

**SEQUENTIAL UNDERGRADUATE/GRADUATE STUDY (SUGS) PROGRAM
IN THE INDUSTRIAL AND OPERATIONS ENGINEERING (IOE)
DEPARTMENT**

APPROVED by the IOE Faculty, March 8, 1995
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REVISED March 2006 (to clarify definition of two full terms)
REVISED January 2008 (to reflect IOE 474 as a required undergraduate course)
REVISED October 2010 (transfer credit for Accounting 471)
REVISED June 2017 (to reflect 1) changes from SGUS to SUGS, 2) CHEPS as a
specialization, and 3) changes in undergraduate requirements)

Introduction and Summary

Description: The Department of Industrial and Operations Engineering has established a five-year Sequential Undergraduate/Graduate Study (SUGS) program that allows outstanding students to receive the BSE and MSE degrees after completing a minimum of 152 credit hours. This is accomplished by allowing students to “double-count” six credit hours of approved graduate-level courses in order to satisfy all requirements for both the BSE and MSE degrees. Double-counted courses appear as transfer credit on the student’s Rackham transcript.

Eligibility: Students who have reached the second term of their junior year with a minimum cumulative GPA of 3.5 may apply for provisional admission to the program. This allows sufficient time for the student to be advised appropriately regarding undergraduate and graduate course selections. Students who do not meet the GPA requirement may petition the IOE Graduate Admissions and Financial Aid Committee for provisional admission by providing other credentials such as letters of recommendation from faculty and/or other evidence of special accomplishments.

Tuition Requirements: SUGS students must enroll in Rackham for at least two (9 credit) terms, paying full Rackham tuition with no other U of M registration. Normally, this will be the final two terms of enrollment in the five-year program.

Background

In the IOE undergraduate curriculum (128 credit hours), students complete 64 credit hours of core engineering courses followed by 64 credit hours of IOE courses and electives. Although this program provides an outstanding introduction to industrial and

operations engineering, the 128 credit hours provide only a limited opportunity for students to pursue advanced IOE topics that are covered in 400-600 level courses. By pursuing a coordinated graduate/undergraduate study program, students are offered the opportunity to take advanced courses and obtain the Masters degree as part of an uninterrupted, five-year program.

There are several reasons why students pursue the IOE Masters degree. Some students use it as the first step toward the IOE Ph.D. degree. Other students pursue the 30 credit-hour Masters degree to expand their knowledge base in order to enhance their qualifications for professional engineering careers. Among this group, most students select Masters courses in order to specialize in one or two of the following areas:

- Engineering Management
- Ergonomics/Safety
- Financial Engineering
- Health Systems Engineering and Patient Safety
- Operations Research
- Production/Distribution/Logistics & Transportation (PDL) Systems
- Statistical Decision Making/Quality Engineering

The IOE SUGS program encourages some of our very best undergraduates to stay at Michigan for an extra year. It also serves the engineering community by providing better-trained engineers at the entry level of the profession.

Program Description and Degree Requirements

Requirements for the BSE (IOE) Degree

SUGS students must complete all requirements for the BSE (IOE) degree as established in The University of Michigan College of Engineering BULLETIN. Up to six credit-hours of undergraduate courses may be “double-counted” and transferred to the student’s Rackham transcript, *provided that these courses are eligible for credit in the IOE Masters degree curriculum*. Normally, double-counted courses are selected from the “Unrestricted Elective” or “Non-IOE Technical Elective” categories of the BSE-IOE degree requirements.

The 12 credits of IOE 400-level classes used to satisfy the “IOE Technical Elective” requirement for the BSE degree are considered to be part of the *undergraduate core curriculum*, and therefore are not eligible for double-counting. The remaining 6 credit-hours of technical electives may be double-counted, provided that the course is eligible for credit in the IOE Masters curriculum.

Requirements for the MSE (IOE) Degree

SUGS students must complete 30 credit-hours of approved graduate-level courses in order to receive the MSE (IOE) degree. Specific requirements are established in The University of Michigan College of Engineering BULLETIN. Information regarding which 400-level and 500-level courses are eligible for IOE graduate credit is summarized on the “Masters Counseling Information” flyer available from the IOE Graduate Program Office. Other questions regarding the eligibility of courses will be answered by the IOE Graduate Program Advisor.

Because six credit-hours of BSE courses are double-counted, SUGS students must complete 24 credit-hours beyond the BSE degree requirements for a total of 152 credit hours in the combined program.

The key to designing a SUGS program that can be completed with the minimum 152 credit hours is careful management of undergraduate elective courses. Students considering the SUGS program must “reserve” at least 6 elective credit hours for courses that are eligible for credit in the IOE Masters degree program.

Admission Procedures

IOE undergraduates who have maintained a GPA of at least 3.5 are eligible to apply for provisional admission to the IOE SUGS program during the first semester of their senior year. The students must submit the standard Rackham application form and provide a cover letter stating that he/she is applying for provisional admission as an SUGS student. They must maintain the 3.5 GPA or higher at the time they complete the undergrad degree.

Formal admission to Rackham will not occur until the student is within 6 credits of completing the B.S.E. degree. Normally, students will enroll in Rackham for the final two terms of the combined program.

Administrative Policies and Practices

The IOE Department will maintain the student's undergraduate record, tagged as a SUGS student, in the IOE Undergraduate Program Office until the BSE is awarded. Following formal acceptance into Rackham, the IOE Graduate Program Office will maintain a separate folder (containing materials from Rackham and graduate counseling forms) for the student, again tagged as a SUGS student.

Audits for both degrees will be performed in the normal manner by the IOE Undergraduate and Graduate Program Advisors.