CEAS-17-06 IEEEM

REQUEST TO COLLEGE CURRICULUM COMMITTEE FOR CURRICULAR IMPROVEMENTS

DEPARTMENT: IEEEM **PROPOSED EFFECTIVE SEMESTER:** Fall, 2017 **COLLEGE:** CEAS

PROPOSED IMPROVEMENTS

Academic Program
- ☐ New degree*
- ☐ New major*
- ☐ New curriculum*
- ☐ New concentration*
- ☐ New certificate
- ☐ New minor
- ☐ Revised major
- ☐ Revised minor
- ☐ Admission requirements
- ☐ Graduation requirements
- ☐ Deletion ☐ Transfer
- ☒ Other (explain**)

Substantive Course Changes
- ☐ New course
- ☐ Pre or Co-requisites
- ☐ Deletion (required by others)
- ☐ Course #, different level
- ☐ Credit hours
- ☐ Enrollment restriction
- ☐ Course-level restriction
- ☐ Prefix ☐ Title and description (attach current & proposed)
- ☐ General education (select one) Not Applicable
- ☐ Other (explain**)

Misc. Course Changes
- ☐ Title
- ☐ Description (attach current & proposed)
- ☐ Deletion (not required by others)
- ☐ Course #, same level
- ☐ Variable credit
- ☐ Credit/no credit
- ☐ Cross-listing
- ☐ COGE reapproval
- ☐ Other (explain**)

** **Other:** Change MS in Engineering Management core course requirements (Addition of 3 cr hrs (one course) to core).

Title of degree, curriculum, major, minor, concentration, or certificate: Master of Science in Engineering Management

Existing course prefix and #: **Proposed course prefix and #:** **Credit hours:**

Existing course title:

Proposed course title:

Existing course prerequisite & co-requisite(s):
Proposed course prerequisite(s)
If there are multiple prerequisites, connect with "and" or "or". To remove prerequisites, enter "none."
Proposed course co-requisite(s)
If there are multiple corequisites, they are always joined by "and."
Proposed course prerequisite(s) that can also be taken concurrently:
Is there a minimum grade for the prerequisites or corequisites?
The default grades are D for undergraduates and C for graduates.
Major/minor or classification restrictions:
List the Banner 4 character codes and whether they should be included or excluded.
For 5000 level prerequisites & corequisites: Do these apply to: (circle one) undergraduates graduates both

Specifications for University Schedule of Classes:
a. Course title (maximum of 30 spaces):
b. Multi-topic course: ☐ No ☐ Yes
c. Repeatable for credit: ☐ No ☐ Yes
d. Mandatory credit/no credit: ☐ No ☐ Yes
e. Type of class and contact hours per week (check type and indicate hours as appropriate)
1. ☐ Lecture
2. ☐ Lab or discussion
3. ☐ Lecture/lab/discussion
4. ☐ Seminar or ☐ studio
5. ☐ Independent study
6. ☐ Supervision or practicum

CIP Code (Registrar's use only):

Chair/Director [signature] Date 3/1/17

Chair, College Curriculum Committee Date

Dean Date: Graduate Dean: Date

Curriculum Manager: Return to dean ☐ Date Forward to: Date

Chair, COGE/ PEB / FS President Date

FOR PROPOSALS REQUIRING GSC/USC REVIEW:

* ☐ Approve ☐ Disapprove | Chair, GSC/USC Date

* ☐ Approve ☐ Disapprove | Provost Date

Revised May 2007. All previous forms are obsolete and should not be used.

1. Explain briefly and clearly the proposed improvement.

   The purpose is to change the core of the program to reflect requirements for graduate program certification by the American Society for Engineering Management. One course is added to the core (IEE 5010 Survey of Industrial Engineering).

2. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.)

   IEE 5010 has been required as a prerequisite of students without a background in production control, quality control, and work design. We have found that the course is valuable to all students in the program, hence moving it to a required course.

3. Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.

   No effect

4. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

   This change reduces the number of courses for a large number of students to 30 instead of 33 (30 credit hours in the program and 3 credit hours of prerequisites).

