courses			
BIOB 160/161N—Princ. Living Syst. w/lab*	3+1	A/S/Su	_____
BIOB 260—Cell and Molecular Biology	4	A/Su	_____
BIOB 272—Genetics and Evolution	4	S	_____
BIOH 280—Fundamentals of Neuroscience	3	S	_____
BIOH 380—Cellular and Molecular Neuroscience	3	S	_____
BIOH 458W—Neuro Research Techniques Lab**	3	A	_____
PSYX 250—Fundamentals of Biological Psychology	3	A/S/Su	_____
*or BCH 110/111 (offered spring semesters)			
**Together BIOH 458+380 satisfy the Upper Division Writing Requirement			
Additional Major Courses Required for Cellular and Molecular Biology Option			
BIOB 425—Adv. Cell & Molecular Biology	3	S	_____
BCH 480—Advanced Biochemistry I	3	A	_____
BCH 482—Advanced Biochemistry II	3	S	_____
A. Choose at least 1 of the following courses:			
BIOB 301—Developmental Biology	3	A	_____
BIOH 365—Human Anat and Physiology I	4	A/Su	_____

Montana Board of Regents
CURRICULUM PROPOSAL FORM

CSD 411—Neuroanatomy of Comm Disorders	3	S	_____
BIOL 435—Comp. Anim. Physiology	3	S	_____

B. Choose at least 1 of the following courses:

KIN 330—Motor Control and Learning	3	A/S	_____
BIOB 375—General Genetics	3	S	_____
PSYX 356—Human Neuropsychology	3	S	_____
BIOB 468—Endocrinology	3	intermitnt	_____
BIOH 441— CNS Diseases	3	A	_____
BMED 646—Neurotoxicology	3	S	_____
BMED 610 —Neuropharmacology	3	F, alt yrs	_____

C. Choose at least 1 of the following set of Intersection Courses *that explore the intersection of Neuroscience and discovery or scholarship derived from other academic disciplines:*

BIOE 406 Behavior and Evolution	4	A	_____
DANC 345 Teaching Dance to People w/ Disabilities (must take for 3 semesters to satisfy the major)	1,R4	A/S	_____
ECNS 451 Behavioral/Experimental Economics	3	S	_____
HTH 430 Hlth & Mind, Body, Spirit Relationship	3	A	_____
LIT 491 Poetry, Cognition and the Brain	3	intermitnt	_____
PSYX 233 Fundamentals of the Psychology of Aging	3	A/S/Su	_____

Other Required Courses

	credits	semester	grade
CHMY 141N—College Chemistry I	5	A/S	_____
CHMY 143N—College Chemistry II	5	S/Su	_____
CHMY 221/222—Org. Chem. I & Lab	3+2	A	_____
CHMY 223—Org. Chem. II	3	S	_____
M 162—Applied Calculus (MATH 150)	4	A/S	_____
PHSX 205N/206N—Coll Phys I & Lab (PHYS 121, 111/113)	4+1	A/S	_____
PHSX 207N/208N—Coll Phys II & Lab	4+1	A/S	_____
STAT 216—Statistics **or**	4	A/S	
PSYX 222—Psychological Statistics	3	A/S/Su	_____

Montana Board of Regents
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Other Required Courses	credits	semester	grade
CHMY 141N—College Chemistry I	5	A/S	_____
CHMY 143N—College Chemistry II	5	S/Su	_____
CHMY 221/222—Org. Chem. I & Lab	3+2	A	_____
CHMY 223—Org. Chem. II	3	S	_____
M 162—Applied Calculus (MATH 150)	4	A/S	_____
PHSX 205N/206N—Coll Phys I & Lab (PHYS 121, 111/113)	4+1	A/S	_____
PHSX 207N/208N—Coll Phys II & Lab	4+1	A/S	_____
STAT 216—Statistics **or**	4	A/S	
PSYX 222—Psychological Statistics	3	A/S/Su	_____

Summary table for courses & credits for existing M.S. in Neuroscience

M.S. in Neuroscience			
30 Credits required			
20 Credits in BMED Major			
10 Credits 500/600 level			
10 Credit limit on Research/Thesis			
Required Courses	**Credits**	**Semester**	**Comment**
BMED 661 Neuroscience I	4	Au	
BMED 662 Neuroscience II	4	Sp	
BMED 609 Biomedical Statistics	3	Au	
Or PSYX 520			
BMED 594 Biomedical Seminar	1	Au, Sp	Must give 1 seminar
BMED 597/599 Neuroscience Research/Thesis	10	Au, Sp	
At least one of the following			
BMED 610 Neuropharmacology	3	Au	
BMED 646 Neurotoxicology	3	Sp	
BMED 667-03 CNS Diseases	3	Au	
Or Alternative Neuro Grad Special Topics			
Additional electives			
BMED 667-04 CSFN Seminar	1	Au, Sp	
BMED 605 Research Ethics	1	Sp	
BMED 593 Literature & Data Discussion	1	Au, Sp	

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **5-Year Dual B.S/M.S. in Cellular and Molecular Neuroscience**

Campus, School/Department: **UM Missoula, CHPBS and CHS**   Expected Submission Date: **Spring 2018**

Contact Name/Info: **Richard Bridges, BMED, College of Health Professions and Biomedical Sciences**

To increase communication, collaboration, and problem solving opportunities throughout the MUS ¡ the program/center/institute development process, please complete this form not more than 18 mor   in advance of the anticipated date of submission of the proposed program/center/institute to the Board of Regent   ·r approval. The completed form should not be more than 2-3 pages. For more information regarding the Intent   ¹lan process, please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

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

   The proposed 5-year dual B.S./M.S. program in Cellular and Molecular Neuroscience leverages courses and faculty from ongoing undergraduate and graduate programs in neuroscience to create an accelerated curricular path that allows top students interested in advanced research training to obtain both degrees in five years, rather than six. It does not merge or replace either parent program. Owing to an accelerated pace, the proposed curriculum will require that a number of graduate course credits (maximum of 16) count toward both the B.S. and M.S degrees. (UM's B.S./M.S in Athletic Training provides a precedent for such an accommodation.)

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 study of our nervous system and the brain is both an established area of scientific inquiry and yet an emerging area of intense focus, especially as related to devastating neurological conditions such as Alzheimer's, Parkinson's, traumatic brain injury, PTSD, addiction, schizophrenia, depression, etc. The Cellular and Molecular Neuroscience BS program at UM continues to respond to the increasing attention and need to understand brain structure and function under both physiological and pathological conditions by educating enthusiastic students from across the state of Montana, the US and the world. The dual BS/MS will further meet this need by enhancing student coursework with the "hands-on" experiential research training that emphasizes critical thinking, team-based science, experimental design and interpretation, information technology, and science communication associated with an independent M.S.-level research project. The result will be students who are better prepared to further their research and/or clinical education (graduate school, medical school, etc.) and address the cause and treatment of the neurological disease that have become a national priority. Alternatively, these students will enter the private sector, meeting the growing demands in the health care fields, and be better prepared for a "knowledge economy" that will require the same innovation skills that are integral to the research and discovery process.

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

   The proposed B.S./M.S. program will allow exceptional neuroscience students to seamlessly build on their undergraduate coursework with an independent M.S.-level research project. The intentions and aims of this program are numerous and align well with goals outlined in *UM Strategic Vision 1.1,*

Montana University System
INTENT TO PLAN FORM

especially:

Engage students where they are: The core of this effort lies not in the classroom, but in getting students into productive research labs where they will learn both the process and rewards of scientific discovery. Beginning in their 3rd year, this experiential training affords students not only with "hands-on" research in a "real-lab" setting, but also the opportunity for valuable "multiple level mentoring" by faculty, post-docs, graduate students, senior undergraduates, and technicians. It is not uncommon for the mentoring relationship that is established between the student and research mentor to last beyond the student's career at UM.

Foster Knowledge Creation and Innovation: Again, students conducting research projects in neuroscience labs will participate first hand in the innovative process of experimental design and the discovery of new knowledge. Almost as important, the student will also gain experience in conveying that knowledge as they prepare poster presentation and contribute to the publications generated in the lab.

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

A 5-year dual B.S/M.S degree in Neuroscience is not presently available within the MUS system. While MSU does offer a B.S. in Cell Biology and Neuroscience, the B.S. degrees in Cellular & Molecular Neuroscience and Cognitive and Behavioral Neuroscience at UM remain distinct with respect to their depth of focus and curriculum. Similarly, both UM and MSU offer Ph.D. and M.S. degrees in Neuroscience, as do most research-intensive universities in the country. Importantly, neither program currently offers the proposed 5-year dual B.S/M.S degree in Cellular and Molecular Neuroscience. The development of 5-year dual B.S./M.S. programs require a detailed integration of both undergraduate and graduate coursework and research training. Consequently, these programs are very campus and program specific. Thus, if a similar 5-year dual B.S./M.S. program in Neuroscience was developed on another MUS campus, both programs would still remain unique with respect to curriculum and research focus. Indeed, this uniqueness would very likely apply to several STEM fields within the MUS system and suggest that similar dual degree programs in other disciplines would prove beneficial to both students and faculty on multiple campuses.

Signature/Date

College/School Dean: _____ 10.23.2017

Chief Academic Officer: _____ 23 Oct. 2017

Chief Executive Officer:

Flagship Provost*: _____ 10/26/17

Flagship President*: _____ 10-30-17

*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.

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **5-Year Dual B.S/M.S. in Cellular and Molecular Neuroscience**

Campus, School/Department: **UM Missoula, CHPBS and CHS** Expected Submission Date: **Spring 2018**

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Montana University System
INTENT TO PLAN FORM

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Signature/Date

College/School Dean: _(signature)_ 10.23.2017   _(signature)_ 23 Oct. 2017

Chief Academic Officer:

Chief Executive Officer:

Flagship Provost*: _(signature)_ 10/26/17

Flagship President*: _(signature)_ 10-30-17

*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.

May 24-25, 2018

179-1002-R0518
ITEM
Request for authorization to change the M.I.S. to a M.S. or M.A. – University of Montana-Missoula

---

THAT

The University of Montana requests authorization from the Montana Board of Regents to change the Master in Interdisciplinary Studies (M.I.S.) to an M.A. or M.S. as appropriate.

EXPLANATION

The Interdisciplinary Studies graduate program allows students to pursue a master's degree that can be tailored to their career aspirations when such a degree option does not exist at either the institution or state. It also benefits the state in allowing the university to train students toward career opportunities where interdisciplinary approaches or skills are required. The program provides a mechanism for the student, working with a faculty committee, to design a curriculum that meets those interdisciplinary requirements by choosing from existing courses at the university.

This is a request to change the current degree awarded from an M.I.S. degree to an M.S. or M.A. as appropriate. A survey of interdisciplinary degree titles in the United States was conducted. It was determined that it would be more in accordance with national trends and more useful to students to offer a M.S. or M.A. than a M.I.S.

ATTACHMENTS

Academic Proposal Request Form
Curriculum Proposal Form
Intent to Plan Form

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **179-1002-R0518**   Submission Month or Meeting: **May 24-25, 2018**

Institution: **University of Montana**   CIP Code: **30.0000**

Program/Center/Institute Title: **M.A. or M.S. in Interdisciplinary Studies**

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 M.A./M.S. in Interdisciplinary Studies program allows students, in consultation with faculty, to combine the curricula of two or more programs from the university to produce a hybrid program. Students need to demonstrate how the disciplines would work together to form an interdisciplinary approach. This is a request to change the current degree awarded from an M.I.S. degree to an M.S. or M.A. as appropriate.

Why

A survey of interdisciplinary degree titles in the United States was conducted. It was determined that it would be more in accordance with national trends and more useful to students to offer a M.S. or M.A. than a M.I.S.

Resources

As this is not a new program (just a renaming of the degree awarded), no new resources are required.

