MEMORANDUM

DATE: Summer Submissions, 2009

TO: Chief Academic Officers Montana University System

FROM: Sylvia Moore, Deputy Commissioner of Academic & Student Affairs &
Mary Moe, Deputy Commissioner of Two-Year Education

RE: Level II Submission Items

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, you need to notify the Office of the Commissioner of Higher Education by September 8, 2009. That notification should be directed to Sarah Elkins, administrative assistant for Academic & Student Affairs. If Sarah does not hear from you, in writing, by September 8th, OCHE will assume that the proposals have your approval.

The Level II proposals are as follows:

Montana State University – Great Falls College of Technology

- Montana State University-Great Falls College of Technology (herein after "the College") is requesting formal Level II approval by the Montana Board of Regents to offer a Certificate of Applied Science and an Associate of Applied Science in Construction Technology – Carpentry *ITEM143-2854-R0509 ITEM143-2854-R0509_sm*

Montana State University – Billings

- MSU Billings has requested permission to offer a Bachelor of Fine Arts in Art degree *ITEM144-2701-R0809 ITEM144-2701-R0809_sm ITEM144-2701-R0809_sm2*

The University of Montana – Missoula

- UM Missoula requested permission to offer a Major in Central and Southwest Asian Studies *ITEM144-1001-R0709 ITEM144-1001-R0709_sm*
- UM Missoula submitted a request to offer a BS in Geography *ITEM144-1002-R0709 ITEM144-1002-R0709_sm*

The University of Montana – Western

- UM Western submitted a request to alter the structure of the science department *ITEM144-1601-R0809 ITEM144-1601-R0809_sm1 ITEM144-1601-R0809_sm2*

The University of Montana – Helena College of Technology

- UM Helena COT requested permission to offer an A.A.S. degree in Water Resources with options in Water Quantity and Water Quality *ITEM144-1901-R0709 ITEM144-1901-R0709_sm*

ITEM 143-2854-R0509 **Authorization to offer a Certificate of Applied Science and an Associate of Applied Science in Construction Technology – Carpentry; Montana State University - Great Falls College of Technology**

THAT: The Montana Board of Regents approves Montana State University- Great Falls College of Technology (MSUGF) to offer a Certificate of Applied Science and an Associate of Applied Science in Construction Technology - Carpentry. The College received temporary approval through the Level I process in May, 2008. We request formal approval through the Level II at this time.

EXPLANATION: To expedite the implementation process of our Certificate of Applied Science and Associate of Applied Science in Construction Technology - Carpentry, MSUGF submitted and was granted temporary approval by the Montana Board of Regents through a Level I process in May, 2008. The College is now requesting formal approval by the Board to offer a Certificate of Applied Science and an Associate of Applied Science in Construction Technology - Carpentry.

The College has strong programs in healthcare, business and technology, and is working to build their trades offerings. Without trades programs, the institution cannot respond to industry demands. In fact, until last year, Great Falls was the only community with a Montana University System presence and no two-year construction trades programming.

The 2007 Legislature appropriated $3 million for the addition of a construction trades building on the College campus. Additional startup funds ($234,455) from the state One-Time-Only program were used to accelerate implementation of skilled trades programming, including construction trades, and help support these fledgling programs until they are established. The CAS and AAS in Carpentry have helped to form a solid foundation for this important workforce segment. Just as it was in the temporary Level I proposal of last year, this program is being proposed for implementation as a 1+1 program whereby students may complete the first year and receive the CAS credential, and/or continue into the second year for the AAS degree.

M O N T A N A B O A R D O F R E G E N T S

LEVEL II REQUEST FORM

Item No.:	**143-2854-R0509**	**Date of Meeting:**	**May 28-29, 2009**
Institution:	**Montana State University-Great Falls College of Technology**		
Program Title:	**Construction Technology: Carpentry CAS and AAS Programs**		

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

- ☐ 1. Change names of degrees (e.g. from B.A. to B.F.A.)
- ☐ 2. Implement a new minor or certificate where there is no major or no option in a major;
- ☐ 3. Establish new degrees and add majors to existing degrees;
- ☐ 4. Expand/extend approved mission; and
- ☒ 5. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

Montana State University-Great Falls College of Technology (herein after "the College") is requesting formal Level II approval by the Montana Board of Regents to offer a Certificate of Applied Science and an Associate of Applied Science in Construction Technology - Carpentry. The College received temporary approval through the Level I process in May, 2008. We request formal approval through the Level II at this time. Supporting documents follow.

CONSTRUCTION TECHNOLOGY - CARPENTRY
MSU-GREAT FALLS COLLEGE OF TECHNOLOGY

Curriculum Proposal

1. Overview

To expedite the implementation process of our Certificate of Applied Science and Associate of Applied Science in Construction Technology - Carpentry, MSU-Great Falls (herein after "the College") submitted and was granted temporary approval by the Montana Board of Regents through a Level I process in May, 2008. The College is now requesting formal approval by the Board to offer a Certificate of Applied Science and an Associate of Applied Science in Construction Technology - Carpentry.

The College has strong programs in healthcare, business and technology, and is working to build their trades offerings. Without trades programs, the institution cannot respond to industry demands. In fact, until last year, Great Falls was the only community with a Montana University System presence and no two-year construction trades programming.

The 2007 Legislature appropriated $3 million for the addition of a construction trades building on the College campus. Additional startup funds ($234,455) from the state One-Time-Only program were used to accelerate implementation of skilled trades programming, including construction trades, and help support these fledgling programs until they are established. The CAS and AAS in Carpentry has helped to form a solid foundation for this important workforce segment. Just as it was in the temporary Level I proposal of last year, this program is being proposed for implementation as a 1+1 program whereby students may complete the first year and receive the CAS credential, and/or continue into the second year for the AAS degree.

2. Need

a. *To what specific need is the institution responding in developing the proposed program?*

The Montana Department of Labor and Industry projects growth statewide in most industrial trades sectors from 2004-2014. Specifically, it projects growth for carpenters at 24.6% (3,300 jobs) and construction laborers at 20.6% (1,000 jobs), cumulatively representing one of the fastest growing and largest industries with anticipated employment openings generated both from new jobs created and from replacing retiring workers. The demand is projected to outnumber the workers available.

A 2005 environmental scanning report by Paulien & Associates recommended that the College develop construction trades programs, pointing to construction as one of the largest occupational categories "with more than 1700 annual openings per year in construction trades and more than 2,100 in all construction-related occupations."

Northcentral Montana, like Eastern Montana, lags behind other regions in economic health. The region's population is declining and aging, indicating worsening worker shortages. The region's economy cannot grow without a skilled workforce, and this regional stagnation will drag down Montana's overall economic recovery. However, with the appropriate training programs in trades areas, the resulting skilled workforce would allow the state to capitalize on economic opportunities.

Further, when companies are confident they can find the necessary and qualified workers, they can pursue contracts and expansion projects they might otherwise avoid, improving competition and fueling further growth. Skilled worker availability is crucial for industry recruitment.

b. How will students and any other affected constituencies be served by the proposed program?

Local industry representatives have bemoaned the time and expense they incur with workers who have no knowledge or skills in basic industrial subjects, such as safety or reading blueprints. These workers frequently must spend extended periods of time in temporary or low-paying entry-level positions while they gain these skills on the job. Employees who entered the workforce with these skills would be able to advance to higher-paying, permanent positions much faster.
The Montana Department of Labor reports construction worker wages at $15-$20 per hour depending on the location and duties. The College's carpentry program will significantly reduce the amount of time workers must spend in on-the-job training, moving them more quickly into higher paying, more responsible positions.

c. What is the anticipated demand for the program? How was this determined?

Demand was originally estimated primarily from the enrollments in the College's outreach programs, student interest gathered during recruiting trips, the annual construction trades jobs fair held on the College campus, and the experience of other construction trades programs in the state. Initial enrollment was estimated at 15 students in the first year, then to 30 students when both first and second year students are enrolled. We currently have 13 students enrolled in both programs. 11 of those have declared the AAS and 2 the CAS. We will have 3 students graduate with the CAS in May, 2009. We project that we will have an intake of approximately 8 more for fall 2009. Four new students have pre-registered to date. One of those has declared the CAS and 3 the AAS. We will have several registrations for new students over the course of the summer and expect the program to be at capacity by fall start of classes.

3. Institutional and System Fit

a. What is the connection between the proposed program and existing programs at the institution?

The College first offered welding at its Bozeman campus (fall semester 2007), expanding that program to the Great Falls campus fall 2008. Both the construction trades and welding programs in Great Falls share space in the newly completed Construction and Industrial Trades Building. Those two programs join auto body as the College's only trades-related programming. All trades programs share some resources, and related instruction designed for the trades industries (i.e. MATH 102: Math for the Trades).

b. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

No. The program will be located in the Construction and Industrial Trades Building. The carpentry programs have a dedicated bay and share a classroom with other trades programs in that facility. Some classroom work may be scheduled in the main campus building, but classroom space is adequate for that need.

c. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

There is no other construction trades program at the Great Falls campus.

d. How does the proposed program serve to advance the strategic goals of the institution?

In alignment with the strategic plan of the Montana Board of Regents, the College is committed to increasing participation of students in post-secondary education, specifically two-year programming, as well as increasing the number of students earning a credential. In addition, preparing people for and placing them into high-demand jobs is at the core of the College's mission. Although the College is a leader in educating students for healthcare professions, it has been notably lacking in programming for careers in the trades industries. Expansion into this sector has been a priority for the past several years. Now that we've begun that effort, we plan to continue to grow in this area.

e. *Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.*

All of the state's colleges of technology, except Great Falls, have a variety of industrial trades programs. The need for more industrial trades programming is demonstrated by the award of a Department of Labor grant to MSU-Billings COT to develop a construction trades program that could be adopted throughout the state. The BILT program assisted the College in its program development, offering advice on curriculum, equipment and building design and providing curriculum materials, such as building plans that can be used in the practical areas of the program. The College also has received advice and assistance from UM-Helena COT and Flathead Valley Community College.

This program is duplication, but a deliberate one based on the previously cited Department of Labor reports of current demand and predictions of future demand and job growth in the construction industry. This demand is manifested in all areas of the state and the geographic separation between the campuses makes additional programs necessary to fill regional needs.

4. Program Details

a. *Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.*

The programs' curricula are included in Appendix A.

5. Resources

a. *Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.*

The College hired one construction trades faculty to teach the 26 credits of carpentry-specific courses fall 2008. Existing faculty and adjunct faculty teach the required general education classes.

The budget for FY2009 was estimated at $62,088. The College was awarded $234,455 in One-Time-Only state funds to cover operating costs for FY2008 and FY2009 in construction trades and an as-yet, undeveloped program in industrial trades. In addition, Carl Perkins monies were utilized for the start-up of this program. For the carpentry program (CAS and AAS), the estimated appropriations would be $24,544 plus the tuition paid by students at $32,448. The total, then, sits at $56,992.

b. *Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.*

There has been a substantial need for startup expenses for equipment and curriculum development. The College committed federal Carl Perkins funding to hire consultants and faculty to help develop and refine the curriculum in FY2008. Additionally, the College was awarded $234,455 in One-Time-Only funds from the 2007 Legislature to help fund startup equipment and program development costs for the construction and industrial trades programs.

6. Assessment

The proposed program will be assessed using the College's institutional outcomes assessment practices. These include assessing standard performance metrics such as graduation/completion rates,

student retention, and enrollments. As previously mentioned, 3 students will graduate May 2009 with the CAS. All 3 of those students are slated to continue on to earn the AAS. Additionally, the program will undergo an internal program review as required by Board of Regent Policy and standard College practice. In addition, the program's student learning outcomes will be assessed to evaluate student success in obtaining the skills identified as goals of the program. Finally, additional measures will be used to determine program success including assessing the number of students who successfully pass NCCER examinations for modules built into the curriculum.

7. Process Leading to Submission

The program was initiated because of industry demand. The greater Great Falls Community sought and obtained funding from the 2007 Legislature for a building to house industrial trades programs on the College campus. The College also successfully applied for One-Time-Only funding to cover start-up costs. The Construction and Industrial Trades Advisory Board reviewed and approved preliminary plans. A consultant was retained to work on curriculum and facility design until the full-time faculty member was hired. The curriculum was approved by the College's Curriculum Committee in April 2008.

Appendix A

Construction Technology – Carpentry
Certificate of Applied Science

FALL SEMESTER

Course No.	Title	Credits
MATH 100	Math for the Trades	3
CNST 100	Fundamentals of Construction Technology	3
CNST 115	Construction Calculators & Estimating	1
CARP 120	Carpentry Basics and Rough-in Framing	6
CARP 150	Beginning Carpentry Practicum (90 hrs)	3

Subtotal 16

SPRING SEMESTER

Course No.	Title	Credits
COM 135	Interpersonal Communications	3
ENGL XXX	Technical Writing	3
CNST 120	Introduction to Site layout & Concrete	3
CNST 150	Construction Site Safety	2
CARP 130	Exterior Finishing, Stair Construction, and Metal Stud Framing	4
CARP 152	Intermediate Carpentry Practicum (90 hrs)	3

Subtotal 18

Total Program Credits – 34

Construction Technology – Carpentry
Associate of Applied Science

FALL SEMESTER 1

Course No.	Title	Credits
MATH 100	Math for the Trades	3
CNST 100	Fundamentals of Construction Technology	3
CNST 115	Construction Calculators & Estimating	1
CARP 120	Carpentry Basics and Rough-in Framing	6
CARP 150	Beginning Carpentry Practicum (90 hrs)	3
		Subtotal 16

SPRING SEMESTER 1

Course No.	Title	Credits
COM 135	Interpersonal Communications	3
ENGL XXX	Technical Writing	3
CNST 120	Introduction to Site layout & Concrete	3
CNST 150	Construction Site Safety	2
CARP 130	Exterior Finishing, Stair Construction, and Metal Stud Framing	4
CARP 152	Intermediate Carpentry Practicum (90 hrs)	3
		Subtotal 18

SUMMER SEMESTER

Course No.	Title	Credits
CARP 240	Summer Carpentry Internship (135-270 hrs)	3-6
		Subtotal 3-6

FALL SEMESTER 2

Course No.	Title	Credits
DRFT 156	Introduction to CAD	3
Weld 151	Welding for Carpenters	2
CARP 230	Advanced Roof, Floor, Wall, and Stair Systems	6
CARP 250	Advanced Carpentry Practicum (90 hrs)	3
		Subtotal 15

SPRING SEMESTER 2

Course No.	Title	Credits
BUS 106	Introduction to Business	3
CNST 220	Advanced Concrete Working	5
CARP 220	Interior Finishing	5
CARP 252	Capstone Carpentry Practicum (120 hrs)	4
		Subtotal 17

Total Program Credits 69-72

ITEM 144-2701-R0809 **Bachelor of Fine Arts in Art Degree**
Montana State University Billings

THAT: The Board of Regents of Higher Education authorizes Montana State University Billings to establish a Bachelor of Fine Arts degree program in Art.

