LEVEL II MEMORANDUM

DATE: August 26, 2011

TO: Chief Academic Officers, Montana University System

FROM: Sylvia Moore, 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 **August 31, 2011**. Issues not resolved at that meeting should be submitted in writing to OCHE by noon on **Friday, September 2, 2011**. That notification should be directed to Summer Marston, Assistant to the Deputy Commissioners. If Summer does not hear from you, in writing, by **noon on September 2**, OCHE will assume that the proposals have your approval.

The Level II submissions are as follows:

Miles Community College:

- Add an AAS in Agriculture Production ITEM #152-404-R0911 | Request Form | Curriculum Proposal

Montana State University-Bozeman:

- Establish a China Studies Minor ITEM #152-2015-R0911 | Request Form | Curriculum Proposal

Montana State University-Billings:

- Continue offering the Associate of Applied Science in Welding and Metal Fabrication Technology and the Certificate of Applied Science in Welding for Energy Technology ITEM #152-2702-R0911 | Request Form | Curriculum Proposal

The University of Montana-Helena COT

- Establish a Healthcare Informatics Technology Certificate program ITEM #152-1901-R0911 | Request Form | Curriculum Proposal

September 21-22, 2011

ITEM 152-404-R0911
AAS Agriculture Production

THAT

Miles Community College requests approval to add an AAS in Agriculture Production to their other agriculture offerings at the College.

EXPLANATION

Currently, MCC grants a Certificate of Applied Science in Agriculture as well as 2 + 2 Associate of Science degrees with emphasis in Agribusiness or Animal Science. Students have requested a terminal two-year Agriculture Production degree.

ATTACHMENTS

Level II Request Form
Curriculum Proposal

Montana Board of Regents

LEVEL II REQUEST FORM

Item Number: **152-404-R0911** Meeting Date: **September 21 – 22, 2011**

Institution: **Miles Community College** CIP Code: **01.0301**

Program Title: **AAS Agriculture Production**

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;**

X **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:

Miles Community College requests approval to add an AAS in Agriculture Production to their other agriculture offerings at the College. Currently, MCC grants a Certificate of Applied Science in Agriculture as well as 2 + 2 Associate of Science degrees with emphasis in Agribusiness or Animal Science. Students have requested a terminal two-year Agriculture Production degree.

1. Overview

Miles Community College requests approval to add an AAS in Agriculture Production to their other agriculture offerings at the College. Currently, MCC grants a Certificate of Applied Science in Agriculture as well as three 2 + 2 Associate of Science degrees with emphasis in Agribusiness or Animal Science. MCC faculty have worked with MSU faculty to create the courses that make up the seamless 2 + 2 transfer. Montana State faculty have been more than helpful by sharing syllabi to assure the courses are of the same rigor and scope. In addition to the transfer degrees, students, local agriculturists and the program advisory board have requested a terminal two-year Agriculture Production degree.

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

Students who complete an AAS in Agriculture Production will be prepared to work in the agriculture industry in production livestock, farm and ranch management or agri-sales. This two-year degree program offers more in-depth learning in the areas of business management and the agricultural topics of livestock evaluation and nutrition than those covered in the one-year agriculture certificate. This degree is designed for those students who want to enter the job market with a two-year degree and do not plan to transfer to a four-year institution.

3. Need

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

One of the main economic drivers in southeastern Montana is agriculture. MCC has a rodeo program that draws 40 athletes per year. The majority of those students want to enter an agriculture related field. In addition, they want to complete a two-year program. If they do not want to transfer to a four year institution in the Agriculture field, the only other option currently available to them is a one-year Certificate of Applied Science in Agriculture. They often complete the Agriculture Certificate, but then search for other options or degrees in their second year that do not necessarily meet their employment goals. Offering the two-year degree program in Agriculture Production will allow those students who want to work in the agriculture field in jobs that do not require a four-year degree the opportunity to complete their education at Miles Community College.

MCC also serves agriculturists in the area, who want to continue to work on their farm or ranch, while expanding their knowledge and understanding of agriculture. They must work on their land, so do not have the luxury of completing a degree several hundred miles away.

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

Students who take the AAS in Agriculture Production as opposed to those who complete the one-year Certificate of Applied Science will have two additional accounting courses, a course in livestock evaluation, enhanced business writing skills, additional courses in livestock feeding and nutrition, range livestock production and plant science and an opportunity to complete an internship. This additional coursework will make them more prepared to manage a livestock operation than the one-year degree can offer. Members of the Agriculture Advisory Board which consist of area livestock

producers, professionals in the agricultural field and scientists suggested the additional coursework in the two-year degree program.

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

Currently there are 30 students enrolled in our agriculture programs. Those numbers consist of students in the one-year Agriculture Certificate of Applied Science and those in the AS with emphasis in Agri-business. This past year, working with Montana State University faculty, MCC has added an AS with emphasis in Animal Science for Livestock Management & Industry, as well as an AS with emphasis in Animal Science for Veterinary, Biotechnology, Nutrition or Genetics. There are already nine students enrolled in these programs with limited or no advertising. Adding the AAS in Agriculture Production will complete the career pathways in agriculture and add at least 20 more students. The hope is that a complete career ladder will stem the flow of students into Wyoming for their agriculture programs.

Miles Community College has been in the process of obtaining the funding from outside sources to start a collegiate judging program like that at Northwest College in Powell, WY. According to statistics from campusdiscovery.com, Powell has 1,756 students. Of those 41% are out-of-state students with a majority of those coming from Montana. While they are not all agriculture students, many of them are going into that field. Wyoming schools continue to take our best and brightest 4-H and FFA students for their agriculture and judging program. The hope is that these students will choose MCC for their education experience. However, a complete career pathway with stop out points at one-year, two-year and four-year transfer degrees must be created to be competitive with Wyoming.

4. Institutional and System Fit

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

The first year of this program will match the Certificate of Applied Science in Agriculture. In that way, students who choose to start with the certificate program and then decide to stay for a two-year degree will have a natural pathway into that program with no missing coursework from their first year of study. The other classes offered in the scope and sequence of the two-year degree program are courses already offered in other degree programs such as Biofuels or the Associate of Science coursework with agri-business or animal science emphasis.

Below is the scope and sequence for the Certificate of Applied Science in Agriculture for verification that the first year of the AAS in Agriculture Production matches this scope and sequence seamlessly. In addition, students are apprised of their ability to easily transfer the credits from the certificate into the two-year degree program.

AGRICULTURE CERTIFICATE
Total Program Requirement 31 credits

This program will provide students with the skills necessary for entry-level employment, or enhancement of present employment, in the agriculture industry. It provides an overview of agricultural careers, as well as opportunities to meet and work with agricultural professionals in the area. Upon completion of the program, students will be qualified for entry-level work with agricultural businesses including farm, ranch, and entrepreneurial opportunities.

Should students choose to do so, the required certificate classes will transfer into the two-year Associate of Applied Science degree in Agriculture.

Fall Semester		**Spring Semester**	
Course	**Credit**	**Course**	**Credit**
AGSC 101 Intro to Agriculture & Environmental Resources	1	AGSC 103 Applied Agriculture Science	2
ANSC 101 Intro to Animal Science	3	AGSC 104 Applied Agriculture Lab	1
NRSM 101 Natural Resource Conservation	3	AGSC 110 Agricultural Issues Forum	3
NRSM 102 Natural Resource Conservation Lab	1	ACTG 101 Accounting Procedures I	3
M 108 Business Math	3	CA 111 Interpersonal Communication	3
CAPP 120 Introduction to Computers	3	**OR**	
WRIT (100 level) Technical Writing for the Trades preferred	2(3)	CA 112 Public Speaking	(3)
		Elective	3
Total Credits	**16(17)**	**Total Credits**	**15**

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

No, as described above, the addition of this degree program will enhance the offerings already available at Miles Community College.

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

As discussed before, this program gives more instruction to students who want to manage their own farm or ranch, than what is covered in the certificate program outlined above. At the same time, it does not have the science and general education requirements of the two-year Associate of Science degrees that are designed as a 2 + 2 bridge into a four-year program. Not all students have the aptitude for, nor desire to pursue degrees with higher math and science requirements than they will need in the field. While ALL students need a level of communication, computation and human relations to survive in our knowledge-based world economy, technical fields do not require the same level of math and science as those found in four-year degrees. A farm and ranch owner or operator must be able to calculate loan interest on land payments, operating loans and other agriculture

ventures. They need to calculate fertilizer and chemical usages, as well as seeding requirements. They also need to calculate break-even points for their production crops. However, they do not necessarily need to complete statistical analysis at the level of a research scientist.

Below are the transfer degrees in this Career Pathway in Agriculture. These are listed to demonstrate that the agriculture coursework for the proposed AAS degree already exists in the transfer degrees. Therefore, no additional coursework will be developed. MCC simply wishes to package a terminal two-year AAS degree as well, to allow stop-out points for those students who want to expand their knowledge in agriculture but do not need a four-year degree.