Relationship to similar MUS programs

This program is not duplicative of other interdisciplinary programs in the M.U.S. as an interdisciplinary program is, by definition, unique. Also, as stated earlier, this program currently exists at the University of Montana. This proposal requests to change the degree awarded.

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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]*

   The M.A./M.S. in Interdisciplinary Studies program allows students, in consultation with faculty, to combine the curricula of two or more programs from this university to produce a hybrid program. Students need to demonstrate how the disciplines would work together to form an interdisciplinary approach. This is a request to change the current M.I.S. degree to M.S./M.A.

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 program fits with the existing institutional array because it is, in essence the renaming of an existing master's program in interdisciplinary studies. The program is at the core of the institutional mission of the university and fits well within the strategic plan as both affirm "interdisciplinary" as a central tenant of education at UM. Interdisciplinary programs provide the students with an opportunity to craft an instructional curriculum that draws from strengths across campus while meeting the needs of their future employment endeavors.

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

   A survey of interdisciplinary degree titles in the United States was conducted. It was determined that it would be more in accordance with national trends and more useful to students to offer a M.S. or M.A. than a M.I.S. This was approved by Graduate Council.

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	
Credits in required courses offered by other departments	30 or 36
Credits in institutional general education curriculum	
Credits of free electives	
Total credits required to complete the program	30 or 36

   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.

   The MSIS/MAIS degree has several learning outcomes which are similar to a traditional master's degree from the University of Montana;

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- Clearly describe and explain a research problem;
- Contextualize the research problem in existing literature;
- Create a methodological approach relevant to the proposal.

One that is a little more unique to this interdisciplinary degree is to:

- Create an interdisciplinary approach to solving the problem or achieving the research;

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 need for the program is two-fold. It allows students to pursue a master's degree that can be tailored to their career aspirations when such a degree option does not exist at either the institution or state. It also benefits the state in allowing the university to train students towards job opportunities where interdisciplinary approaches or skills are required. The program provides a mechanism for the student, working with a faculty committee, to design a curriculum that meets those interdisciplinary requirements by choosing from existing courses at the university.

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
The University of Montana	PhD	Interdisciplinary Studies

   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]*

   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]*

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 is already offered, just with a different degree option. It would be implemented immediately upon approval with the new degree options.

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

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Fall Headcount Enrollment					Graduates				
AY 17/18	AY 18/19	AY 19/20	AY 20/21	AY 21/22	AY 17/18	AY 18/19	AY 19/20	AY 20/21	AY 21/22
13	11	11	11	11	2	2	2	2	2

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

We looked at the enrollment and graduation trends for the current M.I.S. program. For the projections, we considered the data from the last five years and used linear regression for predictions as the data in both cases were a close fit.

Enrollment has declined over the past five years, so our model demonstrated the enrollment declining. However, since the inception of the program in 2001, enrollment has never fallen below eleven so we predicted that it would flatten out at eleven.

Graduation has been very consistent.

c. What is the initial capacity for the program?

The capacity of the program depends on the availability and willingness of faculty members within the departments to serve on committees.

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]*

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]*

Students in the program will be assessed in a manner similar to existing master's program with regular meetings with their faculty advisor and a final thesis defense before their committee. This program is even more commonly evaluated by the faculty committee as each committee member provides a letter of commitment which states the faculty member's contribution to the success of the student.

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

A jury-judged final thesis is a direct measure to assess student learning. Course grades from courses taken during the curriculum will provide indirect measures of student learning.

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

Because this program resides within the Graduate School and not any particular academic department the Graduate School working with the faculty-based Graduate Council ensures the quality of the program. The program has both an admissions committee and an oversight committee drawn from faculty members across campus. The Graduate School provide an annual report on the progress and quality of the program to the oversight committee and the Graduate Council. The Graduate Council reports to the Faculty Senate.

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

    N/A

9. Physical resources.

    a.   Describe the <u>existing</u> 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]*

    There will be no increased use of facilities as this is essentially renaming an existing program.

    b.   List <u>needed</u> 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]*

    There are no further resources needed as this is essentially renaming an existing program.

10. Personnel resources.

    a.   Describe the <u>existing</u> 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 renaming of the MIS program to the MAIS/MSIS will have no effect on existing programs.

    b.   Identify <u>new</u> 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]*

    No new personnel will be hired to support the program. The position of Associate Dean of the Graduate School will help manage the program along with the existing Graduate Admissions Coordinator.

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 available resources are adequate.

    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]*

    Yes, the existing student services do have the capacity to accommodate the program because they are already accommodating it under the current degree name.

12. Revenues and expenditures. Describe the implications of the new program on the financial situation of the

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CURRICULUM PROPOSAL FORM

institution. *[100 words]*

Because this is really the renaming of an existing program there are no additional financial implications of the program.

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			
Expenditures			
Net Revenue (revenues-expenditures)			

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

Because this is really the renaming of the existing MIS program no new funds will be needed for the implementation of the program.

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]*

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.

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]*

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]*

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.

There are no special fees associated with 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.

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Signature/Date

College or School Dean:

Chief Academic Officer:

NA

Chief Executive Officer:

NA

Flagship Provost*:

Flagship President*:

*Not applicable to the Community Colleges.

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I. PROJECTED STUDENT ENROLLMENT – Using FY 18 Data

	FY __18__		FY _____		FY _____	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	6.1	11				

II. REVENUE – using existing data

	FY __18__		FY _____		FY _____	
	On-going	One-time	On-going	One-time	On-going	One-time
1. New Appropriated Funding Request	0	0				
2. Institution Funds	0	0				
3. Federal	0	0				
4. New Tuition Revenues from Increased Enrollments	14287.07	0				
5. Student Fees	60					
6. Other (i.e., Gifts)	0					
Total Revenue	**$14347.07**	**$0**	**$0**	**$0**	**$0**	**$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 – None

	FY __18__		FY _____		FY _____	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE	.03					
2. Faculty						
3. Adjunct Faculty						
4. Graduate/Undergrad Assistants						
5. Research Personnel						

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6. Directors/Administrators	$900					
7. Administrative Support Personnel	$240					
8. Fringe Benefits						
9. Other:						
Total Personnel and Costs	**$1140**	**$0**	**$0**	**$0**	**$0**	**$0**

	FY _____		FY _____		FY _____	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures - None						
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 _____	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay - None						
1. Library Resources						
2. Equipment						
Total Capital Outlay	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

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	FY _____		FY _____		FY _____	
	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation - None						

	FY _____		FY _____		FY _____	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs - None						
1. Utilites						
2. Maintenance & Repairs						
3. Other:						
Total Other Costs	$0	$0	$0	$0	$0	$0
TOTAL EXPENDITURES:	$0	$0	$0	$0	$0	$0
Net Income (Deficit)	$0	$0	$0	$0	$0	$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.

Rosi C Keller

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

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Appendix A – Proposed New Curriculum

The curriculum will be formed by the student in conjunction with their committee. It will be comprised of courses that are offered by existing UM programs. There are two options that can be exercised:

30 credit Thesis option

Students must complete 30 credits of G- and UG- coursework; students must do the graduate increment of the UG- classes. Students will complete thesis proposal (format to be determined by the student's graduate committee) approximately one year after beginning the program. Students must satisfactorily complete an oral defense of the thesis.

36 credit non-Thesis option

Students must complete 36 credits of G- and UG- coursework; students must do the graduate increment of the UG- classes. Students must satisfactorily complete:

a) Comprehensive exam, format to be determined by the student's graduate committee; **AND**

b) One of three options:

   i)   Professional paper – a publishable quality paper, which shall consists of an article-length, monographic study, based substantially on primary sources.

   ii) Three short critical papers or products that show creative work – merit to be judged by your graduate committee.

   iii) A paper submitted to a nationally recognized journal

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **M.S./M.A. In Interdisciplinary Studies**

Campus, School/Department: **University of Montana Missoula, Graduate School**   Expected Submission Date: **Spring 2017**

Contact Name/Info: **Scott Whittenburg, Vice President for Research & Dean of the Graduate School**

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/preparingacademicproposals.asp.

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

   We are requesting to retitle the Master of Interdisciplinary Studies degree (M.I.S.) to a Master of Science (M.S.) or Master of Arts (M.A.) in Interdisciplinary Studies. This degree has existed for some time and allows students to create a hybrid program by combining at least two disciplines offered by the university.

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 name of the degree, as it stands, provides a challenge for students, which means that students need to carefully plan their career path and actively promote their degree with prospective employers. It also doesn't provide an accurate description of the nature of the course of study as it can rely heavily in the sciences or the arts disciplines.

   Research on current master's level interdisciplinary graduate programs nationwide shows that 68% have degrees titled Master of Arts, Master of Science, or Master of Education, etc. There are only five other institutions (UM excluded) that offer degrees titled Master of Interdisciplinary Studies. The degree titles of Master of Arts or Master of Science in Interdisciplinary Studies will more accurately convey the nature of the degree completed by the students.

   The Master of Science degree will require that half of the coursework credits be from a discipline that confers Master of Science degrees at the University of Montana. This will align the program with the national trend.

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

   The program fits with the existing institutional array because it is, in essence, the renaming of an existing master's program in interdisciplinary studies. The program is at the core of the institutional mission of the university and fits well within the strategic plan as both affirm "interdisciplinary" as a central tenant of education at UM. Interdisciplinary programs provide the students with an opportunity to craft an instructional curriculum that draws from strengths across campus while meeting the needs of their future employment endeavors.

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

The program does not duplicate existing efforts in the MUS. This is, in essence, the renaming of an existing master's program. MSU - Bozeman has proposed a similar graduate interdisciplinary program. UM supports their efforts because, by their nature, interdisciplinary degree programs are not duplicative because there is no set curriculum. The curriculum for each student is set, working with a faculty advisor, based upon the vision of the student for their future employment needs and the existing strengths available on the campus. Because the campus strengths vary, the curricula will be different on the two campuses.

Signature/Date

College/School Dean:

Chief Academic Officer:

Chief Executive Officer:

Flagship Provost*:

Flagship President*:

*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.

May 2018

ITEM 179-1500-R0518

Request to Establish Master of Science in Materials Science & Engineering

THAT

The board of Regents of Higher Education authorizes Montana Tech of the University of Montana to establish a Master of Science in Materials Science and Engineering

EXPLANATION

Montana Tech hereby proposes to create and offer a Master of Science program in Materials Science and Engineering (MS/MSE). At present, no MS-level materials science or materials engineering degree program exists in the Montana University System (MUS). The MS/MSE program will include thesis (30 credit-hour) and non-thesis (36 credit-hour) tracks and is designed to serve both on-campus and off-campus (distance-learning) students. The MS/MSE program will operate in conjunction with the Materials Science Ph.D. program in a new Department of Materials Science and Engineering. Approval of the proposed program will not require changes to any existing programs at the institution.

ATTACHMENTS

Curriculum Proposal Form
Proposal Request Form

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ITEM **179-1500-R0518**   Submission Month or Meeting: **May 2018**

Institution: **Montana Tech**   CIP Code: **14.1801**

Program/Center/Institute Title: **Master of Science in Materials Science & 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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____ **B. Level II:**

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

____ 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** <u>(Curriculum or Center/Institute Proposal and Completed Intent to Plan Form, except when eliminating or consolidating)</u>

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

Proposal Summary [360 words maximum]

What: Montana Tech hereby proposes to create and offer a Master of Science program in Materials Science and Engineering (MS/MSE). At present, no MS-level materials science or materials engineering degree program exists in the Montana University System (MUS). The MS/MSE program will include thesis (30 credit-hour) and non-thesis (36 credit-hour) tracks and is designed to serve both on-campus and off-campus (distance-learning) students. The MS/MSE program will operate in conjunction with the Materials Science Ph.D. program in a new Department of Materials Science and Engineering. Approval of the proposed program will not require changes to any existing programs at the institution.

