

LEVEL II MEMORANDUM

DATE: December 7, 2012

TO: Chief Academic Officers, Montana University System

FROM: Neil Moisey, Interim Deputy Commissioner for Academic, Research, & Student Affairs
John Cech, Deputy Commissioner for Two-Year & Community College 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 raise those concerns at the Chief Academic Officer's conference call on **December 12, 2012**. Issues not resolved at that meeting should be submitted in writing to OCHE by noon on **Friday, December 14, 2012**. That notification should be directed to Amy DeMato, Assistant to the Deputy Commissioners. If Amy does not hear from you, in writing, by noon on December 14, 2012, OCHE will assume that the proposals have your approval.

The Level II submissions are as follows:

Montana State University-Bozeman:

- Request to establish a Certificate of Applied Science – Health Information Coding; Gallatin College Program [ITEM # 158-2003-R0113](#) | [Level II Request Form](#) | [Curriculum Proposal](#)
- Request to establish a Pre-Veterinary Medical Certificate [ITEM # 158-2006-R0113](#) | [Level II Request Form](#) | [Curriculum Proposal](#)

January 8, 2013

ITEM 158-2003-R0113
Certificate of Applied Science – Health Information Coding

THAT

The Board of Regents of Higher Education authorizes Montana State University – Bozeman to establish a Certificate of Applied Science – Health Information Coding program.

EXPLANATION

Gallatin College is proposing a Certificate of Applied Science – Health Coding to meet industry and workforce needs. Gallatin County is one of the fastest growing counties in the state, this population growth demands increased health care services in all areas. Health coding is one of many occupations that support the health care industry. The Gallatin College Health Advisory Board recommends that health coding be offered in our community as a means to keep up with the workforce demand in their profession.

Medical coders organize and manage health information data. Medical coding involves assigning alphanumeric and numeric digits to corresponding descriptions of patient diagnoses and treatments. Medical coders work in a variety of settings; hospitals, clinics, home health agencies, long-term care, insurance companies, consulting firms and software vendors. Graduates of the Certificate of Applied Science in Health Information Coding will also be able to take the American Health Information Management Association's certification examination for both the Certified Coding Associate and the Certified Coding Specialist. This is a 35 hour certificate with 22 credits currently being offered by Gallatin College's Medical Assistant program. This program will bring four new courses to Gallatin College.

ATTACHMENTS

Level II Request Form
Curriculum Proposal

Montana Board of Regents
LEVEL II REQUEST FORM

Item Number: 158-2003-R0113 Meeting Date: January 8, 2013
Institution: Gallatin College-Montana State University CIP Code: 51.0713
Program Title: Certificate of Applied Science Health Information Coding

Level II proposals require approval by the Board of Regents.

Level II action requested (place an X for all that apply and submit with completed Curriculum Proposals Form):

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; and
- 4. 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:

Gallatin College is requesting Level II approval for a new Certificate of Applied Science (CAS) Health Information Coding program. This program will be operated by Gallatin College.

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CURRICULUM PROPOSALS

1. Overview

This program was proposed by Gallatin College Health Care Advisory Board comprised of representatives from Bozeman Deaconess Hospital, Livingston HealthCare, Belgrade Urgent Care, the Montana Office of Public Instruction (OPI), and the Gallatin Community Clinic. The professional representation of this advisory group includes a medical doctor, medical assistants, a clinic manager, and a hospital administrator. This program will prepare students for placement into a medical coding position, which is a high demand health care position in the workforce. The profession of medical coding will offer our students meaningful, sustainable employment at a living wage.

Medical coders organize and manage health information data by ensuring its quality, accuracy, accessibility, and security in both paper and electronic systems. They use various classification systems to code and categorize patient information for reimbursement purposes, standardization, and retrieval of statistical analysis. Medical coding involves assigning alphanumeric and numeric digits to corresponding descriptions of patient diagnoses and treatments.

Medical coders work in a variety of settings; hospitals, clinics, home health agencies, long-term care, insurance companies, consulting firms and software vendors. Graduates of the Certificate of Applied Science (CAS) in Health Information Coding will be prepared to take the American Health Information Management Association's Certified Coding Associate (CCA) and Certified Coding Specialist (CCS) examinations. This CAS is a 35 hour certificate with 22 credits currently being offered by the Medical Assistant program. This program is bringing four new courses to Gallatin College.

