

MONTANA BOARD OF REGENTS

NEW ACADEMIC PROGRAM PROPOSAL SUMMARY

Item No.: 134-2802-R0307	Institution: Montana State University-Northern
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1. How does this program advance the campus' academic mission and fit priorities?

This program complements the existing Plumbing Technology and Electrical Technology programs and completes MSU-Northern's trade program offerings. The program is consistent with the mission and vision of the institution and the role of Northern in supporting economic growth and development in North Central Montana.

2. How does this program fit the Board of Regents' goals and objectives?

The Carpentry Technology programs developed statewide are reflective of the goal of the Montana BOR in responding to industry and community needs.

3. How does this program support or advance Montana's needs and interests?

Based on the growing need for workers in these trades, and the aging of Montana's workforce, the Carpentry Technology program addresses both the need to replace retiring workers and the need for new construction occurring statewide. In addition, the development of a statewide program with cooperation among the campuses listed in addition to virtually every two-year college of technology, community college and tribal college in the state is consistent with the direction and goals of the Montana MUS as directed by the Board of Regents.

4. How will this program contribute to economic development in Montana? (Note projected annual economic impact both regionally and statewide.)

This program is designed to support the currently booming construction industry. As indicated in attached documentation, there is a current need for trained capenters that far outstrips the ability of Union and independent contractors to supply. There is no foreseeable lessening of that need.

5. What is the program's planned capacity?

• Break-even point?	8	FTE students
• Enrollments / year?	12	
• Graduates / year?	10	
• MT jobs / year?	100	

6. Resource Allocation:

• Total program budget?	\$ 100,000 /year (see budget)
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• Faculty FTE?	2.5
• Staff FTE?	.125

7. Does this program require new resources? Yes No

If yes, what is the amount? \$ 316,103

8. How will the campus fund the program?

Initial funding for the program is provided as part of the \$2million Montana BILT grant. This funding is expected to provide equipment, tools, and personnel until the program becomes self-sustaining as a result of state FTE funding, student tuition and both direct and indirect industry support.

9. If internal reallocation is necessary, name the sources.

Reallocation of shop space has already taken place, utilizing space vacated as a result of construction of Northern's Applied Technology Center. As indicated in question 8, funding for the program does not require reallocation.

Proposal to Offer a Certificate of Applied Science and Associate of Applied Science Degree in Carpentry

Description of Program

The Certificate and Associate degree at Montana State University – Northern are offered as part of the BILT consortium with curriculum developed in cooperation with MSU-Billings, UM-Tech COT, UM-Helena COT, and UM – COT. The program is designed to provide entry level skills and knowledge for a graduate to pursue a career in the carpentry trade area. Specific curriculum items are designed to meet the National Center for Construction Education and Research (NCCER) curriculum. Students may be able to attain national registry of skill and knowledge areas as a result of completing coursework at MSU-Northern.

1. Pedagogical Objectives and Competencies

Theoretical Principals and Concepts

CAS students will understand;

- Fundamentals of the Building trade
- Basic safety principals and practices
- Construction math and calculations needed in the construction industry
- Basic construction theory
- Electrical basics in new and remodel construction

AAS students will understand

- Principals of finish carpentry
- Rigging principals
- Commercial construction principals
- Operation of light equipment
- Use of Computer Aided design in Construction applications

Practical Skills and Abilities

CAS students will be able to demonstrate;

- Basic hand and power tool usage
- Print reading and basic framing
- Basic roofing, wall and floor construction
- Principals of finish carpentry

AAS students/graduates will be able to demonstrate

- Construction leadership skills
- Advanced framing and construction techniques
- Intermediate and advanced hand and power tool operation and maintenance
- Building forms and pouring foundations and flat work

- Advanced roof, floor, wall and stair construction
- Written and oral communications appropriate to the construction trade
- Metal work, including metal building construction, welding and use of commercial building systems such as steel studs, etc.

2. Requirements

Documented Need

As evidence of need, an excerpt from the original 'Montana BILT grant' application is included in this document as appendix A.

Additional Courses

The AAS degree will require development and offering thirteen new courses (thirty-eight semester credits) in carpentry technology and general trades knowledge and skills areas.