AS with Emphasis in Animal Science
For Livestock Management & Industry

This curriculum has an emphasis on Livestock Management and provides students with a foundation in the biological and natural sciences. Students will learn reproductive physiology, animal breeding, nutrition, and livestock management. This option incorporates courses in economics and business to prepare graduates to manage livestock enterprises, or to be employed by companies producing and marketing livestock, animal feeds and health products.

First Year – Fall Semester			**First Year – Spring Semester**		
Course	**Name**	**Cr**	**Course**	**Name**	**Cr**
ANSC 100	Intro to Animal Science	3	CA 112	Public Speaking	3
NRSM 101	Natural Resource Conservation	3	ANSC 202	Range Livestock Production	3
NRSM 102	Natural Resource Conservation Lab	1	M 121	College Algebra	4
BIOB 160	Principles of Living Systems	3	WRIT	Elementary Technical Writing Or College Writing II	3
BIOB 161	Principles of Living Systems Lab	1		Humanities Core Elective	3
CAPP 120	Introduction to Computers	3			
WRIT 101	College Writing I	3			
	Total Credits	17		Total Credits	16
Second Year – Fall Semester			**Second Year – Spring Semester**		
Course	**Name**	**Cr**	**Course**	**Name**	**Cr**
ACTG 201	Principles of Financial Accounting	4	ACTG 202	Principles of Managerial Accounting	4
ANSC 265	Anatomy & Physiology of Domestic Animals	3	ENSC 245	Soils	3
ANSC 266	Anatomy & Physiology of Domestic Animals Lab	1	CHMY 123	Intro to Organic and Biochemistry	3
CHMY 121	Introduction to General Chemistry	3	CHMY 124	Intro to Organic and Biochemistry Lab	1
CHMY 122	Introduction to General Chemistry Lab	1	STAT 216	Intro to Statistics	4
ECNS 202	Principles of Macroeconomics	3	ECNS 204	Microeconomics	3
	Humanities Core Elective	3			
	Total Credits	18		Total Credits	18

Total Credit Hours = 69

AS with Emphasis in Animal Science for Veterinary, Biotechnology, Nutrition or Genetics

This curriculum provides students with a great depth of study in the biological and natural sciences. Students will also learn reproductive physiology, animal breeding, nutrition, and livestock management. This option is designed for highly motivated students who have a strong interest in graduate training beyond a Bachelor's degree or professional studies such as veterinary medicine.

First Year – Fall Semester			**First Year – Spring Semester**		
Course	**Name**	**Cr**	**Course**	**Name**	**Cr**
ANSC 100	Intro to Animal Science	3	BIOB 170	Principles of Biological Diversity	3
BIOB 160	Principles of Living Systems	3	BIOB 171	Prin. Of Biological Diversity Lab	1
BIOB 161	Prin. Of Living Systems Lab	1	CHMY 143	College Chemistry II	3
CAPP 120	Introduction to Computers	3	CHMY 144	College Chemistry II Lab	1
CHMY 141	College Chemistry I	3	CA 112	Public Speaking	3
CHMY 142	College Chemistry I Lab	1	M 121	College Algebra	4
WRIT 101	College Writing	3	WRIT 121	Intro to Elementary Technical Writing Or College Writing II	3
	Total Credits	**17**		**Total Credits**	**18**
Second Year – Fall Semester			**Second Year – Spring Semester**		
Course	**Name**	**Cr**	**Course**	**Name**	**Cr**
NRSM 101	Natural Resource Conservation	3	ANSC 262	Range Livestock Production	3
NRSM 102	Natural Resource Conservation Lab	1	CHMY 211	Organic Chemistry	3
ANSC 265	Anatomy & Physiology of Domestic Animals	3	CHMY 212	Organic Chemistry Lab	1
ANSC 266	Anatomy & Physiology of Domestic Animals Lab	1	STAT 216	Intro to Statistics	4
M 161	Survey of Calculus	4		Social Science Core Elective	3
	Social Science Core Elective	3		Humanities Core Elective	3
	Humanities Core Elective	3			
	Total Credits	**18**		**Total Credits**	**17**

Total Credit Hours = 70

AS with Emphasis in Agribusiness

This two-year program is designed to allow students to attain employment upon graduation in production agriculture and other agriculture-related endeavors. Students may also transfer to a four-year program such as Montana State University – Bozeman's College of Agriculture to complete a baccalaureate degree in two additional years. Students with a baccalaureate degree may find jobs in agriculture banking, sales, crop adjusting, or farm and ranch management.

First Year – Fall Semester			**First Year – Spring Semester**		
Course	**Name**	**Cr**	**Course**	**Name**	**Cr**
AGSC 101	Intro to Agriculture & Environmental Resources	1	BIOB 110	Introduction to Plant Sciences	3
ANSC 101	Introduction to Animal Science	3	WRIT 201 *Or* WRIT 121	College Writing II *Or* Intro to Technical Writing	3
BIOB 101	Discover Biology	3	CA 112	Public Speaking	3
BIOB 102	Discover Biology Lab	1	M 121	College Algebra	4
CHMY 121	Intro to General Chemistry	3	CAPP 120	Intro to Computers	3
CHMY 122	Intro to General Chemistry Lab	1			
WRIT 101	College Writing	3			
	Total Credits	**15**		**Total Credits**	**16**
Second Year – Fall Semester			**Second Year – Spring Semester**		
Course	**Name**	**Cr**	**Course**	**Name**	**Cr**
NRSM 101	Natural Resource Conservation	3	ENSC 245	Soils	3
NRSM 102	Natural Resource Conservation Lab	1	ACTG 202	Principles of Managerial Accounting	4
ACTG 201	Principles of Financial Accounting	4	ECNS 202	Principles of Macroeconomics	3
ECNS 201	Principles of Microeconomics	3	STAT 216	Introduction to Statistics	4
M 161	Survey of Calculus	4		Humanities Core Elective	3
	Humanities Core Elective	3			
	Total Credits	**18**		**Total Credits**	**17**

Total Credit Hours = 66

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

Based on statistical data from the Bureau of Business and Economic Research of the University of Montana, Miles Community College is located in Custer County where agriculture and agriculture related industries make up 10% of the labor income. In the region served by this community college in eastern Montana, agriculture is one of the leading industries. Therefore, this program will enhance the economy of eastern Montana by educating the future agriculturists in the area and sustain the mission of the College to promote student success and lifelong learning through accessible, quality programs and community partnerships.

In addition, Montana is embarking on a Big Sky Pathways program to provide credit transfer courses

from high school through post-secondary education. Kathy Wilkins, who is currently heading this project for the Office of the Commissioner of Higher Education has encouraged Miles Community College to add Agriculture as a pathway, as there is a large interest in the state from secondary schools. At this time only Dawson Community College is providing the pathway articulations. Kathy supports Miles Community College coming on as a partner in this program due to the number of secondary schools needing served throughout the state as well as MCC's strong record of having the highest completion rates in the Carl Perkins program. She knows MCC is a College who can follow-through in providing this career pathway opportunity to the students of Montana.

Adding an Associate of Applied Science to the mix of agriculture offerings at Miles Community College, allows students with lower math and science aptitude the ability to receive hands-on instruction in an applied science degree in a two-year program. If this degree program is not approved, these particular students will only have the one-year certificate option.

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.

In searching under Agriculture Production Operations or Agriculture General on the degree inventory of the Montana University System, the only other similar program is located at MSU-Northern. Their degree in Agriculture Technology is very close to this. I am sure they serve the agriculturists and students on the highline very well.

Dawson Community College also has a similar program, its major emphasis is on Agribusiness Technology. The differences between the two is the Miles program concentrates on Applied Agriculture and offers more hands-on classes through working labs than the program at Dawson. The Dawson program appears to be an AAS with the opportunity to transfer to a four-year program by the number of science and general education courses required. In addition, many of their agriculture courses appear to be more theory based while the MCC courses are applied in nature with working labs and a required internship.

As mentioned above, Agriculture and FFA are huge programs in Montana's secondary schools. If a secondary school can only offer a couple career and technical programs, agriculture is usually among them. Therefore, more than one school needs to offer Agriculture pathway options for these students. It is unlikely that one college could adequately cover the entire state of Montana with these articulations and maintain the working relationships with each of the secondary schools that is required. In addition, agriculture in Montana is similar to business programs in Montana. It is located in every city and community in the state, so having more than one program in the state will not hinder the enrollment of the other. The competition, as MCC sees it, is not Dawson or Northern, but rather the multitude of students who are leaving the state to study agriculture in Wyoming.

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.

Please note that the first year of this degree program is exactly the same as the one-year certificate program. This allows students a stop-out point on the career pathway, as well as the opportunity to continue with further study. The second year contains more business class for farm and ranch management, as well as animal science lab classes and a required internship. The internships allow students to receive job experience to make them more employable in the field.

AAS in Agriculture Production

This two-year plan of study prepares students to work in the agriculture industry in production livestock, farm and ranch management or agri-sales. It offers more in-depth learning in the areas of agriculture and business management than those covered in the one-year agriculture certificate. This degree is designed for those students who want to enter the job market with a two-year degree and do not plan to transfer to a four-year institution.