The structure of the program allows students to complete the required 35 credits by attending a Summer Fall, and Spring, semesters, making this a program that students can expeditiously complete and enter the workforce in the quickest time possible. Bureau of Labor Statistics cites medical records and health information technicians as one of the 20 fastest growing occupations in the US. New health information graduates with a CAS degree jump right in and earn \$21,000 to \$30,000 annually.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

The CAS Health Information Coding will provide students the opportunity to learn all aspects of medical coding. Students will start their curriculum with basic computer, communications and writing courses designed specifically for workplace needs. Students will then move into introductions to medical terminology, pharmacology, anatomy and physiology and beginning coding. The final semester they will learn the specifics of medical coding take a second biology course and have an introduction to the legal aspects in coding. This CAS will provide students the ability to code and work in a variety of health care settings: hospitals, clinics, home health agencies, long-term care, insurance companies, consulting firms and software vendors. They will often work on the administrative team of a health facility. This program closely follows the standards set forth by the American Health Information Management Associations (AHIMA) certification program. Upon completion of the required 35 hours of course work, students are eligible to take the certifying examination offered through the AHIMA. This industry specific certification demonstrates to the employer that this student has a particular aptitude in coding.

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3. Need

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

Gallatin College measures all its new programs against three factors, wage, demand and industry need. Department of Labor reports in Montana entry level medical coders on average start at \$21,000 and the median wage is \$30,000. Data and local industry leaders have indicated to Gallatin College that the Health Care Industry is in need and will continue to be in need of medical coders. Health Care and personal service workers posted no losses during the recession, and are expected to add significant jobs in the next few years and the long term. In an employment projection analysis titled "Montana Employment Projection 2010 through 2020", Barbara Wagner, the Senior Economist with the Montana Department of Labor and Industry reported that "The impact of the recession varied dramatically by industry. However, the health care industry grew throughout the recession". As health information technology (HIT) becomes more prevalent, health information practitioners will continue to be critical components of the electronic health record (EHR) workforce. The U.S. Bureau of Labor Statistics estimates that employment for medical coders will grow faster than average. In 2010 Education and Health Care workers include almost a quarter of Montana's total employment. The health care sector added over 6,500 jobs during the recession and is expected to continue this growth. It is projected that Medical coding positions in Montana will continue to grow at a rate of 18% till 2018 creating an annual job opening net replacement rate of 40 openings per year.

The residents of Gallatin County and the surrounding region have lacked the opportunity to enroll locally in certificate and associate degree healthcare programs for the past several decades. Gallatin County is one of the fastest growing counties in the state, and with this population growth the need for trained workers in the health care fields remains strong. This high growth coupled with an industry that is required to grow with the population further secures employment for medical coders in our local economy.

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

Offering this program at Gallatin College is a win for both the local health care employers and the students. By attaining the CAS in Health Information Coding and because of its robust curriculum that includes the human biology and pathology as well as the pharmacology students will have the background to apply and walk into an entry level coding position. Students will also have the opportunity to take their AHIMA certification examination for both the Certified Coding Associate (CCA) and the Certified Coding Specialist (CCS). This certificate ensures a higher level of employability. Local industry representatives have expressed concern about the time and expense they incur training employees who have little to no knowledge or prior work experience in basic health care positions. These employees frequently spend longer periods of time in either temporary or low-paying entry-level positions while gaining basic related skills on the job. Employees who enter the workforce with prior education and specialized training would be able to advance to higher-paying, more permanent positions at a faster rate. Discussions with the Gallatin College Health Care Advisory Committee confirms that a Health Information Coding program will have the potential to reduce the amount of time new employees spend in on-the-job training, consequently moving them more quickly into higher pay and secured employment.

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

Demand for a Health Information Coding program was targeted by the Gallatin College Health Care Advisory Board based on a review of several community surveys. Several health care specializations bubbled to the top of the list, however, Gallatin College's Medical Assistant program ranked highest in priority, with a close second being Health Information Coding. In addition, demand was also estimated based on a review of both state and national statistical information regarding job growth and wage potential for students seeking a Health Information Coding certificate. Gallatin College's 2011 Analysis of Workforce Needs rated medical coding as a highly needed program in our region.

4. Institutional and System Fit

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

This will be the second health care program offered by Gallatin College. Health Information Coding will share six medical courses and 3 non-medical courses with the current Medical Assistant program. Health Coding is adding 4 new courses to Gallatin College's offerings.