Why: Materials Science and Engineering is a specialized, cross-disciplinary field. As such, the MS/MSE program is consistent with Montana Tech's designation as a "Special Focus Institution" within the MUS. The program is designed to leverage existing faculty and infrastructure to cost-effectively provide more accessible educational opportunities, expand materials research within the State, and foster regional economic development.

Resources: Extensive physical resources in the basic science and engineering laboratories at Montana Tech are sufficient to support the program implementation. No new facilities, equipment, space, laboratory instruments or other scientific paraphernalia are needed for the proposed MS/MSE program. As needs for additional research project-specific resources emerge, they will be met through grant-funded project budgets of the Principal Investigators/advisors.

Relationship to similar MUS programs: n\a

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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]*

   Montana Tech hereby proposes to create and offer a Master of Science program in Materials Science and Engineering (MS/MSE). At present, no MS-level materials science or materials engineering degree program exists in the Montana University System (MUS). The MS/MSE program will include thesis (30 credit-hour) and non-thesis (36 credit-hour) tracks and is designed to serve both on-campus and off-campus (distance-learning) students. The MS/MSE program will operate in conjunction with the Materials Science Ph.D. program in a new Department of Materials Science and Engineering. Approval of the proposed program will not require changes to any existing programs at the institution.

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]*

Materials Science and Engineering is a specialized, cross-disciplinary field. As such, the MS/MSE program is consistent with Montana Tech's designation as a "Special Focus Institution" within the MUS. The program is designed to leverage existing faculty and infrastructure to cost-effectively provide more accessible educational opportunities, expand materials research within the State, and foster regional economic development.

The proposed MS/MSE program is consistent Montana Tech's stated mission and is expected to advance the following strategic goals:

- Be a national leader in providing education and in transforming undergraduate and graduate education.

- Support and grow research, scholarship, and technology transfer.

- Be responsive to the needs of industry, our community, and State.

- Improve the visibility, recognition, and reputation of Montana Tech in the State, nation, and world.

- Secure resources that support excellence.

- Create a culture and workplace environment that embraces excellence.

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

This proposal was developed in summer and fall 2017 by Metallurgical and Materials Engineering and Mechanical Engineering Department faculty with oversight from the Montana Tech Provost, the Vice Chancellor of Research and Graduate School Dean, the Dean of the School of Mines and Engineering (SME), and the Dean of the College of Letters, Sciences, and Professional Studies (CLSPS). This proposal has been reviewed approved by Director of Libraries (2-Feb-18), Dean of CLSPS (22-Jan-18), Dean of SME (22-Jan-18), Graduate Council (5-Feb-18), Dean of Graduate School (5-Feb-18), Curriculum Review Committee (7-Feb-18), Faculty Senate (15-Feb-18), Provost & Vice Chancellor for Academic Affairs (12-Feb-18).

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

The proposed curriculum is listed in Appendix A.

a. List the program requirements using the following table.

MS/MSE Minimum Credit Requirements	Thesis Track Credits	Non-thesis Track Credits
Core Credits in required courses offered by the department offering the program	10	10
Credits in required courses offered by other departments	5	5
Credits of free electives	9	15
Credits of thesis research or independent study (practicum)	6	6
Total credits required to complete the program	30	36

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 MS/MSE program, students will be able to:

- command the appropriate breadth and depth of fundamental knowledge in materials science and engineering

- create new knowledge by performing theoretical, computational, and/or experimental research at the graduate level (design new materials)

- employ the highest ethical and professional standards

- understand and employ sound and safe laboratory practices

- effectively communicate new knowledge through journal articles, theses, and archived publications

- apply their engineering knowledge to critically evaluate relevant literature and new technologies or systems; review and critically analyze the ideas of other scientists and engineers

- solve advanced materials engineering problems and defend their recommendations by applying engineering, science, and mathematical principles

- understand and evaluate the impact of their work in the context of sustainability, including societal, ethical, economic, and environmental aspects

- become leaders capable of working in diverse environments

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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]*

Materials science and engineering are well-established fields that serve multiple industrial sectors with significant strategic and economic importance. In 2016, the U.S. Council on Competitiveness declared "advanced materials key to elevating the U.S. economy." As examples of the economic significance of advanced materials, the U.S. consumer electronics industry annual revenues exceeded $218 billion in 2015 and annual global demand for biomaterials is projected to reach $149 billion by 2021. Other major industries that depend on advanced materials technology to remain globally competitive are aerospace, automotive, chemicals, energy, metals, and telecommunications. The availability of highly educated materials scientists and engineers is vital to national manufacturing competitiveness and sustained industrial growth.

In coming years, the development and application of advanced materials promises to become one of the largest sources of technological and economic growth in Montana. A 2016 report by the University of Montana's Bureau of Business and Economic Research (BBER) projected high-tech and manufacturing companies will *grow seven times faster than the overall Montana economy*. The 2017 Montana Economic Report produced by the BBER asserted that "finding enough talent remains the No. 1 barrier to growth for Montana high-tech firms." The MS/MSE program will produce graduates to fill high-paying positions in these new, fast-growing companies.

Figure 1 compares the number of MSE graduates (B.S., M.S., and Ph.D.) from 2006 to 2015 with other specialty engineering disciplines. The positive trend illustrates the interest that is fueled by industrial demand. MS degrees represent approximately one-third of the MSE degrees conferred in recent years.
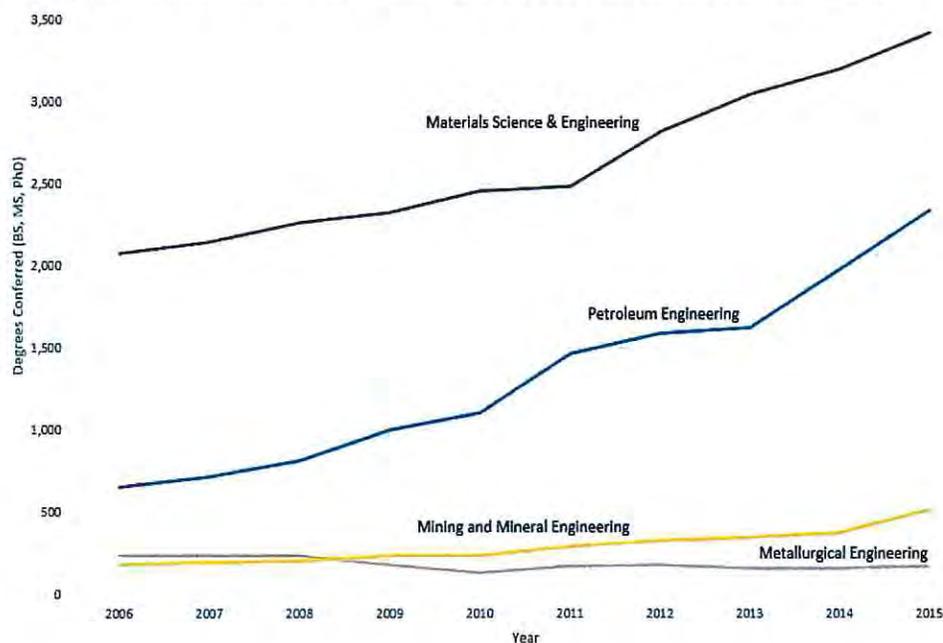

Figure 1 – Degrees conferred in the U.S. for selected engineering specialties, 2006 to 2015

(Source: National Center for Education Statistics; ncsesdata.nsf.gov)

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

No similar M.S.-level materials science or materials engineering degree programs exist within the MUS or within the private colleges in Montana. Montana Tech offers a Bachelor of Science degree in Metallurgical and Materials Engineering and a M.S. degree in Metallurgical and Mineral Processing Engineering. Montana Tech participates, along with Montana State University and the University of Montana, in the MUS collaborative Materials Science Ph.D. program. Thus, the proposed MS/MSE program will bridge an educational void between the undergraduate science and engineering programs and the Materials Science Ph.D. program.

Institution Name	Degree	Program Title
Not Applicable		

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 proposed program does not substantially duplicate any other program offered in the Montana University System. The program will be the only Master of Science degree in Materials Science and Engineering available in the State.

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]*

No similar M.S.-level materials science or materials engineering degree programs exist at other institutions within Montana. The proposed MS/MSE program is structured to complement and facilitate student matriculation into the MUS Collaborative Material Science Ph.D. program. Graduate course credits earned in pursuit of the MS/MSE will be transferable to the Ph.D. program, which will attract students who decide to continue their education beyond the M.S. With judicious selection of technical electives, MS/MSE graduates accepted into the Ph.D. program could be eligible to sit for the Qualifying Examination at the start of their first semester because of the common core course requirements in the two programs. The program also stands to benefit students who enter the Ph.D. program without an M.S.

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degree and must exit the Ph.D. program due to life circumstances, qualifying or candidacy exam failure, or other reasons; the MS/MSE program will afford such students the opportunity to complete their educational experience by earning a graduate degree that will position them for career opportunities.

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]*

Montana Tech is prepared to launch the MS/MSE program at the start of the semester immediately following receipt of approval by the Board of Regents or as early as the Fall 2018 semester. Recruiting efforts will focus on enrollment of the initial student cohort, including online and resident students. Program start-up will be seamless and stage-wise implementation is not deemed necessary because the requisite faculty, classrooms, courses, and laboratories are already in place, and the program will conform to existing faculty assignments and projected class schedules.

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

Fall Headcount Enrollment					Graduates				
2018-19	2019-20	2020-21	2021-22	2022-23	2018-19	2019-20	2020-21	2021-22	2022-23
3	6	12	17	19	0	3	3	6	8

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

Conservative estimates of the projected enrollment and graduation figures for first five years of the proposed program are shown in the table. The apparent disparity between the enrollment and graduate figures results from the fact that, as a graduate program, there will be at least a two-year lag between enrollment and graduation (the lag will be longer for part-time, distance-learning students). In the early years, enrollment projections rely on recruitment of students as they graduate with Bachelor of Science degrees from on-campus science and engineering programs and in venues where recruiting takes place for the Materials Science Ph.D. As the program expands and gains recognition, recruitment of on-campus and off-campus students, who are in the materials work force and/or earned B.S. degrees at other institutions, is expected to increase. A ten-year projection indicates steady-state will be attained after seven years. With allowances for attrition, the program is projected to enroll twelve new students and produce ten graduates each year. It was assumed that half of the incoming students will be off-campus distance learning students.

   c. What is the initial capacity for the program?

The graduate-level Materials Science courses that form the core and several electives in the proposed MS/MSE curriculum are exclusively taught in the Engineering Laboratory Classroom (ELC) Building Room 202. The room, which provides seating for 32 students, is fully equipped for synchronous delivery of lectures to and real-time interaction with distance learning students. The classroom has ample capacity to seat 5 – 10 Ph.D. students and 6 – 12 MS/MSE students, with excess capacity available to graduate and

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upper division undergraduate students from other programs. These numbers are consistent with recent MTSI enrollment figures and the projected enrollment for the MS/MSE program. Distance learning students do not require seats and the synchronous delivery system could accommodate 100 or more 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]*

The program is designed around a specific set of curricular outcomes to provide students with a rigorous education in materials science and engineering. The curriculum consists of carefully chosen core courses, supplemented by extensive electives. These courses will be annually evaluated to determine their responsiveness to the desired outcomes. A matrix will be developed to indicate the degree to which each outcome is addressed in a specified course. Remedial actions are discussed under 8.a.

Program success will also be measured according to traditional metrics of enrollment, retention, graduation rate, time to completion, and academic performance (e.g., overall GPA and core course GPA). The resultant data will be examined to identify positive or negative trends and trace them to specific courses or practices; where necessary, curricular changes will be effected to improve quality and to better serve student interests.