EXPLANATION: As a comprehensive, regional, public university serving the educational needs of Montanans and accessible to all who are qualified, Montana State University Billings has the primary mission of preparing students of all ages to be productive and responsible citizens, with special focus on the integration of education with service and an applied rather than basic research mission. The purpose of this proposal is to offer a new Bachelor of Fine Arts (B.F.A.) degree in Art at Montana State University Billings. The addition of the B.F.A. in Art would add a professional degree option to the existing Bachelor of Arts (B.A.) degree in Art, which is considered a general liberal arts degree that does not necessarily prepare students for careers as art professionals.

The Department of Art is accredited by the National Schools of Art and Design (NASAD). Since 2002, NASAD has been recommending that one of the areas of specialization (Studio Art Extended) currently offered under the Bachelor of Arts (B.A.) degree in Art be re-titled a Bachelor of Fine Arts (B.F.A.) degree, as it is in full compliance with NASAD requirements for that degree. As NASAD officials stated: "The Commission strongly recommends that the institution seek state approval to re-title this program Bachelor of Fine Arts in order to provide greater title/content consistency for the general public and for the profession."

ATTACHMENTS: Level II Request Form
Level II Board of Regents Items: Curriculum Proposals

M O N T A N A B O A R D O F R E G E N T S

LEVEL II REQUEST FORM

Item No.:	**144-2701-R0809**	**Date of Meeting:**	**August 3, 2009**
Institution:	**Montana State University Billings**		
Program Title:	**Bachelor of Fine Arts in Art Degree**		

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

- ☐ 1. Change names of degrees (e.g. from B.A. to B.F.A.)
- ☐ 2. Implement a new minor or certificate where there is no major or no option in a major;
- ☒ 3. Establish new degrees and add majors to existing degrees;
- ☐ 4. Expand/extend approved mission; and
- ☐ 5. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

As a comprehensive, regional, public university serving the educational needs of Montanans and accessible to all who are qualified, Montana State University Billings has the primary mission of preparing students of all ages to be productive and responsible citizens, with special focus on the integration of education with service and an applied rather than basic research mission. The Department of Art, a subdivision of the College of Arts, is requesting the establishment of a new degree, the Bachelor of Fine Arts (B.F.A.) in Art. The B.F.A. is considered the professional undergraduate degree in art. The addition of the B.F.A. in Art would thus add a professional degree option to the existing Bachelor of Arts (B.A.) degree in Art, which is considered a general liberal arts degree that does not necessarily prepare students for careers as art professionals. Students who are enrolled in B.F.A. programs are expected to develop the knowledge, skills, concepts, and sensitivities necessary to function in the professional life of the artist. For any of the possible roles of a professional artist, beyond learning technical competence, the student must also understand and utilize basic art knowledge, possess the ability to synthesize art knowledge and skills, and develop insights into the role of art in intellectual and cultural life.

LEVEL II BOARD OF REGENTS ITEMS

Curriculum Proposals

1. Overview

Montana State University Billings is seeking authorization to offer a Bachelor of Fine Arts (BFA) degree in Art. This degree will be offered by the Department of Art, a subdivision of the College of Arts and Sciences (CAS). The BFA is considered the professional undergraduate degree in studio art and is designed to provide students with a thorough grounding in fundamental principles and techniques with opportunities for emphasis in one or more specific studio art areas. The Department of Art is accredited by the National Association of Schools of Art and Design (NASAD). Their guidelines for BFA curricula are as follows: studies in studio comprise 25-35% of the total program; supportive courses in art and design, 20-30%; studies in art history, 10-15%; and general studies, 25-35%. Studies in the major area, supportive courses in art and design, and studies in visual arts histories normally total at least 65% of the curriculum. The Studio Art Extended area of specialization currently offered under the Bachelor of Art degree in Art already meets these guidelines. Thus, in essence, we are asking for a title change for one of our areas of specialization. No new resources are being requested.

2. Need

a. To what specific need is the institution responding in developing the proposed program?

The Department of Art has been accredited by NASAD since 1980. NASAD is the only agency recognized for accrediting art programs in the United States. In its last accrediting report, which was issued on November 15, 2002 after its last 10-year on-campus review, the following recommendation was made:

> The Bachelor of Arts in Art with Studio Arts Extended specialization requires 82 credits in the study of art (69% of the degree requirements) with 65 credits in studio. By the numbers, this specialization is clearly equivalent in structure to requirements for a BFA. If the Department intends this degree to be a professional Bachelor of Fine Arts degree in General Studio, the degree should be titled as such and submitted for Plan Approval.

NASAD requires yearly progress reports on its recommendations. In response to the Department of Art's 2003 report, NASAD stated: "The Commission strongly recommends that the institution seek state approval to re-title this program Bachelor of Fine Arts in order to provide greater title/content consistency for the general public and for the profession." This recommendation has been reiterated each year since then. NASAD will be reviewing this year's report in October, and the only item still of concern to them after the 2002 review is the

Department of Art's progress in obtaining the BFA degree. The next on-campus 10-year review will take place in 2012, and if this recommendation still has not been implemented, accreditation may be at risk.

b. How will students and any other affected constituencies be served by the proposed program?

It is anticipated that this new degree will serve existing MSU Billings students, aid in the retention of existing students, and aid in the recruitment of new students. Because the current Studio Art Extended area of specialization is in full compliance with NASAD standards for the BFA degree, the BA designation is misleading, implying a nonprofessional education of lesser quality. The BA does not reflect either the professional nature of the degree program or the number of art credits required within this area of specialization.

The BFA is a professional undergraduate degree and granting it would benefit graduates as they enter the workplace and compete for jobs. A degree in fine arts can lead to professional careers in art-related fields, such as print and Web design, gallery direction and curatorship, advertising, publishing, and government agencies. The BFA is also considered an appropriate preparation for graduates who wish to pursue a Master of Fine Arts degree. In competitive graduate programs the expected minimum degree for admittance is a BFA. As it stands, graduates completing the Studio Art Extended area of specialization are at a disadvantage. They complete the requirements for the BFA but are unable to claim the degree.

c. What is the anticipated demand for the program? How was this determined?

Offering a BFA has been part of the Department of Art's long-range planning for years. In 1997, in response to student requests, the Art major curriculum was re-designed to include an ara of specialization in Studio Art that was equivalent to the BFA. It was anticipated that this plan of study could then easily be transformed into an actual BFA degree. After the 2002 NASAD recommendation, new hope arose among art faculty and students. In 2004, a group of art students prepared a formal written proposal for the BFA, which included letters of support from 22 students. This proposal was presented to the Department of Art Chairperson and the College of Arts and Sciences Dean. Students have continued to express an interest in the BFA, and disappointment that we do not offer one, especially those who complete the Studio Art Extended area of specialization. Much of this feedback is given at the time of the Senior Review, when all art faculty members are present.

At the very least, we project that the number of students seeking the BFA will remain consistent with the number currently seeking the Studio Art Extended area of specialization. However, it is more likely that this number will increase because the BFA is a more attractive degree to serious, motivated students seeking to become professional artists and/or attend graduate programs in the fine arts. Excluding the Teaching Licensure Option students, the fall 2008 census headcount showed 52 majors seeking the Bachelor of Arts degree in Art. Of

these 52 students, the majority are seeking the Studio Art Extended area of specialization. Seven students graduated with this specialization in spring 2009.

3. Institutional and System Fit

a. What is the connection between the proposed program and existing programs at the institution?

The BFA will offer MSU Billings students a professional degree option in the study of the visual arts. Courses for the proposed program will be offered by the same faculty and in the same facilities as those currently offered in the Department of Art. No new courses need to be developed.

b. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Approval of the proposed program will not require changes to any existing programs. The Bachelor of Arts degree in Art and the Teaching Licensure Option will remain in place, as will the Art minor and the Art Teaching minor. Although the Studio Art Extended area of specialization may eventually be phased out, the other BA non-teaching areas of specialization will continue to be offered (Studio Art with Minor, Art History with Minor, Studio Art and Art History, and Art History).

The only major difference between the BFA and the BA Studio Art Extended area of specialization is that students will have to pass a portfolio review before admittance to the BFA program. This review will take place at the sophomore level before the student begins taking 300-level studio art courses. Higher minimum G.P.A. requirements for admittance to, and retention in, the BFA program may also be implemented.

c. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

The BFA is a professional degree, unlike the BA in Art, which is a liberal arts degree.

d. How does the proposed program serve to advance the strategic goals of the institution?

As a professional degree, the BFA in Art will advance MSU Billing's vision of being a regional leader in translating knowledge into practice and accepting leadership for Intellectual, cultural, social and economic development beyond university boundaries. The proposed program also aligns with the university's strategic initiatives that seek to create and maintain distinctive, vital academic programs and to identify the needs of all learners and provide access to a university experience that fulfils both individual goals and societal needs. It would also serve the university's research initiative of increasing the stature and professionalism of all academic programs. Maintaining NASAD accreditation is crucial in this regard.

e. Describe the relationship between the proposed program and any similar programs within the Montana University System.

Montana State University Bozeman (MSU) and the University of Montana Missoula (UM) both offer the BFA in Art. However, offering a BFA at MSU Billings would have little impact on the UM or MSU enrollment numbers. The BFA programs at both universities are highly competitive and selective. Enrollment in these programs is also limited by studio space capacities. The appropriate Chairs, Deans and CAO's at both universities have been notified of the proposed program, and none of them have raised any objections.

The proposed program would be the only BFA offered in central and eastern Montana and the northern Wyoming region. According to the fall 2008 census, 60% of Montana residents who attend MSU Billings are from Yellowstone County and 32% of the undergraduates are over the age of 25. Many of these students are place-bound due to family and work responsibilities.

Finally, granting of the BFA in Art to MSU Billings would not create an additional duplication, because the program is essentially in place under another name: Bachelor of Arts in Art (Studio Art Extended).

4. Program Details

a. Provide a detailed description of the proposed curriculum.

Bachelor of Fine Arts (B.F.A.) in Art

Degree Requirements:

37 credits in Academic Foundations
35 credits in required art courses (Six credits may also fulfill Academic Foundations requirements)
15 credits in restricted art electives
28 credits in upper division studio art with a minimum of 16 credits in one Area of Concentration (Ceramics, Digital Arts, Drawing, Painting, Photography, Printmaking or Sculpture)
5-11 credits in art electives

Required Art Courses

*ART 132 Art History Survey 3
ART 151 Two-Dimensional Design..... 3
ART 152 Three-Dimensional Design 3
*ART 161 Introduction to Drawing 3
ART 255 Introduction to Photoshop
OR
ART 256 Introduction to Illustrator 4

ART 261 Figure Drawing 4
ART 331 Renaissance and Baroque Art 3
ART 332 Modern Art.....3
ART 352 Visual Theory and Criticism 3
ART 399 Careers in Art 1
ART 437 Contemporary Art 3
ART 498 Resume and Artist Statement 1
ART 499 Senior Show, Portfolio and Review 1

Total required Art courses.....35

*Also fulfills Academic Foundations requirements

Restricted Art Electives

Group 1: Select one course from each of the following three areas:

Area One
ART 211 Introduction to Photography 4
ART 217 Introduction to Lithography 4

Area Two
ART 271 Introduction to Watercolor 4
ART 272 Introduction to Painting 4

Area Three
ART 242 Introduction to Ceramics..... 4
ART 281 Introduction to Sculpture..... 4

Group 2: Select one course from this group:

ART 434 Art and the Environment 3
ART 435 Art of the United States 3
ART 436 History of Women in Art..... 3
ART 439 Survey of American Indian Art.....3
ART 492 Seminar (Art History) 3

Total Restricted Art Electives.....15

Upper-Division Studio Art……..28

Twenty-eight hours of upper division studio art credits to include a minimum of 16 credits in one Area of Concentration (Ceramics, Digital Arts, Drawing, Painting, Photography, Printmaking or Sculpture)

Art Electives.....5-11

Suggested Plan of Study

First Year	**F**	**S**
ART 151 Two-Dimensional Design	3	
ART 152 Three-Dimensional Design		3
*ART 161 Introduction to Drawing	3	
*ART 132 Art History Survey		3
Eng 150 College Composition	3	
Academic Foundations	6	9
Total credits	**15**	**15**

Second Year	**F**	**S**
ART 255 Introduction to Photoshop	4	
ART 261 Figure Drawing		4
ART 211 Introduction to Photography or ART 217 Introduction to Lithography		4
ART 271 Introduction to Watercolor or ART 272 Introduction to Painting	4	
ART 242 Introduction to Ceramics or ART 281 Introduction to Sculpture	4	
ART 331 Renaissance and Baroque Art	3	
Eng 226 Research Writing		3
Academic Foundations		4
Total credits	**15**	**15**

Sophomore Portfolio and Transcript Review

Third Year	**F**	**S**
ART 352 Visual Theory and Criticism	3	
ART 399 Careers in Art		1
ART 332 Modern Art		3
Area of Concentration Art Studio Upper Division	4	4
Art Studio Upper Division	4	
Academic Foundations	3	3
Art Elective		4
Total credits	**14**	**15**

Fourth Year	**F**	**S**
ART 498 Resume and Artist Statement	1	

ART 499 Senior Show, Visual Portfolio and Review		1
Area of Concentration Art Studio Upper Division	4	4
Art Studio Upper Division	4	4
Art 400-Level Art History	3	
Art 437 Contemporary Art		3
Art Elective	3	4
Total	**15**	**16**

Degree Total 120 credits

ART Course Descriptions

ART 131 Global Visual Culture 3 cr. (Lec) Examines visual culture, which includes painting, sculpture, photography, the Internet, performance, cinema, advertising, and television, as our primary means of communication and of understanding our postmodern world. Explores the effects of global visual culture on specific cultures and societies. Special emphasis on the importance of race, ethnicity, gender, sexuality, and the body in visual culture.

ART 132 Art History Survey 3 cr. (Lec) Surveys world art from prehistory through the present day with the objective of developing a critical understanding of art forms in their historical and cultural context.