5. Effects on enrolled students: Are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer only, provide a rationale.

   If a student had IEE 5010 included as a prerequisite to the program, they will now see a reduction in the number of courses they need to take. If it was not included, they will need to take the course, but will take one less elective.

6. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?

   The market will continue to be the same, students with a background in engineering or technology looking for graduate engineering management education. The student market has been consistent for many years. The demand may increase due to the reduced course load and our plan to get formal certification for our program.

7. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)

   It will increase the demand for IEE 5010, however, the increase may be marginal as a strong majority of students already are required to take IEE 5010.

8. General education criteria. For a general education course, indicate how this course will meet the criteria for the area or proficiency. (See the General Education Policy for descriptions of each area and proficiency and the criteria. Attach additional pages as necessary. Attach a syllabus if (a) proposing a new course, (b) requesting certification for baccalaureate-level writing, or (c) requesting reapproval of an existing course.)

   N/A - Masters level

9. List the learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program.

   The learning objectives of the Engineering Management program are listed below. The change in the core will not have an effect on the learning objectives of the program.

1. To enhance the capabilities to deal with resources available in commerce and industry to managing people, money, and projects.
2. To develop the leadership capabilities based on the student's strong technical background and significant managerial skills.
3. To allow students to develop analytical and managerial skills and to acquire knowledge in related fields.
4. To develop their ability to integrate technical, managerial and systems skills to improve the performance of the enterprise.
5. To prepare students for further study in post-master's and doctoral programs as their interest and professional growth require.

10. Describe how this curriculum change is a response to assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities.

    This is in response to the assessment of our curriculum relative to the requirements of the American Society for Engineering Management's Graduate Certification Program.

11. (Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, include detail on necessary changes to transfer articulation from Michigan community college courses. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.

    N/A

Specifics of change

Current program requirements (2016-17 Graduate Catalog)

Program Requirements
The Master of Science in Engineering Management requires a minimum of thirty (30) hours: 18 hours of core courses and 12 hours of electives.

1. Core courses (18 hours):
EM 5050 - Continuous Improvement in Operations Credits: 3 hours
EM 5080 - Advanced Quality Management Credits: 3 hours
EM 6000 - Concepts and Principles of Engineering Management Credits: 3 hours
IEE 6060 - Capital Budgeting and Cost Analysis Credits: 3 hours
EM 6120 - Production/Operations Management Credits: 3 hours
EM 6140 - Project Management Credits: 3 hours

2. Elective courses (12 hours at minimum)
To be selected from a set of approved graduate courses available in the Department of Industrial and Entrepreneurial Engineering & Engineering Management and other departments within the University. The elected courses must be compatible with the overall program and the career objectives of the student, and must be approved by the program advisor prior to registration. Included in the electives is EM 6970: Problems in Engineering Management which allows for students to pursue independent projects and research and EM 6990 where students can receive credit for practical training. Any EM or IEE 6000-level class can be substituted for EM 6970.

3. An overall 3.0 grade point average.

New program requirements

Program Requirements
The Master of Science in Engineering Management requires a minimum of thirty (30) hours: 21 hours of core courses and 9 hours of electives.

1. Core courses (21 hours):
IEE 5010 – Survey of Industrial Engineering Topics
EM 5050 - Continuous Improvement in Operations Credits: 3 hours
EM 5080 - Advanced Quality Management Credits: 3 hours
EM 6000 - Concepts and Principles of Engineering Management Credits: 3 hours
IEE 6060 - Capital Budgeting and Cost Analysis Credits: 3 hours
EM 6120 - Production/Operations Management Credits: 3 hours
EM 6140 - Project Management Credits: 3 hours

2. Elective courses (9 hours at minimum)
To be selected from a set of approved graduate courses available in the Department of Industrial and Entrepreneurial Engineering & Engineering Management and other departments within the University. The elected courses must be compatible with the overall program and the career objectives of the student, and must be approved by the program advisor prior to registration. Included in the electives is EM 6970: Problems in Engineering Management which allows for students to pursue independent projects and research and EM 6990 where students can receive credit for practical training. Any EM or IEE 6000-level class can be substituted for EM 6970.

3. An overall 3.0 grade point average.