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]*

The MS/MSE program will implement a two-pronged approach geared to measure, maintain, and, when required, improve student achievement of the intended program learning outcomes. First, the extent of student achievement of the learning outcomes will be annually measured on a course-by-course basis. At the end of each semester, each student in the MS/MSE program will be asked to complete an extensive survey to probe the specific outcomes for each course in which they were enrolled. Second, in order to secure credible evidence that objectives are being attained, each course will include specific graded assignments to provide concise and objective measurement of student attainment of outcomes. These assignments include, but are not necessarily limited to, final examinations, term papers and projects, and public presentations. The aggregated survey and measurement results will be considered in detail and shared with the course instructors.

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

Faculty will employ various mechanisms to assess and, where necessary, address particular learning outcomes. These mechanisms include: classroom quizzes and examinations, term projects, cooperative experiences (particularly important in the cross-disciplinary MSE program), portfolios, standardized examinations, questionnaires, interviews, and focus groups. Student responses will be evaluated to obtain information about individual student learning and performance and compared with the aggregate performance of students and classes to discern the relative strengths and weaknesses in the instruction of individual classes and of the entire curriculum.

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

As part of Montana Tech's program review cycle, the MSE Director will prepare an assessment report every two years above. The Director will present the report to the Deans of the Graduate School, SME, and CLSPS, and to the faculty involved with the program to identify program strengths and weaknesses

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and establish an action plan to ensure program quality. As warranted by program growth, the campus will organize an External Advisory Board comprised of representatives from high-profile academic institutions, industry, and government with a stake in materials science and engineering. The EAB will provide oversight to help ensure quality.

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

Montana Tech is accredited through the Northwest Commission on Colleges and Universities (NWCCU), and its engineering programs are accredited through the Accreditation Board for Engineering and Technology (ABET). The MS/MSE program will operate in conformance with Montana Tech policies and practices regarding accreditation of master of science level engineering programs, which do not typically seek accreditation.

9. **Physical resources.**

a. Describe the <u>existing</u> 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]*

Extensive physical resources in the basic science and engineering laboratories at Montana Tech are sufficient to support the program implementation. For example, the Metallurgical and Materials Engineering Department has laboratories dedicated to Materials Thermochemistry, Metallography, Scanning Electron Microscopy, and Materials Testing. Mechanical Engineering has a well-equipped Nanotechnology Laboratory and a plethora of materials testing and preparation devices. The labs are supported by an array of characterization equipment including: x-ray fluorescence and x-ray diffraction spectroscopy, Raman spectrometry, micro-hardness, and strength testing, and various types of thermo-analysis. Other available resources include the Center for Advanced Minerals, Metals, and Materials Processing (CAMP), the Library, the High Performance Computing Center and powerful analytical capabilities at the Montana Bureau of Mines and Geology. Instead of imposing strain, the proposed program will to contribute to maximum effective resource utilization because most of these resources are subject to intermittent used by faculty and graduate students.

b. List <u>needed</u> 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 facilities, equipment, space, laboratory instruments or other scientific paraphernalia are needed for the proposed MS/MSE program. As needs for additional research project-specific resources emerge, they will be met through grant-funded project budgets of the Principal Investigators/advisors.

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10. **Personnel resources.**

    a. Describe the <u>existing</u> 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 MS/MSE curriculum is predominantly based on graduate-level courses that are offered annually in the Materials Science Ph.D. program, the M.S. in the Project Engineering Management (MPEM) program, and the individual basic science and engineering departments. The program will be implemented with existing basic sciences and engineering faculty and without affecting their respective class schedules. Faculty availability to teach the courses are not concerns because excess capacity exists in the relevant graduate courses.

    b. Identify <u>new</u> 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]*

    No new personnel are needed to implement the program.

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 and information resources are sufficient to support the proposed MS/MSE program. To date, these resources have proved adequate to sustain the Materials Science Ph.D. program, which is currently in its fourth year of active student engagement. MS/MSE research is expected to focus on the same areas as does the Ph.D. program, so new library resources are unnecessary. Further, the MS/MSE program, while rigorous, will not require resources at as high of a level as the Ph.D. program.

    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]*

    Existing student services have the capacity to accommodate the proposed program. As a graduate program, enrollment will be low compared to most undergraduate programs and therefore unlikely to overwhelm existing student services. With two possible exceptions, the implications of the new program on services for the rest of the student body will be practically negligible. The first exception is the influx of MSE students could affect certain laboratory-based courses, where enrollment is necessarily limited by space and safety constraints. The second exception is the provision of adequate laboratory space for the MS/MSE students to conduct their research. Both exceptions can be managed by mindful advising and scheduling.

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

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Estimated revenues and expenditures for the first three years of the program are shown in the following table. Beyond Year 3, net revenues are expected to increase as the program continues to grow.

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	25,255	52,303	108,371
Expenditures	6,600	7,850	10,300
Net Revenue (revenues-expenditures)	18,655	44,453	98,071

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

The additional expense of a half of a GTA and supplies will be met by the increased enrollment.

  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]*

  N/A

  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.

  N/A

  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.

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No new fees proposed.

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: 4-4-18

Chief Academic Officer: Douglas M. Abbott 4/4/18

Chief Executive Officer: Donald M. Blackketter

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	3	3	6	6	12	12

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	17,930		37,653		79,071	
5. Student Fees	7,325		14,650		29,300	
6. Other (i.e., Gifts)						
Total Revenue	**$25,255**	**$0**	**$52,303**	**$0**	**$108,371**	**$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						
2. Faculty						
3. Adjunct Faculty						
4. Graduate/Undergrad Assistants	5,400		5,450		5,500	
5. Research Personnel						

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6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits						
9. Other:						
Total Personnel and Costs	$5400	$0	$5450	$0	$5500	$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	1200		2400		4800	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	$1200	$0	$2400	$0	$4800	$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						
Total Capital Outlay	$0	$0	$0	$0	$0	$0

FY 19	FY 20	FY 21

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	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:	$6,600	$0	$7,850	$0	$10,300	$0
Net Income (Deficit)	$18,655	$0	$44,453	$0	$98,071	$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.

(signature) 4/4/18

Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

The MS/MSE program offers thesis track and non-thesis track alternatives. Both alternatives will be available to conventional on-campus students and to off-campus students through distance-learning. However, all incoming off-campus students are initially admitted to the non-thesis track. At the invitation of a research-active participating faculty member (advisor), students, who demonstrate an interest and aptitude for scientific research, may petition the Graduate School for transfer to the thesis track.

To graduate with the MS/MSE degree, a student on the non-thesis track is required to complete a minimum of 36 semester credit hours. In the final year of their program, non-thesis track students complete a culminating experience or "practicum." To fulfill the practicum requirements, students must undertake and complete a substantial materials-related project of approximately six months duration. As part of the practicum, students must participate in a one-week summer laboratory session at Montana Tech. The project selection, scope, and objectives must be approved in advance by the student's academic advisor, the MS/MSE program director, and the Montana Tech graduate school. At the conclusion of the project, the student must submit a detailed comprehensive technical report and deliver a presentation to an audience of MSE faculty and students.

Thesis-track students are required to complete a minimum of 30 semester credit hours. Thesis track students must prepare and submit a research-based thesis and pass a formal thesis defense examination, which will be conducted by the student's research advisor and committee. The thesis and defense examination must conform to established Montana Tech Graduate School and department policies and guidelines.

The program requirements are summarized in Table A-1. Courses are categorized as "Core Courses", "Advanced Graduate Courses", and "Seminar", and, depending on whether the student selects the thesis or the non-thesis track. All students must complete the following mandatory Core Courses:

- MTSI 501 – Bonding, Structure, and defects (4 credit-hours)
- MTSI 511 – Thermodynamics of materials (3 credit-hours)
- MTSI 512 – Kinetics and phase transformations (3 credit-hours)

Table A-1. Program Requirements for the Proposed MS/MSE Degree

MS/MSE Minimums	Thesis Track	Non-thesis Track
Core	10	10
Adv. Mathematics/Modeling	3	3
Technical Electives	9	15
Independent Study/Practicum	0	6
Seminar	1	1
Writing Seminar	1	1
Thesis	6	0
Total Credit Requirement	**30**	**36**

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Beyond the core courses, the general curricular requirements are summarized in the following points:

- A total of 30 credit-hours (credits) are required to earn the M.S. degree under the thesis track, and 36 credit-hours are required to earn the degree under the non-thesis track option.

- Students in each track are required to take one 3-credit-hour graduate-level course in advanced mathematics, computer applications, or experimental design.

- A minimum of nine technical elective credits are required for the thesis track and 15 for the non-thesis track. The technical electives must be in STEM disciplines and are accepted at the advisor's discretion. Courses are typically at the 500 level but, subject to committee approval, as many as six credits in 400 level courses may count toward the M.S. degree requirement. Students may take a maximum of three approved courses (9 credits) from the Master of Science in Project Engineering Management (MPEM) program as technical electives.

- Two 1-credit seminar courses (ENGR 5940 and TC 5160) are required.

- Thesis track students are required to earn a minimum of 6 thesis credits while performing research and writing/defending a M.S. thesis.

- Non-thesis track students are required earn a minimum of 6 independent study credits to complete their practicum requirement.

- Thesis and practicum credits may not substitute for elective credits.

More than thirty materials-oriented graduate courses are available and eighteen of these courses are available through distance learning, and many are delivered in real time via the existing synchronous delivery system. A list of the currently available courses is provided as Appendix A but, in addition to the courses listed, several departments offer 400- and 500-level courses that students could take as electives to fulfill their degree requirements.

Applicants are expected to have earned a bachelor of science degree in a physical science or engineering discipline with a minimum GPA of 3.0 (4.0 maximum basis) or equivalent. Undergraduate studies normally include mathematics at least through differential equations, at least one year each of general physics and chemistry, a course in physical chemistry or modern physics, an elementary course in properties of materials (such as EGEN 213 or EMAT 251), and engineering coursework (including prerequisites) equivalent to:

- EGEN 201 – Engineering Mechanics/Statics
- EELE 201 – Circuits for Engineers
- EGEN 335 – Fluid Mechanics
- EGEN 305 – Mechanics of Materials

Applicants may be admitted with deficiencies but, to the extent possible, such courses are expected to be made up during the student's first year in the program.

It is possible for students to earn the MS/MSE degree almost entirely via distance learning. The degree requirements for the non-thesis and thesis alternatives are essentially the same as those previously described for students in residence at Montana Tech. Off-campus research is encouraged for qualified students. This

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alternative enables off-campus students to enter the thesis-track and conduct their M.S. research at their place of employment. Student participation is subject to the following stipulations:

- The student must be employed by a company, national laboratory, or government agency or department (the Employer) prior to admission to the program and, to enter the thesis track, the proposed research must be approved in writing by an authorized representative of the Employer, the student's academic advisor, and the Vice Chancellor of Research and Dean of the Graduate School.

- The thesis research project must be well defined and acceptable to the graduate student's advisory committee. The thesis may be based on either fundamental or applied research that involves (original) computational and/or experimental research to investigate a current problem of interest to the field of materials science and engineering.

- Where possible, a qualified representative of the Employer will serve as an on-site thesis committee member; to qualify as a committee member, the individual must be a professional with an M.S. or Ph.D. degree in materials science and engineering or a closely related field.

- The student must follow the published Montana Tech guidelines for thesis content, format, preparation, and defense.

- The student must be on-campus in person for the thesis defense.

- The student must register every semester that he or she is working toward fulfillment of the degree requirements.

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **Master of Science in Materials Science & Engineering (MS/MSE)**

Campus, School/Department: **Montana Tech Graduate School**   Expected Submission Date: **May 2018**

Contact Name/Info: **Dr. Jerry Downey, jdowney@mtech.edu;**

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/preparingacademicproposals.asp.

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

The interdisciplinary Master of Science in Materials Science and Engineering (MS/MSE) degree program will include thesis (30 credit-hour) and non-thesis (36 credit-hour) tracks to enable students to customize their studies to fit their career goals and objectives. It will be available to students enrolled on campus and to working professionals seeking professional advancement via distance learning. It will be structured to complement and bridge between several engineering and science bachelor's degree programs and the growing MUS Collaborative Materials Science Ph.D. program, and to position its graduates for numerous career pathways in materials, manufacturing, and high tech industries.