First Year – Fall Semester		**First Year -- Spring Semester**	
Course	**Credit**	**Course**	**Credit**
AGSC 100 Intro to Agriculture & Environmental Resources	1	AGSC 103 Applied Agriculture Science	2
ANSC 100 Intro to Animal Science	3	AGSC 104 Applied Agriculture Lab	1
NRSM 101 Natural Resource Conservation	3	AGSC 110 Agricultural Issues Forum	3
NRSM 102 Natural Resource Conservation Lab	1	ACTG 101 Accounting Procedures I	3
M 108 Business Math	3	CA 111 Interpersonal Communication	3
CAPP 120 Introduction to Computers	3	**OR**	
WRIT (100 level) Elementary Technical Writing preferred	2(3)	CA 112 Public Speaking	(3)
		Directed Elective	3
Total Credits	**16(17)**	**Total Credits**	**15**

Second Year – Fall Semester		Second Year -- Spring Semester	
Course	**Credit**	**Course**	**Credit**
ACTG 201 Principles of Financial Accounting	4	ACTG 205 Computerized Accounting	3
ANSC 108 Intro to Livestock Evaluation	2	ANSC 202 Livestock Feeding & Nutrition	3
ANSC 109 Intro to Livestock Evaluation Lab	1	ANSC 262 Range Livestock Production	3
AG 241 Agriculture Internship	3	BIOB 110 Intro to Plant Biology	3
WRIT 122 Intro to Business Writing	3	Directed Elective	3
Directed Elective	2		
Total Credits	**15**	**Total Credits**	**15**

DIRECTED ELECTIVES

Elective Options	Credit	Elective Options	Credit
ACTG 180 Payroll Accounting	3	CA 102 Human Relations	2
AGSC 208 Livestock Evaluation	2	CAPP 151 MS Office	3
AGSC 209 Livestock Evaluation Lab	1	EG 100 Intro to Biofuels	1
EG 101 Renewable Energy	3	EG 201 Energy Mechanics	3
EO 120 CDL (Commercial Drivers License)	4	EO 120L CDL Lab	1
ECNS 201 Principles of Microeconomics	3	ET 101 Electricity, Resistors and OHM's Law	3
EQ230 Professional Hoof Care Provider	2	EQ230L Professional Hoof Care Provider Lab	1
EQ 232 Equine Sales and Marketing	3	WLDG 235 Oxy-Acetylene Welding	2
PE 214 First Aid and CPR	1	WLDG 240 Electric Arc Welding	2

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

As we have found in developing other programs at the College, there is an expectancy of no more than 5 or 6 students in the first year of the program, due to a limited time to market the offering. The plan is to implement this program starting in the fall of 2011 with students enrolled in the Agriculture Certificate, until approval of this program is received by the Montana Board of Regents. If approval is not received, students will still be able to walk away with a certificate before changing their major.

With the number of students who have already shown an interest in this two year degree program, through conversations with agriculture instructor Josh Stroh, by the time this program is marketed there should be 10 incoming freshmen into the 2012 academic year. This is the actually below the average number of students in our transfer agriculture programs, which typically have 14 – 15 students enrolled. However, our certificate and AAS programs normally do not have as many students as the transfer degree programs. Fortunately, all of the coursework is shared with other programs to

make the offering affordable. It would be even more economically feasible for the College if this AAS was added, so there would be more students in the applied courses.

Semester	Students Enrolled	Degree
Fall 2011	5	Certificate of Applied Science in Agriculture
Fall 2012	10 freshmen 5 sophomores	AAS in Agriculture Production
Fall 2013	12 freshmen 8 sophomores	AAS in Agriculture Production

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 additional faculty will be required to implement this program. The same faculty who teach these courses for the certificate program and in the transfer degree programs will be utilized.

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 additional resources are necessary for the implementation of this program. Miles Community College already has an agricultural complex which includes space for animal projects and a greenhouse for the plant and soil science courses.

7. Assessment

How will the success of the program be measured?

Break-even point calculations begin at 8 students per course. Since this particular program is using existing human and plant resources, and includes coursework utilized in other existing programs, the break-even calculation will be 10 students in the program. To be economically successful, there will need to be a total of 10 students including freshmen and sophomores in the program.

Philosophically, the program will be considered a success if students are employable upon graduation in the agriculture field and working in that industry. Employer satisfaction surveys will also be utilized to determine the value of the students who graduate from this program.

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.

On May 11, 2010 the Agriculture Advisory Committee met to discuss the agriculture programs and direction. The meeting consisted of an overview of the programs, number of students in the programs,

and a discussion of trends in the industry as well as economic forecasts. The committee agreed that an AAS in Agriculture should be added to the offerings at the College and went on to discuss specific instruction the students should receive to prepare them to operate a farm or ranch.

During the fall semester of 2010, the Vice President of Academic Affairs met with agriculture instructors Josh Stroh and Kristin Buck to discuss the AAS degree program and coursework that should be included. The goal was to build a solid career pathway from the Certificate of Applied Science to the two-year degree. In addition, the group was tasked to create a viable program from existing courses taught at the College.

The scope and sequence for the AAS in Agriculture Production was presented to the Academic Standards and Curriculum Committee in February of 2011 for first reading. It was approved at the College level in March and presented to the MCC Board of Trustees for approval at their May 2011 meeting.

September 21-22, 2011

ITEM 152-2015-R0911
China Studies Minor

THAT

The Board of Regents of Higher Education authorizes Montana State University-Bozeman to establish a China Studies Minor

---

EXPLANATION

The China Studies minor is designed to recognize a serious commitment to the study of Chinese language and culture. It is especially suited for students who wish to augment their major program in the College of Letters and Science with mastery of one of the Asian languages—Chinese. The lower division language courses provide students with basic skills in speaking, aural comprehension, reading, and writing. The lower and upper division survey courses in literature, culture, history, philosophy and anthropology provide students with an essential introduction to the cultural and historical heritages of China. The China Studies Minor will draw mainly from existing course offerings in the following departments: Modern Languages and Literature, Anthropology, Earth Science, History and Philosophy

---

ATTACHMENTS

Level II Request Form
Curriculum Proposal

Montana Board of Regents

LEVEL II REQUEST FORM

Item Number: **152-2015-R0911** Meeting Date: **September 21-22, 2011**

Institution: **MSU-Bozeman** CIP Code: **05.0123**

Program Title: **China Studies Minor**

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.)**

_X_ **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:

The Department of Modern Languages and Literatures requests approval to establish a non-teaching minor in China Studies (Chinese language and culture). The program's mission is to provide students with language skill and cultural understanding they need to succeed in Chinese contexts. The minor requires basic Chinese language proficiency and a broad knowledge of Chinese history, literature, and culture.

1. Overview

The China Studies minor is designed to recognize a serious commitment to the study of Chinese language and culture. It is especially suited for students who wish to augment their major program with mastery of one of the Asian languages—Chinese. The lower division language courses provide students with basic skills in speaking, aural comprehension, reading, and writing. The lower and upper division survey courses in literature, culture, history, and philosophy provide students with an essential introduction to the cultural and historical heritages of China. The China Studies Minor will draw mainly from existing course offerings in the following departments: Modern Languages and Literature, Earth Science, and History and Philosophy.

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

The Department of Modern Languages and Literatures offers a non-teaching minor in China Studies (Chinese language and culture). The program's mission is to provide students with language skill and cultural understanding they need to succeed in Chinese contexts. The minor requires basic Chinese language proficiency and a broad knowledge of Chinese history, literature, and culture.

3. Need

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

The proposed curriculum responds to the rise of East Asia (China, Japan, and Korea, etc) and the continuing demand for multicultural and Chinese language courses and curricula. As MSU has increased faculty expertise in this area since 2009, students are increasingly seeking an associated curriculum. As a minor, students will be able to use this program to complement curricula in their majors, such as history, education, anthropology, economics, and philosophy.

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

This program will offer a new and exciting choice for students interested in studying humanities, arts, and economics, especially those who major in history, education, anthropology, or philosophy, and want to have a regional focus on Asia. Meanwhile, it will be attractive to those from the sciences, such as engineering, and computer science students who want to have an international certificate in their field. It will also attract students from earth sciences whose research involves fieldwork in China.

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

Demand for the program has not been formally assessed but anecdotal evidence suggests that this is an area with broad appeal to students from the sciences, humanities, social sciences, and the arts. The following facts reveal the increasing student interests in China Studies at MSU.

1. Our Chinese program started in Fall 2009 with the hiring of our first faculty of China Studies, Dr. Hua Li, in the Department of Modern Languages and Literatures. We have seen a steady increase of student enrollment during the past two years. For example, the cap of our Chinese language class is 30 students. The enrollment of CHIN 101 has increased from 19 in fall 2009 to

24 in fall 2010, and CHIN 102 from 9 in spring 2010 to 14 in spring 2011. The second year Chinese language classes have also seen an increase of enrollment. Besides language classes, our Chinese culture classes have attracted students from different majors across campus.

2. In past two years, we have helped our students to apply for Chinese Government Scholarships to go to China to study Language. In 2010, we had one student from our CHIN 102 class received a full-scholarship to study one semester in a Chinese university. This year, we have another two students who are applying for this scholarship. We believe this Chinese Government Scholarship will be one of resources that we can use to send our students to study in China. Meanwhile, we are also exploring other scholarships available to our students.

