

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

NEW ACADEMIC PROGRAM PROPOSAL SUMMARY

Institution: MSU-Northern and MSU-Great Falls
Program Title: Bachelor of Science Degree in Civil Engineering Technology.

1. How does this program advance the campus' academic mission and fit priorities?

MSU-Northern's Mission Statement commits the institution to providing high quality education in mechanical and engineering technologies while MSU-Great Falls is committed to providing technical training to serve workforce needs and provide access to higher degrees. The proposed program fits the mission of both institutions as it prepares individuals to advance into a four year program that graduates students into well paid jobs that fill the needs of local and national industry for Civil Engineers.

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

Among the Board of Regents goals is the promise to deliver higher education services in a manner that is efficient, coordinated, highly accessible and responsive to market, employment, and economic development needs of the State and the nation. The proposed program helps the Board of Regents meet both goals by delivering a high value program in an area where the need has been articulated by local employers. The proposed program will be delivered in a collaborative partnership format between two institutions, MSU-Northern and MSU-Great Falls. The Great Falls campus will rely on its current offerings to provide students with the Associate of Science degree, but will rely heavily on MSU-Northern's established lower-division course work for the program of study in Civil Engineering Technology. In turn, MSU – Northern will bring its upper division course work to the Great Falls campus to make it possible for students to complete with Bachelor of Science degree in Great Falls. This program is an example of partnerships encouraged by the Board of Regents where different institutions within the Montana University System share their resources in order to create better access for students.

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

The types of projects that a CET graduate would be involved in includes design and construction projects for the municipal sector; like subdivisions, airports, traffic designs and configurations, water treatment plants, and sewage treatment plants; for county government with parks, recreational areas, and county roads; for state government with large regional plans, water supply facilities, flood control projects, interstate highway system and state roads, and for the federal government with every department and agency. A student graduating with a CET degree could seek employment at each level of government, with private firms (consultants) and contractors employed by various governments. The governmental agencies, consultants, and contractors could all be located within Montana. For example, Montana has over 1,200 miles of interstate highway and thousands more miles of paved and unpaved roads. Registered professional civil engineers are an essential element in the construction, repair and maintenance of these transportation links, which are vital to the economic and social health of the State. In addition the offering of this program in Great Falls was requested by Malmstrom Air Force Base as a vehicle for the training of military engineers who respond to regional and national disasters and play a vital role in national defense.

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

By the third year of it operation, the CET program in Great Falls is anticipated to be at 29 students per year. This number is conservative and allows for part-time enrollment of Malmstrom Air Force Base personnel. The CET program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineers and Technology, 111Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone (410) 347-7700 (TAC/ABET). As a graduate with a TAC/ABET CET program students can choose to fulfill the requirements to become a Licensed Registered Professional Engineer in the State of Montana. Montana Department of Labor statistics indicate that there are 38 openings per year for Civil Engineers in the state. As

of 2002, 1,222 civil engineers were employed in Montana in various capacities. Demand is projected to increase over the next decade reaching 1,401 by 2012. The annual mean income for civil engineers in Montana is \$53,720. The offering of MSU-Northern's program in Great Falls will provide additional individuals to fill the hiring needs of the profession in Montana to plan and manage large scale building projects.

In the 1960s and 1970s governmental activities like the development of the National Aeronautics and Space Administration (NASA) and increase protections for the environment through the creation of Environmental Protection Agency increased the need and participation in engineering and science education. During that period the enrollments in colleges and universities offering degrees in engineering and science increased. Since then the enrollments in these programs have been decreasing while at the same time many of those graduates are beginning to retire. The engineering community is concerned about an adequate supply of graduates to fill the anticipated vacancies in the near future. Governmental agencies and private industry are continually looking for trained and qualified personnel to fill the vacancies. In addition to the Civil Engineer projections stated above, there continues to be the need for adequately trained personnel to work in association with Civil Engineers such as graduates in Civil Engineering Technology. For students who do not plan to acquire a license as a Registered Professional Engineer, there is increasing demand for their knowledge and expertise.

5. What is the program's planned capacity?

• Break-even point?	9
• Enrollments / year?	12
• Graduates / year?	7
• MT jobs / year?	10 (new)

6. Resource Allocation:

• Total program budget?	\$115,480 by year 5
• Faculty FTE?	1.50 by year 5 plus utilization of existing faculty
• Staff FTE?	.25

7. Does this program require new resources? Yes No

If yes, what is the amount?

For MSU-Northern, \$76,400 per year by year 3 (see budget analysis) For MSU – Great Falls, \$7,800 by year 2 to develop and provide instruction for general education course work needed for the degree.

8. How will the campus fund the program?

Through tuition, fees and state allocation for FTE

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

None required