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

Nationally, materials science and engineering are rapidly growing, economically vital fields, in increasing demand for graduate credentials both by students and employers (National Science Foundation, *Science & Engineering Indicators 2018*). The MS/MSE program will fill an educational gap in Montana, which currently has no master's-level degree programs in materials science or engineering, and this lack contributes to a shortfall in expertise and skilled workforce that remains a major barrier in Montana to launching, attracting, and expanding manufacturing and high tech firms with the associated rapid growth in jobs (2016 & 2018 *Montana Economic Reports,* University of Montana, Bureau of Business and Economic Research (BBER)). Industry sectors supported and enabled by the proposed degree program include biotechnology, energy, aerospace, photonics, automotive, chemicals, metals, ceramics, composites, defense, and telecommunications.

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

The proposed interdisciplinary MS/MSE program will fit Montana Tech's mission by providing exemplary graduate education and research, blending theory with practice and building on Montana Tech's strong heritage and special focus on engineering, science, and technology and supporting the responsible and sustainable use of natural resources. It supports all four themes (quality education, achieving students, engaged faculty, and service to the community) and numerous strategic goals and objectives in the institutional strategic plan. It fills a gap between bachelor's degree programs in Metallurgical and Materials Engineering, Mechanical Engineering, Geological Engineering, Environmental Engineering, Electrical Engineering, Petroleum Engineering, Mining Engineering, and Chemistry and the collaborative MUS Ph.D. program in Materials Science. It complements existing Master of Science degree programs in Metallurgical and

Montana University System
INTENT TO PLAN FORM

Mineral Processing Engineering, General Engineering (especially the mechanical- and welding-focused options), Geoscience, Environmental Engineering, Electrical Engineering, Mining Engineering, Project Engineering Management, and Petroleum Engineering. No new courses would be needed and no schedule or teaching changes would be required, because the MS/MSE curriculum will utilize as core courses and as electives courses that are already offered for one or more of those programs and the Materials Science Ph.D. program. Thus, the existence of the MS/MSE will increase enrollment, instructional efficiency, and peer-learning in graduate-level courses in the Materials Science Ph.D. program and the listed materials-related M.S. programs. No changes will be needed in the existing programs.

4) **Describe how the program/center/institute overlaps, complements, or duplicates existing efforts in the MUS. Describe efforts that will be made to collaborate with similar programs at other institutions. If no efforts will be made, please explain why.**

There is no other Master of Science in Materials Science & Engineering in the MUS or at other institutions in Montana. The proposed program will complement and fill a gap for the collaborative MUS Ph.D. program in Materials Science, which currently lacks any matched Master of Science program that would allow students who leave that program prior to completion to achieve a completion that would position them will for numerous career opportunities in materials science and/or engineering—where there are many master's-requiring positions available. Active coordination and collaboration with UM-Missoula and MSU-Bozeman will be continued as part of the ongoing routine coordination and collaboration via near-weekly phone calls involving the faculty leaders of the Materials Science Ph.D. program on the three campuses, and the occasional phone calls and face-to-face meetings involving the faculty leaders and the three graduate deans. The core courses for the MS/MSE are some of the core courses for the Materials Science Ph.D. program, which are taught by faculty on the three campuses. As is the case for the Materials Science Ph.D. students, the MS/MSE students would be allowed to take courses from UM-Missoula or MSU-Bozeman, where the topics would be valuable to their curriculum and aspirations. In addition, some MS/MSE students may decide they are interested in continuing for the Ph.D. in the MUS collaborative program. They would be mentored and encouraged to apply and enroll at whichever campus best matches their interests and career aspirations.

Signature/Date

College/School Dean: _Ben K Hart_ 1/29/18

Chief Academic Officer: _Douglas M. Abbott_ 1/30/18

Chief Executive Officer: _Donald M Blacketter_ 1-30-18

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.

May 23-24, 2018

ITEM 179-1901-R0518

Request for permanent authorization of the C.A.S. degree in Sheet Metal Apprenticeship; Helena College

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THAT

Helena College University of Montana requests authorization from the Montana Board of Regents of Higher Education to make permanent the temporary C.A.S. degree in Sheet Metal Apprenticeship.

EXPLANATION

Helena College began offering this program in the 2014-2015 academic year. After the first year, it was determined by the instructors, industry, and advisory boards that this program would be better offered as a C.A.S. rather than an A.A.S. This was also supported by industry. As a C.A.S., students can complete the educational portion of the apprenticeship in a two-year timeframe versus a four-year timeframe, which is preferable. Industry also asked for some program course modification to include HVAC and refrigeration courses to meet industry needs, as well as less on-site time due to issues with students having to travel to the campus for specific training. The program now includes a stronger online component with quarterly meetings to address skills training and assessment. This program revision has been approved by our campus' Academic Standards and Curriculum Revision Committee and by Helena College Leadership.

Helena College established a temporary C.A.S. degree in June 2016 with Level I item 172-1902-LI0616. An Intent to Plan for the C.A.S. was done in February 2017 and the Board was notified the following May. Helena College now requests authorization to make the C.A.S. permanent. Following this approval, the College will then terminate the A.A.S. via a Level I submission.

ATTACHMENTS

Academic Proposal Request Form
Curriculum Proposal Form

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM **179-1901-R0518**   Submission Month or Meeting: **May 23-24, 2018**

Institution: **Helena College University of Montana**   CIP Code: **48.0506**

Program/Center/Institute Title: **C.A.S. degree in Sheet Metal Apprenticeship**

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

Helena College University of Montana requests authorization from the Montana Board of Regents of Higher Education to make permanent the temporary C.A.S. degree in Sheet Metal Apprenticeship.

Why

After the first year, it was determined by the instructors, industry, and advisory boards that this program would be better offered as a C.A.S. rather than an A.A.S. This was also supported by industry. As a C.A.S., students can complete the educational portion of the apprenticeship in a two-year timeframe versus a four-year timeframe, which is preferable. Industry also asked for some program course modification to include HVAC and refrigeration courses to meet industry needs, as well as less on-site time due to issues with students having to travel to the campus for specific training. The program now includes a stronger online component with quarterly meetings to address skills training and assessment. This program revision has been approved by our campus' Academic Standards and Curriculum Revision Committee and by Helena College Leadership. Helena College established a temporary C.A.S. degree in June 2016 with Level I item 172-1902-LI0616. An Intent to Plan for the C.A.S. was done in February 2017 and the Board was notified the following May. Helena College now requests authorization to make the C.A.S. permanent. Following this approval, the College will then terminate the A.A.S. via a Level I submission.

Resources

This change will require no additional resources.

Relationship to similar MUS programs

None.

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 current Sheet Metal Apprenticeship Program at Helena College University of Montana was approved by the BOR in 2014 and is currently being offered as an AAS program. Based upon faculty recommendations, advisory board recommendations and industry partner recommendations, this proposal is to change the current program to offer a Certificate of Applied Science (CAS) rather than the previously-approved Associate of Applied Science (AAS).

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]*

   A chief strategic goal of Helena College is workforce development. After analysis of the HVAC/Sheet Metal industry, reports from the Department of Labor and Industry, and requests from industry partners through advisory boards, it was noted that formal education and training were required to support the workforce needs of this industry. The revision of the current program will make the apprenticeship program more responsive to the needs of employers, as well as more accessible to potential students/apprentices. The College anticipates improved student retention and completion in this program as a result of the proposed refinements. Another goal at Helena College is community engagement. As an educational program tied to registered apprenticeship, this program reinforces a robust working relationship between the State of Montana Department of Labor & Industry, multiple industry partners and advisory board members, and Helena College. Finally, this program directly supports Governor Bullock's Main Street Montana initiative.

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

   After a pilot run of this program, it was determined by both the instructors as well as industry that the program could be condensed into a CAS. This program was previously approved as an AAS by the curriculum committee at Helena College (Academic Standards and Curriculum Review Committee/ASCRC); therefore, a revision of the program was submitted to the curriculum committee and then forwarded to administration to be approved and sent forward to the Board of Regents.

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	22
Credits in required courses offered by other departments	0
Credits in institutional general education curriculum	8
Credits of free electives	0
Total credits required to complete the program	30

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.

1. Apply theory as it relates to trade competencies.
2. Determine project requirements, including scope, assembly sequences, and required methods and materials, according to blueprints, drawings, and written or verbal instructions.
3. Lay out, measure, and mark dimensions and reference lines on material, such as roofing panels, according to drawings or templates, using calculators, scribes, dividers, squares, and rulers.
4. Fasten seams or joints together with welds, bolts, cement, rivets, solder, caulks, metal drive clips, or bonds to assemble components into products or to repair sheet metal items.
5. Install assemblies, such as flashing, pipes, tubes, heating and air conditioning ducts, furnace casings, rain gutters, or downspouts in supportive frameworks.
6. Convert blueprints into shop drawings to be followed in the construction or assembly of sheet metal products.
7. Fabricate or alter parts at construction sites, using shears, hammers, punches, or drills.
8. Select gauges or types of sheet metal or nonmetallic material, according to product specifications.
9. Maneuver completed units into position for installation, and anchor the units.
10. Transport prefabricated parts to construction sites for assembly and installation.
11. Drill and punch holes in metal, for screws, bolts, and rivets.

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 Governor's initiative of the Main Street Montana project as well as the Department of Labor and Industry have expressed needs in the area of workforce development as the workforce in Montana is aging and there is an increased need for skilled workers. This need has been expressed by our area industry partners as well as our advisory board and we are being proactive in trying to meet workforce demands in an apprenticeship style format so that workers can be working full-time while still receiving quality education.

6. **Similar programs.** Use the table below to identify and describe the relationship between any similar programs within the Montana University System. There are no other sheet metal training programs within the Montana University System.

Institution Name	Degree	Program Title

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]*

N/A

Montana Board of Regents
CURRICULUM PROPOSAL FORM

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 similar programs in the State of Montana at any other institutions.

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]*

It is the goal that this program be offered in the Fall of 2018. As the program will only take two semesters, it will be offered in the fall of each academic year. If there is a substantial need, the program may be offered twice a year with a fall start and spring start but that would only occur if industry demands it.

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

Fall Headcount Enrollment					Graduates				
AY18-19	AY19-20	AY20-21	AY21-22	AY22-23	AY18-19	AY19-20	AY20-21	AY21-22	AY22-23
15	15	15	15	15	15	15	15	15	15

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

This program will be promoted Statewide. A majority of the training will be online which will enable distance education for many students.

c. What is the initial capacity for the program?

Due to the fact that we will have two adjunct instructors the capacity will be 15 students per cohort.

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 dependent on if industry needs are being met and apprentices are being hired by industry partners.

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 will occur for this program in the same way it does for all of our institutional programs. Assessments will be performed at all levels starting at the course level, then program level, then institutional level. Assessments will be ongoing during the courses. Program assessments will be performed on a cyclical basis which will include yearly, mid-cycle, and end of cycle assessments.

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

Montana Board of Regents
CURRICULUM PROPOSAL FORM

Direct measures will include course assignments, tests, etc. Indirect measurements will be based on skill level performance evaluations to determine proficiency in technical skills.

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

Helena College sets high standards to ensure the quality of all of the programs offered at the institution. This program will be held to the same high standards. Students will not be allowed to progress without demonstrating competency in all areas.

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

No specialized accreditation will be sought—rather, this program will fall under the umbrella of NWCCU regional accreditation.

9. **Physical resources.**

a. Describe the <u>existing</u> 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]*

Due to the fact that this program was already in place as an AAS and is only changing to a CAS, all of the requirements to have the program at the facility have already been met. This program will be held in the existing computer labs, classroom space, and laboratory space at the campus at 2300 Airport Road. Due to the fact that this program will be primarily online with occasional site visits, this will not affect any other programs or space requirements.

b. List <u>needed</u> 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]*

All needs have already been met.