3. We have been working with the Office of International Program to set up a China Study Tour summer program, and hope to get a group of MSU students going to China next summer. Other than that, the OIP has submitted a grant proposal for International Research and Studies Program in which they proposed online Chinese and Portuguese classes. In this project, our Chinese faculty in MLL will be one of the Primary Investigators.

4. Our Chinese program has also worked closely with the A.C. E. Language Institute at MSU to create a language exchange partnership. We have helped set up language partners between Chinese students who are studying English at A.C.E. with American students who are studying Chinese in our Chinese program.

5. In the fall of 2009, we started a student organization on campus—the Chinese Cultural Club—that recruits students who either have interests in China or are from China. Students meet regularly to participate in cultural activities and language exchange. This club also helps students who participate in the MSU Dinosaur Eggs and Education program prepare their Chinese language before they go to China.

6. In terms of serving the community, we have helped Bozeman High School with their Chinese language classes. The students from our MSU Chinese program have been volunteers to provide on-site help to the high school students.

7. (7) In addition, one purpose of offering this as a minor is that it requires low initial investment, which allows interest to be gauged before resources are reallocated. It is anticipated that program will eventually graduate up to 10 students per year.

4. Institutional and System Fit

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

The China Studies Minor would be an excellent complement to research and teaching strengths of a number of departments and schools, such as Modern Languages and Literatures, History, Philosophy, Anthropology, Education, Economics, Earth Sciences, and the School of Film and Photography. The Department of Earth Sciences has received a three-year national grant so support summer research training for undergraduates in southeast China: Dinosaur Eggs and Education. Overall, the minor would enhance the curriculum of the aforementioned departments.

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).

Currently there is no China Studies minor on MSU campus. The History department has a Japanese Studies option, which covers a different area of Asia.

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

It expands undergraduate opportunities and supports multicultural training.

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.

Within the Montana University System, the Department of Modern & Classical Languages and Literatures at University of Montana (UofM) has a Chinese program, which offers a minor. In addition, UofM also has an Asian Studies program. The program draws its faculty from College of Arts and Sciences, Professional Schools, and the Mansfield Center. Students may choose from two programs. The first is a major in Liberal Studies with an option in Asian Studies. The second program is a minor in Asian Studies to be combined with a major in another discipline. We are also aware that the Mansfield Center at UofM has a strong focus on Asia, and has expertise in China Studies. It also houses the Confucius Institute in Montana. We have communicated with the Mansfield Center in the past two years for different events and activities. Specifically, Dr. Terry Weidner, the director of Mansfield Center has generously co-sponsored our CLS Distinguished Speaker Series to invite Chinese author Yu Hua to come to Montana to give lectures. At present, we are working with the Mansfield Center and the Confucius Institute on the potential Immersion Chinese Summer Camp in the summer of 2012 in Bozeman. We will have more collaboration with UofM in future.

MSU and UofM are the two major universities in Montana, but they are located in two different cities, and meet the educational needs of two different areas. If MSU has a China Studies minor, it will not be redundant or conflict with the Chinese Minor and Asian Studies Program at UofM. Instead, it will better serve the students' needs of both universities. It will not affect the student enrollment at UM because students will not choose the university based on minors, and the MSU students should have access to Chinese minor curriculum. In addition, our Chinese Studies Minor will be under the umbrella of our future Asian Studies Major, which is an interdisciplinary major. This also makes our China Studies Minor different from that in the University of Montana, which, according to the program coordinator Professor Timothy R. Bradstock, will develop into a Chinese major in future. We have contacted the coordinator of the Chinese program, Professor Timothy R. Bradstock, in the Department

of Modern & Classical Languages and Literatures at UofM, and exchanged ideas and concerns about China Studies minor. Professor Bradstock has read our proposed curriculum, and has given us very good advice. We have made some revisions according to his suggestions. In addition, some courses offered in our program have the same course numbers as those offered by UofM. These identical course numbers greatly benefit the transfer students between the two campuses.

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.

China Studies Minor (Non-Teaching)

(This is the language that is going to be put in the MSU catalog.)

The Department of Modern Languages and Literatures offers a non-teaching minor in China Studies (Chinese language and culture). The program's mission is to provide students with the language skill and cultural understanding they need to succeed in Chinese contexts. The minor requires basic Chinese language proficiency and a broad knowledge of Chinese history, literature, and culture.

A total of 28 credits of coursework are required, including 16 credits in Chinese language, and 12 credits of non-language China-related courses, of which 9 credits are at the upper division level. In addition, as many as 9 credits may be taken from courses on China in other departments. In order to receive the minor, students must successfully complete the following course work:

Language Courses	**Credits**
The following four language courses are required:	
CHIN 101: Elementary Chinese I	4
CHIN 102D: Elementary Chinese II	4
CHIN 201: Intermediate Chinese I	4
CHIN 220: Intermediate Chinese II	4

	16

Select one lower-division course on Chinese history, literature or culture

	Credits
CHIN 130D: Historical and Literary Journey into Modern China	3
CHIN 211D: Chinese Culture and Civilization	3
RELS 203D Asian Religions: From Daoism to Zen	3

	3

Select three upper-division courses from the following courses:

	Credits
ART302: Survey of Asian Art	3
CHIN320IH: History of Chinese Cinema	3
HSTR 345: Modern China	3
MLL 4XX: Crosscurrents in Modern East Asia	3
HSTR 443: Gender in Asia	3
HSTR 446 Science & Medicine in China	3
ML490R Undergraduate Research / ML492 Independent Study **	3

	9
Total:	**28**

** Students who are on the Chinese Government Scholarship to study in China will receive 3 credits of ML 490R or ML 492. We highly encourage the students with China Studies minor to spend a short period of time in China.

Proposed New Course:

MLL 4XX: Crosscurrents in Modern East Asia (3 credits):

"Crosscurrents in Modern East Asia" is designed as a 400-level, 3-credit course to satisfy requirements in and to be cross-listed with Japan Studies/Chinese Studies/Asian Studies and History. The course will cover how China and Japan have engaged with the West/modernity and with each other and will cover the period beginning with the Opium Wars of the 1840s through the present. Essentially, this will be a "straight history" course, with topics approached in chronological order, even as we cross the East China Sea between the two nations. Accordingly, history texts on China and on Japan will be the backbone for the course, to be supplemented by various primary sources translated into English, as well as by documentary films.

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

The program would be implemented for students matriculating Fall 2011 with a target of 5 minors. In the first five years of this program, we are aiming at having 5-10 minors.

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.

At present, there will not be any request for additional resources, and we will mainly use the existing resources in the Departments of Modern Languages and Literatures, Anthropology, Earth Science, and History and Philosophy. In future, we will seek an adjunct position in Chinese. We have, however, been

thinking of developing some parts of the China Studies minor online, which would then possibly create funds for on-site adjunct instructor. In addition, we will also apply for an external grant to create funds for adjunct instructor.

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.

We have worked with MSU library to gradually build up our collection of Chinese books, videos and a database to meet the research and teaching need of our China studies program. The library has bought books and subscribed to academic journals on China at the suggestion of our Chinese faculty. The library has also expanded its Chinese video collection, including film and documentary DVDs. Recently, the library has been working on subscribing to a Full-Text Chinese Academic Journal Database. In future, we will keep working with the MSU library to expand the library resources on China.

7. Assessment

How will the success of the program be measured?

Questionnaires will be used to assess students' views on the new course offerings during their development stage. Graduation numbers in the minor will be tracked, and the minor will be subject to program review as part of the normal BOR process.

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 has been reviewed and approved by MSU's Undergraduate Studies Committee and the Academic Affairs sub-committee of Faculty Senate.

September 21-22, 2011

ITEM 152-2702-R0911
Associate of Applied Science in Welding and Metal Fabrication Technology and Certificate of Applied Science in Welding for Energy Technology

---

THAT

Montana State University Billings College of Technology requests authorization to continue offering the Associate of Applied Science in Welding and Metal Fabrication Technology and the Certificate of Applied Science in Welding for Energy Technology.

EXPLANATION

Montana State University Billings College of Technology requests authorization to continue offering the Associate of Applied Science in Welding and Metal Fabrication Technology and the Certificate of Applied Science in Welding for Energy Technology. A Level I proposal was submitted in May 2009.

ATTACHMENTS

Level II Request Form
Curriculum Proposal

Montana Board of Regents

LEVEL II REQUEST FORM

Item Number: **152-2702-R0911** Meeting Date: **September 21-22, 2011**

Institution: **Montana State University Billings College of Technology** CIP Code: **480508**

Program Title: **Associate of Applied Science in Welding and Metal Fabrication Technology and Certificate of Applied Science in Welding for Energy Technology**

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;**

X **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 Billings College of Technology requests authorization to continue offering the Associate of Applied Science in Welding and Metal Fabrication Technology and the Certificate of Applied Science in Welding for Energy Technology. A Level I proposal was submitted in May 2009.