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

No. The approval of the proposed program will not require any changes to existing programs at Gallatin College or MSU-Bozeman

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

There are no other Health Information Coding programs at Gallatin College or MSU-Bozeman. The Health Information Coding program is a health care program that fits nicely in the health care worker continuum between the entry level certified Nursing Assistant program (non-credit) offered through MSU Extended University, the Medical Assistant program offered at Gallatin College and the MSU College of Nursing.

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

Gallatin College falls under several institutional strategic goals and work plans. First MSU's strategic plan states under the goal area for learning that "we should prepare students to graduate equipped for careers", this new program will increase the number of workforce certificates (metric L.2.3) and it will increase the number of graduates employed full-time in their field (metric L.3.1). Additionally MSU's strategic plan states in the goal area titled Access that we will increase the number of students enrolled in certificate programs, this new program will assist in hitting this metric also (metric A.1.5).

One of the three strategic areas the Montana Board of Regents is focusing on, for two year institutions, is workforce development. Targets in the area of workforce development are to offer accessible, responsive, student centered learning that facilitates and supports degree completion and decreases time to employment. In addition, programs offered will prepare students for high demand living wage employment. This program hits all those targets and contributes the workforce development goals in the soon to be released Gallatin College comprehensive mission and strategic

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implementation plan.

- 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.*

The establishment of some type of medical coding program at the majority of the two-year colleges in the state is a testament for the need for these workers at cities throughout the state. Programs around the state include: City College in Billings offers a face to face and online C.A.S. in Billing and Coding (34 credits), Great Falls College offers an on-line A.A.S. in Medical Billing and Coding (66 credits), Flathead Valley Community College offers a A.A.S. in Medical Coding (64 credits), Missoula College offers a A.A.S. in Medical Information Technology Information Coding Specialty (60 credits), Highlands College A.A.S. Medical Assistant Program (69 credits) has a few coding classes and Helena College offers an A.A.S. in Medical Administrative Specialist (70 credits).

This program is based on a review of the coding courses offered across the state and conversations Gallatin College staff have had with a number of two-year colleges. Learning from peer institutions that operate similar programs can be very beneficial. Gallatin College and Missoula College faculty and staff will be engaging in a conversation in early spring semester to discuss the medical coding program. This conversation will cover curriculum, resource development, program outcomes and other topics. Gallatin College will initiate additional conversations with other two-year colleges as the project moves to the program implementation phase. The proposed program will follow the MUS initiative for common course numbering and inter-campus transferability.

As noted in the previously cited Department of Labor report, which states that both current and future demand for job growth in the health care industry is predicted to increase, this increased demand in all areas of the state and the geographic separation between the campuses, make additional Health Care programs necessary to fill regional needs. By approving this proposal, area residents will now have access to a Health Coding CAS that can be obtained locally through face to face instruction.

5. 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 program's curriculum and course descriptions are included in Appendix A.

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

Interest in the program is strong as identified by the Health Advisory Committee and local high school administrators. The implementation plan calls for a program start in Fall 2013. The number of students admitted to the program the first year is estimated at 10-14. Once approved the Health

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Information Coding faculty will begin the process of hiring an adjunct faculty that will teach the coding specific courses. The industry standard software that will be used in the classroom will be purchased. Twenty nine of the thirty five credits will originally be offered face to face. During the first few years of operation the faculty will evaluate the merits of moving additional courses on-line or to a blended delivery model.

6. 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.*

Yes. Gallatin College will hire a full time tenure track Program Director/Faculty to teach the classes. Adjunct Faculty will be hired as needed. Some efficiencies are gained by existing faculty and adjunct faculty teaching required general education classes and shared courses with the Medical Assistant program.

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

The annual operating budget for the Medical Coding program is \$68,500. This includes the cost of the Program Director/Faculty including benefits, adjunct instructors, and the annual operating expenses. The annual expense is partially offset by an estimated \$41,580 in tuition revenue for the first year. The Gallatin College annual budget is sufficient to cover the additional operating costs on an annual basis.

The start-up budget for the program includes equipment, supplies and curriculum development assistance in the amount of \$22,500. The FY 2012-2013 funding from the city of Bozeman will cover these start-up costs and some of the first year expenses.

7. Assessment

How will the success of the program be measured?