ART 142 Introduction to Pottery 3 cr. (Stu) Develops the ability to design three-dimensional clay forms using manual dexterity. Provides the individual with opportunities for creative experiences and an understanding of basic artistic developments in design, process and content of the ceramic object. (Lab fee)

ART 151 Two-Dimensional Design 3 cr. (Stu) Provides the student with the basic fundamentals to plan and organize two-dimensional expression through painting, graphic design, color theory and composition. Student will be exposed to both content (what artists want to say) and form (how an artist says it). An emphasis will be placed on creativity and critical thinking skills. (Lab fee)

ART 152 Three-Dimensional Design 3 cr. (Stu) Introduces the basic principles of designing in three dimensions with an emphasis on form, structure, and terminology in media such as wood, paper fibers, metal, plaster, clay, etc. Assignments focus on aesthetic concepts and technical skills and involve broad-based themes of art, the role of the artist, and creative and critical thinking skills. (Lab fee)

ART 161 Introduction to Drawing 3 cr. (Stu) Introduces the beginning student to the basic fundamentals of drawing including line, form, value, composition, and linear perspective. Instruction will include drawing of various subjects and many include the nude figure. (Lab fee)

ART 211 Introduction to Photography 4 cr. (Rct 2, Stu 2) Preferred background: ART 151. Provides instruction in film and/or digital photography while investigating problems of design, content, criticism and expression in the photographic medium. (Lab fee)

ART 215 Introduction to Printmaking 4 cr. (Rct 2, Stu 2) Preferred background: ART 151 and ART 161 or permission of the instructor. Provides basic concepts in areas of serigraphy, intaglio, and relief as means of contemporary expression. (Lab fee)
ART 217 Introduction to Lithography 4 cr. (Rct 2, Stu 2) Preferred background: ART 151 and ART 161 or permission of instructor. Provides concepts and techniques of printmaking through the technical means of lithography. (Lab fee)
ART 242 Introduction to Ceramics 4 cr. (Rct 2, Stu 2) Preferred background: ART 152. Introduces basic forming skills, glaze techniques and firing processes with emphasis on craftsmanship and aesthetic judgment. (Lab fee)
ART 255 Introduction to Photoshop (TN) 4 cr. (Stu) Prerequisites: Basic computer literacy and Preferred Background: ART 151. Provides a fundamental practical knowledge of Adobe Photoshop to create original graphics with an emphasis on fine applications. Opportunities to creatively solve visual problems are emphasized. (Lab fee)
ART 256 Introduction to Illustrator (TN) 4 cr. (Stu) Prerequisites: Basic computer literacy and Preferred Background: ART 151. Provides a basic practical knowledge of Adobe Illustrator toward the creation of original graphics with an emphasis on fine art applications.

ART 257 Introduction to Desktop Publishing (TN) 4 cr. (Stu) Prerequisites: Basic computer literacy. Provides practical knowledge of software used for desktop publishing to create layouts and documents. Emphasis is on professional design using flexible and original templates with stock illustrations, digital photos and student-created images toward effective visual communication.
ART 261 Figure Drawing 4 cr. (Rct 2, Stu 2) Prerequisite: ART 161. Continues and expands on the understanding of the fundamentals, the theories and the content of drawing with an emphasis on the human figure. (Lab fee)
ART 271 Introduction to Watercolor 4 cr. (Rct 2, Stu 2) Prerequisites: ART 151 and ART 161 or permission of instructor. Introduces the principles and techniques of painting with transparent watercolor media.
ART 272 Introduction to Painting 4 cr. (Rct 2, Stu 2) Prerequisites: ART 151 and ART 161 or permission of instructor. Introduces the principles of painting through the use of various painting media.
ART 281 Introduction to Sculpture 4 cr. (Rct 2, Stu 2) Prerequisite: ART 152 or permission of instructor. Introduces the basic concepts of space and volume as they relate to sculpture as well as the basic methods of forming various materials into sculpture. (Lab fee)
ART 292 Seminar V 1-3 cr. Provides students an opportunity to investigate topics pertinent to the field of Art.
ART 293 Workshop V 1-4 cr. Provides an opportunity for study in an area of Art.
ART 296 Cooperative Education/Internship V 1-9 cr. Provides university credit for a sophomore work experience in the area of Art supervised by faculty. Learning agreement must be completed prior to registration (restricted).
ART 311 Intermediate Photography 4 cr. (Rct 2, Stu 2) Prerequisite: ART 211. Provides experience in variety of transitional photographic techniques involving film and/or digital photography while exploring experimental and aesthetic possibilities in the context of photographic history. (Lab fee)

ART 315 Intermediate Printmaking 4 cr. (Rct 2, Stu 2) Prerequisite: ART 215. Continues the study of printmaking with extensive exploration in artistic expression and printing techniques. (Lab fee)
ART 317 Intermediate Lithography 4 cr. (Rct 2, Stu 2) Prerequisite: ART 217. Continues the study of printmaking in the area of lithography as a means of contemporary artistic expression. (Lab fee)
ART 331 Renaissance and Baroque Art 3 cr. (Lec) Prerequisite: ART 132 or permission of instructor. Surveys the major artistic developments in Europe from the fifteenth through the seventeenth centuries. In addition to examining the stylistic evolution of Renaissance and Baroque art, this course also addresses the relationship of cultural production to social customs, intellectual trends, political systems, and religious beliefs. Emphasis on the works of Jan Van Eyck, Donatello, Botticelli, Leonardo daVinci, Michelangelo, Albrecht Durer, Titian, Caravaggio, Artemisia Gentileschi, Bernini, Rubens, Velazquez, and Rembrandt.
ART 332 Modern Art 3 cr. (Lec) Prerequisite: ART 132 or permission of instructor. Surveys major developments in European and American art from the late eighteenth century to the present. Focuses on the aesthetics and philosophies of modernism and postmodernism and their cultural and political contexts.
ART 342 Intermediate Ceramics 4 cr. (Rct 2, Stu 2) Prerequisite: ART 242. Develops technical skills in the forming of clay design concepts and glaze technology. Emphasis is placed on the growth of personal development. (Lab fee)
ART 352 Visual Theory and Criticism (WR) 3 cr. (Lec) Prerequisite: ART 132, ENGL 150. Covers reading, research and discussion of the thought of historic and contemporary art critics and theoreticians, relating them to the practice of creating art.
ART 358 Intermediate Computer Graphics (TN) 4 cr. (Stu 6 hrs/wk) Prerequisite: ART 255 or ART 256 or consent of instructor. Stresses intermediate exploration, application, and integration of different software into electronic media production. Emphasis is on fine art applications. Develop a vocabulary of critical language applicable to computer graphics. (Lab fee)
ART 361 Intermediate Drawing 4 cr. (Rct 2, Stu 2) Prerequisite: ART 261. Stresses further exploration and application of drawing from the human figure. Students are exposed to various approaches and disciplines both as to medium and concept. (Lab fee)
ART 371 Intermediate Watercolor 4 cr. (Rct 2, Stu 2) Prerequisite: ART 271. Provides individual experimentation and exploration in the medium of transparent watercolor.
ART 372 Intermediate Painting 4 cr. (Rct 2, Stu 2) Prerequisite: ART 272. Provides experimentation in various directions to develop personal style and techniques in painting with the use of various painting media. (Lab fee)
ART 381 Intermediate Sculpture 4 cr. (Rct 2, Stu 2) Prerequisite: ART 281. Provides exploration and laboratory experience in a variety of materials in the production of three-dimensional art forms. (Lab fee)
ART 399 Careers in Art 1 cr. (Lec) Prerequisites: For Art majors and minors, sophomore level and above or by instructor approval. Provides an overview of information from a variety of sources on professional art careers. A discussion format will accompany presentations by invited speakers, readings, research and written assignments. Offered spring only.
ART 411 Advanced Photography 4 cr. (Rct 2, Stu 2) R-24. Prerequisite: ART 311. Involves advanced level film and/or digital photographic exploration and production

emphasizing photography as a fine art medium and a means to personal expression. (Lab fee)
ART 415 Advanced Printmaking 4 cr. (Rct 2, Stu 2) R-24. Prerequisite: ART 315. Extends the study of serigraphy, intaglio, or relief printmaking with extensive exploration in artistic expression and printing techniques. (Lab fee)
ART 417 Advanced Lithography 4 cr. (Rct 2, Stu 2) R-24. Prerequisite: ART 317. Extends the study of lithography with extensive exploration in artistic expression and printing techniques. (Lab fee)
ART 431 Advanced Global Visual Culture (WR) 3 cr. (Lec) Prerequisite: ENGL 150. Examines visual culture, which includes painting, sculpture, photography, the Internet, performance, cinema, advertising, and television, as the primary means of communicating with each other and of understanding our postmodern world. Explores the effects of global visual culture on specific cultures and societies. Special emphasis on the importance of race, ethnicity, gender, sexuality, and the body in visual culture.
ART 434 Art and the Environment (WR) 3 cr. (Lec) Prerequisites: ENGL 150; Preferred background: ART 132. Explores the relationship between artistic expression and the natural environment from a cross-cultural and historical perspective. Emphasis on landscape painting, architectural site planning, earthworks, land art and the impact of environmentalism, eco-feminism and holistic worldviews on contemporary art production.
ART 435 Art of the United States (WR) 3 cr. (Lec) Prerequisite: ENGL 150: Preferred background ART 132. Reviews the art and architecture of the United States from colonial times to the present.

ART/A&SC 436 History of Women in Art (WR) 3 cr. (Lec) Prerequisite: ENGL 150; Preferred background ART 132. Provides a thematic and chronological survey of women as creators, collectors, and the subject of art, beginning with the medieval period and finishing in the present day. Emphasizes the institutional and ideological factors that have made it difficult for women to achieve equal status in the arts, the Women's Art Movement of the 1970's, and contemporary feminist art.
ART 437 Contemporary Art (WR) 3 cr. (Lec) Prerequisite: ENGL 150; Preferred background ART 132. Surveys developments in the world of art since 1970.
ART/NAMS 439 Survey of American Indian Art (WR) 3 cr. (Lec) Presents an overview and analysis of Native American art forms, techniques, and traditions. Background and interpretation of traditional and contemporary styles and symbols important to both tribal and individual expression. Includes discussion of tribal arts and crafts associations, markets and exhibitions, and federal laws.
ART 442 Advanced Ceramics 4 cr. (Rct 2, Stu 2) R-24. Prerequisite: ART 342. Employs advanced technical problems and emphasizes personal expression in the medium. (Lab fee)
ART 458 Advanced Computer Graphics (TN) 4 cr. (Stu 6 hrs/wk) Prerequisite: ART 358 or Consent of Instructor. Provides experimentation and exploration toward the development of the student's personal expression and style through integration of current software. Emphasis is on fine art applications and professional artistic development. (Lab fee)
ART 461 Advanced Drawing 4 cr. (Rct 2, Stu 2) R- 24. Prerequisite: ART 361. Development of the student's personal expression and style. Includes the principles of drawing exemplified in works of historic and contemporary masters. Emphasis will be placed on the use of drawing as a finished art product. (Lab fee)

ART 471 Advanced Watercolor 4 cr. (Rct 2, Stu 2) R-24. Prerequisite: ART 371. Emphasizes advanced exploration techniques in the medium of transparent watercolor.
ART 472 Advanced Painting 4 cr. (Rct 2, Stu 2) R- 24. Prerequisite: ART 372. Emphasizes advanced explorations in various painting media. (Lab fee)
ART 481 Advanced Sculpture 4 cr. (Rct 2, Stu 2) R- 24. Prerequisite: ART 381. Involves advanced level sculptural exploration emphasizing personal expression and style. (Lab fee)
ART 490 Practicum in Art V 1-5 cr. Prerequisites: Senior level standing in Art and consent of department chairperson. Provides experience in a responsible appointment as an assistant in some specialized area of the Art Program.
ART 491 Independent Study V 1-5 cr. Prerequisites: consent of instructor and department chairperson. Provides outstanding students an opportunity to explore material not covered by regular Art courses.
ART 492 Seminar V 1-3 cr. Provides advanced students an opportunity to intensively investigate topics pertinent to the field of Art.
ART 493 Workshop V 1-5 cr. Provides an opportunity for study in an area of Art.
ART 496 Cooperative Education/Internship V 1-9 cr. Provides university credit for a work experience in the area of Art supervised by faculty. Learning agreement must be completed prior to registration (restricted).
ART 498 Resume and Artist Statement 1 cr. (Lec) Prerequisites: Junior or senior level standing; Art majors and minors only. Covers the initial development of visual portfolio, the writing of a resume and artist statement and other preparation for the senior show. Other topics include art venue possibilities, financial aspects, graduate programs, and securing an art teaching position. Students will work with their advisor and other art faculty. Class may be taken concurrently with ART 499 Senior Show if the show is scheduled during Fall Semester. Offered fall only.
ART 499 Senior Show, Portfolio and Review (WR) 1 cr. (Lec) Prerequisite: Junior or senior level standing in Art. Art majors or minors only. Involves arranging for all details necessary to present a show of work done during the two years prior to graduation in conjunction with a formal review. The art history student will prepare for the formal review through written documents and recitation. The student will work with his/her advisor.

5. Resources

a. Will additional faculty resources be required to implement this program?

No additional faculty resources will be required to implement this program.

b. Are other, additional resources required to ensure the success of the proposed program?

No additional resources are required to ensure the success of the proposed program. Existing studio art facilities and library sources are sufficient to support the proposed program.

6. Assessment.

How will the success of the program be measured?

The Department of Art is accredited by the National Association of Schools of Art and Design (NASAD), which has specific guidelines for the BFA degree in Art. Yearly reports have been filed with NASAD since their last on-campus 10-year review (2002). The next review will take place in 2012. NASAD evaluations cite specific recommendations for improvement, which the department must adhere to in order to maintain accreditation. Their assessment of the BFA program will provide one measure of success.

Another measure of success will be student enrollment and graduation rates. Interest will be accessed through the number of students who apply to the BFA program, and the success of our foundation courses will be assessed through the quality of work exhibited by the students who pass the portfolio review and are admitted to the program. Graduating BFA seniors will be assessed through the quality of their Senior Show and Faculty Review. At the Review, the student will also be asked for feedback on the program's strengths and weaknesses. The graduating senior will also be required to prepare a professional portfolio, artist statement, and resume to be reviewed by their advisor and to be kept on file for review by NASAD evaluators.

In fall 2009, the faculty will be implementing a pre-/post-test for all art majors. The test will consist of 50 multiple choice questions and is designed to assess content knowledge. The pre-test will be given to students enrolled in freshman-level design courses, and the post-test will be taken by students at the time of their Senior Review.

Internal assessment of the proposed program will ed occurduring the annual Continuing Quality Improvement (CQI) review and the seven-year BOR program review.

The Department of Art follows the Collective Bargaining Agreement and Department Rank and Tenure Committee policies and procedures in regards to Student Evaluation of Faculty.

Lastly, the success of the program will be accessed through the success of the students who graduate from it. Markers of success will include:

1. acceptance into graduate programs in the fine arts
2. securing artist residencies, fellowships and grants
3. exhibition records
4. professional employment in art-related fields

7. Process Leading to Submission

Describe the process of developing and approving the proposed program.