1. Overview

Montana State University Billings College of Technology requests approval to continue offering an Associate of Applied Science degree in Welding and Metal Fabrication Technology and a Certificate of Applied Science in Welding for Energy Technology.

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

The expansion of commercial construction, conventional and alternative energy and production in Montana has created a need for trained welding and metal fabrication technicians. The welding and metal fabrication AAS curricula emphasizes the fundamentals of all welding, cutting, print, reading, layout, fabrication, testing and CNC processes associated with the welding field of study. Upon completion of the program, students are prepared for employment in the structural steel and pipe welding industries. The Certificate of Applied Science in Energy Technology provides skills for employment as a welding technician in the energy industry and is targeted toward prospective students who possess a foundation of knowledge in welding and metal fabrication that could advance them to placement in the second year of the program.

National Center for Construction Education and Research (NCCER) curriculum is utilized throughout the program. The lead instructor for the program is American Welding Society (AWS) certified.

3. Need

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

Montana State University Billings College of Technology is responding to the need for more skilled workers in the areas of welding and metal fabrication. The need is demonstrated through regional projects such as Many Stars Coal to Liquid Plant and Coal Mine; Highwood Generating Station; Signal Peak Mine; and Montana-Alberta Tie Line, and the Bakken Oil Formation.

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

Students now have more options available to them to enter this career path. Students may seek the existing entry level Certificate of Applied Science in Welding and Metal Fabrication Technology, a more advanced Certificate of Applied Science in Energy Technology, or a full Associate of Applied Science degree. Graduates find employment as entry level employees in structural steel fabricating shops with heavy equipment rebuilders and manufacturers, mining, refineries, process pipelines, and other energy related enterprises in the region. Also, graduates may qualify for advanced employment in the Ironworkers, Pipefitters, or Boilermakers Unions.

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

MSU Billings College of Technology worked with local industry partners to determine employment needs. Despite the recent economic downturn, Montana remains in the midst of a strong industrial and commercial economy. Most of the growth is tied to national expansion within the energy sector. According to MT Dept. of Labor and Industry, Research and Analysis Bureau, there will be is a 14%

growth in projected workers for welding in Montana through 2012. In 2010, 100% of MSU Billings COT Graduates in the Welding and Metal Fabrication field were either placed in employment or continuing their education (MSU Billings Graduate Survey, 2010).

4. Institutional and System Fit

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

Students may seek the existing entry level Certificate of Applied Science in Welding and Metal Fabrication Technology, a more advanced Certificate of Applied Science in Energy Technology, or a full Associate of Applied Science degree. Welding faculty partner with staff and other faculty to ensure general education courses are meeting the needs of industry as well as to provide access for services to students across campus.

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

No changes will be required.

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

MSU Billings COT continues to offer the original Certificate of Applied Science in Welding and Metal Fabrication Technology. This Certificate program provides students with a foundation of knowledge in the field that includes blueprint reading, welding theory and safety, cutting and shielding metal arc welding, metal fabrication basics, layout, and semi-automatic welding. The Certificate of Applied Science in Welding for Energy Technology is a more advanced certificate that provides students with knowledge in metallurgy, pipe welding and layout, gas tungsten, and specialty welding processes. The Associate of Applied Science degree allows students to gain a strong knowledge with four semesters of all of the coursework outlined in the two certificates.

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

The **mission** of the Montana State University Billings College of Technology is to be the College of first choice, dedicated to the development of workforce capacity by providing top quality learning opportunities and services to meet a variety of career choices and customer needs by being responsive, flexible and market-driven. One important **core value** of MSU Billings is to meet the changing needs of our learners with informed action and innovation based on current standards of educational and technical excellence. One key **strategic initiative** for MSU Billings is to create and maintain distinctive, vital academic programs and services for 21st Century learners. Tied to the mission, core values, and strategic initiatives, the MSU Billings College of Technology has set a **strategic goal** to strengthen and diversify programs and offerings. The expansion of the Welding and Metal Fabrication program to include an additional CAS and AAS program, has demonstrated our ability to be responsive, flexible, and market driven and to strengthen our program offerings.

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.

Nearly 75% of enrolled students at MSU Billings College of Technology come from a sixty mile radius of Billings. MSU Billings COT is serving its role as a regional hub to meet the local and regional needs in this area. MSU Billings COT faculty members have collaborated with faculty members at other institutions through the statewide transfer initiative. After review of the courses, faculty determined that five of the eight courses in the second year of the new AAS program are unique to MSU Billings. The second year of the program includes content such as ASME codes, API codes, pipe welding and pipe fitting, and running the CNC process. In addition, as opportunities arise, efforts will be made to partner with other two-year institutions in potential future collaborative grants across programs.

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.

Program Outcomes

Upon successful completion of this program a student will be able to:

- Describe and demonstrate welding and metal fabrication safety
- Follow written and oral directions related to welding procedures and fabrication
- Read and draw blueprints
- Set up and operate hand, semi-automatic, and automatic cutting processes
- Identify material shapes and sizes
- Weld in all positions with a variety of welding processes current with the welding and energy industry
- Weld ferrous and non-ferrous metals with a variety of welding processes
- Operate fabrication equipment common in a welding and fabrication environment
- Identify, select, and match filler metals to base metals
- Apply fabrication principles and practices
- Prepare parts for assembly and welding
- Understand and apply welding metallurgy to weldments
- Understand and apply CNC processes to fabrication and welding
- Formulate a plan for assembly and welding of weldments
- Comprehend and apply inspection and testing methods
- Earn NCCER (National Center for Construction Education and Research) Certification

Welding for Energy Technology

Certificate of Applied Science

The entrance requirement for the Welding for Energy Technology Certificate of Applied Science is successful completion of the Welding and Metal Fabrication Certificate of Applied Science or equivalent professional industry certification, and/or evaluation by qualified College of Technology faculty of applicable work experience.
Welding is a fall start program only. See an advisor for more information.

The welding industry offers workers immediate tangible rewards for their efforts. Few professions allow the opportunity for creativity found in the fabrication shop. In addition, the fabrication industry represents one of the largest employment segments in our local economy. Graduates find work in structural and steel fabrication shops and with heavy equipment rebuilders and manufacturers, mining, refineries, and other energy related enterprises in the region. See our website at www.msubillings.edu/careers for graduate data.

2010-2011 Welding for Energy Technology
Certificate of Applied Science
This is a Fall start program only.

Required Courses	Credits
COMT 109 Human Relations	3
M 111 Technical Mathematics	3
WLDG 205 Applied Metallurgy	2
WLDG 212 Pipe Welding and Layout	3
WLDG 213 Pipe Welding I Lab	5
WLDG 215 Gas Tungsten Arc Welding	5
WLDG 251 Specialty Welding Processes	5
WLDG 255 CNC Burn Table Programming and Operation	5
WLDG 280 Weld Testing Certification	2
WLDG 281 Weld Testing Certification Lab	3-5
WRIT 104 Workplace Communications	3
Total minimum credits required	**39**
Suggested Elective	
CAPP 120 Introduction to Computers	3
Students should check the course descriptions for required prerequisites.	

Suggested Plan of Study
Welding for Energy Technology
Certificate of Applied Science

First Semester	Credits
WRIT 104	3
COMT 109	3
WLDG 211	3
WLDG 212	5
WLDG 213	5
WLDG 214	2
Total	**21**
Second Semester	**Credits**
M 111	3
WLDG 251	5
WLDG 255	5
WLDG 253	2
WLDG 254	3
Total	**18**

Welding and Metal Fabrication Technology

Associate of Applied Science

Welding is a fall start program only. See an advisor for more information.
The welding industry offers workers immediate tangible rewards for their efforts. Few professions allow the opportunity for creativity found in the fabrication shop. In addition, the fabrication industry represents one of the largest employment segments in our local economy. The program is NCCER and AWS certified. Upon successful completion of the program, students can earn a National Center for Construction Education and Research (NCCER) Certification. Graduates may also qualify for advanced placement in the Ironworkers, Pipefitters, or Boilermakers unions. Graduates find work in structural and steel fabrication shops and with heavy equipment rebuilders and manufacturers, mining, refineries, and other energy related enterprises in the region. See our website at www.msubillings.edu/careers for graduate data.

2010-2011 Welding and Metal Fabrication Technology
Associate of Applied Science
This is a Fall start program only.

Required Courses	Credits
CAPP 120 Introduction to Computers	3
COMT 109 Human Relations	3
M 114 Extended Technical Mathematics	3
WLDG 117 Blueprint Reading and Welding Symbols	3
WLDG 124 Welding Theory, Technology and Safety	3
WLDG 125 Cutting and Shielded Metal Arc Welding Lab	5
WLDG 126 Shielded Metal Arc Welding Lab	4
WLDG 152 Layout Pattern Making	3
WLDG 153 Metal Fabrication Basics	2
WLDG 154 Metal Fabrication Basics Lab	3
WLDG 156 Semi-Automatic Welding	2
WLDG 157 Semi-Automatic and SMAW Lab	5
WLDG 205 Applied Metallurgy	2
WLDG 212 Pipe Welding and Layout	3
WLDG 213 Pipe Welding I Lab	5
WLDG 215 Gas Tungsten Arc Welding	5
WLDG 251 Specialty Welding Processes	5
WLDG 255 CNC Burn Table Programming and Operation	5
WLDG 280 Weld Testing Certification	2
WLDG 281 Weld Testing Certification Lab	3
WRIT 122 Introduction to Business Writing	3
Total minimum credits required	**72**
Suggested Elective	
WLDG 298 Internship/Cooperative Education	3-9
In order to take the first semester of METL courses, students must prove their skills in Reading Comprehension and Writing. For more information, please contact the Advising Office.	