Adequacy of Current Courses

The carpentry degree and certificate will utilize eight courses (twenty eight semester credits) of existing coursework currently being offered in other degree programs, or as part of general education core.

Accreditation Status

The curriculum is being developed in cooperation with the Independent Contractors Association, and will be recognized by the National Center for Construction Education and Research (NCCER).

Assessment Plan

Students will be required to participate in knowledge area testing resulting in certification by the NCCER. Skills and knowledge areas evaluated by testing and by observation of program faculty will be recognized by registration in the NCCER system.

Additional Faculty Requirements

A new faculty member will be hired to support and develop degree curriculum. In addition a second faculty member will be assigned on a part time basis to the Carpentry program as well as to the existing Industrial Technology degree program.

Impact on Facilities

Underutilized facilities have been assigned to support carpentry labs, collocated with other trades programs on the Northern campus (plumbing and electrical technology). Reassignment of lab and classroom space has resulted in better utilization of facilities. At some point, additional in-door facilities will be required to allow construction projects to be performed on a semester-long basis with some protection from inclement weather. This additional facility is expected to serve all three trades areas, and will be provided through industry support of the programs.

Cost Analysis

Financial support for the first three years of the program is provided through the Montana BILT grant, administered through MSU-Billings. These finances (see budget) provide funding for faculty, staff support and initial equipment acquisitions. Based on enrollment at our sister institutions, student interest is expected to be very high, as is support from industry. The program is expected to be self-sustaining after the grant period.

Enrollment Impact

Based on interest and enrollment in the other carpentry programs in the state, enrollment in the first year of classes is expected to exceed capacity very rapidly. With an expected cap on program enrollment at twenty students per year, and an anticipated retention rate of 75% from the certificate to associate degree level, the program is expected to result in a roughly 35 FTE increase after the second year is in place. Based on industry demand and the ability of the Montana economy to support the current rate of construction activity, and with an aging construction workforce, additional resources may be utilized to increase the program capacity to roughly double of the stated figures.

Relationship to Other Campus Programs

As indicated above, the carpentry program complements existing programs in plumbing and electrical technology, and utilizes coursework from both of these trades programs. In addition, courses offered to a variety of programs in the College of Technical Sciences are incorporated into the Carpentry program, increasing productivity across the MSU-Northern campus.

Relationship to Other Institutions

As indicated above this program is developed in cooperation with Northern's Montana BILT partners. Curriculum, recruiting, and articulation have been coordinated and built into the project from the beginning. Based on strong interest, Northern is currently working on cooperative and articulation agreements with Tribal and community colleges throughout Montana and in particular in North Central Montana.

Description of Proposal Development Process

Curriculum was developed in cooperation with industry and university partners as described above. After course and program flow were determined by program faculty, the proposal was reviewed by the College of Technical Sciences at MSU-Northern, then by the MSU-Northern Academic Senate, and finally through the administration review process at MSU-Northern.

Supporting Documents

Letters of support and curriculum paperwork are attached.

Appendix A: Excerpt from Montana BILT Grant Application




A. Statement of Need:





a. Identifying the industry of focus. The industry of focus in this statewide proposal is the construction-trades industry. The construction industry faces a critical and growing shortage of workers. There is a growing gap between the supply of and demand for skilled construction laborers due to industry image issues, limited career paths for youth, the aging of the construction workforce and increasing issues of limited English proficiency. Montana will experience a need of 9,560 trained construction workers by 2012, while nationally the number will exceed 1 million new jobs (data from Dr. Brad Eldridge, chief economic forecaster of the Montana Bureau of Labor and Statistics.)

b. industry is high growth. In Montana, as in the nation as a whole, the construction industry has grown steadily, with increasing numbers of jobs, over the past several years. Jerry Laughery, Training and Education Director for the Montana Contractors’ Association, notes that growth in 2004 and 2005 has continued at about 8% annually, and is projected to continue at that rate. In a speech to the Montana Workforce Conference in Great Falls, MT, on June 22, 2005, Byron Roberts, Executive Director of the Montana Building Industry Association, pointed out that the growth in Montana’s building industry is not due to “the bubble” being debated in other areas of the nation. Roberts noted that the rate of over 5,000 homes built in Montana annually is just keeping up with the one percent per year growth rate in Montana due to immigration and natural population increase.

