

**Board of Regents, State of Iowa**

**REQUEST TO IMPLEMENT A NEW BACCALAUREATE, MASTERS,  
DOCTORAL OR FIRST PROFESSIONAL DEGREE PROGRAM**

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent University to demonstrate need and demand as well as the university's ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: **Iowa State University**

Departments involved: Civil, Construction, and Environmental Engineering

CIP Discipline Specialty Title: Civil Engineering

CIP Discipline Specialty Number (six digits): 14.0899

Level: B                    **(M)**                    D                    FP

Title of Proposed Program: Civil Engineering

Degree Abbreviation (e.g., Minor, B.S., B.A., M.A.): ME

Approximate date to establish degree: Month                    August                    Year 2010

Contact person(s): (name, telephone, and e-mail)

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Please provide the following information (use additional pages as needed).

1. Describe the proposed new degree program, including the following:
  - a. A brief description of the program and a statement of objectives including the student learning outcomes and how the learning outcomes will be assessed;

This is a coursework only version of the master of science degree in Civil Engineering already offered by the Department of Civil, Construction, and Environmental Engineering. Students graduating from the major proposed will help to fill the current and future needs for well-educated civil engineers in the government, private sector, and academia.

Discussions are currently being undertaken by the American Society of Civil Engineers and the National Council of Examiners for Engineering and Surveying to encourage state licensing authorities to require 30 credits of graduate level education beyond a bachelors degree as a prerequisite for professional licensure in civil engineering. If this BS + 30 model is adopted, it is expected that educational institutions will be motivated to offer coursework only masters degree to address this possible requirement for advanced study. By offering a masters of

engineering in civil engineering degree, Iowa State University will be able to serve this potential group of students as well.

- b. The relationship of the proposed new program to the institutional mission and how the program fits into the institution's, college's, and department/program's strategic plan.

This program is consistent with the strategic plans of the departments, college and university. The program is also consistent with the college plan of increasing graduate student production and in meeting the needs of industry and government. These goals are also consistent with the university goals as a premier land grant university. The program will provide an increase in the number of individuals who can help design and build more advanced civil engineering projects and can help provide increased value to the state and national economies.

- c. The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university.

This is a coursework only version of the existing MS degree in Civil Engineering. There are no other programs at ISU that focus on Civil Engineering.

- d. The relationship of the proposed new program to existing programs at other colleges and universities in Iowa, including how the proposed program is different or has a different emphasis than the existing programs; and

There are no master of engineering degree programs in Civil Engineering offered by schools in Iowa.

- e. Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.

Iowa State University is a national leader in the area of Civil Engineering as evidence by the program's consistent top 25 ranking. The proposed program builds on existing strengths and offers a degree option most institutions offer that are ranked ahead of Iowa State University in Civil Engineering.

- f. Does the proposing institution have personnel, facilities, and equipment adequate to establish and maintain a high quality program?

Yes, this program will use existing courses and will not require additional resources.

- g. How does student demand for the proposed program justify its development?

The Department of Civil, Construction, and Environmental Engineering has examined the enrollment categories of other peer institutions and found up to 30 percent of the graduate students are pursuing a coursework only degree option. The Department of Civil, Construction and Environmental Engineering believes graduate enrollment will increase once this degree option is available.

- 2. Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the near future (provide documentation about the sources of data used to estimate need and demand.)

This option is expected to attract a group of students, including industry professionals, who wish to pursue advance studies in Civil Engineering but are not interested in conducting research. This includes students who often wish to engage through distance education, so this option would support current departmental efforts to expand in this area. Discussions are currently being undertaken by the American Society of Civil Engineers and the National Council of Examiners for Engineering and Surveying to encourage state licensing authorities to require 30 credits of graduate level education beyond a bachelors degree as a prerequisite for professional licensure in civil engineering. If this BS + 30 model is adopted, it is expected that educational institutions will be motivated to offer coursework only masters degree to address this possible requirement for advanced study. By offering a MEng CE degree, Iowa State University will be able to serve this potential group of students as well.