Suggested Plan of Study
Welding and Metal Fabrication Technology Associate of Applied Science

First Semester	Credits
WRIT 122	3
WLDG 124	3
WLDG 117	3
WLDG 125	5
WLDG 126	4
Total	**18**
Second Semester	**Credits**
M 111	3
WLDG 152	3
WLDG 153	2
WLDG 154	3
WLDG 156	2
WLDG 157	5
Total	**18**
Summer	**Credits**
WLDG 298 (optional)	3-9
Total	**6**
Third Semester	**Credits**
CAPP 120	3
WLDG 212	3
WLDG 213	5
WLDG 215	5
WLDG 205	2
Total	**18**
Fourth Semester	**Credits**
COMT 109	3
WLDG 251	5
WLDG 255	5
WLDG 280	2
WLDG 281	3-6
Total	**18**

COURSE DESCRIPTIONS FOR CORE COURSES

WLDG 117 Blueprint Reading and Welding Symbols
[formerly METL 112 Blueprint Reading and Welding Symbols]
3 cr. (3 lec/wk) Prerequisite: RD 101 and WRIT 104 or compass score equivalent.
Introduces the student to structural steel, piping, and mechanical blueprint reading. Hand sketching of orthographic and isometric drawings are taught along with weld symbols and solid modeling for blueprint design.

WLDG 124 Welding Theory, Technology and Safety
[formerly METL 111 Welding Technology, Theory and Safety]
3 cr. (3 lec/wk) Prerequisite: RD 101 and WRIT 104 or compass score equivalent.
Examines and presents welding and shop safety, oxy-fuel safety, base metal preparation, weld quality, SMAW equipment and set-up, electrode selection, and joint design and fit-up. Other topics introduced are air carbon arc cutting, plasma cutting, and beginning pipe welding.

WLDG 125 Cutting and Shielded Metal Arc Welding Lab
[formerly METL 113 Cutting and Shielded Metal Arc Welding Lab]
5 cr. (10 lab/wk) Corequisite: WLDG 124.
Includes manual and semi-automated oxy-acetylene cutting processes and safety. Shielded Metal Arc Welding with 6010 electrode prepares students for the American Welding Society D1.1 and American Society of Mechanical Engineers Section IX structural certification. In addition, air carbon cutting process, plasma arc cutting process, and equipment set-up are presented. Welding shop safety and quality are emphasized.

WLDG 126 Shielded Metal Arc Welding Lab
[formerly METL 114 Shielded Metal Arc Welding Lab]
4 cr. (8 lab/wk) Corequisite: WLDG 124.
Continues WLDG 125 which leads the student toward American Welding Society D1.1 and American Society of Mechanical Engineers Section IX structural certification for 6010 and 7018 electrodes in all positions. Equipment set-up, operation, weld quality, and safety are emphasized.

WLDG 152 Layout Pattern Making
[formerly METL 151 Layout and Pattern Making Fundamentals]
3 cr. (3 lec/wk) Prerequisites: WLDG 117, M 111 or consent of instructor. Corequisites: WLDG 153 and WLDG 154.
Provides layout and fitting skills applicable to an industrial welding and fabrication shop. Tasks include reading prints, estimating, and ordering materials. Employs simple layout, parallel line development, radial line development, triangulation for pattern development and applied math concepts.

WLDG 153 Metal Fabrication Basics
[formerly METL 152 Metal Fabrication Basics]
2 cr. (2 lec/wk) Prerequisites: WLDG 124, WLDG 117, WLDG 125, WLDG 126, M 111, or instructor consent. Corequisites: WLDG 152 and WLDG 154.
Introduces metal fabrication procedures and safe operation of fabrication equipment. Instruction covers operation of shears, press-brakes, ironworkers, punches, drill presses, and CNC plasma tables. Common terminology, fabrication theory, material use, and equipment safety are taught.

WLDG 154 Metal Fabrication Basics Lab
[formerly METL 153 Metal Fabrication Lab]
3 cr. (6 lab/wk) Prerequisites: WLDG 124, WLDG 117, WLDG 125, WLDG 126, or consent of instructor. Corequisites: WLDG 152, WLDG 153.
Uses techniques learned in WLDG 152 and WLDG 153 to perform layout, cutting and fabrication, fitting, and weld-out procedures applicable to fabricating a finished product or project. Includes the proper use of fabrication equipment and shop practices. Safety, accuracy, quality, and commitment to excellence are

emphasized. Semester projects are assigned.

WLDG 156 Semi-Automatic Welding
[formerly METL 154 Semi-Automatic Welding]
2 cr. (2 lec/wk) Prerequisites: WLDG 124, WLDG 117, WLDG 125, WLDG 126, or consent of instructor.
Prepares and teaches students basic knowledge of Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW), shielded and non-shielded, and GMAW-Pulsed. Equipment needs, set-up, joint design, filler metals, shielding gasses, welding techniques, and safety will be taught.

WLDG 157 Semi-Automatic and SMAW Lab
[formerly METL 155 Semi-Automatic and SMAW Lab]
5 cr. (10 lab/wk) Prerequisites: WLDG 124, WLDG 125, WLDG 126, or consent of instructor. Corequisite: WLDG 156.
Introduces semi-automatic wire feed processes. This course leads to AWS and ASME certification of plate (all positions) with the SMAW, GMAW, GMAW-P, and FCAW-G and FCAW processes. Safe practices and weld quality are emphasized.

WLDG 205 Applied Metallurgy
[formerly METL 214 Advanced Weld Technology and Theory II]
2 cr. (2 lec/wk) Prerequisite: Completion of first year of program or consent of instructor.
Introduces the student to weldability of metals, welding metallurgy, welding automation and robotics, and related cutting and welding processes.

WLDG 212 Pipe Welding and Layout
[formerly METL 211 Pipe Welding and Layout]
3 cr. (1 lec/4 lab/wk) Prerequisite: Completion of first year of program or consent of instructor.
Provides the second year welding student with an introduction to pipe layout, fitting, and welding. Instructs students in piping information, basic pipe layout practices, use of pipe layout tools, and basic pipe welding techniques for 1G rolled position, 2G, 5G, and
6G fixed position using 6010 and 7018 electrodes. Safety, quality, and proper welding techniques according to ASME SEC IX and API 1104 standards are stressed.

WLDG 213 Pipe Welding I Lab
[formerly METL 212 Pipe Welding Lab I]
5 cr. (5 lec/10 lab/wk) Prerequisite: Completion of first year of program or consent of instructor. Corequisite: WLDG 212.
Provides students with the practical application of pipe welding and fitup. Students will practice pipe layout, fitting, and welding techniques in the 1G rolled position the 2G, 5G, and 6G fixed position using 6010 and 7018 welding electrodes and semi-automatic wire processes. Quality and safety will be emphasized.

WLDG 215 Gas Tungsten Arc Welding
[formerly METL 213 Gas Tungsten Arc Welding]
5 cr. (2 lec/6 lab/wk) Prerequisite: Completion of first year of program or consent of instructor.
Provides an intense course in all aspects of manual gas tungsten arc welding (GTAW). Course covers welding techniques and applications, equipment setup, and procedures for ferrous and non-ferrous metals. Quality and safety will be stressed.

WLDG 251 Specialty Welding Processes
[formerly METL 251 Specialty Welding Processes]
5 cr. (2 lec/6 lab/wk) Prerequisite: Completion of first year of program, WLDG 213, WLDG 215, and WLDG 205 or instructor's consent.
Provides welding students with the practices and difficulties welding high carbon and low alloy steels, cast

iron, stainless steel, and aluminum with SMAW, GTAW, GMAW, and FCAW. Welding safety will be a component of this course.

WLDG 255 CNC Burn Table Programming and Operation
[formerly METL 252 CNC Processes for Metal Fabrication]
5 cr. (2 lec/6 lab/wk) Prerequisites: WLDG 124, WLDG 117, WLDG 152, WLDG 153, and WLDG 154 or consent of instructor.
Introduces the student to CNC processes used in metal fabrication. Students will learn how to understand and use machine post processors and controllers. Covers programming of metal shears, metal brakes, and plasma cutting tables as well as programming basic operations on CNC lathes and mills. Master Cam CNC programming software and Solid Works solid modeling software will be taught and used.

WLDG 280 Weld Testing Certification
[formerly METL 253 Weld Testing and Certification]
2 cr. (2 lec/wk) Prerequisite: Completion of first year of program or consent of instructor.
Prepares the student for weld testing and certification. Covers destructive and non-destructive testing for weld inspection. Students learn the weld certification process and welding codes governing welding.