As explained in 2a and 2c above, the Bachelor of Fine Arts degree in Art has been part of the department's long-range planning since at least as early as 1997, when the curriculum was modified to include an area of specialization (Studio Art Extended) equivalent to the BFA. This change was made because of interest expressed by both students and

faculty. During the 2002 10-year on-campus review, the National Association of Schools of Art and Design (NASAD), the department's accrediting agency, recommended that this area of specialization be re-titled a Bachelor of Fine Arts degree in Art, since it meets the requirements for that degree. Since 2002, the art faculty has been seeking permission from the administration to move forward with this proposal. Students became involved in 2004 by writing a formal proposal for the BFA and submitting it with letters of support to the Art Department Chair and College of Arts and Sciences Dean. NASAD continues to press for this change in its response to the department's yearly progress report, and with the next 10-year on-campus review on the horizon (2012), the administration and art faculty are moving ahead with this proposal at this time in hopes that the new degree will be firmly established by then. In early 2009, art faculty and administrators at MSU and UM were notified of MSU Billing's intent to bring this proposal to the Board of Regents and no objections were raised.

This written proposal was prepared by the Art Department Chair with assistance from other members of the art faculty and with reference to the 2004 student proposal and NASAD and BOR guidelines.

ITEM 144-1001-R0709 **Approval to create a major in Central and Southwest Asian Studies; The University of Montana–Missoula**

THAT: In accordance with Montana University System Policy, the Board of Regents of Higher Education authorizes The University of Montana to create a major in Central and Southwest Asian Studies.

EXPLANATION: This proposal is to create a major and minor in Central and Southwest Asian Studies in the Department of Anthropology, replacing the current option and minor in Central and Southwest Asian Studies in the Department of Geography. The proposed Central and Southwest Asian Studies major combines interdisciplinary study of Central and Southwest Asia with language training in the regional languages of Central Asia, the Middle East, the former Soviet Union, and the Central Asian part of Western China. The program emphasizes social science approaches to the study of history, politics, environment, and culture of these regions, with a strong provision for the study of their literature and artistic traditions. Students pursuing this degree are to be trained through a program of interdisciplinary courses offered in various departments, as outlined in the major requirements, as well as in the languages of the region.

ATTACHMENTS:

M O N T A N A B O A R D O F R E G E N T S

LEVEL II REQUEST FORM

Item No.:	**144-1001-R0709**	**Date of Meeting:**	**July 9-10, 2009**
Institution:	**The University of Montana - Missoula**		
Program Title:	**Major in Central and Southwest Asian Studies**		

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

- ☐ 1. Change names of degrees (e.g. from B.A. to B.F.A.)
- ☐ 2. Implement a new minor or certificate where there is no major or no option in a major;
- ☒ 3. Establish new degrees and add majors to existing degrees;
- ☐ 4. Expand/extend approved mission; and
- ☐ 5. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

The University of Montana requests permission to create a major and minor in Central and Southwest Asian Studies in the Department of Anthropology, replacing the option and minor in Central and Southwest Asian Studies in the Department of Geography.

Proposal

1. Overview

This proposal is to create a major and relocate a minor in Central and Southwest Asian Studies to the Department of Anthropology. The proposed Central and Southwest Asian Studies major combines interdisciplinary study of Central and Southwest Asia with language training in the regional languages of Central Asia, the Middle East, the former Soviet Union, and the Central Asian part of Western China. The program emphasizes social science approaches to the study of history, politics, environment, and culture of these regions, with a strong provision for the study of their literature and artistic traditions. Students pursuing this degree are to be trained through a program of interdisciplinary courses offered in various departments, as outlined in the major requirements, as well as in the languages of the region. The requirements include a minimum of two years of language study in sequence, but students are encouraged to take as many language courses as possible, within the limits prescribed by the university for a major.

2. Need

The current minor and option in Central and Southwest Asian Studies, introduced in 2005 in the Department of Geography, have proven popular among undergraduates across majors in the social sciences, humanities, and professional schools. Students taking area studies courses recognize the value and importance of language study in order to apply for graduate programs, or to seek career opportunities requiring knowledge of Central Asia, the Middle East, the former Soviet Union, and Chinese Central Asia. The national priorities for regional specialists of these critical areas coincides with the institutional mission of the University of Montana-Missoula to promote global and civic awareness, and to encourage interdisciplinary breadth and relative depth in the study of Central and Southwest Asia, including at least two years of language study. The move of several faculty from Geography to Anthropology provides an opportunity to focus the offerings in Central and Southwest Asian Studies, allowing establishment of both a minor and major in Central and Southwest Asian Studies.

a. Specific Needs.

The current minor encourages language study in regional languages (Arabic, Chinese, Persian, Russian and Turkish). Currently, Chinese and Russian are offered through three years as permanent course offerings by tenure line faculty. Arabic has permanent course numbers offered through three years of study. Persian and Turkish are currently offered at the first year, with plans for expansion. By integrating interdisciplinary coursework and language courses in a single major in Anthropology, the new degree program will serve students seeking more in depth training and preparation for international graduate study, public service, or career and employment opportunities in governmental and non-governmental agencies and institutions. This major will strengthen University course offerings in two regions of the world, which have been identified as critical to the United States foreign policy, and will help create a new pool of area studies experts and language learners on the UM campus.

b. How will students and other constituencies be served?

The proposed major integrates existing courses that are offered on a regular basis across four departments or interdisciplinary programs (Anthropology, History, Modern and Classical Languages and Literatures and Liberal Studies/Asian Studies). The gateway course for the minor, and the proposed major, ANTH/HIST/LS/AS 106: The Silk Road, has been offered every semester for the past four years. Students should be able to complete the major in four years, even if they begin the two years of lower – division language study in their junior year.

c. Anticipated demand.

Enrollment in the current, core lower-division courses varies between 60 and 200, with 100 students currently enrolled in the gateway course, ANTH 106: The Silk Road, and 136 students enrolled in ANTH 284: Islamic Civilizations during spring semester 2009. The minor currently has over 20 students declared, and has seen already two years of graduates completing the degree since 2005. Twelve students intend to graduate with the minor in May, 2009. Anticipated demand for the new major would be 10-12 students declaring each year, with the first students graduating in the new major in 2012.

3. Institutional and System Fit

No other institution in the Montana University System offers a degree on Central and Southwest Asian Studies. Thus, the major would be the only one available to students in Montana. At the University of Montana-Missoula, the new degree fits well with the stated invitation to "internationalize the UM undergraduate curriculum" and to provide more global curricula for general education. The integration of both Asian and European languages into a single major signals attention to changes in the twenty-first century global environment, and highlights this region of national and international importance for graduates and higher education in general.

a. Connection between existing and proposed programs

The current minor includes courses cross-listed across four programs (Anthropology, History, Political Science, and Liberal Studies/Asian Studies) and the proposed major would extend this collaboration by including courses from the Department of Modern and Classical Languages and Literatures. The current faculty teaching Russian and other languages listed have been consulted, and are in full support of this proposal.

b. Will approval of the proposed program require changes to any existing programs at the institution?

No changes to existing programs.

c. Describe what differentiates this program from other, closely related programs at the institution.

No other program resembles the proposed major in structure, with its unique set of offerings across the social sciences and humanities, except Liberal Studies, which also requires two years of language study, and combines humanistic and social science disciplines across three other departments (English, Modern and Classical Languages and Native American Studies), taught by five tenure line faculty. The proposed major would be taught by seven tenure-line faculty across four departments as well (Anthropology, History, Liberal Studies/Asian Studies and Modern and Classical Studies). Because the number of credits does not exceed 60, students still have the opportunity to combine majors, or a major and a minor, in pursuit of their educational goals. Specifically, this proposed major lists only six (6) credits of 300-level language study towards this major, in order to keep the balance of interdisciplinary studies in the social sciences (unlike majors in Modern and Classical Languages and Literatures) which focus on more intensive upper-division coursework on specific languages and literatures.)

d. How does the proposed program serve to advance the strategic goals of the institution?

The University of Montana-Missoula is poised to apply for competitive institutional grants to support area studies in Central and Southwest Asian Studies for which a crucial prerequisite is that international majors are offered at the undergraduate level. The current minor and option, with substantial enrollments, have demonstrated that there is adequate demand to engage in interdisciplinary regional studies. Furthermore, the Faculty Senate has stated repeatedly that at least one year, and preferably two years of second language study is a goal of general education for all students, and this proposed major would support that goal.

e. Describe the relationship between the proposed program and any similar programs within the Montana University System.

No such similar programs exist elsewhere within the Montana University System.

4. Program details. Requirements for the Central and Southwest Asian Studies Major

Students selecting a major in Central and Southwest Asian Studies must successfully complete the following requirements.

a) Nine credits in introductory, 100 and 200 level courses
b) Twelve credits in upper division, 300 and 400 level courses, which include one required capstone seminar, ANTH 460 to be taken by all students in the major.
c) Eighteen to twenty credits of sequential language training (a first year course sequence of 101-102 for ten (10) credits in a regional language (Arabic, Chinese, Russian, Persian* or Turkish*), and a second year course sequence for eight (8) or ten (10) credits (Arabic, Chinese, and Russian, with Persian and Turkish second year offerings to be developed through external funding).
d) In addition, a maximum of six (6) of the twelve (12) required upper division (300 and 400 level) courses can be upper division credits in the language studies, and allowed in the major (e.g. RUSS 301 and RUSS 302).
e) Detailed description of the proposed curriculum.

Central and Southwest Asian Studies Courses

100-200 Level Courses

The Silk Road: Anthropology/History/Asian Studies 106
Central Asia: Peoples and Environments: Anthropology/History/Asian Studies 214
Islamic Civilizations: Anthropology/History/Asian Studies 283
Islamic Civilizations: Anthropology/History/Asian Studies 284

300-400 level Courses (including third year language sequences)

Advanced Modern Standard Arabic Language and Culture I: Arab 301
Advanced Modern Standard Arabic Language and Culture II: Arab 302

Advanced Chinese I: Chin 301 and
Advanced Chinese II: Chin 302

Russian Oral and Written Expression: Russ 301

Russian Culture and Civilization: Russ 302
Introduction to 19th Century Russian Literature: Modern and Classical Languages/Russian Studies/Liberal Studies 306
Introduction to 20th Century Russian Literature: Modern and Classical Languages/Russian Studies/Liberal Studies 307
Russian Cinema and Culture: Modern and Classical Languages/Russian Studies/Liberal Studies 308
Politics of Post-Soviet Russia: Political Science 323
Central Asia and its Neighbors: Anthropology 346/History346/Asian Studies 345
Modern China: History 380
Russia to 1881: History 344
Russia since 1881: History 345
Nationalism in Modern Middle East: Anthropology/History 386
Iran between Two Revolutions: Anthropology History 387
Cities and Landscapes of Central Asia: Anthropology 462/History 402/Asian Studies 402
The World of Anna Karenina: History 445
The Russian Revolution: History 446
Artistic Traditions of Central and Southwest Asia: Anthropology 461/History 457/Asian Studies 457
Independent Study: Central Asia: Anthropology 496

Required Capstone course:
Central Asia Seminar: Anthropology 460/History 462/Asian Studies 460

5. Planned implementation

The major could begin Autumn semester 2009. Some students taking the minor or option and qualified language study may elect to declare a major instead, so the number of minors may adjust slightly in the first year or two. Courses taught in the programs listed (Anthropology, History, Liberal Studies/Asian Studies and Modern and Classical Languages and Literatures) are offered on a regular basis.

6. Resources

The Central and Southwest Asian Studies Program has been successful in garnering a number of major institutional grants for curriculum development, research, academic service and exchanges, with over $2.4 million in grants in the last five years. It is anticipated that with the creation of this new major, several new grant applications for the National Resource Centers in Central and Southwest Asian Studies, and Foreign Language and Area Specialist scholarships would be submitted in Autumn 2009.

a. Faculty resources

Seven tenure-track faculty members teach thirty-two (32) permanent courses listed in this proposal. Chinese and Russian are offered by both tenure line faculty and lecturers with five year contract. Persian has been, and is currently being taught by tenure line faculty. Arabic has been taught by adjunct faculty supported by the Office of the President over the past eight years. Turkish and Persian have been taught by visiting Fulbright scholars in the past five years at no cost to the College of Arts and Sciences. It is hoped that a permanent, tenure line Arabic language position can be stabilized and a national search held to expand the current offerings of language study. However no new resources are requested, or needed for this major to be offered in 2009.

d. Other resources.

The CSWAS Program will be applying for FLAS scholarships for undergraduates to study critical languages as part of the National Resource Center application in Autumn 2009.

7. Assessment

All new degree programs are assessed after the first three years of implementation. Therefore, this new major would be assessed in 2112. Thereafter, it would be assessed with Anthropology.

ITEM -144-1002-R0709 **Approval to establish a Bachelor of Science in Geography; The University of Montana–Missoula**

THAT: In accordance with Montana University System Policy, the Board of Regents of Higher Education authorizes The University of Montana—Missoula to establish a Bachelor of Science degree in Geography.

EXPLANATION: Geography is often called a "synthetic" or "bridging" discipline because of how it integrates both physical and social sciences. At The University of Montana, the Geography Department has traditionally had representation on both the Science and Social Science General Education Subcommittees. Most Geography Departments offer both B.A. and B.S. degrees. Regionally, the University of Oregon, University of Wyoming, and University of Utah provide this choice for their students. Appendix A lists the degree programs offered by other regional universities. Although the Geography Department at The University of Montana currently only offers a B.A. degree, it has a curriculum that is as diverse and broad within the physical and information technologies as these other universities, and which should allow students a broad range of professional choices upon completion. This proposal will remedy this discrepancy between U.M. and other Universities in the region by creating a B.S. degree to complement the existing B.A. It will also move the option in Physical Geography to the B.S. from the B.A. This will better serve our existing students with interests in science, technology, and planning, broaden the appeal of Geography to a wider range of students, increase the attractiveness of the existing Physical Geography option, and uphold a "contractual agreement" between the Geography Department and the U.M. Administration to create a B.S. degree.

ATTACHMENTS: A-D

M O N T A N A B O A R D O F R E G E N T S

LEVEL II REQUEST FORM

Item No.:	**144-1002-R0709**	**Date of Meeting:**	**July 9-10, 2009**
Institution:	**The University of Montana—Missoula**		
Program Title:	**Establish B.S. in Geography**		

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

☐ 1. Change names of degrees (e.g. from B.A. to B.F.A.)
☐ 2. Implement a new minor or certificate where there is no major or no option in a major;
☒ 3. Establish new degrees and add majors to existing degrees;
☐ 4. Expand/extend approved mission; and
☐ 5. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

The University of Montana – Missoula requests permission to establish a Bachelor of Science degree in Geography, and to move an existing option in Physical Geography from the B.A. to the proposed B.S.