3. List all other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad definitional framework, e.g., such identification should not be limited to programs with the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)

No other institutions of higher education in Iowa offer a masters of engineering degree in Civil Engineering.

If the same or similar program exists at another public or private institution of higher education in Iowa, respond to the following questions:

- a. Could the other institution reasonably accommodate the need for the new program through expansion? Through collaboration?
  - b. With what representatives of these programs has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted.
  - c. Has the possibility of an inter-institutional program or other cooperative effort been explored? What are the results of this study? (Consider not only the possibility of a formally established inter-institutional program, but also how special resources at other institutions might be used on a cooperative basis in implementing the proposed program solely at the requesting institution.)
4. Estimate the number of majors and non-majors students that are projected to be enrolled in the program during the first seven years of the program.

a. Undergraduate

Undergraduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors							
Non-Majors							

b. Graduate

Graduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	5	10	15	20	30	30	40
Non-Majors							

- c. What are the anticipated sources of these students?

This program will be offered through on site instruction and primarily through distance education. This will be very attractive for high quality undergraduate students in the Department of Civil, Construction, and Environmental Engineering that qualify for the concurrent program to complete the master of engineering degree requirements in one year. Currently our distance education courses have a nationwide following.

5. If there are plans to offer the program away from the campus, briefly describe these plans, including potential sites and possible methods of delivery instruction.

Yes through engineering distance education.

6. Has the proposed program been reviewed and approved by the appropriate campus committees and authorities? List them:

Approved by:

Department of Civil, Construction, and Environmental Engineering Curriculum  
Committee

Department of Civil, Construction, and Environmental Engineering faculty  
Engineering College Curriculum Committee  
Graduate Curriculum and Catalog Committee

7. List date the program proposal was submitted to the Iowa Coordinating Council for Post High School Education (ICCPHSE) and the results of listserv review. (THIS WILL BE FILLED IN BY THE PROVOST OFFICE.)
8. Will the proposed program apply for accreditation? When?

Historically, ABET allowed for institutions to either have an accredited bachelors degree program or a masters degree program. More recently, ABET will allow institutions to be accredited for both bachelors and masters degree programs. The Department of Civil, Construction, and Environmental Engineering has ABET accredited degree programs in civil and construction engineering. Currently there are no plans obtain accreditation at the Masters Degree Level.

9. Will articulation agreements be developed for the proposed program? With whom?

Not Applicable

10. Describe the faculty, facilities, and equipment that will be required for the proposed program.

This program will use existing faculty and facilities used to teach the Master of Engineering degree in Civil Engineering.

11. From where will the financial resources for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?

SOURCES	TOTAL AMOUNT
No additional resources are needed beyond the additional tuition revenues generated	

12. Estimate the total costs/total new costs (incremental increases each year in expenditures) that will be necessary for the next seven years as a result of the new program:

**No additional resources are required.** The program is currently funded as part of the operational expenses of the Department of Civil, Construction and Environmental Engineering.

	TOTAL COSTS	TOTAL <u>NEW</u> COSTS
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		
Year 7		

## **Supplemental materials**

**(to be used at Iowa State University in the review of the proposal):**

13. Program requirements, including:
  - a. prerequisites for prospective students;
  - b. language requirements;
  - c. courses and seminars presently available for credit toward the program;
  - d. proposed new courses or modifications of existing courses;
  - e. thesis and non-thesis options in master's programs;
  - f. implications for related areas within the university;
  - g. admissions standards for graduate programs
14. Attach to the program proposal memos from the department chair(s), the college dean(s), and other appropriate persons, agreeing to the allocation of new resources and/or the reallocation of resources as described in the Regents questions
15. Attach to the program proposal, letters of support, recommendations, and statements when appropriate:
  - a. from programs at the other Regents universities
  - b. from programs and departments at ISU which are associated with the proposed program or have an interest in the proposed program

## **Notes:**

1. The CIP Specialty name and number is found at:  
<http://nces.ed.gov/pubs2002/cip2000/>