The proposed program will be assessed using the College's institutional outcomes assessment practices. These include assessing standard performance with the following metrics:

1. Graduation/completion rates
2. Student retention
3. Enrollments
4. Licensing and pass rate
4. Placement in the field
5. Employer satisfaction with graduates

MSU's Career Services is assisting in collecting above metrics from Gallatin College students. The Health Information Coding Director will collect data regarding licensing and those pass rates. 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. The program's Health Care Advisory Board will review the assessment measures on an annual basis. Student evaluations are another important assessment tool for faculty and

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program administration.

8. 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.

The program was initiated due to community and industry demand. Gallatin College established a health care industry advisory board in 2009, and through a series of meetings the committee prioritized the development of the Health Coding Certificate. Conversation among committee members indicated that a student who earned a Health Coding certificate would have numerous employment opportunities in the Gallatin Valley and surrounding area, and that a program such as this would be a significant benefit to employers in the valley.

The Medical Coding program proposal was first vetted by MSU's Programs Working Group, a sub-committee of the MSU Curriculum and Program Committee (CPC). After recommendation from the Programs Working Group the CPC sent results to the Faculty Senate for review. The MSU Faculty Senate approved the proposal as did the MSU Dean's Council. The Provost Office reviewed the program and submitted it to the Board of Regents. Upon approval from the Board of Regents the program proposal will be submitted to the Northwest Commission on Colleges and Universities for review.

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Appendix A

Course No.: CAPP 120

Course Title: Introduction to Computers

Credits: 3

Course Description: Using lecture and lab experience, this course introduces the technology and terminology of computer systems and demonstrates how computers have impacted individuals and society. The course also provides instruction in the basics of operating systems and word processing, spreadsheet, and database software.

Course No.: COMM 120

Course Title: Interpersonal Skills in the Workplace

Credits: 1

Course Description: This course covers the basic elements of communication in the business environment, including listening, speaking, and reading. It also looks at the importance of nonverbal communication, ethics, and professional courtesy. It discusses the importance of internal skills within the business and external skills with customers. Skills of the employment process are also included.

Course No.: WRIT 104

Course Title: Workplace Communications

Credits: 2

Course Description: This course reviews the basic elements of grammar and language arts skills in business writing. Emphasis is placed on writing business letters, memos, emails, and reports for a variety of business applications. Letters of application and resumes are also covered.

Fall

Course No.: AHMS 144

Course Title: Medical Terminology

Credits: 3

Course Description: Through the study of medical terminology the student will be introduced to the language of medicine. Students will gain an understanding of basic elements, rules of building and analyzing medical words, and medical terms associated with the body as a whole. Utilizing a systems approach, the student will define, interpret, and pronounce medical terms relating to structure and function, pathology, diagnosis, clinical procedures, oncology, and pharmacology. In addition to medical terms, common abbreviations applicable to each system will be interpreted.

Course No.: AH 140

Course Title: Pharmacology

Credits: 2

Course Description: This course enables the beginning medical professional to understand the foundation and principles of entry level pharmacology. This course introduces general principles of drug action on multiple body systems, pharmacology of the major drug classifications, and drug side effects while emphasizing safety and administration of medications by medical assistants. The course also includes the basic concepts of mathematics used in the calculation, preparation, and administration of various medications. This course also covers legal and ethical issues of medication dispensing.

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Course No.: BIOH 112

Course Title Human Form and Function I

Credits: 3

Course Description: This course is a study of anatomy and physiology for the allied health professional. This course is designed to develop a working knowledge of human anatomy, physiology, and pathology; including etiology, prognosis, medical treatment, signs and symptoms of diseases of respiratory, endocrine, digestive, excretory, reproductive systems.

Course No.: AHMS 160

Course Title: Beginning Procedural Coding

Credits: 3

Course Description: This course focuses on the format and use of CPT coding for physician and non-physician services is the purpose of this course. Case studies and lab exercises are used to develop basic procedural coding skills that cover all sections of the CPT coding manual with a focus on the interpretation of CPT manual section guidelines and proper modifier usage.

Course No.: AHMS 162

Course Title: Beginning Diagnosis Coding

Credits: 3

Course Description: This course covers basic and intermediate levels of theory and application of ICD-CM principles and guidelines for coding and sequencing diagnoses and procedures. Students perform basic and intermediate coding using real health records, case studies, and scenarios. Application will focus on the use of the electronic ICD-9-CM with an overview of encoder software. This coding class involves hands-on coding, and knowledge of basic use of applicable coding books or the electronic ICD-9-CM.