10. **Personnel resources.**

a. Describe the <u>existing</u> 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]*

As this program has not been in place since the pilot, there are currently no support staff for this program.

b. Identify <u>new</u> 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]*

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This program will require two adjunct instructors (which were previously used in the pilot of the program). Advisory board members and local industry experts have offered their support for this program and have been willing to teach various courses for this program.

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 information available to support this program.

   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]*

   Yes, there should not be a significant impact to accommodate 15 extra students in this program.

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	15 students x $1,614.50 tuition per semester = $24,217.50 x 2 semesters = $48,435.00/year	Same	Same
Expenditures	Adjunct instructors for 22 credits ($600/credit) $13,200.00 plus materials $3,000.00 Total $16,200.00/year	Same	Same
Net Revenue (revenues-expenditures)	$32,235.00	Same	Same

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

   There may be some equipment needs to support the program. If necessary, this equipment will be purchased with Perkins Funding.

   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]*

   N/A

   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.

   The only funding that will be required in addition to base funding would be the adjunct instructor's salaries (see above).

Montana Board of Regents
CURRICULUM PROPOSAL FORM

    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]*

       Some Perkins funding may be used to support 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.

There will most likely be a course fee added to those courses that will require consumable materials in order to offset the cost of consumable materials needed for those courses.

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:

Mary Lannert, Interim Associate Dean of Academic & Student Affairs

Chief Executive Officer:

Dr. Kirk Lacy, Interim Dean/CEO

Flagship Provost*:

Flagship President*:

*Not applicable to the Community Colleges.

Montana Board of Regents
CURRICULUM PROPOSAL FORM

I. PROJECTED STUDENT ENROLLMENT

	FY 18-19		FY 19-20		FY 20-21	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	7.5	15	7.5	15	7.5	15

II. REVENUE

	FY 18-19		FY 19-20		FY 20-21	
	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	$30,000		$30,000		$30,000	
5. Student Fees	$1,200		$1,200		$1,200	
6. Other (i.e., Gifts)						
Total Revenue	**$31,200**	**$0**	**$31,200**	**$0**	**$31,200**	**$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 18-19		FY 19-20		FY 20-21	
	On-going	One-time	On-going	One-time	On-going	One-time
A. Personnel Costs						
1. FTE						
2. Faculty						
3. Adjunct Faculty	$10,400		$10,400		$10,400	
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	$10,400	$0	$10,400	$0	$10,400	$0

	FY 18-19		FY 19-20		FY 20-21	
	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	$400		$400			$400
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	$400	$0	$400	$0	$0	$400

	FY 18-19		FY 18-19		FY 18-19	
	On-going	One-time	On-going	One-time	On-going	One-time
C. Capital Outlay						
1. Library Resources						
2. Equipment		$5,000				
Total Capital Outlay	$0	$5,000	$0	$0	$0	$0

	FY 18-19	FY 19-20	FY 20-21

Montana Board of Regents
CURRICULUM PROPOSAL FORM

	On-going	One-time	On-going	One-time	On-going	One-time
D. Capital Facilities Construction or Major Renovation	$0	$0	$0	$0	$0	$0

	FY 18-19		FY 19-20		FY 20-21	
	On-going	One-time	On-going	One-time	On-going	One-time
E. Other Costs						
1. Utilites	$200		$200		$200	
2. Maintenance & Repairs	$200		$200		$200	
3. Other:						
Total Other Costs	$400	$0	$400	$0	$400	$400
TOTAL EXPENDITURES:	$27,000	$5,000	$27,000	$0	$27,000	$0
Net Income (Deficit)	$42,000	$0	$42,000	$0	$42,000	$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.
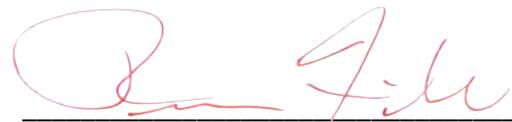
_____
Russ Fillner, Assistant Dean of Fiscal & Plant
Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana Board of Regents

CURRICULUM PROPOSAL FORM

Appendix A – Proposed New Curriculum

Sheet Metal CAS	Course	Credits	Lecture	Lab	Hours	Offered
Safety and Health in Construction (includes OSHA 10)	SHML 100	2	2	0	30	online/distance
Materials, Hand Tools, Rigging	SHML 120	2	1	1	45	online/shop
Sheet Metal Orientation/Shop Practices	SHML 110	2	1	1	45	online/shop
Technical Math	M111T	3	3	0	45	online/distance
Drafting and Layout Tools/Basic Fabrication	SHML 170	2	1	1	45	online/shop
Basic Blueprint Reading/Building Codes	SHML 200	2	2	0	30	online/distance
Basic Ductwork Installation/Hangers, Supports, Insulation	SHML 160	2	1	1	45	online/shop
Welding for Sheet Metal	SHML 265	2	1	1	45	online/shop
Advanced Layout/Plasma Cutting	SHML 270	3	2	1	60	online/shop
Installation of Air Distribution Accessories	SHML 225	1	0.5	0.5	30	online/shop
Heating, Ventilating, and Air Conditioning	SHML 220	2	2	0	30	online/distance
Refrigeration and Air Conditioning	SHML 230	2	2	0	30	online/distance
Technical Writing	WRIT 121	3	3	0	45	online/distance
Human Resources	HR 110	2	2	0	30	online/distance
Total Credits		30	23.5	6.5	555	

***Alternate Courses

Architectural Sheet Metal or Welding	SHML 290	2	1	1		online/shop
Stainless Steel Orientation or Refrigeration	SHML 250	2	1	1		online/shop

Montana University System
INTENT TO PLAN FORM

Program/Center/Institute Title: **Sheet Metal Certificate of Applied Science (C.A.S.)**

Campus, School/Department: **Helena College University of Montana** Expected Submission Date: **02/24/2017**

Contact Name/Info: **Tammy Burke, Trades Division Chair; tammy.burke@umhelena.edu; 406.447.6352**

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/preparingacademicproposals.asp.

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

   This program was already in place and being offered as an Associate of Applied Science (A.A.S.) following BOR approval in 2014. After the first year of offering this program (2014-2015 academic year) it was determined by the instructors, industry, and advisory boards that this program would be better offered as a C.A.S. rather than an A.A.S. This was also supported by industry as students can complete the educational portion of the apprenticeship in a two-year timeframe versus a four-year timeframe which is preferable. Industry also asked for some program course modification to include HVAC and refrigeration courses to meet industry needs as well as less on site time due to issues with students having to travel to the campus for specific training. The program now includes a stronger online component with quarterly meetings to address skills training and assessment. This program revision has been approved by our campus' Academic Standards and Curriculum Revision Committee and by Helena College Leadership. This program offering as a Certificate of Applied Science (C.A.S.) began in Fall 2016 after receiving temporary OCHE approval in June 2016. There are three admission times for this program – fall, summer, and spring – which allows for 30 students per year and up to 60 students if first and second year are being offered simultaneously.

   This program allows students to work full-time and obtain on the job training while also getting their educational component required by the State apprenticeship program. This allows students, and in some cases their employers, to pay for their education while in the program to avoid large amounts of debt upon completing the program. The average wage for a sheet metal worker is $25.09 and the mean annual is $52,190. This program also assists with workforce development in the State of Montana serving the sheet metal industry statewide. According to statistics from the Department of Labor and Industry as well as the Bureau of Labor statistics the sheet metal industry will grow by 7% over the next ten years (http://www.bls.gov/oes/current/oes472211.htm) Governor Bullock's Main Street Montana Project report in 2015 stated that construction has been one of Montana's fastest growing industries with employment growth at 5.3% over the year and 1,300 jobs added. As the workforce is aging this trend should continue to support this program as well as other construction programs.

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

   This change will result in a reduction of credit hours in the current A.A.S. program from 60 to 30, as well as decreasing the face-to-face instructional time. More courses will be provided in the online/hybrid format to provide greater access to students who are working full-time in diverse geographic locations.

Montana University System
INTENT TO PLAN FORM

The Governor's initiative of the Main Street Montana project as well as the Department of Labor and Industry have expressed needs in the area of workforce development as the workforce in Montana is aging and there is an increased need for skilled workers. This need has been expressed by our area industry partners as well as our advisory board and we are being proactive in trying to meet workforce demands in an apprenticeship style format so that workers can be working full-time while still receiving quality education.

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

The Sheet Metal Apprenticeship Program complements other existing design, fabrication/manufacturing, and maintenance programs, and represents Helena College's primary support of the construction industry at this time. A chief strategic goal of Helena College is workforce development. After analysis of the HVAC/Sheet Metal industry, reports from the Department of Labor and Industry, and requests from industry partners through advisory boards, it was noted that formal education and training were required to support the workforce needs of this industry. The revision of the current program will make the apprenticeship program more responsive to the needs of employers, as well as more accessible to potential students/apprentices. The College anticipates improved student retention and completion in this program as a result of the proposed refinements. Another goal at Helena College is community engagement. As an educational program tied to registered apprenticeship, this program reinforces a robust working relationship between the State of Montana Department of Labor & Industry, multiple industry partners and advisory board members, and Helena College. Finally, this program directly supports Governor Bullock's Main Street Montana initiative.

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

This is the only true sheet metal apprenticeship style program offered in the State. MSU-Northern offers some correspondence courses in sheet metal but has no actual credential associated with those courses.

Signature/Date

~~College/School Dean:~~

Chief Academic Officer: Dr. Chad Hickox, Associate Dean of Academic Affairs _____

Chief Executive Officer: Dr. Daniel Bingham, Dean/CEO _____
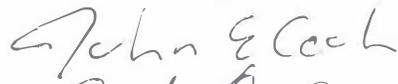
Flagship Provost*: _John E Cech_ 3/28/17

Flagship President*: _____
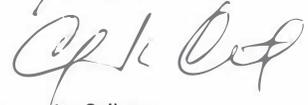
*Not applicable to the Community Colleges.

Date of Final Review: March 26, 2017

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

May 23-24, 2018

ITEM 179-1600-R0518

<u>Item Name</u>

**Request for authorization to revise the B.S. in Environmental Interpretation to B.S. in Environmental Sustainability.**

THAT

The University of Montana Western requests authorization from the Montana Board of Regents to revise the bachelor of science in Environmental Interpretations with options in Biological Naturalist and Geological Naturalist to the bachelor of science in Environmental Sustainability with an option in Environmental Interpretation. This request includes terminating the option of Biological Naturalist and Geological Naturalist and adding a new option in Environmental Interpretation.

EXPLANATION

The revision will produce more competitive program graduates for non-profit, environmental organizations, and land-trust organizations during a changing job market. Furthermore, most organizations in this field are more apt to recognize the program name of Environmental Sustainability. As a result these revisions to the program will make the education of the graduates more recognizable in their field.

ATTACHMENTS

Academic Proposal Form
Curriculum Proposal Form
Program Termination/Moratorium Form
Intent to Plan

Montana Board of Regents

ACADEMIC PROPOSAL REQUEST FORM

ITEM: **179-1900-R0518**

Submission Month or Meeting: **May 2018**

Institution: **The University of Montana Western**

CIP Code: **03.0199**

Program/Center/Institute Title: **B.S. in Environmental Sustainability**

Includes (please specify below): Online Offering _____ Options **Environmental Interpretation**

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.

X   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**

X   **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)

X   **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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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 University of Montana Western is requesting approval to revise the B.S. in Environmental Interpretations with options in Biological Naturalist and Geological Naturalist to a B.S. in Environmental Sustainability with an option in Environmental Interpretation.

Why: This proposal is designed to enhance employability, without changing the educational goal of the original Environmental Interpretation degree to prepare science-literate students who can effectively communicate with the public. This change will make the environmental studies graduates more competitive in a changing job market and as a result better prepared for placement with non-profit, environmental organizations and land-trust organizations. Most of these organizations do not recognize the previous title "Environmental Interpretation." As a result, the degree needs to be updated to something recognizable by employers.