WLDG 281 Weld Testing Certification Lab
[formerly METL 254 Weld Testing and Certification Lab]
V3-5 cr. (6-10 lab/wk) Prerequisite: Completion of first year of program or consent of instructor.
Provides students with the opportunity to prepare, practice, and certify for plate and pipe according to AWS D1.1, API 1104, and ASME Section IX codes and standards.

WLDG 294 Seminar/Workshop
[formerly METL 292 Seminar]
V1-3 cr.
Provides students an opportunity to investigate intensively topics pertinent to the field of metal fabrication.

WLDG 294 Seminar/Workshop
[formerly METL 293 Workshop]
V1-3 cr.
Provides an opportunity for experimental study in an area of metal fabrication.

WLDG 298 Internship/Cooperative Education
[formerly METL 296 Cooperative Education/Internship]
V1-9 cr. (45 hours/credit)
Provides university credit for a sophomore work experience in the area of Welding and Metal Fabrication Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

COURSE DESCRIPTIONS FOR GENERAL EDUCATION/RELATED INSTRUCTION

CAPP 120 Introduction to Computers (For AAS in Welding and Metal Fabrication Technology)
[formerly CMP 105 Introduction to Computers and Applications]
3 cr. (3 lec/wk)
Instructs students in fundamental computing skills. Concepts include the creation and manipulation of files, use of a common Operating System, a basic understanding of computer hardware, and a functional knowledge of common business applications such as: word processing, spreadsheets, Internet and email, and presentation software. The course is performed in a lab setting with access to computers and necessary software.

COMT 109 Human Relations (For CAS in Welding for Energy Technology and AAS in Welding and Metal Fabrication Technology)
3 cr. (3 lec/wk)
Offers a theoretical and practical understanding of communication processes in the working environment, self-awareness in that environment, and the individual's participation in these relationships. The course aims to develop the student's perception and expression skill to communicate successfully in a variety of work contexts.

M 111 Technical Mathematics (For CAS in Welding for Energy Technology)
[formerly MATH 103 Essential Mathematics for the Trades]
3 cr. (3 lec/wk) Prerequisite: M 061 or appropriate placement scores.
Applies math to problems drawn from diverse occupational fields. In addition to a review of operations on rational numbers, the topics of measurement, percent, proportion and variation, applications of algebra to the extent of solving quadratic equations, and applications of plane and solid figure geometry are developed for use in a trade or industrial setting. Course may serve as a prerequisite to M 114, but does not satisfy the prerequisite of any other math courses. Credits apply to graduation but do not fulfill General Education requirements.
M 114 Extended Technical Mathematics (For AAS in Welding and Metal Fabrication Technology)
[formerly MATH 122 College Mathematics for Technology]
3 cr. (3 lec/wk) Prerequisite: M 111 or M 095 or appropriate placement score.
Applies math to problems drawn from diverse occupational fields. Provides college level study of measurement, algebra, geometry, and trigonometry as needed to solve mathematical applications in a trade or technical work environment.

WRIT 104 Workplace Communications (For CAS in Welding for Energy Technology)
[formerly ENGL 102 English Essentials for Technical Writers]
3 cr. (3 lec/wk)
Designed to teach students the fundamentals of the English language. Includes grammar, spelling, punctuation, and word usage with emphasis on both written and oral communication.

WRIT 122 Introduction to Business Writing (For AAS in Welding and Metal Fabrication)
[formerly ENGL 140 Business Writing]
3 cr. (3 lec/wk) Prerequisite: Satisfactory completion of WRIT 095, WRIT 104, or qualifying score on the placement exam.
Provides instruction in the preparation of business memos, letters, reports, oral presentations, and computer assisted writing in business contexts.

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

When MSU Billings COT submitted the Level I proposal in 2009, we projected 20 students entering the AAS program each year. The demand has been so great, that we made accommodations to add seats for four to five additional students for entering classes during semesters fall 2009 and fall 2010. Between CAS and AAS program enrollment, there were 41 students enrolled fall 2009 and 38 students enrolled fall semester 2010. Enrollment looks strong for fall semester 2011 as well and we anticipate over 20 students for the entering class once again. Below is a timeline of implementation for the program.

May 2009: Level I to Montana Board of Regents
September 2009: 42 students enrolled in Metal and Welding Fabrication majors
September 2010: 38 students enrolled in Metal and Welding Fabrication majors
September 2011: Level II proposal submitted to Montana Board of Regents
September 2011: 38 students projected enrollment in Metal and Welding Fabrication majors

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.

The addition of one full-time faculty member was necessary to offer the new CAS and AAS options. The funds for the additional faculty line for this program were reallocated when the Heating, Ventilation, Air Conditioning, and Refrigeration Repair program was placed on moratorium.

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.

Current facilities are adequate for the programs. Additional equipment to launch the programs was purchased through grant funds. The OCHE Industry Grant 2005 allowed for the purchase of Welders, a Plasma Table, CNC-Mill and Lathe, and Brake & Shear. Dollars from the CITE 2 grant, WIRED grant, and US DOL Energy for Tomorrow Grant paid for additional welders and other lab materials to support the programs.

7. Assessment

How will the success of the program be measured?

Program assessment will be conducted in a variety of ways. Annual assessment and program reports are required for all MSU Billings programs. Rubrics, projects, exams, weld test certifications, employer surveys, and alumni surveys are included as measurements for student learning outcomes in the program assessment plan. In addition, other assessment instruments will include student enrollment, retention, and student employment rates. Faculty will seek input from their program advisory committee in order to meet industry needs and make improvements to the program as needed.

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 proposal was developed through the research of a number of entities at MSU Billings including the College of Technology's Welding Program Advisory Committee; the successful completion of a DACUM (development of curriculum) study in partnership with five local industry partners; and through the support of the US Department of Labor "Energy for Tomorrow" grant.

ITEM 152-1901-R0911
Healthcare Informatics Technology (HIT) Certificate Program

THAT

The University of Montana-Helena College of Technology requests approval to establish a Healthcare Informatics Technology Certificate program.

EXPLANATION

UM-Helena would like to establish a Healthcare Informatics Technology Certificate Program (CIP Code: 512706). The program involves creating a two-track 16 or 17 Credit certificate to support both state and regional implementation of Health Information Technology under the ARRA-funded "Community College Consortia to Educate Information Technology Professionals in Health Care." UM-Helena will be providing an additional access point for students to obtain the degree in addition to the already approved programs in Butte, Kalispell, and Great Falls.

ATTACHMENTS

Level II Request Form
Curriculum Proposal

Montana Board of Regents

LEVEL II REQUEST FORM

Item Number: **152-1901-R0911** Meeting Date: **September 21-22, 2011**

Institution: **The UM Helena College of Technology** CIP Code: **512706**

Program Title: **Healthcare Informatics Technology (HIT) Certificate Program**

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**

X **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:

UM-Helena would like to establish a Healthcare Informatics Technology Certificate Program (CIP Code: 512706). The program involves creating a two-track 16 or 17 Credit certificate to support both state and regional implementation of Health Information Technology under the ARRA-funded "Community College Consortia to Educate Information Technology Professionals in Health Care." UM-Helena will be providing an additional access point for students to obtain the degree in addition to the already approved programs in Butte, Kalispell, and Great Falls.

1. Overview

The Healthcare Informatics certificate program has been developed under subcontract to a multi-state consortium of colleges (Region A) and is supported by a federally-funded cooperative agreement through the Department of Health & Human Services (Community College Consortia to Educate Information Technology Professionals in Health Care: ARRA Grant # 90CC07701). The Healthcare Informatics Technology certificate program will target (1) technology professionals and recent graduates of technology/CS programs who are transitioning to work in the health care system; or (2) allied health and healthcare professionals who currently work in the health care delivery system, but who must transition to Health Information Technology (HIT) implementation and support roles. Both information technology and healthcare have relatively high "barriers to entry" and the certificate will provide an orientation to multiple aspects of the healthcare industry and health information technology. The certificate will consist of 16-17 credits, and, under the requirements of the grant, must be designed to be completed in one semester (< 6 months) for a student attending full-time. UM-Helena will be one of four sites providing access for student to obtain this certificate in HIT (Helena, Butte, Kalispell and Great Falls).

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

The Healthcare Informatics Technology Certificate Program will provide a 17-credit track for IT professionals transitioning to working in the healthcare delivery system; and a 16-credit track for healthcare professionals and allied health professionals who will be responsible for supporting local hospitals and clinics as these organizations adopt and use Health Information Technology (HIT).

