

The Senate of Michigan Technological University

PROPOSAL 8-86

ESTABLISHMENT OF A BACHELOR OF SCIENCE IN ENVIRONMENTAL ENGINEERING (BSEnE)

BACKGROUND:

On February 5, 1986, the Senate gave preliminary approval for the establishment of a Bachelor of Science in Environmental Engineering (BSEnE) Degree Program (Proposal 6-86, p. 2510 Senate Minutes). Final Senate approval of the proposed program in accordance with Proposal 10-70 is required in order to implement the program. On April 22, 1986, the Curricular Policy Committee voted unanimously to recommend that the Senate approve the proposal to establish the program leading to the Bachelor of Science in Environmental Engineering.

PROPOSAL:

The Senate of Michigan Technological University recommends the establishment of a program leading to the Bachelor of Science in Environmental Engineering. A description of the program follows:

Program Description:

Although the BSEnE is a new degree designation at Michigan Tech, it is not a new program. An environmental engineering specialty curriculum has been available under the undesignated Bachelor of Science in Engineering (BSE) degree program since 1972. Since that time, this specialty has grown to an enrollment of about 30 students and a degree production of about 6 per year. The proposed degree program is essentially an evolution and proper titling of the existing specialty program. It will be administered through the Civil Engineering Department in much the same way as is the existing program. The environmental engineering faculty group will have primary responsibility for curricular matters. In addition, the Environmental Engineering Doctoral Program Committee will serve in an advisory capacity.

Curriculum and Degree Requirements:

The curriculum includes a strong foundation in mathematics, basic science, and engineering science and is capped by design and analysis courses in civil and environmental engineering.

Mathematics		26 credits minimum
Basic Science		43 credits minimum
Biological Science	10 cr	
Chemistry	14 cr	
Physics	10 cr	
Electives	9 cr	
Engineering Science		48 credits minimum
Civil - Env. Eng.	11cr	
Engr. Mech. - ME	19 cr	

Elect. Engr.	4 cr	
Electives	14 cr	
Engineering Design		24 credits minimum
Civil - Env. Eng.	21 cr	
Mech. Eng.	3 cr	
General HU/SS and Thematic Requirements		27 credits minimum
Communications and Other Humanities		12 credits minimum
Computer Science		3 credits minimum
Physical Education		4 credits minimum
Free Electives		13 credits
	TOTAL	200 credits minimum

Impact on the Civil Engineering Department and University:

The impact will be positive in several ways. First there will be a modest net increase in students at the University. The program will attract qualified students who are not interested in the traditional engineering curricula but are interested in environmental protection and water quality. It is estimated that this program will grow to a degree production of about 20 per year, and this will mean an increase of about 500 sch/yr for the CE department and about 2500 sch/yr for the University. However, this number of students does not justify the creation of a new department. Therefore, it is logical that this program be administered within the Civil Engineering Department.

Accreditation Requirements:

The proposed BSEnE degree program will require accreditation by the Accreditation Board for Engineering and Technology (ABET). The current BSE degree program is accredited by ABET and was evaluated based primarily on the environmental engineering curriculum. The proposed BSEnE degree program meets all ABET requirements and should easily merit accreditation. Because this new degree program is essentially a name change applied to an existing accredited program which has already produced dozens of successful graduates, it is planned to request an ABET examination of this new degree during the forthcoming ABET visitation to Michigan Tech in the fall of 1986.

Related Programs:

The ABET roster of Accredited Programs lists accredited BSEnE degree programs at the following institutions:

- Renselear Polytechnic Institute
- Northwestern University
- Pennsylvania State University
- University of Florida
- Montana College of MS&T
- University of Central Florida
- California Polytechnic State Univ., San Luis Obispo

Within Michigan, there is an accredited Environmental Science degree program at the University of Michigan. Although this program is related to the proposed BSEnE degree program, it is not an engineering program and is substantially different.

New Resources Required:

Because the proposed degree program is essentially a retitling of an existing program requiring the eventual addition of only one course, no additional resources are required.

Approved by Senate: 30 April 1986

Approved by President: YES

BOC Approval: 23 May 1986