Proposal

1. Overview

The University of Montana – Missoula seeks to add a Bachelor of Science (B.S.) in Geography. Geography is often called a "synthetic" or "bridging" discipline because of the way it integrates both physical and social sciences. At The University of Montana, the Geography Department has traditionally had representation on both the Science and Social Science General Education Subcommittees. Most Geography Departments offer both B.A. and B.S. degrees. Regionally, the University of Oregon, University of Wyoming, and University of Utah provide this choice for their students. Appendix A lists the degree programs offered by other regional universities. Although the Geography Department at The University of Montana currently only offers a B.A. degree, it has a curriculum that is as diverse and broad within the physical and information technologies as these other universities, and which should allow students a broad range of professional choices upon completion. This proposal will remedy this discrepancy between U.M. and other Universities in the region by creating a B.S. degree to complement our existing B.A. It will also move the option in Physical Geography to the B.S. from the B.A. This will better serve our existing students with interests in science, technology, and planning, broaden the appeal of Geography to a wider range of students, increase the attractiveness of the existing Physical Geography option, and uphold a "contractual agreement" between the Geography Department and the U.M. Administration to create a B.S. degree.

2. Need

a. Specific Needs.

In response to a departmental review in 2005 and rapid growth in student enrollment over the last decade, the Geography Department has undertaken a restructuring of its undergraduate programs. This proposal is to create a Bachelor of Science (B.S.) Degree in Geography. This B.S. degree would allow our students with interests in Physical Geography, Geographic Information Systems (GIS), and Planning to elect to pursue a more appropriate degree for their professional goals. Also, this proposal will move an existing option in Physical Geography from the B.A. to the proposed B.S. It is envisioned that this new degree and modified option will strengthen the undergraduate program in Geography and the existing option.

The Department of Geography has more than doubled the enrollment in undergraduate programs over the last decade and supported a variety of options within the B.A. program (Appendix B). However, technology has also changed dramatically over that period and fully one-third of our graduates each year are enrolled in the Cartography and GIS Option. In 2007, in response to conversations with local and state employers, the Department of Geography and the College of Forestry implemented a new Undergraduate Certificate in Geographic Information and Technologies that is designed to accompany any undergraduate major on campus without requiring the student to major in Geography. Although this Certificate also serves Geography majors and is replacing our Cartography and GIS Option, we still have a substantial number of majors who are concentrating in the science and technology aspects of the field and would be better served by a B.S. degree than a B.A. when they go into the work force.

In addition, the Geography Department began offering the Option in Physical Geography in 1999, and it has had a small but increasing enrollment (from 1 in 2002 to 5 in 2007) which corresponds to the hiring of two physical geography professors since 2003 (Appendix B). However, each year there have been students that have indicated to faculty that they perceive the lack of a B.S. degree associated with the physical geography track as a significant problem, but that they did not have time in their schedules to complete all of the requirements. (It was the only Option that required a Senior Thesis, additional mathematical courses, and two years of additional science courses.) For these students looking at future employment in applied and technical fields, a B.S. degree is typically the standard credential. For instance, the U.S. Forest Service often requires, or preferentially hires, a B.S. or M.S. instead of a B.A. or M.A. The time constraints have led to the situation in which students who have been enrolled in the

Physical Geography option but do not fulfill the requirements by the time they have obtained adequate credits to graduate to select a different option or degree. During the Geography Department Assessment in 2005, the issues associated with the Physical Geography option were discussed and the disparity between the existing rigorous curriculum requirements and resulting B.A. degree was identified as problematic. The existing curriculum is not in line with those of other options in Geography, with the programs of other Geography departments in the U.S., nor with requirements in other B.S. degree programs at The University of Montana (Appendix C). The addition of a well-designed B.S. degree will provide more options to students interested in the physical and technical aspects of Geography and provide graduates with the appropriate credentials for employment with public and private enterprises in the state and region.

Students interested in planning can follow the Planning Option in the B.A. program, but for those interested in environmental planning and hydrology, for instance, a B.A. does not offer the opportunities for advancement that a B.S. would. The B.S. degree would allow these students to customize their program to include planning courses, but also integrate science-based training in physics and hydrology courses to better prepare for their career goals.

b. How will students and other constituencies be served?

The B.S. will allow students increased professional opportunities in areas that require emphasis in science and technology. Those students interested in double-majoring or moving from other science majors will find it easier to integrate their prior coursework into the revised curriculum, and allow timely completion of their undergraduate program of study.

Although our students are successful in finding employment within the field, some have reported that additional opportunities would be available if they had a “science” degree. Creation of a B.S. will help these students gain appropriate recognition for the science-rich course loads they have completed and assist with attainment of reasonable employment with a variety of agencies and firms.

c. Anticipated demand.

The graph in Appendix B indicates an increasing demand for majoring in geography. There has been a steady, consistent desire expressed by undergraduates focusing on cartography and GIS each year for a B.S. degree. Additionally, each year students have specifically requested that the Physical Geography Option to be made more flexible and less cumbersome in terms of credit hours and the requirement for a senior thesis. This change would also make our program more attractive to existing and prospective students and also to prospective faculty. Each of the last 3 hires in the department have expressed concern about the lack of a B.S. program in Geography. While many of these students would come from the existing B.A. program, we anticipate attracting additional students as freshmen.

3. Institutional and System Fit

a. Connection between existing and proposed programs.

There are no specific guidelines at U.M. as to what criteria should distinguish a B.A. from a B.S. For instance, Forestry has B.S. degrees in Wild Land Restoration, Recreation Management, Resource Conservation, and Wildlife Biology. U.M. also offers B.S. degrees in Business Administration, Chemistry, Computer Science, Health and Human Performance, Medical Technology, and Microbiology. However, Math and Physics offer B.A. degrees. Therefore, we examined existing programs within the University and developed similar requirements. Appendix B lists math, science, and writing courses required by several similar degrees at U.M.

Geography has interactions with a wide range of departments from all across campus. Presumably the proposed B.S. will have small impacts on those departments with which we have “shared” students in the past. Appendix D shows a graph of the second majors taken by students with a primary major in Geography over the past five years. Fourteen different majors were taken by 25 students with the most

being eight students in Environmental Studies, three in Anthropology, and two each in Business Administration and Forestry. These departments offer a combination of B.A. and B.S. degrees and we do not anticipate that the addition of a B.S. degree to Geography's curriculum will cause large numbers of students to switch majors from any of these departments. Indeed, the implementation of the Undergraduate Certificate in Geographic Information Sciences and Technologies makes it much easier for students to add technical skills without having to minor or major in Geography.

b. Will approval of the proposed program require changes to any existing programs at the institution?

There will be no changes to existing programs aside from the creation of the B.S. program and minor changes to course requirements in the Physical Geography option. Although the curriculum requires coursework from other departments, this has been the case already with the Physical Geography option. We do not expect the impact to be large on any department due to the flexibility of the courses that can be chosen.

c. Describe what differentiates this program from other, closely related programs at the institution.

An undergraduate B.S. in Geography reflects the synthetic nature of geography as a discipline at the core of integrative Earth Science. It emphasizes that the student is well trained with scientific skills in addition to the breadth considered the hallmark of a Geographer. The option in Physical Geography allows students to focus their studies and research in the traditional core areas of biogeography, climatology, and geomorphology, although this has broadened to include cold climate processes, hydrology, and many of the facets of human-environment interaction that are considered classic problems in Geography. Some of the options in the Geosciences Department's undergraduate offerings are somewhat similar, but these have existed harmoniously for many years with the existing option in Physical Geography, and this proposal is not anticipated to affect that program.

d. How does the proposed program serve to advance the strategic goals of the institution?

The University of Montana has long sought to support educational experiences that are international and interdisciplinary. Geography naturally satisfies these goals by looking at problems in an international, comparative context and by integrating knowledge from multiple disciplines in earth science and technology. This degree will allow those students with an interest in the technology, quantitative techniques, and physical sciences to have increased opportunities within the major. Another goal of the University is to identify and support new academic programs. While this degree in not an entirely new program, it diversifies the Geography major that increased dramatically in enrollment over the last 5 years. Additionally, much of the increase in the major has been due to the use of Geospatial Technologies in many, many industries and agencies. This proposal will serve as another choice for students who are particularly interested in the technical side of these fields.

e. Describe the relationship between the proposed program and any similar programs within the Montana University System.

Geography is similar to many other departments because of the breadth of the discipline. Individual geographers may be similar in their research interests to others in departments ranging from Anthropology to Zoology but the geographical perspective, emphasis on place and scale, and integrative nature of inquiry makes the discipline unique. Geography tends to be housed and co-exist harmoniously with a wide range of other disciplines. The Department of Earth Sciences at Montana State University offers a B.S. degree with a concentration in Geography as well as 5 other concentrations in other allied areas (Appendix A). Examination of the course offerings in the Geography concentration show some overlap of basic introductory courses with those offered by the Department of Geography at the University of Montana. However, these similarities have existed for some time and no changes to the current undergraduate course offerings within the Department of Geography are proposed. Accordingly, there should be no impact on the existing programs at MSU. None of the other units of the Montana University

Systems have similar programs that might be affected. Clearly, there has been overlapping interests between some U.M. Geography faculty and some U.M. Geoscience faculty for some time, but students are easily able to take courses between the two departments and the proposed B.S. should not impact that relationship negatively.

4. Program details

The B.S. will require students to follow a similar curriculum to the B.A. but with the addition of requiring the Math track for the Symbolic Systems requirement, with Calculus encouraged. Students must also complete a two-course sequence in science (e.g., Chem 151 and 152). They must also either complete a Senior Thesis or an upper-level writing course focused on science so that students become familiar with the style of writing used in scientific discourse.

Students interested in the Physical Geography Option must fulfill the B.S. requirements and an additional 3 or more credits in a higher-level math course (Calculus or a senior-level statistics class), their two-course sequence must be in Biology, Chemistry, or Physics), and they must complete all three of the Physical Geography systematic courses (Geog 322, 324, and 426). These changes, from two-course science sequences and only two Physical Geography systematic courses, will increase flexibility and ensure the broad background assumed in a Geographer.

a. Detailed description of the proposed curriculum.

B.S. in GEOGRAPHY (General Ge ography witho ut Opti on: mini mum of 36 credits/ maxi mum of 60 credits)

The B.S. in Geography is designed to accommodate those students who are interested in pursuing more technical areas of study and work in the field of Geography, such as aspects of geospatial technologies, environmental planning, and physical geography. The curriculum for the Physical Geography option is similar to that of the general degree, but includes some additional course work in the sciences and directs several of the choices available within the Core requirements.

Geography students pursuing the B.S. in Geography MUST meet the symbolic systems requirement by taking Math 117 and Math 241, or just one of Math 150, 152, or 444. Regular calculus (Math 152) is strongly recommended.

In addition to completing the core requirements for ALL geography majors, students electing the B.S. option must complete 6-10 additional credits (a two-course sequence) of science coursework. The classes must be selected and approved by the student and advisor as appropriate to individual student goals (e.g., Biol 120 and 121).

In addition, those pursuing the B.S. must either select to complete a senior thesis OR complete an upper-level science-based writing class (e.g. Geog335, Geos320, Geos499, Bio 304, Bio306, etc.) [Students will be advised to see GenEd Requirements for a list of potential classes and consult an advisor to make sure they are science-based.]

B.S. in GEOGRAPHY with option in Physical Geography (minimum of 41 credits/ maximum of 60 credits)

Geography students pursuing the Physical Geography option must meet ALL of the requirements of the B.S. in Geography degree and complete the following additional courses (18-22 credits in option).

Required Courses (18-22 credits, 9-12 of which may overlap with B.S. requirements)*

Math-3-4	Math 151, 153, 444, or equivalent

An additional appropriate course must be taken to the complement the ones used to fulfill the symbolic systems requirement. For instance, if Math 152 meets the symbolic systems requirement, then Math 153 (the second semester of Calculus) would work to fulfill the Physical Geography Math course.

One of the following five science sequences must be used for the Geography B.S. science requirement (6-10 credits)

Chem 151-3 Gen. & Inorg. Chem
Chem 152-3 Org. & Biol. Chem.
(for those interested in bio but not doing any biochem)

Or

Chem 161-5 College Chemistry I
Chem 162-5 College Chem. II
(no organic; suitable for hard-rock process interests)

Phys 121-5 Fund. of Physics I
Phys 122-5 Fund. of Physics II
(for those interested in physics but not going into atm dynamics or hydrologic modeling)

Or

Phys 221-5 Physics w/ Calc
Phys 222-5 Physics w/ Calc II
(needed for interests in atm or hydrologic modeling)

Biol 120-3 General Botany
Biol 121-3 Introductory Ecology
(for those interested in ecological interactions)

Select three of the following courses (9 credits)

Geog 322N-3 Weather and Climate
Geog 324-3 Geomorphology
Geog 426N-3 Biogeography

Substitutions of other suitable courses from allied fields (e.g. Biology, Chemistry, Forestry, Geosciences, Physics, or Wildlife Biology) may be made with the approval of your advisor. Any substituted course must broaden the curriculum of study to include a range of sciences. Also, an additional science sequence from above may replace one of the 3 physical geography core courses.

*Note: The proposal was approved on campus prior to Common Course Numbering. Modifications to the course lists will be made in accordance with requirements of the CCN Transfer Policy.

b. Planned implementation.

The courses within the degree program and option are already offered at UM, and this proposal can be implemented without delay. Initially, the B.S. will attract students from the existing B.A. program, but as the program is more widely known it will be more attractive to students interested in double majors within the sciences and new students looking at a degree program that allows for a wide range of careers based in science and technology upon completion. Over the next few years it is estimated that average annual enrollment should grow to be a dozen within the B.S. general degree program, and a half dozen within the option.

5. Resources

a. Faculty resources.

Our current faculty resources are adequate as there are no changes to existing courses.

b. Other resources.

There are no additional space or curriculum needs.

6. Assessment

The Geography Department's 2007 assessment plan will be expanded to include measuring learning outcomes specific to the B.S. general degree and Physical Geography option, as are presently done for the other degrees and options. In addition, a variety of statistics are collected concerning changes in enrollments and matriculation for each program and this will include the new B.S. and Option once approved.

7. Process leading to submission

This proposal has been a goal of the department for more than 5 years. The original proposal for the Physical Geography Option was led by a Geography professor just before his retirement, and when enrollments did not prove to be as large as anticipated the Geography faculty determined that it was the added rigor of the curriculum requirements that discouraged students. This assessment was formalized in the 2005 Geography Department Assessment, and the recommendation was to develop a B.S. degree program and Physical Geography option such as is proposed here. This proposal was developed by a subcommittee over the last 2 years, and revised and approved by the Geography faculty. The Chair of Geography and the Dean of the College of Arts and Sciences then signed the documents necessary to submit the proposal to the Provost's Office and the Faculty Senate.

