SPECIAL REPORT

OF THE

ACADEMIC MATTERS
AND GRADUATE COUNCILS

concerning

CREATION OF AN ACCELERATED
MASTERS IN INDUSTRIAL ENGINEERING
(#4753)

Presented at the
778th Regular Meeting of the Faculty Senate
April 26, 2018

COUNCIL MEMBERSHIP

ACADEMIC MATTERS COUNCIL

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GRADUATE COUNCIL


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This proposal would allow up to 9 credits taken while a student is an undergraduate to be applied toward the Masters degree, provided that none of the credits are used to meet Bachelors degree requirements. This fits with the policy on accelerated Masters programs.
The Graduate Council recommends approval of this proposal.

*Briefly describe the Proposal*

We are proposing to develop an accelerated masters degree in Industrial Engineering. The proposed degree program will allow direct admission of Industrial Engineering students with a GPA of over 3.5 into a course-work only MS degree program without requiring GRE test scores or letters of recommendation.

*Provide a brief overview of the process for developing the proposal.*

The proposal was developed by the graduate committee within MIE with consultation with the Graduate Program Director and the Department Head.

*Purpose and Goals*

*Describe the proposal's purpose and the particular knowledge and skills to be acquired and provide a rationale for creating this accelerated degree program.*

The purpose of this program is to create a pipeline of our own highly talented and motivated undergraduate students into our graduate program. Although many of these students will leave after receiving their MS degree, we believe that this program will also feed a number of excellent students into our PhD program as well. This request is motivated to not only expand our graduate program, with the ensuing added revenue, but also enhance the quality of our graduate pool. We believe with the increasing complexity of industrial systems and the increasing emphasis that employers place on graduate education, the Master's degree will enhance the marketability of our students.

*Accelerated Masters Information*

Does the accelerated master's option apply to all master's degrees in this field, or only to certain tracks or concentrations?

Yes, the accelerated masters option will apply to all MS degrees in Industrial Engineering.

What type of degree program does this accelerated master's option pertain to?

*Note: second and third require separate approval.*

An existing degree

*Describe the projected course sequence for this degree and the timeline to completion for students.*

The expectation is that the accelerated MS degree can be completed in one to one and a half years. To complete the MS degree, 30 course credits are required. To complete that in one year, five courses per semester would be required. To complete that in one and a half years, one semester of 4 courses and two of 3 courses would be required. To help accelerate the program...
for our own students, up to 9 credits of graduate level coursework taken during the student's undergraduate program and not used to fulfill their bachelors degree can be transferred directly to the MS degree. By transferring some or all of these 9 credits completion of the MS degree in one year is much more feasible.

Here is an example for a student getting an MS in Industrial Engineering:

**Fall**

MIE 620  Linear Programming  
MIE 657  Human Factors Engineering  
MIE 697SEI  Introduction to Systems Engineering  
MIE 686  Multiple Criteria Decision Making & Decision Analysis  
MIE 532  Network Optimization

**Spring**

MIE 651  Production Planning I  
MIE 697Q  Logistics  
MIE 684  Stochastic Processes in Industrial Engineering  
STAT 506  Design of Experiments  
MIE 597 C  Operations Research in Healthcare

*What undergraduate degree program is this accelerated masters associated with, if any.*

BS in Industrial Engineering

*If this proposal requires no additional resources, say so and briefly explain why. If this proposal requires additional resources, explain how they will be paid for. For proposals involving instruction, indicate how many new enrollments are expected and whether the courses have room to accommodate them.*

No additional resources are needed. We already have an MS program in Industrial Engineering and this would simply be an extension of the existing program.

Provide the curriculum to the applicable masters degree as it currently appears in the Graduate Bulletin and explain how this curriculum will be scheduled over the student's undergraduate and graduate careers. Note that total number of credits must be 30 plus the minimum number required for undergraduate degree (generally 120, making total number of credits required 150).

Note: For Master's programs under 36 credits, a maximum of 9 graduate-level credits taken as an undergraduate may be applied to both degrees. For Master's programs over 36 credits, a maximum of 12 graduate-level credits taken as an undergraduate may be applied to both degrees.

From Graduate Bulletin:

“Students must select either a thesis or non-thesis option upon enrolling in a program.”
The Master of Science program in Industrial Engineering and Operations Research thesis option requires that students complete a total of 30 credits. Candidates for the M.S. degree take a core curriculum consisting of M&I-ENG 620, 657, 684; at least one of 651 or 697Q; at least one of 686 or 754. They must take a total of at least six core courses as approved by their advisor. A master’s thesis or a special project must be completed. Students may select theoretical or applied research projects related to either the industrial, financial, or public sector; projects in the public sector have been concerned with health care delivery, the environment, energy, transportation, and community service. Additionally, all students must register for M&I-ENG 794 every semester.

The requirements of the Coursework Only option are:

1) The student must successfully complete at least 30 graduate (500 level or above) credits. Thesis or project credits do not count towards this total.

2) At least 21 credits must be at the 600 level or above.

3) At least 18 credits must be Mechanical and Industrial Engineering courses.

4) A maximum of 6 credits can be for independent study.

5) The student must take the five named IEOR core courses required for the MS Thesis option (see above for a listing).

6) Credits that apply to any other degree program, with the exception of graduate certificate programs, cannot be applied to this degree.

Master's students who select the Coursework Only option will not usually be considered for assistantships or tuition waivers."

The bachelor’s degree in MIE requires 123 credits. The master’s degree requires 30 credits. Of those 30 credits, 9 credits can be transferred from the undergraduate degree provided that they were not used to fulfill the bachelor’s degree requirements.

Who can apply to pursue this accelerated master’s degree?
(UMass students, Five College Students, Students in specific degree programs, etc.)

UMass students in Industrial Engineering

Are there any admissions exceptions to this degree program, such as a waiver of the GRE requirements?

Yes
Comments: Waiver of the GRE requirements and waiver of the letters of recommendation requirements.

MOTION: That the Faculty Senate approve the Creation of an Accelerated Masters in Industrial Engineering, as presented in Sen. Doc. No. 18-066.