Spring

Course No.: BIOH 113

Course Title: Human Form and Function II

Credits: 3

Course Description: This course is designed to develop a working knowledge of human anatomy, physiology, and pathology; including etiology, prognosis, medical treatment, signs and symptoms of diseases of muscular, skeletal, nervous, cardio vascular, and lymphatic systems.

Course No.: AHMS 250

Course Title: Advanced Medical Coding

Credits: 3

Course Description: Students will develop the knowledge, skills, and abilities necessary for to correlate a numerical code to a handwritten or typed procedure description generated by clinical staff in the health care setting for insurance purposes utilizing the principles of CPT-4, ICD-CM, and HCPCS Coding. This course is required for the Medical Coding and Insurance Billing Certificate.

Course No. AHMS 156

Course Title: Medical Billing Fundamentals

Credits: 4

Prerequisite or Co-requisite: AHMS 144

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Course Description: Introduces students to the major national medical insurance programs, including Medicare, Medicaid, Blue Cross/Blue Shield, and TRICARE. Topics covered will include plan options, carrier requirements, state and federal regulations, abstracting from source documents, manual claim form completion, legal and ethical issues, and a review of diagnostic and procedural coding. Inpatient and outpatient billing will be covered. Inpatient and outpatient billing will be covered.

Course No.: AHMS 158

Course Title: Legal and Regulatory Aspects of Healthcare

Credits: 2

Course Description: This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. This course also identifies patient behaviors and stressors related to illness, cultural influences, death and dying.

Course No.: AHMS 100

Course Title: Math for Allied Health Professions

Credits: 3

Course Description: AHMS 100 MATH APPLICATIONS HEALTH

Prepares health science students for the mathematics required in their profession. Topics investigated include: measurement systems, whole number review, decimals, fractions, ratios, proportions, percentages, conversions. Utilizing these areas, the course also provides students with clinical applications.

Gallatin College-Montana State University
Certificate of Applied Science – Medical Coding

Summer Term

CAPP 120	3	Intro to Computers (include MS Office)
COMM 120	1	Interpersonal Skills in Workplace
WRIT 104	<u>2</u>	Workplace Communications
Total	6	

Fall

AHMS 144	3	Medical Terminology
AH 140	2	Pharmacology
BIOH 112	3	Human Form and Function I
AHMS 160	3	Beginning Procedural Coding
AHMS 162	<u>3</u>	Beginning Diagnosis Coding
Total Sem.	14	

Spring

BIOH 113	3	Human Form and Function II
AHMS 250	3	Advanced Medical Coding
AHMS 156	4	Medical Billing Fundamentals
AHMS 158	2	Legal and Regulatory Aspects of Healthcare
AHMS 100	<u>3</u>	Math Applications for Allied Health Professions

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Total Sem. 15

Total Programmatic Credits, includes pre-requisites: 35

January 8, 2013

ITEM 158-2006-R0113

Request to Establish a Pre-Veterinary Medical Certificate

THAT

The Board of Regents of Higher Education authorizes Montana State University-Bozeman to establish a Pre-Veterinary Medical Certificate.

EXPLANATION

MSU-Bozeman is proposing a Pre-Veterinary Medical Certificate to address the needs of students who will be applying to Colleges of Veterinary Medicine throughout the nation. Students who have completed or are completing a baccalaureate in science or non-science undergraduate degrees will be able to map out an academic path that will qualify them to apply to veterinary school. The proposed Certificate would provide a tangible recognition for their achievement and would benefit students applying to veterinary schools by providing a formal recognition of excellence in their completion of pre-veterinary studies.

ATTACHMENTS

Level II request form
Curriculum proposal

Montana Board of Regents
LEVEL II REQUEST FORM

Item Number: 158-2006-R0113 Meeting Date: January 8, 2013
Institution: Montana State University-Bozeman CIP Code: 51.1104
Program Title: Pre-Veterinary Medical Certificate

Level II proposals require approval by the Board of Regents.

Level II action requested (place an X for all that apply and submit with completed Curriculum Proposals Form):

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; and
- 4. 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:

MSU -Bozeman is requesting Level II approval for a new Pre-Veterinary Medical Certificate program. This program will be operated by MSU-Bozeman.