This proposal was reviewed and approved by the affected departments as follows:

Department Name: Geography Date: 09/18/2008

Department Name: _____ Date: _____

In addition the deans of the following Schools/Colleges reviewed and approved the proposal:

Dean of: The College of Arts and Sciences Date: 09/23/2008

Dean of: Library Services Date: 10/01/2008

The proposal was reviewed and approved by the Faculty Senate at the University of Montana Date: January 2009

[No outside consultants were employed for the development of this proposal.]

Appendix A.

Institution & Department	Undergrad Degrees and Difference Between Them	Options/Concentrations
U. of Idaho - Geography	BS in Geog	Physical, Global and Regional, GIS
U. of Wyoming - Geography	BA and BS in Geog. They require the same core courses.	Human, Physical, GIS, Natural Resource Management/Recreation, Planning. They also offer an interdisciplinary Earth System Science BS with concentration in Geography in cooperation with Anthro., Atm. Sci., Biol., Botany, Geology & Geophysics, Secondary Ed. and Soil Sci.
U. of Washington - Geography	BA	GIS, Economic, Urban Social & Political, Regional & International Dev, Society & Environment
Montana State U – Earth Science	BS in Earth Science	Geography, Geology, Geohydrology, Snow Science, Paleontology, GIS/Planning
Oregon State – Dept of Geosciences	BS's in Geology, Geography, and "Natural Resources and Earth Science"	None, but several minors
U of Oregon - Geography	BA and BS. BA requires a language and BS requires one of several math sequences. See quote below table from their catalog.**	Physical, Environmental, Culture Politics & Place, GIS, or Geog Ed
U of Utah - Geography	BA and BS. Following U policy, BA has language requirement and BS has a quantitative requirement.	Int Regional Geography, Urban & Economic, Environmental/Earth Sys Science, GIScience, Hazards & Emergency Management

****From U of Oregon. General Requirements for a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) in Geography**

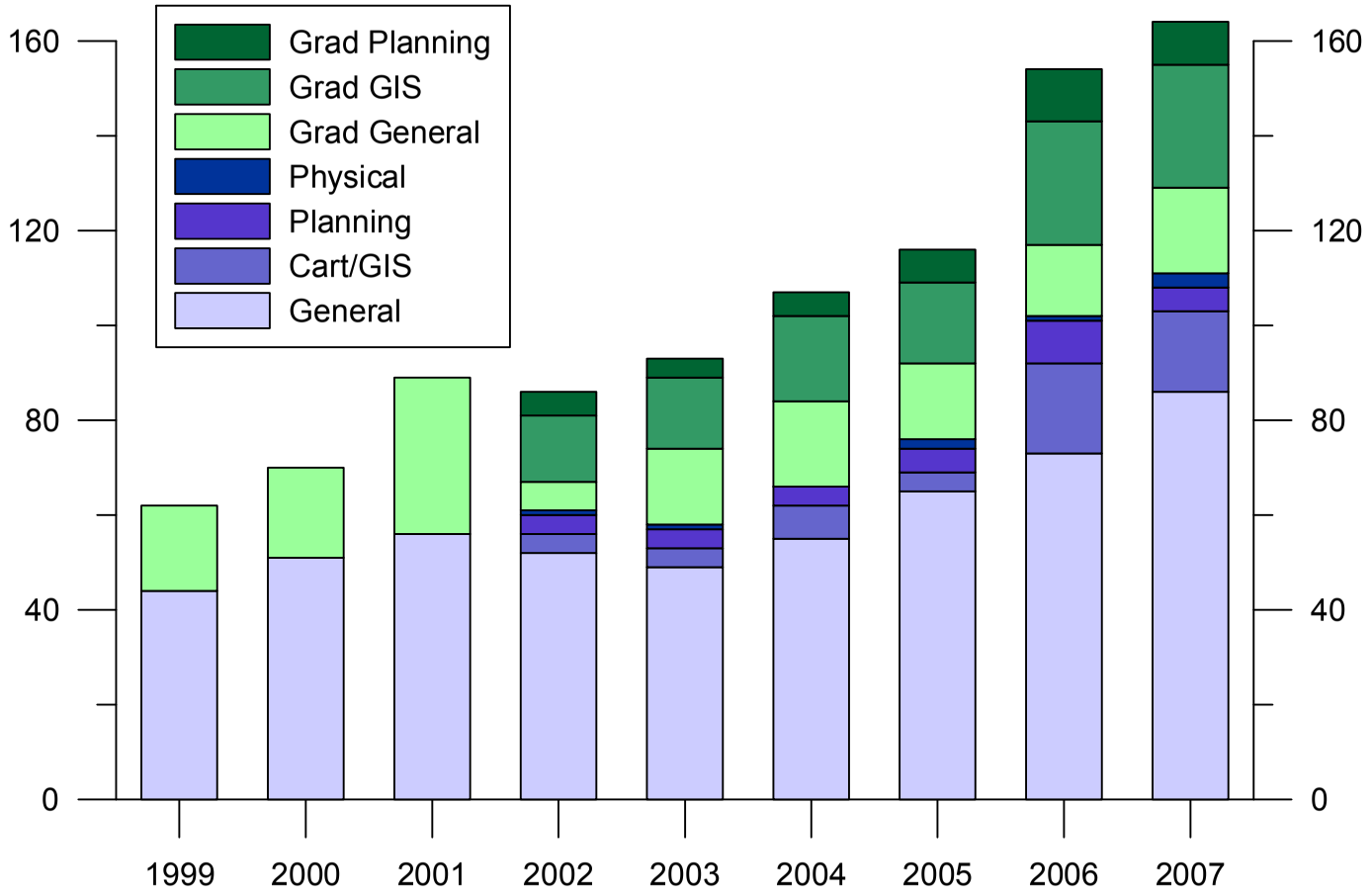
Bachelor of Science. All Geography majors seeking a B.S. degree will be required to complete any math sequence that satisfies the University's math requirement for a B.S. degree. Math classes must be passed with a grade of at least C- or P. For the ***Environmental Geography Track*** we recommend either a statistics sequence or a calculus sequence. For the ***Geographic Information Science Track***, we recommend a computer programming sequence. For students interested in the ***Physical Geography Track***, there are recommendations based on your more specific interests. For *geomorphology* we recommend a calculus emphasis; for *biogeography* we recommend a statistics emphasis; and for *climatology* we recommend a calculus or computer programming emphasis.

Bachelor of Arts. All Geography majors seeking a B.A. degree must demonstrate proficiency in a second language either by passing the third quarter of a second-year university language course with a grade of C- or better or by an examination indicating an equivalent level of proficiency.

If you are considering applying to graduate school in the future, we strongly recommended that you complete *both* the math and language requirements.

Appendix B.

Students Majors in the Department of Geography by Option



Numbers are spring enrollments. Option data not available before 2002. By graduation, more than half of students have an option. For instance, in 2007 1/3 of graduates were in the Cart/GIS Option and 10% were in planning.

Appendix C.

	Current Phys .Geog. B.A. option	Proposed General Geog. B.S.	Proposed B.S. w/ Phys. Geog. option	General Comp Sci. B.S.	B.S. in Resource Conservation w/ Land & People option	Interdisciplinary Geoscience B.S.
Math	Math 150, 444, or equivalent	Math 117 & 241, or just one of Math 150, 152, or 444. Math 152 is recommended.	Gen req. plus an additional course of Math 150, 153, 444, or equivalent.	Math 152–153, 221 OR 325, 225, and 341.	Math 121; Econ 111 &2; Stats: For 201, Math 241, Soc 202, OR Psych 220.	Math 121 or above.
Allied Sciences	Two 2-course sequences in Chem (151 & 2 or 161&2), Phys (121&2 or 221&1), OR Bio (120&121)	One 2-course sequence of natural science (e.g., Biol 120 & 121) approved by advisor.	One 2-course sequence of natural science which MUST be in Chem (151 & 2 or 161&2), Phys (121&2 or 221&1), OR Bio (120&121).	One of the sequences: Biol 108N-109N, 110N; Chem 161N, 162N; OR Phys 211N/213N & 212N/214N, AND 2 additional courses from a list.	Chem 151; Bio 121; CS 101 or 172;	Chem (151 & 2 or 161&2), One course in CS, GIS, or Stats, and 27 additional credits in Chem, Math, CS, Phys, Biol, or For
Within Dept. Sci. Courses	2 of Geog322, 324, or 426.	One of Geog322, 324, and 426 in addition to Geog385, 387/9	Geog322, 324, and 426 in addition to Geog385, 387/9	CS121, 131–2, 241-2, 281, 332, 344, 346, 365, 441-2, 488, & 9 more CS credits.	For200, 210, 230, 320, 330, 347, 360, 385 or 455, 422, 424, 480 etc.	Geos200, 226 & 230 and 13 more Geos credits at 200 or above.
Writing	Senior thesis	Senior thesis OR complete an upper-level natural science-based writing class.	Senior thesis OR complete an upper-level natural science-based writing class.	CS415E and For220, and either Comm111A or 242.	For220 An	upper-level natural science-based writing class.

*Introductory 100-level courses within each department were not listed but complete titles of courses are on following page.

Assorted Course titles for Reference:

Geography
322N Weather and Climate
324 Geomorphology
426N Biogeography

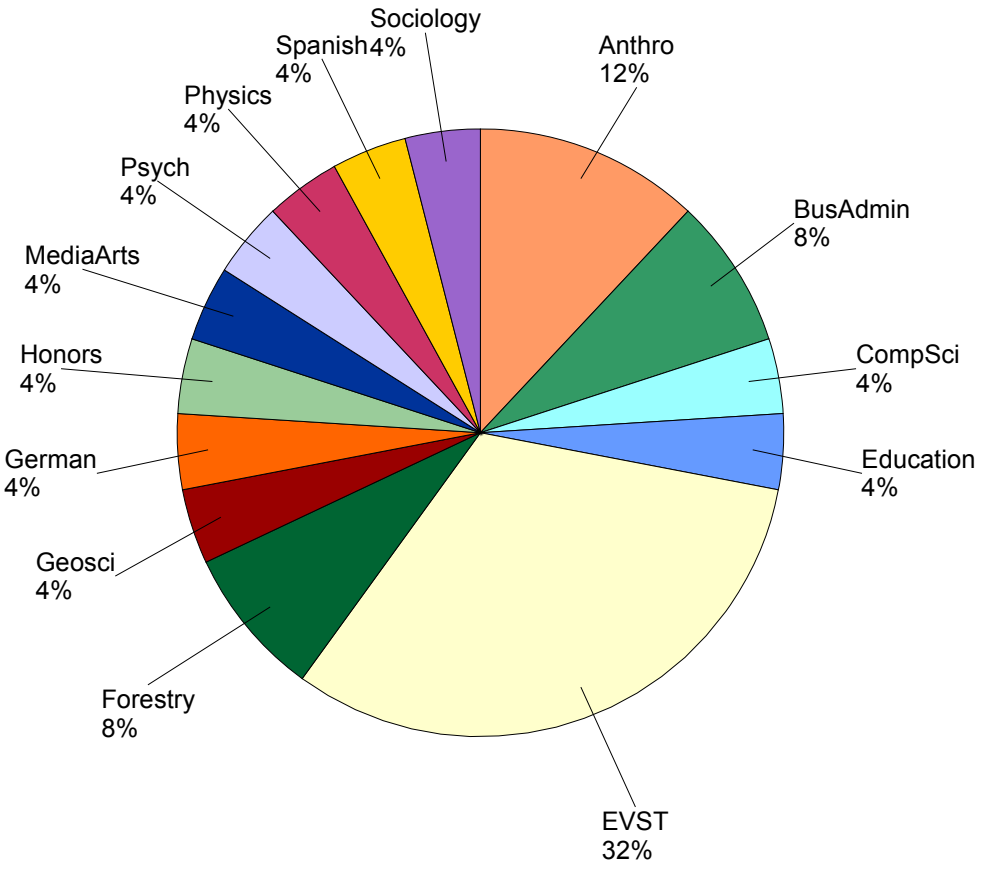
Mathematics
117 Probability and Linear Mathematics
121 Precalculus
150 Applied Calculus
152 Calculus I
153 Calculus II
221 Linear Algebra
225 Discrete Mathematics
241 Statistics
305 Introduction to Abstract Mathematics
325 Discrete Mathematics (cont of 225).
341 Introduction to Probability and Statistics (Prerec Calc)
441&2 Mathematical Statistics
444&5 Statistical Methods

Chemistry
151N General and Inorganic Chemistry
152N Organic and Biological Chemistry
161N College Chemistry
162N College Chemistry

Physics
121N Fundamentals of Physics
122N Fundamentals of Physics II
211N Fundamentals of Physics with Calculus I
212N Fundamentals of Physics with Calculus II

Appendix D.

Second Majors among Geography Majors



Data from 2004-2008 (n=25). Majors are listed in alphabetic order.

ITEM 143-1601-R0509 **Approval To Reorganize The Science Department At UMW**

THAT: In accordance with Montana University System Policy, the Board of Regents of Higher Education authorizes The University of Montana-Western to reorganize the science department.

EXPLANATION: Alter the existing department structure of our science faculty by dividing the current Environmental Sciences Department into a Biology Department and an Earth and Environmental Sciences Department.

ATTACHMENTS: Level II Request Form, Letter of Support

M O N T A N A B O A R D O F R E G E N T S

LEVEL II REQUEST FORM

Item No.:	**143-1601-R0509**	**Date of Meeting:**	**May 2009**
Institution:	**The University of Montana Western**		
Program Title:	**Alteration of Science Department Structure**		

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

☐	1.	Change names of degrees (e.g. from B.A. to B.F.A.)
☐	2.	Implement a new minor or certificate where there is no major or no option in a major;
☐	3.	Establish new degrees and add majors to existing degrees;
☐	4.	Expand/extend approved mission; and
X	5.	Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:
Alter the existing department structure of our science faculty by dividing the current Environmental Sciences Department into a Biology Department and an Earth and Environmental Sciences Department.

Background:
Over roughly the last decade, the sciences at the University of Montana Western have flourished and experienced significant increases in student enrollment. Students majoring in Environmental Science degrees are currently near all time highs with 62 declared majors just this year. The increase in student numbers has been especially evident in biology, particularly biomedical science, where the number of majors has increased from five to 76 students in the last seven years. The explosion of biology majors has resulted in the University creating two new tenure-track positions for biomedical scientists over that time period.