3. Need

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

The transition to the Electronic Health Record will force a major change in the way patient information is recorded, accessed and used. The Bureau of Labor Statistics (BLS) predicts that job opportunities for health IT professionals will be highly favorable in the coming years. This field is projected to grow much faster than average < http://www.bls.gov/oco/ocos103.htm >. While hospitals have generally been the leading employers of healthcare informaticists, experts are speculating that many health information technicians will also find employment in other types of medical facilities, including nursing centers, outpatient care facilities, home medical services, and physicians' offices. To support the transition of the entire U.S. healthcare delivery system to electronic platforms, the Centers for Medicare & Medicaid Services (CMS) has made 19 billion dollars in incentive payments available to help clinics and hospitals adopt Health Information Technology (HIT). Clinicians may qualify, starting in 2011, for a reimbursement of up to $44,000 per physician by meeting the "meaningful use" requirements recently published by the Office of the National Coordinator of Health IT. These incentives phase out over the next two years and penalties, in the form of reductions in reimbursement to Medicare and Medicaid providers of 1-2% will be phased in. These incentives are intended to encourage providers to adopt HIT and are also meant to operate in tandem with ARRA-funded educational programs, such as this certificate program, to support the rapid development of a healthcare workforce capable of the meaningful use of the Electronic Health Record (EHR). Because of the financial consequences to the State's health care delivery system, it is imperative the rural

clinicians begin to implement the Electronic Health Record in their practices in order to maximize the benefit to Montana's medical providers and to avoid the eventual payment penalties.

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

Students will be provided with an additional educational option due to the development of the certificate. For example, current IT, allied health and pre-nursing/nursing students will have the option of acquiring an additional certification that will increase their value in the job market. Within Montana itself, virtually all providers of patient care in the system will be affected by the transition to electronic health information systems, and a substantial number of providers and allied healthcare workers will require either direct or indirect re-training.

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

The Office of the National Coordinator of Health IT, Department of Health & Human Services, estimates an immediate need for 10,000 Health Care Informaticists nationally and 50,000 Health Care Informaticists and Health Information Technology specialists over the next 10 years. Montana's certificate program itself has the goal of producing 150 trainees per year for two years for a total of 300 trainees. This rate of trainee production is based on requirements set by the conditions of the cooperative agreement as detailed by the Office of the National Coordinator of Health IT and based on Health IT workforce estimates for the State and the northwest region.

4. Institutional and System Fit

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

The certificate program will leverage the strengths in online delivery, Healthcare Informatics, Health Information Technology, and allied health programs that each institution currently possesses. Montana Tech currently offers both AAS and Baccalaureate degrees in Healthcare Informatics, as well as programs in Medical Transcription, Medical Assisting, and 2- and 4-year nursing programs. MSU-Great Falls currently offers AAS programs in Health Information Technology, and Health Information Coding Specialist. Flathead Valley Community College excels in the delivery of online learning; is developing a 2+2 agreement with Montana Tech's Health Care Informatics Baccalaureate degree program; and also offers Information Technology, Medical Assistant, Practical Nursing, and Medical Administrative Assistant AAS programs. UM-Helena has a 2-year nursing program and long-standing relationship with Montana Tech's Business Information Technology degree program, the offering of which is coordinated between the two institutions. This will also complement the non-credit offerings UM-Helena has developed under this grant and give students an option for continued education.

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

The impact on existing courses/programs will be minimal. The certificate is being implemented using existing courses from all four participating institutions wherever possible. Additional sections of a limited number of courses may need to be developed and offered to meet the levels of trainee production that the educational program and cooperative agreement times lines require.

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

This certificate program is a concentrated course of study in Health Information Technology and Healthcare informatics with tracks targeted to current information technology, health, and allied health professionals. The program will be available entirely online and offered cooperatively by four campuses in the MUS, leveraging the existing strengths of all four campuses in this area.

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

The certificate will advance the System's use of online learning as it will be targeted to the distance learner currently employed in the healthcare or technology sectors, as well as being available to current students. The HIT Certificate also builds on the strengths of the Montana University System's current programs. Existing courses have been used to develop the certificate wherever possible. This certificate program allows campuses of the University of Montana, Montana State University and Community College systems to work together. As the certificate draws on courses from all four institutions it will support the creation of 2+2 programs and will provide a bridge between the 2 and 4-year programs in Health Information Technology and Healthcare Informatics.

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 program is being implemented through Montana Tech as the lead institution within Montana in close collaboration with MSU-Great Falls, UM-Helena, and Flathead Valley Community College. As all campuses have agreed to share courses and students, accepting the courses that make up the certificate even if taught at another institution, there will be virtually no duplication of courses.

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.

See Appendix A.

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

(1) Fall, 2010 - Marketing of the program and recruiting students; (2) Spring, 2010 - Admission of 50 students to the program across four campuses; (3) Summer, 2010 - Admission of 70 students among the four campuses; (4) Fall, 2011 - 75 Students; (5) Spring, 2011 - 75 Students

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.

This will require no additional full-time faculty members at UM-Helena. Courses offered by UM-Helena in support of the delivery of the certificate will be addressed using adjunct faculty or through an optional additional load for full-time faculty.

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.

The development of the certificate will require granting an exception to several prerequisites and/or corequisites. However, the primary trainee populations targeted by this program will generally be graduates of health or CS/IT programs and will also likely be working in the healthcare or IT fields currently. Some flexibility, in terms of making an allowance for the experience of the trainees, will be necessary as enrollment criteria is further developed and refined at the regional/national levels. Two other components of the federal Health IT Workforce Program have also been executed at the federal level to provide support for this effort. The Department of Health & Human Services has funded Curriculum Development Centers to create curricular materials to support the delivery of healthcare informatics certificate programs nationwide. The second program is the development of certification exams under the "Competency Examination for Individuals Completing Non-Degree Training" program, which will support the development and initial administration of a set of individual health IT competency examinations.

7. Assessment

How will the success of the program be measured?

The Office of the National Coordinator has provided mandatory reporting measures under ARRA guidelines that will be used to assess the success of the program. These include (1) Proportion of trainees successfully completing the program; (2) Proportion of trainees taking and passing a certification examination; (3) Proportion of trainees employed in Health IT at three months following completion of the program; (4) Proportion of trainees employed in Health IT at six months after the completion of the program.

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.

Montana Tech's Industrial Advisory Board, consisting of representatives from Billings Clinic, Bozeman Deaconess Hospital, HealthShare Montana, and other healthcare organizations have reviewed and approved this training/certification program. OCHE has also expressed interest in the development/ success of the program as a model for cooperative program delivery between campuses. Students will enroll through a “home campus” and currently extant agreements, such as the agreement supporting the cooperative delivery of an engineering program between MSU-Billings and MSU-Bozeman, will be used to appropriately allocate student FTE and tuition/fees to the campus offering the course. This type of jointly

offered, cooperative program will also benefit from, and illustrate the utility of, the MUS common course numbering and transferability initiatives.

Health Informatics Certificate Detail

Track 1: For Information Technology Professionals – Total Credits = 15

AHMS 144	Medical Terminology	3 Cr.. (Hrs. 3 Lec.)	Prereq or Coreq: None	*1
AHMS 252	Computerized Medical Billing	3 Cr. (Hrs. 3 Lec.)	Prereq or Coreq: None	*2
HCI 1016	Introduction to Health Care Informatics	3 Cr. (Hrs. 3 Lec.)	Prereq or Coreq: None	
HCI 2156	Health Care Facility Procedures	3 Cr. (Hrs. 3 Lec.)	Prereq or Coreq: HCI 1016	
HCI 3406	Elect Health Record in Med Practice	3 Cr. (Hrs. 2 Lec.,1 Lab)	Prereq or Coreq: HCI 2156	

Track 2: For Allied Health Care & Health Care Professionals – Total Credits = 17

HCI 1016	Introduction to Health Care Informatics	3 Cr. (Hrs. 3 Lec.)	Prereq or Coreq: None	
HCI 2256	Data, Information & Knowledge	3 Cr. (Hr.3 Lec.)	Prereq or Coreq: CAPP 158, HCI 1016 or Consent of Instructor	*3
HCI 2306	Overview of HCI Systems	4 Cr. (Hrs. 2 Lec., 6 Lab)	Prereq or Coreq: HCI 1016 or Consent of Instructor	
HCI 3406	Elect Health Record in Med Practice	3 Cr. (Hrs. 2 Lec., 1 Lab)	Prereq or Coreq: HCI 2156 or Consent of Instructor	
HCI 4106	Project & System Management	4 Cr. (Hrs. 2 Lec., 6 Lab)	Prereq or Coreq: Consent of Instructor	

MSU-GF Courses contributing to the Health Information Technology Certificate Program

**1* AHMS 144 (Medical Terminology) is considered equivalent across all campuses of the MUS

**2* MSU-GF- AHMS 252 (Computerized Medical Billing) is equivalent to Montana Tech - AHMS 220 (Medical Office Procedures)

**3* MSU-GF - AHMS 108 (Health Data Content and Structure) is equivalent to Montana Tech - HCI 2256 (Data, Information & Knowledge)

Note: MSU-GF has a number of courses, listed above, that will contribute significantly to the MUS's capacity to

scale-up and meet the objectives of the federally supported cooperative agreement for trainee production. To ensure equivalency, Montana Tech and MSU-GF faculty are revising the Montana Tech and their MSU-GF equivalent courses jointly. We will, as a follow-up effort, put these courses through the common course numbering/FLOC'ing process to further mesh the first two years of courses comprising MSU-GF's 2-year Health IT program and Montana Tech's 4-year Health Care Informatics Program.