Data in the table on the following page document the projected need for employees in the construction and building trades industry.

c. providing evidence of industry demand. However, while the pressure to add jobs and skilled workers continues, industry struggles to find sufficiently trained employees. As Dave Kalberg, Manager of Commercial Operations for Pierce Flooring and Design (the State’s largest flooring installer and supplier) noted in a personal communication with Dean Cech, MSU-Billings College of Technology, recently, “the

Table 1. Hot Careers – By State			Montana		
#	Top Occupations	Projected Need for Employees (2002 - 2012)	Projected Growth	Average Job Openings	In a High Growth Industry?
1	Carpenters	4,100	 21-36%	620	<input checked="" type="checkbox"/> Construction
3	General and Operations Managers	2,260	 21-36%	430	
4	Construction Laborers	1,750	 21-36%	240	<input checked="" type="checkbox"/> Construction

6	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	1,290		190	<input checked="" type="checkbox"/> Construction <input checked="" type="checkbox"/> Energy
8	Painters, Construction and Maintenance	1,210		160	<input checked="" type="checkbox"/> Construction
10	Construction Managers	1,080		160	<input checked="" type="checkbox"/> Construction
18	Electricians	820		120	<input checked="" type="checkbox"/> Construction <input checked="" type="checkbox"/> Energy

Source: http://www.acinet.org/acinet/acinet_emerging_start.asp?stfips=30

entire flooring industry is facing [problems] to get new qualified people into this profession . . . the experienced installers are either nearing retirement or their bodies are wearing down from the physical work. Nationwide there is a huge shortage of installers . . .”

Ironically, this industry growth and demand for new workers is taking place in a state whose median household income is 47th in the nation; whose overall unemployment rate is 6.0%, and on the reservations rises as high as 75% (“2001 Local estimate of Indian Service Population and Labor Market Information,” Bureau of Indian Affairs). Montana is 4th in the nation in percentage of multiple job holders; our families’ wage earners must work two jobs to make ends meet. At the same time, industry is reaching out for workers; the Montana Department of Labor notes that there were 21,525 estimated construction-related job openings in 2002 with an annual growth rate of 3.2% per year. This growth rate is higher in areas of the state with higher population concentrations, such as Billings and Missoula. On June 22, 2005, there were approximately 400 job openings in the construction trades in Montana which represents 12% of the 3,400 open jobs posted on the www.jobs.mt.gov website. This figure only counts those positions that are advertised through Job Service and is a fraction of the actual number of open positions as per industry representatives. Meeting industry demand for a trained workforce would both alleviate much individual poverty, and enable the growth of an entire industry sector.

BUDGET ANALYSIS

Campus: Montana State University-Northern										
Proposed Program: Certificate of Applied Science and Associate of Applied Science Degree in Carpentry Technology										
	Year 1		Year 2		Year 3		Year 4		Year 5	
Estimated ENROLLMENT										
FTE Enrollment	8		18		24		24		24	
Estimated Incremental REVENUE										
Use of Current General Operating Funds	8500		8500		8500		8500		8500	
State Funding for Enrollment Growth	0		33984		45312		45312		45312	
Tuition Revenue										
A. Gross Incremental Tuition Revenue	35040		78840		105120		105120		105120	
B. Reductions to Incremental Tuition										
C. Net Tuition Revenue (A-B)	35040		78840		105120		105120		105120	
Program/Course Fees	4000		4000		4000		4000		4000	
External Funds	15000		25000		35000		50000		100000	
Other Funds (please specify)	128314		130156							
TOTAL Estimated Incremental Revenue	190854		280480		197932		212932		262932	
Estimated Incremental EXPENDITURES										
Personal Services	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost
Faculty	1.2	62554	1.2	65156	1.5	84703	1.5	88091	1.5	91615
Other Staff	0.125	4000	0.125	4000	0.125	4000	0.125	4000	0.125	4000
Operating Expenses	13500		13500		13500		13500		13500	
Equipment	36000		15000		15000					
Start-up Expenditures	52260		51500							
TOTAL Estimated Incremental Expenditures	168314		149156		117202.8		105591		109115	
Estimated Revenues Over/(Under) Expenditures	22540		131324		80729.2		107341		153817	