

MICHIGAN STATE UNIVERSITY

December 26, 2007

MEMORANDUM

TO: Dr. Douglas Estry, Associate Provost for Undergraduate Education
and Dean of Undergraduate Studies

FROM: Dr. Linda O. Stanford, Associate Provost for Academic Services

RE: Request to Change the Graduation Requirements for All Majors in the
College of Engineering

For Transmittal to the University Committee on Academic Policy (UCAP)

The request referenced above is being sent to you for action by the University Committee on Academic Policy (UCAP).

UCAP Response Requested:

Please ask the UCAP to consider the request referenced above at its meeting on January 10, 2008. Please mail the related materials referenced under the heading Attachments at the end of this memorandum to the members of the UCAP.

The UCAP alone will consider this request.

If you have any questions about this memorandum or the attached materials, please call me at 5-8420.

Thank you for your help.

Attachments:

1. Request to Change the Graduation Requirements for All Majors in the College of Engineering



UNIVERSITY
CURRICULUM
and CATALOG

Michigan State University
176 Administration Building
East Lansing, Michigan
48824-1046

PH: 517/355-8420
FAX: 517/353-1935

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Joy Speas, RO

Tuesday, 10/23/2007

Program Name: Engineering - Graduation Requirements **Degree Name: BS** **Sequence Number: 2****Effective Dates: Fall 2008 - Open** **Status: Interim** **Initial Action: Change****Requested Date:** 10/22/2007 12:14:49 PM**1. Department/School/College:**

16256 College of Engineering

2. Name of Program:

Engineering - Graduation Requirements

3. Name of Degree:

BS

4. Type of Program:

Major

5. Effective Start Semester:

Fall 2008

6. Target student audience for the program:

Undergraduate engineering students

7. Enrollment:

What is the expected enrollment per year:

700

What is the minimum enrollment acceptable:

400

8. Source of budget for the program:

New Funds

9. Projected Costs as compared to other programs in unit:

Same

10. Staff requirement:

How many additional staff will be required:

3

Who will provide the primary instruction. Describe any external linkages(industry, government, etc.):

Combination of new and current faculty. Funding for instructional staff being received from Provost

11. Will additional equipment be required:**Approximate cost:**

0

Source of funding:

12. Will additional library materials be required:

Approximate cost:

0

Source of funding:

current resources are sufficient

13. Will additional space be required:

Type:

lab facilities in residence hall

Approximate amount:

30000

14. If the program requirements contain a named concentration, do you wish for the concentration to be noted on the student's transcript?:

No

15. Detailed Description:

This reflects the initiation of the Cornerstone Engineering program, a required first-year design experience that will be housed in a residence hall near the Engineering Building, as noted in President Simon's announcement of 10/15/07. Program will provide a team-based, hands-on design experience to incoming freshmen, as the foundation effort of a number of initiatives to better prepare them for the rapidly changing engineering profession in the US in light of globalization and outsourcing. Program will also help MSU attract top students in light of first-year programs at other schools.

This action also provides for a change in the MTH requirements for graduation in Computer Science, and cleans up old changes related to the old Manufacturing program, the credit requirements for AES, and credit for military science courses.

Program changes to College Graduation Requirements, in highlighted bold italic; deletions in strikethrough.

Graduation Requirements for All Majors

1. The University requirements for bachelor's degrees as described in the *Undergraduate Education* section of the catalog; 120 credits, including general elective credits, are required for the Bachelor of Science degree in Computer Science and Applied Engineering Sciences, ~~124 credits are required for the Bachelor of Science degree in Manufacturing Engineering;~~ and 128 credits, including general elective credits, are required for the Bachelor of Science degree with ~~majors~~ in the other Engineering *majors* Professional Fields. ~~A student electing advanced aerospace or military science studies may be required to earn part or all of the credits for that program in addition to the minimum credits required for graduation.~~ Students who are enrolled in majors leading to the Bachelor of Science degree in the College of Engineering may complete an alternative track to Integrative Studies in Biological and Physical Sciences that consists of the following courses:

- a. One of the following courses: Biological Science 110, 111; Plant Biology 105; Entomology 205; Microbiology and Molecular Genetics 201, 301; Physiology 250; Zoology 141.
- b. Two of the following courses: Chemistry 141, Chemistry 151, Physics 183 or 183B, Physics 184.
- c. One of the following laboratory courses: Biological Science 110, 111L; Plant Biology 106; Chemistry 161; Physics 191.