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1. Overview

MSU-Bozeman is proposing a Pre-Veterinary Medical Certificate to respond to the needs of students who will be applying to Colleges of Veterinary Medicine throughout the nation. Students who have completed or are completing a baccalaureate in science or non-science undergraduate degrees will be able to map out an academic path that will qualify them to apply to veterinary school. The proposed Certificate would provide a tangible recognition for their academic achievement and would benefit students applying to veterinary schools by providing formal recognition of excellence in their completion of pre-veterinary studies.

2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Program Description

The proposed Pre-Veterinary Medical Certificate program will address the needs of students who have completed their bachelor's level work at MSU-Bozeman or other four-year institutions, but who still must complete the science courses traditionally required for application to veterinary school, as well as students in their upper division science curriculum preparing to apply to a college of veterinary medicine. The requisite courses – two semesters each of general chemistry, introductory biology, organic chemistry, introductory physics, biochemistry, genetics, statistics, microbiology, and calculus – already exist in the MSU-Bozeman curriculum, and are taught consistently in the two semesters and summer sessions, thus ensuring flexibility in scheduling for those pursuing such a program and efficiency in program completion for those eager to move on to the time-consuming graduate school application process. A need exists for such a program in this region of the country. At present, there are no other such certificates or programs at any public university in all of the Northwest, or in most other regions of the country. MSU-Bozeman will thus be breaking new and fertile ground with this endeavor. This program would draw applicants from the region who wish to study here for this coursework, their professional training, and ultimately, their careers, but would also attract out-of-state applicants drawn to the program's quality experience. The implementation of a Certificate gives cohesion to this collection of courses, and lends itself well to describing this option both to candidates and to the professional schools to which they will apply.

3. Need

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

Currently students wishing to pursue a career in veterinary medicine have no defined programmatic path. Many students, parents, and recruiters are confused about the pre-vet curriculum and are constantly asking for a defined program that is understandable and provides a defined outcome. To address this need, the Pre-Veterinary Medical Certificate will define the specific pre-veterinary requirements of all the veterinary programs in the United States. Students who have completed or are completing a baccalaureate in science or non-science undergraduate degrees will be able to map out an academic path that will qualify them to apply to any of the 28 accredited veterinary schools. The proposed Certificate would provide a tangible reward for their academic achievement and would benefit students applying to veterinary schools, as the Certificate would provide formal evidence of completion of pre-veterinary studies and achievement in addition to the major area of study indicated on a students' transcript. The targeted student may be a college undergraduate student dealing with the necessity of entering the work world with no "practical" skills, or a non-traditional age student

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who has tried other careers, and in doing so, has confirmed a desire to enter veterinary medicine. Experience demonstrates that these students learn about pre-veterinary programs by contacting their alma maters' advisors, veterinary medical school admission offices, and/or by searching the internet. Thus, the Certificate's features should be readily available to anyone searching in both print and internet formats, as well as MSU orientation and other outreach events.

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

Students, parents, and advisors find the current pre-veterinary curriculum confusing and cumbersome. The Pre-Veterinary Medical Certificate program would clarify the academic requirements. This will help define a clearer path towards graduation and reduce the number of years it takes students to graduate. It will provide students and advisors confidence in pursuing this career path. Advisors who are not veterinarians have difficulty articulating consistently to students on how to proceed with requirements to successfully apply to a college of veterinary medicine.

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

Currently, there are 75 freshman and sophomore undergraduates enrolled in the pre-veterinary curriculum. In addition, there are approximately 125 other students in various science curricula attempting to meet the pre-veterinary requirements needed for application to numerous veterinary colleges. It is anticipated that at least half of these students would seek to receive the Pre-Veterinary Medical Certificate regardless of admission into a college of veterinary medicine. This Certificate Program will not affect course enrollments because these students would already be taking these courses for their majors.

4. Institutional and System Fit

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

There are several academic undergraduate programs that encompass most but not all of the pre-veterinary requirements (e.g., Animal Biotechnology, Animal Science, etc.). This program would ensure that students across the campus would have a clear understanding of course work necessary for admission into a college of veterinary medicine. The proposed certificate is interdisciplinary in nature and would serve students across the institution in a variety of majors and different Colleges.