Resources: No additional faculty or funding is required to facilitate this change to the existing degree.

Relationship to similar MUS programs: While an Option in Sustainability Studies currently exists at UM Missoula, neither UM Missoula or MSU offer a degree program in Environmental Sustainability. UM Missoula and MSU-B offer a degree program in Environmental Studies and MSU offers an Environmental Studies Option, so to our knowledge there is no duplication of existing efforts in the MUS. In the future, additional Options could be offered as the program expands, but for now only one Option (focus area): Environmental Interpretation will exist.

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</div>

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 University of Montana Western plans to revise the bachelor of science in Environmental Interpretation with options in Biological Naturalist and Geological Naturalist to a bachelor of science in Environmental Sustainability with an option in Environmental Interpretation. While minimal changes will occur in the major core of the program, this change will require the termination of the Biological Naturalist and Geological Naturalist options and the addition of a new option, Environmental Interpretation.

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]*

   As this is only a revision to the current offered Environmental Interpretation degree, the program remains in alignment with the University of Montana Western's institution mission and core themes.

   Montana Western's mission statement notes the importance of "academic excellence by sustaining a culture of concentrated experiential education." The Environmental Sciences department conducts regular assessment and planning related to the experiential learning aspects of their program. These practices will transition from the bachelor of science in Environmental Interpretation to the revised bachelor of science in Environmental Sustainability. As a result, the department will continue their leadership in producing program graduates that have real world experience as they transition from college into the job-market.

   This change also aligns with all three core themes of the University. By proposing this change, the program used their assessment process to align with Core Theme 1 to improve the undergraduate education and experiential learning of the program. In addition it supports retention, student success efforts (Core Theme 2), and stewardship (Core Theme 3) by updating to changing job-market demands.

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

   The department conducted an assessment process which included the tracking of job opportunities through interviews with environmental organizations throughout the state. Through their research, the Environmental Sciences department recognized a growing need for completers with science literacy and excellent communication. The revised program meets these new demands in a changing job market.

   During the 2017-18 academic year, a curriculum proposal advanced through the campus approval process including: an approval by the department; initial approval by the Provost for resource consideration; a review by the campus department chairs; approval by faculty senate; concluding with a final approval from the Provost and the Chancellor.

4. **Program description.** Please include a complete listing of the proposed new curriculum in Appendix A of this document. Appendix A provides the revised program Bachelor of Science in Environmental Sustainability

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with an Option in Environmental Interpretation. Appendix B provides the previous program structure for comparison.

a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	60-68
Credits in required courses offered by other departments	12-20
Credits in institutional general education curriculum	32
Credits of free electives	8
Total credits required to complete the program	120

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 outcomes remain the same under the new title of the degree which are:

Program graduates will:
*   Demonstrate knowledge about the natural processes that create and shape our environment.
*   Acquire skills and methods necessary to communicate discipline-specific knowledge to others.
*   Demonstrate knowledge of the concepts central to his/her field of study.

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 change to the title of this program and the addition of an Environmental Interpretation Option in the major will make UMW students more competitive in a changing job market. Job placement is the top priority in the Environmental Sciences Department, and this revision will better prepare students for job placement with non-profit, environmental organizations and land-trust organizations. By tracking job opportunities through interviews with these types of organizations it is clear that these areas are growing and in need of students with science literacy and excellent communication skills. Most of these organizations do not recognize the previous title of the degree "Bachelor of Science in Environmental Interpretation." As a result, the department believes that UMW needs to change the title to something recognizable by employers and provide an environmental interpretation focus in the option areas of this major. In summary, this change to the degree is designed to enhance employability, without changing the educational goal of the original Environmental Interpretation degree of preparing science-literate students who can effectively communicate with the public.

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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
University of Montana	Option	Sustainability Studies
Montana State University, Billings	BS	Environmental Studies
Montana State University	BS	Environmental Studies

   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]*

   While an Option in Sustainability Studies currently exists at UM Missoula, neither UM Missoula nor MSU offer a degree program in Environmental Sustainability. UM Missoula and MSU-B offer a degree program in Environmental Studies and MSU offers an Environmental Studies Option, so to our knowledge there is no direct duplication of existing efforts in the MUS. In the future, additional Options could be offered as the program expands, but for now only one Option (focus area): Environmental Interpretation will exist.

   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 original Intent to Plan requested a title change to bachelor of science in Environmental Studies with an option in Environmental Interpretation. Because there was concern that this title change might pull attention from existing programs in the MUS, the department revisited their program and updated the Intent to Plan to bachelor of science in Environmental Sustainability. This change addressed the concern of the other institutions in the MUS, but did not take away from Montana Western's goals for the restructure.

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 revised program will be offered by the start of the fall 2018 (AY19) semester.

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

Fall Headcount Enrollment					Graduates				
AY 19	AY 20	AY 21	AY 22	AY 23	AY 22	AY 23	AY 24	AY 25	AY 26
18	26	34	42	48	8	10	12	15	18

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

On average 5-8 new students declare the currently existing Environmental Interpretation major each fall. Minimally these students will now declare the Environmental Sustainability program. Furthermore, during the first year there will be approximately 10-12 students that were previously pursuing the Environmental Interpretation degree who will update to the Environmental Sustainability. Given these two student populations, the initial fall 2018 cohort for the Environmental Sustainability program will be close to 15-20 students. Then each following year an estimate of 8 newly declared transfer or first time students will be added to the enrollment projection.

Because some of the existing Environmental Interpretation students may update their degree to Environmental Sustainability, the program may have completers as early as spring 2019. However, this will only be one to three students each year. The revised program will most likely experience sustained completers beginning in annual year 2022. AY22 is the four-year graduation point for any new program students entering in fall 2018.

Program graduates from AY22 forward are projected based on the existing transfer and first time graduation rates and potential for a slight increase based on marketability of the revised degree.

c. What is the initial capacity for the program?

The initial capacity of the program is 50 students. This capacity assumes students are either completing the previous Environmental Interpretation program or transitioning to the revised program of Environmental Sustainability.

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 program will recruit students seeking engagement in subjects related broadly to environmental sustainability and to retain these students, through high impact practices using Experience One, to produce students able to meet the program learning objectives. Objectives are designed to produce students able to work within fields related to environmental sustainability or to produce students with strong communication skills and an understanding of the environment and sustainability to serve in many careers.

We will track recruitment metrics, engagement levels, retention, skill mastery and completion metrics. Program learning outcomes will be adjusted proactively to align with needs in professional and academic fields related to environmental sustainability. Low values within metrics that define program success will initiate investigations into why numbers are low. Initially, program adjustments will be made to improve numbers. If program success becomes low across all measures for a sustained period, program overhaul or disbanding may be required.

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]*

Learning outcomes within courses will be aligned with program outcomes. Specific activities within courses will be used to assess learning outcomes in lower division and then upper division courses. Upper

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division outcome results will measure overall student mastery of material through completion of the program.

An example of a table used to assess a student learning outcome in an upper and lower division course:

OUTCOME: Give oral presentations on original research and topics within environmental sustainability

LEVEL & Course	Assignment	Shows strong development for level	Developing	Not Developed
ENVS 275	Final Individual Presentation			
Research Sym. Presentation (494P)	Final Oral Presentation			

Assessment will take place within courses whenever they are offered and will be compiled by the department annually.

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

Use of rubrics on assignments that relate to program outcomes will help with ensuring program standards are met and will be a direct measure to assess student learning. The department also uses surveys related to course content that we will continue to use to indirectly measure student engagement, study skills and issues of retention and success.

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

Annually the department compiles assessment data and writes up an assessment report. As part of the annual assessment, we review any relevant data related to teaching, learning and program structure. Learning outcomes, department curricular structure and the department mission statement are checked for alignment with common student career and educational goals. The department strives to support skill development that will lead to student success well-beyond the University of Montana Western campus. Because we already annually visit these data, and have a planned discussion of the results, the department will continue to do so with the Environmental Sustainability Program to maximize the success of the program.

We also have regularly scheduled department meetings throughout the academic year to ensure we are proactive in maintaining program quality and addressing issues as they arise.

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

We do not need any specialized accreditation for the Environmental Sustainability Program. University accreditation will support the legitimacy of the program.

9. Physical resources.

    a.   Describe the <u>existing</u> 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 Environmental Sciences program has three dedicated classrooms, a dedicated laboratory space with instrumentation, and shared usage of a computer lab in Block Hall. We have two small storage rooms for equipment that are part of one of the classrooms, as well as two larger storage areas for field equipment located in the basement. The ES program has been able to upgrade and purchase new equipment over the past few years to handle the larger number of students in our courses and can provide professional grade equipment for in-field training. In addition, we have usage of classroom space and computer labs in the STC building.

    b.   List <u>needed</u> 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 facilities, equipment, space, laboratory instruments, etc. to deliver this program are already in place as this is a revision of a previously existing program offered at the University of Montana Western.

10. Personnel resources.

    a.   Describe the <u>existing</u> 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 Environmental Sciences Department has had the necessary faculty instructional support for this program for well over a decade. Along with our BS in Environmental Sciences, we have offered a BS in Environmental Interpretation, and this proposal only changes the title of the EI degree with a few, minor changes to the packaging of coursework, almost all of which is currently offered by the department. All courses in the core are offered in an every-year rotation, and all courses in the option are offered every other year. The existing faculty have these courses built into their rotation, so there will be zero impact on existing programs. The proposal requires no additional administrative resources to implement or sustain the program. The quality and productivity of the existing programs have been excellent during the many years the department has offered the Environmental Science and Environmental Interpretation programs. Our students are required to do internships with companies and agencies in their disciplinary area, and they utilize the many examples of their work in our experiential, project-based Experience One courses to secure employment shortly after graduation. Students have evidence of what they can do, not just what courses

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they took, so the quality is very high. Based on tracking of graduates using social media, we know that approximately 90% of our students find a job in their discipline within a year of graduation. The name change to Environmental Sustainability will simply expand the available job market to include the growing, private, non-profit land and water conservation industry in Montana and elsewhere.

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]*

There are no new personnel required for the proposed program. Almost all of the courses are currently being offered by the faculty in the Environmental Sciences Department. The existing BS Environmental Interpretation program has been available to students for well over a decade using the existing faculty resources, so that will not change with this name change and slight reorganization of the required courses.

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]*

Resources from the library are more than adequate to meet the needs of this program. The requests for this program are submitted as part of the Environmental Sciences department regular requests for library and information resources.

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]*

Student services are already in place to support this program. There are no implications as the revision will not place any additional strain on existing student services.

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

The program is revision of one of the current programs. It will require no new funding or reallocation of funds.

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	669,398	685,031	698,606
Expenditures	663,185	678,818	692,393
Net Revenue (revenues-expenditures)	0	0	0

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

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There are no new expenses.

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]*

There is no fund reallocations involved in this proposal.

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 new base funding will be required.

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.

Fees will be equivalent to the currently existing program.

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

Budget sheet is included with this curriculum proposal

Signature/Date

College or School Dean:

Deb Hedeen   4·16·18

Chief Academic Officer:

Deb Hedeen   4·16·18

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Chief Executive Officer: B Weatherly 4/16/18

Flagship Provost*:

Flagship President*:

*Not applicable to the Community Colleges.