Currently, the nine tenure-track UMW science faculty, which include five biologists, two geologists, one physicists and one chemist, are lumped into a single Environmental Sciences department, primarily due to the department's historical focus on environmental sciences. However, we feel that the significant expansion of the biomedical science program necessitates a change in departmental structure. Therefore, we are requesting permission to allow the formation of a separate biology department.

Rationale:
There are many reasons why the formation of a Biology Department is necessary. For example, many of the biology faculty members are very active in pursuing research grants and providing UMW students with hands on research opportunities. In the last five years, over $1 million in grant monies have been obtained from the National Institutes of Health (NIH) to support the development of infrastructure necessary for UMW to engage in active biomedical research and to increase the number of graduates pursuing biomedical careers and graduate

degrees. Additionally, two new NIH proposals were just awarded to two UMW biologists generating an additional $1 million in NIH funding for the next five years. These research efforts have been of great benefit to many UMW biology students, who have completed impressive senior theses, presented their work at national conferences, co-published with UMW professors, and have gone on to professional schools and graduate programs.

The placement of a well-funded biomedical program within an environmental sciences department generates many problems. When publishing manuscripts, writing grant proposals and attending conferences, the current departmental affiliation of the biomedical science faculty is viewed unfavorably. In addition, the successful completion of specific aims outlined in the research grants requires a significant number of high quality undergraduate students. Unfortunately, potential students that are interested in biology, but are unfamiliar with UMW, do not immediately realize that we have a biology program because it is housed within the Environmental Sciences Department. This is especially a problem for those students interested in the biomedical sciences, since biomedicine does not logically fit within an environmental sciences umbrella. Finally, the formation of two separate departments will make curricular changes much simpler, and will allow for much more effective departmental planning.

The entire UMW science faculty agrees that the formation of a Biology Department and an Earth and Environmental Sciences Department (a name change for the existing Environmental Sciences Department), is essential for the continued success of our programs and faculty (Please see attached letter). In fact, at a recent meeting, the UMW Faculty Senate voted unanimously in favor of this proposal, which demonstrates that there is campus wide support for this change.

Budgeting and other considerations:

To keep budgets as simple as possible at this time, the chairs of the two departments will work together to manage a single science-operating budget. This approach is supported by the entire UMW administration, and it can be reevaluated at a later date if necessary. The distribution of lab fee budgets will remain unchanged, as they are currently separated by rubric. Since department chairs at UMW are not compensated the establishment of a Biology Department will not result in additional departmental overhead costs for the University. Any future costs that may become associated with the Biology Department could be covered by discretionary funds that are currently associated with the biology program such as indirect monies from grants or our biology endowment.

Finally, the science departments will maintain their current level of representation on campus-wide committees and faculty senate.

February 5, 2009

RECOMMENDATION

TO: Dr. Karl Ulrich, Provost, Dr. Richard Storey, Chancellor, Dr. George Dennison, President, and the Montana Board of Regents
FROM: Environmental Science Faculty, UMW
RE: Split the Environmental Sciences Department into a Biology Department and an Earth and Environmental Sciences Department

Over roughly the last decade, the sciences at the University of Montana Western have flourished and experienced significant increases in student enrollment. Students majoring in Environmental Science degrees are currently near all time highs with 62 declared majors this year. The increase in student numbers has been especially evident in biology, particularly biomedical science, where the number of majors has increased from five to 76 students in the last seven years. The explosion of biology majors has resulted in the University creating two new tenure-track positions for biomedical scientists over that time period.

Currently, the nine tenure-track UMW science faculty, which include five biologists, two geologists, one physicists and one chemist, are lumped into a single Environmental Sciences department, primarily due to the department's historical focus on environmental sciences. However, the significant expansion of the biological sciences program, including biomedical science, has necessitated a change in departmental structure. Therefore, we are requesting permission to allow the formation of a separate biology department.

There are many reasons why the formation of a Biology Department is necessary. For example, many of the five biology faculty are very active in pursuing research grants and providing UMW students with hands on research opportunities. In the last five years, over $1 million in grant monies have been obtained from the National Institutes of Health (NIH) to support the development of infrastructure necessary for UMW to engage in active biomedical research and to increase the number of graduates pursuing biomedical careers and graduate degrees. Additionally, two new NIH proposals were just awarded to two UMW biologists generating an additional $1 million in NIH funding for the next five years.

These research efforts have been of great benefit to many UMW biology students, who have completed impressive senior theses, presented their work at national conferences, co-published with UMW professors, and have gone on to professional schools and graduate programs.

The placement of a well funded biomedical program within an environmental sciences department generates many problems. When publishing manuscripts, writing grant proposals and attending conferences, the current departmental affiliation of the biomedical science faculty is viewed unfavorably. In addition, the successful completion of specific aims outlined in the research grants requires a significant number of high quality undergraduate students. Unfortunately, potential students that are interested in biological fields and are unfamiliar with UMW, do not immediately realize that we have a biology program because it is within the

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Environmental Sciences Department. This is especially a problem for those students interested in the biomedical sciences, since biomedicine does not logically fit within an environmental sciences umbrella. Finally, the formation of two separate departments will make curricular changes much simpler, and will allow for much more effective departmental planning.

All of the UMW science faculty agree that the formation of a Biology Department and an Earth and Environmental Sciences Department (a name change for the existing Environmental Sciences Department), is essential for the continued success of our programs and faculty. In fact, there is agreement with this change on campus as demonstrated by a unanimous Faculty Senate vote in favor of this proposed change.

Since department chairs at UMW are not compensated, and since there are no departmental overhead costs, the establishment of a Biology Department will not result in additional obligations for the University. If in the future costs are associated with departments, any costs associated with the Biology Department could be covered by discretionary funds that are currently associated with the biology program such as indirect monies from grants or our biology endowment.

To keep budgets as simple as possible at this time, the chairs of the two departments will work together to manage a single science operating budget. This approach is supported by Vice-Chancellor Briggs, and it can be reevaluated at a later date if necessary. Lab fee budgets and their distribution will remain unchanged, as they are currently separated by rubric. Finally, the science departments will maintain the current level of representation on campus-wide committees and faculty senate.

We feel very confident that the new organization structure will significantly assist both departments in student recruitment, program development, professional development and efforts to obtain extramural funding. It will also help us operate much more smoothly and efficiently. Thank you very much for your consideration of this proposal. Feel free to contact us if there are any questions, or if you wish to discuss this proposal further.

Thank you,

Michael W. Morrow, Ph.D.
Associate Professor of Biology

Craig Zaspel, Ph.D.
Professor of Physics

Steve Mock, Ph.D.
Professor of Chemistry

Rob Thomas, Ph.D.
Professor of Geology

Sheila Roberts, Ph.D.
Professor of Geology/Chemistry

Jack Kirkley, Ph.D.
Professor of Biology

Linda Lyon, Ph.D.
Assistant Professor of Biology

Michael Gilbert, Ph.D.
Assistant Professor of Biology

ITEM 144-1901-R0709 **Associate Of Applied Science In Water Resources**

THAT: The University of Montana-Helena College of Technology requests to offer an Associate of Applied Science in Water Resources with options in Water Quantity and Water Quality.

EXPLANATION: The University of Montana-Helena College of Technology requests approval of an Associate of Applied Science in Water Resources with options in Water Quantity and Water Quality.

State agencies and students have been requesting a technician level water resources offering at UM-Helena for the previous three years. The interest has come from officials at the Department of Natural Resources and Conservation (DNRC), officials at the Department of Environmental Quality (DEQ), existing students at UM-Helena, and people currently working in the field who are looking for continuing education in their field or a formal credential. This degree can be offered with a minimal resource investment and will increase UM-Helena's offerings in the area of Green Jobs, as well as fulfilling part of our mission of delivering workforce development to our local employers.

ATTACHMENTS:

M O N T A N A B O A R D O F R E G E N T S

LEVEL II REQUEST FORM

Item No.:	**144-1901-R0709**	**Date of Meeting:**	**August 2009**
Institution:	**The University of Montana-Helena College of Technology**		
Program Title:	**Water Resources**		

Level II proposals require approval by the Board of Regents.

Level II action requested (check all that apply): Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

- ☐ 1. Change names of degrees (e.g. from B.A. to B.F.A.)
- ☐ 2. Implement a new minor or certificate where there is no major or no option in a major;
- ☒ 3. Establish new degrees and add majors to existing degrees;
- ☐ 4. Expand/extend approved mission; and
- ☐ 5. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

The University of Montana-Helena College of Technology requests to offer an Associate of Applied Science in Water Resources with options in Water Quantity and Water Quality.

LEVEL II –A.A.S in Water Resources

Curriculum Proposals

1. Overview

The University of Montana-Helena College of Technology is requesting approval by the Montana Board of Regents to offer an Associate of Applied Science in Water Resources with options in Water Quantity and Water Quality.

The Water Resources program being proposed by UM-Helena has been created in response to demand from local employers, students, and current employees in the field. The demand and interest brought forward by these individuals resulted in a 2 ½ year process of program development. The end result is a program that addresses the workforce development needs of our local state agencies, Department of Natural Resources and Conservation (DNRC) and Department of Environmental Quality (DEQ). The program will also produce employees who will be qualified to fill positions at private companies working in the water industry. With the vast amount of resources and expertise in the Helena area to draw from, it was clear that the program could be created and delivered with a minimal financial investment. Based on input from industry and the need to reach out to students across our extensive state, this program primarily will be delivered on-line with the field internship having to be completed face to face.

2. Need

a. *To what specific need is the institution responding in developing the proposed program?*

According to the Occupational Supply Demand System, the national demand for technicians in this area is expected to grow 28% between the years of 2006-2016. This is one of the highest expected rates of growth on a national level during that time, and will expand the college's offerings of green jobs and green education.

Our local demand and need for this program primarily has been driven by our local state agencies, DNRC and DEQ. They have identified to us a specific need for technician-level employees in the water quantity and water quality areas. The designed curriculum would prepare those students to perform jobs using a mix of scientific knowledge and technical skills. This curriculum was designed by our advisory board of industry individuals who will be the primary job market for these graduating students. The curriculum was designed not only to train degree-seeking students, but also to provide continuing education opportunities for incumbent workers.

The demand identified by our local agencies also required that the entire curriculum be offered over a distance delivery format in order to reach potential students and incumbent workers around the state. UM-Helena intends to meet this request and is working to finalize details on how each of the courses will be delivered via distance education.

b. *How will students and any other affected constituencies be served by the proposed program?*

This degree will provide students and incumbent workers access to a sequence of courses that are designed to provide a strong scientific knowledge base and technical skills in the area of water resources. This offering of courses can be used to pursue a

degree option or used as training for incumbent workers looking to upgrade their knowledge base and further their career.

The skills developed can lead to positions in state government (DNRC and DEQ) or private companies in numerous career positions. In the area of water quantity, the student will be prepared for a job such as Water Resource Specialist. In the water quantity option, students will be qualified for additional jobs performing the following duties: analysis of issues pertaining to water use, gathering and analyzing technical water data, researching water use information, conducting field investigations to collect and evaluate water data, resolving disputes between water users, and other water resource management functions.

In the area of water quality, students will be trained for jobs such as Water Protection Bureau-Compliance Inspector. In the water quality option, students will be qualified for additional jobs performing the following duties: conduct compliance evaluations, inspections, investigation and sampling regarding actual and potential wastewater discharges, report and analyze decisions based on current water laws, regulations, and policies.

c. *What is the anticipated demand for the program? How was this determined?*
The anticipated demand for the program is between 10-15 students in the first year and growing gradually after that point. The anticipated enrollment is based on an identified interest by current students in the Associate of Science Environmental Science degree, inquiries through the Admissions office, and participation by incumbent workers in previous course offerings. UM-Helena has offered some of the fundamental courses associated with this degree in the 07-08 and 08-09 academic year with strong enrollment each time they were offered, averaging around 13 students per class. The courses we offered were Introduction to Water Resources, Introduction to GIS, and Groundwater Hydrology. These courses were filled with primarily non-degree seeking students and we believe this non-degree population will continue with the creation of a program.

3. Institutional and System Fit

a. *What is the connection between the proposed program and existing programs at the institution?*
The proposed program is most closely related to our current Associate of Science degree in Environmental Science. Although there are some courses that are requirements for both degrees, the student outcomes for each of the degrees are vastly different. The Water Resources offering is a focused program aimed at producing a student who is specifically trained at the technician level in the water resources field. The Environmental Science degree curriculum is a broad-based offering of foundational courses in the area of Environmental Science.

b. *Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.*
The approval of this program will not require changes to any existing programs at UM-Helena.

c. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

See Item 3. (a)

d. *How does the proposed program serve to advance the strategic goals of the institution?*

The development and implementation of the Water Resources program is directly related to UM-Helena's strategic direction of Connecting with the Community and our action plan to work with business and industry to address workforce development needs. In the Helena area, state government is the largest employer and one of the most important industries to serve when addressing workforce needs. This program directly responds to a request by two large state agencies and shows UM-Helena's ability to address industry requests.

The creation of this program and our goal of delivering the entire curriculum through distance education also targets our strategic direction of Creating Access for students. Not only will this program and its method of delivery serve our students on campus, but it will make those course offerings available across the state and to current employees in the field.

e. *Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.*

At the time UM-Helena began conversations about the development of a Water Resources program in summer 2006, there were no active programs in the MUS that would be considered similar. The only program that had similar outcomes at that time was the Water Quality Technology: Environmental Health degree at MSU-Northern, which was in moratorium. In the Fall of 2006 our Academic Dean informed the Provost at MSU-N of our intent to pursue the development of our Water Resources program. The Academic Officers from The University of Montana were informed of our intent in September of 2007.

During the development of our program, MSU-N made the decision to have their Water Resources Program taken out of moratorium. We did have informal discussions with MSU-N about the possibility of collaboration between our programs before their program was reinstated, but no formal proposals for collaboration have been exchanged. The program curriculum was exchanged between campuses and we have had additional informal conversations about the similarities in our programs.

It is the belief of UM-Helena that although the programs at UM-Helena and MSU-N have similar titles and a few similar courses, the overall curriculum is significantly different and the intended outcomes for students are significantly different. In the Water Quantity Option the overall focus of discipline is different than the MSU-N Water Quality degree. A comparison of the UM-Helena Water Quality Option and the MSU-N

Quality degree demonstrates that the outcomes for the UM-Helena degree are designed to accommodate specific requirements outlined by DEQ and their Water Compliance Officer job description.

UM-Helena believes this program differs significantly from all other programs in the MUS and that this will directly address a need and request from our local employers.

4. Program Details

a. *Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.*

See attached curriculum

b. *Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.*

UM-Helena will begin offering the Water Resources sequence of courses for both options in the Fall of 2009. We expect 10-15 students in the first year of the program and will fill the remaining seats with incumbent workers from the state agencies in Helena and around the state. Our goal in the second year of the program is to enroll a minimum of 20 students in the program, and reach a goal of 30 students in the program by the start of the third year (Fall of 2011).