Credits earned in the alternative track may also be counted toward College and major requirements for the Bachelor of Science degree.

2. The requirements of the College of Engineering for the Bachelor of Science degree that are listed below:

- a. Mathematics 132, 133, 234, and 235. Computer Science majors ~~may substitute Mathematics 314 for Mathematics 235~~ **are not required to take MTH 235.**
- b. Chemistry 141 or 151. Computer Science majors are not required to complete Chemistry 141 or 151.
- c. Physics 183 or 183B and 184.
- d. Computer Science and Engineering ~~434 or~~ **231 or Engineering 102**
- e. Engineering 100.**

Students who are enrolled in bachelor's degree programs in the College of Engineering may elect a Specialization in Environmental Studies. For additional information, refer to the *Specialization in Environmental Studies* statement in...

16. Type(s) of change(s):

College admission and graduation requirements.

17. Students who will be affected by the proposed changes:

Undergrad engineering students starting FS08.

18. Will the proposed change(s) have a negative impact on students? If so, which ones?:

No

Describe impact and explain what accommodations will be made:

The cornerstone program will have a positive effect on our graduates.

19. Reason(s) for change(s):

Initiation of the Cornerstone Engineering program / better prepare students.

DEPARTMENT LEVEL APPROVAL STATUS

Approved by: College of Engineering
10/22/2007 1:08:20 PM by Thomas Wolff for Thomas F. Wolff, Associate Dean

COLLEGE LEVEL APPROVAL STATUS

Approved by: College of Engineering
10/22/2007 1:08:34 PM by Thomas Wolff for Thomas F. Wolff, Associate Dean

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admitted or informed of their progress. Others may apply for admission during each semester, and applications will be reviewed after the end of each semester. Students must be admitted to a degree-granting college at the time they have completed 56 credits

16. Type(s) of change(s):

College Admission Requirements

17. Students who will be affected by the proposed changes:

Engineering undergraduate students after FS08

18. Will the proposed change(s) have a negative impact on students? If so, which ones?:

no

Describe impact and explain what accommodations will be made:

19. Reason(s) for change(s):

Initiation of the Cornerstone Engineering program / better prepare students.

DEPARTMENT LEVEL APPROVAL STATUS

Approved by: College of Engineering
10/22/2007 1:05:44 PM by Thomas Wolff for Thomas F. Wolff, Associate Dean

COLLEGE LEVEL APPROVAL STATUS

Approved by: College of Engineering
10/22/2007 1:08:28 PM by Thomas Wolff for Thomas F. Wolff, Associate Dean

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- b. Two of the following courses: Chemistry 141, Chemistry 151, Physics 183 or 183B, Physics 184.
- c. One of the following laboratory courses: Biological Science 110, 111L; Plant Biology 106; Chemistry 161; Physics 191.

Credits earned in the alternative track may also be counted toward College and major requirements for the Bachelor of Science degree.

2. The requirements of the College of Engineering for the Bachelor of Science degree that are listed below:
 - a. Mathematics 132, 133, 234, and 235. Computer Science majors ~~may substitute Mathematics 344 for Mathematics 235.~~
 - b. Chemistry 141 or 151. Computer Science majors are not required to complete Chemistry 141 or 151.
 - c. Physics 183 or 183B and 184.
 - d. Computer Science and Engineering ~~131 or 231.~~

are not required to complete Mathematics 235.

or Engineering 102

e. Engineering 100.

Students who are enrolled in bachelor's degree programs in the College of Engineering may elect a Specialization in Environmental Studies. For additional information, refer to the *Specialization in Environmental Studies* statement in the *College of Natural Science* section of this catalog.