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

No

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

The Post-baccalaureate Pre-Medical Certificate is somewhat related as far as the nature of both programs is to provide a pathway to achieve the basic requirements for applying to the respective professional school; however, the Pre-Medical Certificate program is quite different and specific for students whose goal is to apply to medical school. That program offers about half of the credits needed to pursue admission to veterinary school. There are only 28 veterinary schools in the United

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States, but the requirements are much more variable and rigorous than the applications for medical school. Aside from the Pre-Medical Certificate program, there are no other related programs at this institution or other institutions in Montana.

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

Montana State University-Bozeman is the premier land grant institution in the state. Agriculture remains Montana’s number one industry. Veterinary medicine is essential to that industry. MSU-Bozeman currently serves 200 pre-veterinary students. MSU-Bozeman graduates are competitively recruited into veterinary schools in the west. With the visibility of a Pre-Veterinary Medical Certificate on a web-based search, as well as the ease of understanding the requirements for admission to veterinary school, the ability to recruit and retain the best and brightest students from Montana and the entire Nation would be enhanced. This benefit will contribute to the strategic goals of MSU-Bozeman and serve the needs of Montana’s rural veterinary population, with the increased likelihood that graduate veterinarians will return to our state to practice.

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.

There are no programs similar to this Certificate Program within the Montana University System. Currently, MSU-Bozeman and perhaps other institutions have Pre-veterinary Advisors who provide pre-Veterinary curriculum oversight; however, the proposed Certificate codifies this vague system into an official process whereby the students who complete the proposed curriculum will be awarded with a tangible outcome: the Pre-Veterinary Medical Certificate.

5. 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.

BIOLOGY (8 credits)				
Pick one of these series				
BIOB 160	4 credits	OR	BIOB 256	4 credits
BIOB 170	4 credits		BIOB 260	4 credits
GENERAL CHEMISTRY (8 credits)				
CHMY 141	4 credits	AND	CHMY 143	4 credits
ORGANIC CHEMISTRY (5-8 credits)*				
Pick one of these options				

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CHMY 211 5 credits	OR	CHMY 321 4 credits	
		CHMY 323 4 credits	
BIOCHEMISTRY (5 credits)			
BCH 380	5 credits		
MATH (7 credits)			
STATS 216	3 credits	AND	M 161 4 credits
PHYSICS (8 Credits)			
PHSX 205	4 credits	AND	PHSX 207 4 credits
GENETICS (3 Credits)			
BIOB 375	3 credits		
MICROBIOLOGY (5 credits)*			
BIOM 360	5 credits		
ANIMAL NUTRITION (4-7 credits)*			
ANSC 100	3 credits		
ANSC 320	4 credits		
TOTAL CREDITS: 56-59 credits			
*These courses are not required by all veterinary schools but are required for completion of the Certificate. With Prevet Advisor approval, upper division courses may be substituted in some cases to fulfill course requirements.			

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

Students would follow the planned curriculum as outlined above. Application for the Pre-Veterinary Medical Certificate would occur during the student’s third undergraduate year, and awards would be limited to students who have attained a 3.2 GPA or greater in the above coursework. Completion requirements will be monitored by the Pre-veterinary Advisor and Head of the Department of Immunology and Infectious Diseases. The graduation requirements as set forth by the Graduation and Admissions Review Committee for a baccalaureate degree will apply to the Preveterinary Certificate. Names of successful Certificate candidates will be submitted to the Registrar, and paper Certificates will be prepared and provided to the successful students by the Department.

6. 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.

No. Students are currently being advised regarding pre-veterinary course work by faculty and staff in the Department of Immunology and Infectious Diseases, Department of Animal and Range Sciences,

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and College of Agriculture Dean's Office. The required courses are all currently offered by various departments across the University. No new courses or faculty resources would be necessary to implement and operate this 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.**

No

7. Assessment

How will the success of the program be measured?

Success of the program will be measured by increased enrollment in the pre-veterinary curriculum, increased number of applications from MSU students to Colleges of Veterinary Medicine, and increased numbers of successful admissions of these students into a College of Veterinary Medicine.

8. 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.

This proposal originated in the College of Agriculture and was initiated by faculty from the Department of Immunology and Infectious Diseases. The Pre-Veterinary Advisor and Department Head developed the proposal, with consideration of the requirements for applying to Colleges of Veterinary Medicine throughout the nation. The Head of Immunology and Infectious Diseases and the Dean of the College of Agriculture then reviewed the proposal and signed the documents necessary to submit it to the Provost's Office and the Faculty Senate.