5. Resources

a. *Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.*

It is the intent of UM-Helena to deliver this curriculum exclusively with adjunct instructors at this time. The number of individuals with expertise in this area that reside in the Helena community will provide us with a rich pool of part-time instructors to deliver the curriculum. We believe the ability to use current employees in the field to deliver all technical courses in the program will be one of the strengths of the program.

b. *Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.*

Any additional resources we may need for this program will be addressed by working in partnership with DNRC, DEQ, or local companies to provide access to equipment, internships, and expertise. Implementing this program at UM-Helena will require a minimal, or no financial investment of new resources. To solidify industry's desire for and commitment to this program, DNRC has provided $10,000 to assist in course development.

6. Assessment.

How will the success of the program be measured?

The program will be assessed using our institutional process for annual assessment of programs. This will include course evaluations, instructor evaluations, and submission of program goals. In addition to the annual assessment, we will use indicators such as graduation rates, job placement, student satisfaction inventories, and enrollment by program/course.

7. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

In the summer of 2006 a former faculty member of UM-Helena proposed the development of a Water Resources program to address a need identified by DNRC for trained technicians. Through collaboration between UM-Helena and DNRC, a Memorandum of Agreement was created and signed by officials of both institutions that provided UM-Helena resources to develop the program and provided DNRC with the expectation that a Water Resources program would be developed.

The process of developing that program was informally handled by our former physical sciences instructor until December of 2008. At that time the faculty member was no longer employed at UM-Helena and the development of the program was passed to the Executive Director of Academic and Workforce Development. Using the documentation collected over the prior two years, a formal advisory board was created with seven experts and potential employers in the area of water resources. The board included representatives from DNRC, DEQ and our local municipalities. This advisory board worked diligently through the next five months to formalize the curriculum, develop courses, and create a product that would meet their needs for training employees. The curriculum was submitted and approved at the departmental level on May 5, 2008, and received approval from the UM-Helena Academic Standards Curriculum Review Committee on June 2, 2009.

WATER RESOURCES PROGRAM
Water Quantity Option

Course Number	Course Title	Credits
	First Semester	
EVSC 120	Introduc tion to Water Resources 3	
EVSC 130	Introduction to Environmental Science 3	
BIOL 101	Biology	4
CAPP 131	Basic MS Office	3
M121	College Algebra (or higher)	3
Total	Credits	16
	Second Semester	
EVSC 125	Maps and Aerial Photo Interpretation	3
EVSC 140	Introduction to Geographic Information Systems (GIS)	3
EVSC 145	Hydrologic Measurements	3
CHMY 121/122	Introduction to General Chemistry and Lab	4
WRIT 121	Introduction to Technical Writing	3
Total	Credits	16
GEN 288	Internship	8
	Third Semester	
EVSC 210	Water Rights and Water Policy	3
EVSC 220	Surface Water Hydrology	3
EVSC 215	Ground Water Hydrology	3
EVSC 240	Applied Geographic Information Systems (GIS)	3
GEO 101/102	Introduction to Physical Geology and Laboratory	4
Total	Credits	16
	Fourth Semester	
EVSC 225	Applied Quantitative Methods in Water Resources	4
EVSC 260	Soils, Weather, and Climate	3
EVSC 250	Technical Report Writing	3
EVSC 250	Field Methods and Reporting	4
COMM 201	Introduction to Public Relations	3
Total	Credits	17
Total		73

WATER RESOURCES PROGRAM
Water Quality Option

Course Number	Course Title	Credits
	First Semester	
EVSC 120	Introduc tion to Water Resources 3	
EVSC 130	Introduction to Environmental Science 3	
BIOL 101	Biology	4
CAPP 131	Basic MS Office	3
M 121	College Algebra (or higher)	3
Total	Credits	16
	Second Semester	
EVSC 135	Maps and Aerial Photo Interpretation	3
EVSC 140	Introduction to Geographic Information Systems (GIS)	3
EVSC 150	Hydrologic Measurements	3
CHMY 121/122	General and Inorganic Chemistry and Lab	4
WRIT 121	Introduction to Technical Writing	3
Total	Credits	16
	Summer Semester	
GEN 288	Internship	8
	Third Semester	
EVSC 210	Water Quality	3
EVSC 220	Surface Water Hydrology	3
EVSC 215	Ground Water Hydrology	3
BIOL 220	Microbiology with Laboratory	4
EVSC 240	Environmental Policy and Laws	4
Total	Credits	17
	Fourth Semester	
EVSC 250	Applied Quantitative Methods in Water Resources	4
EVSC 235	Environment and the Economy	3
WRIT	Technical Report Writing	3
COMM 201	Introduction to Public Relations	3
Electives		3
Total	Credits	16
Total		65

Course Prefix/Number: EVSC 120 Introduction to Water Resources

COURSE DESCRIPTION

This course provides a basic introduction to the fundamental concepts, techniques and knowledge required to understand and manage water resources. Introduction to Water Resources is an introduction to use, conservation, and management of water resources. The course will provide an introduction to a variety of water resource topics including: water resource terminology, the principles of the hydrologic cycle, water balance techniques, hydrology, hydrogeology, basic computational techniques, historic water information, water law, and water rights overview. Through the use of professional sources, the students will develop a working knowledge of the hydrologic, water quality, legal, economic, political and social factors that determine water availability, hazards, use, demand, and allocation.

Course Prefix/Number: EVSC 130 Introduction to Environmental Science

COURSE DESCRIPTION

This course is designed to introduce non-science students to important science-related issues in the world around us. The class will examine environmental issues and relate them to current problems in Montana and the United States. Class discussions will emphasize the basic scientific principles needed to evaluate scientific problems with examples based on areas of state and local concern.

Course Prefix/Number: BIOL101 Biology I with Lab

COURSE DESCRIPTION

The first course in the biology sequence is an introduction to the basic concepts and principles of general biology with an emphasis on lab experiences, critical thinking, problem solving, and the scientific method. Areas of study include organic chemistry and biochemistry, cellular biology, cell growth, genetics and genetic engineering, reproduction, cell metabolism, ecology, evolution theory, and classification systems in biology.

Course Prefix/Number: CAPP 131 Basic MS Office

COURSE DESCRIPTION

This course provides students with basic computer literacy concerning terminology, careers, and social issues related to computer, network, and information technology including ethics, crime, and copyright issues. Students will explore a computer operating system (Microsoft Windows XP) and Microsoft Office Suite 2007, including Microsoft Word and Excel, Internet, and solutions for real world problems. Through hands-on activities, participants will learn effective uses of a Windows-based computer as a tool to increase productivity and employability.

Course Prefix/Number: M121 College Algebra (or higher)

COURSE DESCRIPTION

This is a study of equations and inequalities, including systems, functions and graphs, polynomial, rational, exponential and logarithmic functions and graphs, sequences and series and the binomial theorem.

Course Prefix/Number: EVSC 135 Maps and Aerial Photo Interpretation

COURSE DESCRIPTION

The course will introduce basic principles, techniques, processes, and procedures for quantitative and qualitative interpretation of topographic maps and aerial photographs. The course will entail not only formal explanation of principles and concepts but also hands-on exercises that focus on various practical applications for effective interpretation of maps and air photos in order to make quality assessments of physical objects or locations of interest. Each student is required to conduct an individual research project, which will consist of problem solving using the analytical skills learned during the semester.

Course Prefix/Number: EVSC 140 Introduction to Geographic Information Systems (GIS)

COURSE DESCRIPTION

This course teaches the basics of Geographic Information Systems (GIS) and the science and technology behind it. Students will be introduced to the fundamentals and methods of spatial data collection, processing, analysis, and cartography.

Course Prefix/Number: EVSC 150 Hydrologic Measurements

COURSE DESCRIPTION

This course will introduce the concepts of flow, pressures, and measurement of water. This is a foundational course that will introduce the knowledge necessary to complete future courses in Surface Water, Groundwater, and Applied Methods.

Course Prefix/Number: CHEM 150/151 General and Inorganic Chemistry and Lab

COURSE DESCRIPTION

CHEM 150: This course is designed to provide students with a working knowledge of the basic principles of chemistry and the physical world at a microscopic scale. Topics include the atomic model of matter, energy, chemical bonds and reactions, the states of matter, acids and bases, and an introduction to organic chemistry. The course integrates lecture and

homework assignments to provide students practical examples of applications and course material to “real world” situations.

CHEM 151: The lab component is designed to reinforce the material covered in CHEM 150 by providing students with a practical hands-on opportunity to execute and to observe supplemental exercises in a lab setting.

Course Prefix/Number: WRIT 121 Introduction to Technical Writing

COURSE DESCRIPTION

The course provides experience in communication formats typical of technical careers and places emphasis on writing as the craft of the critical thinker, involving analysis of audience, context, and purpose, as well as the ability to locate, synthesize, analyze, organize, and present information effectively.

Course Prefix/Number: GEN 288 Internship

COURSE DESCRIPTION

This course is designed for the student who takes the initiative to perform work outside of and in addition to the normal school curriculum. It is designed to be a highly rewarding workplace experience to give the student exposure to real workplace conditions, with the opportunity to enhance his/her resume and to aid in the student’s transition from school to work.

Course Prefix/Number: EVSC 212 Water Quality

COURSE DESCRIPTION

The Water Quality course provides an understanding and an awareness of the basic principles of water quality including the following main themes: classification and assessment of ground water and surface water quality for naturally occurring, anthropogenic and biologic constituents; local, state, and federal regulations related to water quality; guidelines related to sampling and testing requirements for and the practical development of monitoring programs including design, sampling, analysis, interpretation and presentation of data; and water treatment processes for municipal water supply, surface water and ground water. The water quality course is designed to prepare interested students for future careers in applied water resource management.

Course Prefix/Number: EVSC 220 Surface Water Hydrology

COURSE DESCRIPTION

Surface Water Hydrology explores the theory and observations of the physical processes of the hydrologic cycle with an emphasis on surface flows. This course involves an in-depth analysis of the hydrologic cycle and principles including: precipitation, evapotranspiration, stream flow and open channel hydraulics, rainfall interception, infiltration, and ground water hydrology. Water measurement and analysis tools will be introduced, including discharge and stage monitoring and hydrograph analysis methods. These processes will be applied with the goal of evaluating simplified water budgets and understanding how different factors influence water flows, storage, and probabilities of extreme events including floods and droughts.

Course Prefix/Number: EVSC 215 Groundwater Hydrology

COURSE DESCRIPTION

Ground Water Hydrology presents fundamental concepts and principles of the geology of ground water occurrence, aquifer types and their hydraulic properties, ground water flow, well drilling and design technology, aquifer testing analysis methods, and interpretation and assessment of aquifer testing results and pumping impacts.

Course Prefix/Number: BIOL 220 Microbiology with Laboratory

COURSE DESCRIPTION

This course provides a general study of microscopic organisms and their forms, metabolism, reproduction, physiology, classification, relationship to each other, and their effects on humans.

Course Prefix/Number: EVSC 210 Water Rights and Water Policy

COURSE DESCRIPTION

The Water Rights and Water Policy course is designed to introduce the laws, regulations and policies governing water quantity and water quality resources. The course will explore the many factors that influence and shape water quality laws and policies and the impact on a society's value, allocation, distribution, use, and preservation of water resources. Special emphasis will be given to the system of water courts and water judges by using real examples of adjudication and water transactions of a finite resource. This course will also introduce the historical context and evolution of water quality laws and regulations and explore the use of water quality permits and other regulatory methods for the protection of water quality.

Course Prefix/Number: EVSC 211 Environmental Policy and Laws

COURSE DESCRIPTION

This course will study the federal and state policy and laws that apply to water quality. It will take a practical approach showing how those policies and laws are applied and enforced in different circumstances.

Course Prefix/Number: EVSC 240 Geographic Information Systems (GIS)- Existing

COURSE DESCRIPTION

Geographic Information Systems (GIS) are used for the creation, storage, representation, research, and analysis of spatial information in a digital environment. This course expands on the fundamentals and principles of GIS and cartography learned in the Introduction to Geographic Information Systems course. Students will learn the processes, procedures, and the critical thinking involved with performing geospatial analysis. The course will entail a hands-on lab that focuses on GIS concepts and techniques utilized for data design, analysis, and map creation. Each student is required to conduct his or her own individual research project, which will consist of model building and design for spatial analysis.

Course Prefix/Number: EVSC 250 Applied Quantitative Methods in Water Resources

COURSE DESCRIPTION

Applied Quantitative Methods in Water Resources expands on the fundamentals of water resources and hydrology to provide more experience in problem solving and critical thinking. This course reviews and applies the skills required and the methods used for measuring and analyzing surface water and ground water data to make predictions or decisions in water resource applications. The course emphasizes practical applications of stream flow measurement with emphasis on discharge and stage monitoring methods for measuring and analyzing flow rate and discharge. Ground water flow and aquifer storage and sustainability analysis techniques including pumping test data analysis and borehole test data analysis. A review of field equipment required for measurement and computational tools utilized in the context of hydrologic problem solving will be discussed. An introduction to both analytic and numerical models as tools for problem solving will be introduced with an emphasis placed on spreadsheet use in problem solving.

Course Prefix/Number: EVSC 233 Environment and the Economy

COURSE DESCRIPTION

This course will specifically address the environmental impact caused by economic development and projects. It will look specifically at the impact of water pollution, water sources, and reclamation of impacted water supplies. Current and historical examples will be used for demonstration purposes.

Course Prefix/Number: EVSC 235 Soils, Weather and Climate

COURSE DESCRIPTION

This course will study the effect of soils, weather and climate on water distribution. A practical approach will be taken to apply this knowledge to existing examples of water distribution and the effect the environmental factors have on that process.

Course Prefix/Number: EVSC 260 Field Methods and Reporting

COURSE DESCRIPTION

This Field Methods and Reporting course is designed to provide students with a working knowledge of the scientific principles and protocols used in water resource measurements and field methods. The course will emphasize equipment utilized in water resource measurements and experimental design for water resource studies. Measurement and sampling strategies and safety practices in the field will be discussed along with field trips to demonstrate application of field methods. Quality Assurance and Quality Control (QA/QC) procedures will be studied. The importance of record keeping, data logging, and data management to the legal aspects of environmental projects is emphasized.

Course Prefix/Number: WRIT Technical Report Writing

COURSE DESCRIPTION

This course will specifically address advanced techniques in technical writing and how those skills should be applied when creating technical reports.

Course Prefix/Number: COMM 201 Introduction to Public Relations

COURSE DESCRIPTION

This course introduces students to theory and to practice of public relations with practical application of public relations, writing, and delivery strategies. Additionally, students will study the media and produce a communications plan.