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Appendix A – Proposed New Curriculum

Bachelor of Science: Environmental Sustainability (Updated Program)

Credit Requirements

GENER AL EDUC ATION	**32**
Select the following course for Behavior & Social Science	
PSYX 100 Introduction to Psychology	4
Select the following course for Mathematics	
STAT 121 Probability	4
Select the following course as one of the Natural Science requirements	4
BIOB 160 Principles of Living Systems	
GEO 101 Introduction to Physical Geology	(4)
GEO 103 Introduction to Environmental Geology	(4)
GEO 107 Natural Hazards	(4)
ENVIRONMENTAL SUSTAINABILITY MA JOR CORE	**52**
BIOE 250 Conservation Biology	4
CHMY 121 Introduction to Chemistry	4
ENSC 120 Introduction to Ethnobotany	4
ENSC 269 Maps, Compass and GPS	2
ENSC 384 Geographic Information Systems Workshop	2
ENSC 291 Environmental Research and Writing	4
ENSC 429 Environmental Field Studies	4
ENST 191 Living Interpretation	4
ENST 275 Environmental Interpretation I	4
ENST 384 Environmental Policy	4
ENST 472 Environmental Education	4
ENST 475 Environmental Interpretation II	4
GEO 110 Weather and Climate	4
GEO 230 Geology of American West	4
INTERNSHIP	**4**
ENSC/ENST 494P Seminar: Public Presentation	1
Select 3 credits from the following:	
ENST 498 Internship/Cooperative Education	(3)
ENST 499 Senior Thesis/Capstone	(3)
ENVIRONMENTAL INTERPRETATION OPTIONS	**24**
Environmental Interpretation	(24)
ELEC TIVES	**8**
Select any college-level catalog courses to bring degree total to 120 credits.	
BS : ENVIRONMENTAL STUDIES TOTA L CREDIT S	**120**

Environmental Sustainability Option Course Summary

ENVIRONMENTAL INTERPRETATION OPTION	**24**
BIOB 170 Principles of Biological Diversity	4
BIOO 220 General Botany	4
GEO 309 Sedimentation and Stratigraphy	4
GEO 378 Surficial Processes	4
Select 2 courses/8 credits from the following:	
BIOE 220 Alpine Community Ecology	(4)
BIOE 370 General Ecology	(4)
BIOO 435 Plant Systematics	(4)
GEO 391 Carbon Cycle and Climate Impacts	(4)
GEO 315 Structural Geology	(4)

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Appendix A – Proposed New Curriculum

Bachelor of Science: Environmental Interpretation (Previous Program)

Credit Requirements

GENER AL EDUC ATION	**32**
Select the following course for Behavior & Social Science	
PSYX 100 Introduction to Psychology	4
Select the following course for Mathematics	
STAT 121 Probability	4
Select the following course as one of the Natural Science requirements	4
BIOB 160 Principles of Living Systems	
ENVIRONMENTAL INTERPRETATION MA JOR CORE	**52**
ANTY 220 Culture and Society	4
BIOB 170 Principles of Biological Diversity	4
BIOO 120 Introduction to Ethnobotany	4
BIOO 220 General Botany	4
CHMY 121 Introduction to Chemistry	4
ENST 275 Environmental Interpretation I	4
ENST 384 Environmental Policy	4
ENST 475 Environmental Interpretation II	4
ENVS 260 Wildlands Skills: Night Sky	2
ENVS 269 Wildlands Skills: Map/Comp/GPS	2
GEO 103 Intro to Environmental Geology	4
GEO 230 Geology of American West	4
NRSM 441 Sustainable Resource Management	4
Select 1 course/4 credits from the following:	
STAT 217 Intermediate Statistical Concepts	(4)
STAT 233 Biostatistics	(4)
INTERNSHIP	**4**
ENSC/ENST 494P Seminar: Public Presentation	1
Select 3 credits from the following:	
ENSC/ENST 498 Internship/Cooperative Education	(3)
ENSC/ENST 499 Senior Thesis/Capstone	(3)
ENVIRONMENTAL INTERPRETATION OPTIONS	**24**
Select 1 option from the following:	
Biological Naturalist	(24)
Geological Naturalist	(24)
ELEC TIVES	**8**

Select any college-level catalog courses to bring degree total to 120 credits.

Environmental Interpretation Options Course Summary

BIOLOGIC AL NATUR ALIST OPTION	**24**
BIOE 250 Conservation Biology	4
BIOE 370 General Ecology	4
BIOO 435 Plant Systematics	4
ENSC 429 Environmental Field Studies	4
Select 2 courses/8 credits from the following:	
BIOE 425 Wetlands Ecology	(4)
BIOO 470 Ornithology	(4)
BIOO 475 Mammalogy	(4)
WILD 471 Wildlife Ecology and Management	(4)
WILD 473 Fisheries Ecology and Management	(4)
GEOLOGIC AL NATUR ALIST OPTION	**24**
GEO 226 Rocks, Minerals, and Resources	4
GEO 309 Sedimentation and Stratigraphy	4
GEO 315 Structural Geology	4
GEO 378 Surficial Processes	4
Select 2 courses/8 credits from the following:	
ENSC 348 Soil Science	(4)
ENSC 429 Environmental Field Studies	(4)
GEO 421 Hydrology	(4)
GEO 470 Geological Research and Writing	(4)

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As the Environmental Sustainability program will be an integrated part of the budget of the Environmental Sciences department, the projections (enrollment numbers, revenue, and expenditures) is based on the entire department, not just the Environmental Sustainability program. FTE calculation is based on the Montana State formula total credit hours/fifteen=FTE

I PROJECTED STUDENT ENROLLMENT

	FY 19		FY 20		FY 21	
	FTE	Headcount	FTE	Headcount	FTE	Headcount
Projected enrollments	83.8	81	87.94	85	92.08	89

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	669,398		685,031		698,606	
3. Federal						
4. New Tuition Revenues from Increased Enrollments						
5. Student Fees						
6. Other (i.e., Gifts)						
Total Revenue	$669,398	$0	$685,031	$0	$698,606	$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	7		7		7	
2. Faculty	493,478		503,348		513,414	
3. Adjunct Faculty						

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4. Graduate/Undergrad Assistants						
5. Research Personnel						
6. Directors/Administrators						
7. Administrative Support Personnel						
8. Fringe Benefits	169,707		175,470		178,979	
9. Other:						
Total Personnel and Costs	**$663,185**	**$0**	**$678,818**	**$0**	**$692,393**	**$0**

	FY 19		FY 20		FY 21	
	On-going	One-time	On-going	One-time	On-going	One-time
B. Operating Expenditures						
1. Travel	200		200		200	
2. Professional Services						
3. Other Services						
4. Communications	3,013		3,013		3,013	
5. Materials and Supplies	3,000		3,000		3,000	
6. Rentals						
7. Materials & Goods for Manufacture & Resale						
8. Other:						
Total Operating Expenditures	**$6,213**	**$0**	**$6,213**	**$0**	**$6,213**	**$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						
Total Capital Outlay	**$0**	**$0**	**$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:	$669,398	$0	$685031	$0	$698606	$0
Net Income (Deficit)	$0	$0	$0	$0	$0	$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.

Susan D. Bridge
_____
Campus Chief Financial Officer Signature

Chief Financial Officer comments:

Montana University System
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Program/Center/Institute Title: **B.S. Environmental Sustainability with an option in Environmental Interpretation**

Campus, School/Department: **The University of Montana Western/Environmental Sciences**

Expected Submission Date: **Fall 2017**

Contact Name/Info: **Dr. Spruce Schoenemann/spruce.schoenemann@umwestern.edu/ (406) 683-7624**

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/preparingacademicproposals.asp.

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

   While the B.S. in Environmental Sustainability is a retitle/revision (Level I) of Montana Western's currently existing B.S. in Environmental Interpretation, the program will include a new 24 credit option, Environmental Interpretation, which is a blending of the existing Geological Naturalist and Biological Naturalist Options into a single Option.

2) **Describe the need for the program/center/institute. Specifically, how the program/center/institute meets current student and workforce demands. (Please cite sources).**
   This proposal is designed to enhance both recruitment and employability while still focusing on the educational goal of the original Environmental Interpretation degree to prepare science-literate students who can effectively communicate with the public. The Environmental Interpretation Option within the Environmental Sustainability bachelor degree will make our graduates more competitive in a changing job market and as a result better prepared for placement with non-profit, environmental organizations, land-trust organizations, watershed coalitions, and green jobs, many of which are prevalent here in the state of Montana.

   https://www.thebalance.com/top-jobs-for-environmental-Sustainability-science-majors-2059630
   https://www.fastcompany.com/1129671/ten-best-green-jobs-next-decade
   https://www.monster.com/career-advice/article/environmental-career-options-0417
   http://environment.nationalgeographic.com/environment/sustainable-earth/11-of-the-fastest-growing-green-jobs/ - /rio-20-green-jobs-solar-panel-testing_55051_600x450.jpg

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

   As the addition of the 24 credit Environmental Interpretation option is a part of the Level 1 retitle/revision to the existing B.S. in Environmental Interpretation the program remains in alignment with the University of Montana Western's institution mission and core themes.

   Western's mission states the importance of "academic excellence by sustaining a culture of concentrated experiential education". The Environmental Sciences department conducts regular assessment and planning related to the experiential learning aspects of their program. These practices will transition from the B.S. in

Montana University System
INTENT TO PLAN FORM

Environmental Interpretation to the proposed B.S. in Environmental Sustainability with an Option in Environmental Interpretation. As a result, the department will continue their leadership in experiential learning by producing graduates that have real-world experience as they move into the job-market.

This change also aligns with all three core themes of the University. By proposing this change, the program used their assessment process to align with Core Theme 1 to improve the undergraduate education and experiential learning of the program. In addition it supports retention, student success efforts (Core Theme 2), and stewardship (Core Theme 3) by updating to changing job-market demands.

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

While an Option in Sustainability Studies currently exists at UM Missoula, neither UM Missoula or MSU offer a degree program in Environmental Sustainability. UM Missoula and MSU-B offer a degree program in Environmental Studies and MSU offers an Environmental Studies Option, so to our knowledge there is duplication of existing efforts in the MUS. In the future, additional Options could be offered as the program expands, but for now only one Option (focus area): Environmental Interpretation will exist.

Signature/Date

College/School Dean: _Deb Hedeen_   1·19·18

Chief Academic Officer: _Deb Hedeen_   1·19·18

Chief Executive Officer: _B Weatherly_   1·19·18

Flagship Provost*:

Flagship President*:

*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.

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PROGRAM TERMINATION/MORATORIUM FORM

Please complete the following questionnaire prior to submission of a program for termination or placement into moratorium. Please add additional comments beneath each question where applicable.

Program Title: **Options in Biological Naturalist and Geological Naturalist**

Program is being _____ **Placed into moratorium**   __X__   **Terminated**

1. **Are there currently students enrolled in the program? (If yes, please answer questions a - c below.)**   Y: __X__ N: _____

    a.) **Have all students currently enrolled in the program been met with and informed of the impending termination/moratorium?**   Y: __X__ N: _____

    b.) **What is the expected graduation date of all students from the program?** As late as Spring 2023

    c.) **Have course offerings been planned to allow for students in the program to complete the degree in a reasonable fashion?**   Y: __X__ N: _____

2. **Will any faculty layoffs or changes in working conditions occur because of the termination/moratorium? (If yes, please answer questions a - b below.)**   Y: _____ N: __X__

    a.) **Have the faculty affected by the program termination/moratorium been notified?**   Y: _____ N: _____

        NA

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PROGRAM TERMINATION/MORATORIUM FORM

    b.) Please describe any layoffs that will occur including the date expected?

       NA

3. **The following parties, where applicable, have been notified of the impending program termination/moratorium. (Please mark X for completed, NA for not applicable):**

    a.) Internal Curriculum Committees   <u>   NA   </u>

    b.) Faculty Senate   <u>   X   </u>

    c.) Program Public Advisory Committee   <u>   NA   </u>

    d.) Articulation Partners   <u>   NA   </u>

4. **Has there been any negative feedback received from students, faculty, or other constituents regarding the impending termination/moratorium? (If yes, please explain below.)**   **Y:** <u>   </u> **N:** <u> X </u>

    The program these two options exist under (Environmental Interpretation) is being revised to a new title and structure (Environmental Sustainability). The program still exists, only the options are being terminated. UMW anticipates that the restructure will be a stronger more marketable degree for students.