



Doctor of Philosophy in Engineering

The University of Alabama in Huntsville

Department of Industrial and Systems Engineering
and Engineering Management

Technology Hall, Room N143, Huntsville, AL 35899

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INDUSTRIAL ENGINEERING CONCENTRATION

Major Courses: (18 Hours)

ISE 626 Introduction to Operations Research
ISE 627 Engineering Systems
ISE 630 Computer Integrated Manufacturing
ISE 641 Advanced Quality Control
ISE 647 Advanced System Simulation
ISE 726 Systems Modeling

Supporting Courses: (15 hrs.)

ISE 523 Statistical Quality Control
ISE 530 Manufacturing Systems and Facilities Design
ISE 547 Introduction to Systems Simulation
ISE 723 Engineering Economic Analysis
ISE 761 Evolving Theory of Industrial Engineering

1st Minor: (15 hrs.) Select from the following areas

Engineering Management	Operations Research
Quality Engineering	Reliability Engineering
Systems Engineering	(Others on approval of the student's supervisory committee)

2nd Minor: (12 hrs.)

ISE 526 Design and Analysis of Experiments
ISE 690 Statistical Methods for Engineers
ISE 790 Advanced Statistical Applications
Math/statistics elective

Dissertation: (18 hours Minimum)

Distance Learning:

The Industrial Engineering Concentration is supported by the Distance Learning Program at The University of Alabama in Huntsville. For more information, please contact the DL Office at 256-824-6976.

Further Information:

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I. Admission

Unconditional: ABET-accredited BS degree in engineering; GPA of 3.0 or better at the undergraduate level, 3.5 at the graduate level; GRE score of 400 or better on the Verbal, 600 or better on the Quantitative, and a combined score of 1100 or better; GRE Analytical Writing score of 4.5 or better; undergraduate Probability & Statistics course or equivalent; and undergraduate Engineering Economy course or equivalent. Additional requirements for students seeking the Engineering Management or Systems Engineering options include five years of work experience in an engineering position past the BS degree or current full-time employment as an engineer in a U.S.-based organization.

Conditional: Conditional admission may be granted to students meeting all requirements above except the Probability & Statistics and Engineering Economy courses. A conditional admission requires successful completion of the undergraduate equivalent of these courses within the first year of admission.

II. Curriculum

A minimum of 60 hours beyond the bachelor's degree is required. These hours are required in the following areas: Major – 18 hours; Supporting Courses – 15 hours; First Minor – 15 hours; Math/stat Minor – 12 hours. In addition, a minimum of 18 dissertation hours are required for the doctorate degree.

Every student's background and preparation is different. Each student's program must be approved by his/her doctoral supervisory committee. A maximum 6 hours of Master's thesis may be included in the program of study. Each student will be initially assigned a faculty advisor to direct the student's work until the preliminary examination is taken.

III. Preliminary Examination

The ISEEM Preliminary Examination Policy: Students must take the Preliminary Examination within the first academic year or prior to completing 12 hours of graduate work beyond the Master's degree, whichever comes first. Student must pass all sections to pass the exam unconditionally. The student has a total of two attempts in which to pass the exam. A second failure disqualifies the student from further doctoral work in the ISEEM Department. Grading: Scores of 70% and above are considered passing;

IV. Supervisory Committee

Each doctoral candidate is advised by a Supervisory Committee of at least five members. The committee consists of at least three members representing the major field of study and each of the minor fields. All committee members must be members of the UAH graduate faculty. The candidate requests an individual to chair his/her committee; the committee chair must be a full-time graduate faculty member. The chair appoints the remaining committee members in consultation with the doctoral candidate. The candidate's supervisory committee will not be officially convened until the Preliminary Examination has been successfully completed.

V. Program of Study

The student submits a program of study to the Supervisory Committee for review and approval.

VI. Comprehensive Exam, Qualifying Examination and Dissertation

Upon completion of the approved coursework, the written portion of the Comprehensive Examination may be scheduled. The examination is a one-week take home exam prepared by the Supervisory Committee. The responses to the questions are submitted in formal report fashion with one copy of the entire set of responses for each committee member. The oral portion of the Comprehensive Examination is normally scheduled within a month after the submission of the written portion and passing the comprehensive exam fulfills the requirements for the first stage of the Qualifying Exam.

Upon successfully completing the written and oral portions of the Comprehensive Examination, the candidate develops a dissertation proposal for Supervisory Committee approval. Once approved, the candidate is said to have completed the Qualifying Exam. After successful completion of the Qualifying Examination, the doctoral candidate is permitted five years to complete his or her dissertation. Supervisory Committee approval of the draft copy of the dissertation permits the scheduling of the dissertation defense. Before the defense can be taken, student must fill out the Application for Advanced Degree. The final step is the dissertation defense and final approvals of the dissertation document by the committee, College Dean, and Graduate Dean.

VII. Residency and Transfer Credits

UAH residency can be fulfilled in one of two ways: 1) Student can take at least nine semester hours of graduate work in each of two consecutive semesters; or 2) the student can take six semester hours of graduate work in each of three out of four consecutive semesters. Credits from other recognized institutions may be applied to the Program of Study if approved by the Supervisory Committee. Students who have completed the courses on their Program of study must register for a minimum of three semester hours of graduate credit (to include dissertation credit) each fall and spring semester until all degree requirements are complete.