INDUSTRIAL AND SYSTEMS ENGINEERING (M.S. AND M.ENGR.)

Master of Science (Thesis-based)
Students in the Master of Science degree will be required to complete a thesis, with a maximum of six credit hours. An ISE faculty member will serve as the thesis advisor. Students will form their thesis committee by the time they have completed their required courses. The thesis requirements include a written thesis, an oral defense in open forum, and a closed session examination by the committee members.

Master of Engineering (Non-thesis)
Master of Engineering students have the option to either complete a master's non-thesis project (maximum three credit hours) or pass the International Council on Systems Engineering (INCOSE) Certified Systems Engineering Professional (CSEP) exam (maximum one credit hour).

Curriculum

Code	Title	Hours
Required Courses		
ISE 5374	Advanced Engineering Economic Analysis	3
ISE 5314	Simulation and Analysis of Systems	3
ISE 5332	Human Factors and Ergonomics	3
ISE 5381	Approaches to Managing Complex Systems	3
ISE 5363	Production, Distribution, and Inventory Planning and Control	3
Concentration Area (Optional, select one)		**9**
Industrial Engineering Concentration (Optional)		
ISE 5322	Experimental Design and Analysis of Industrial Processes	3
ISE 5365	Advanced Continuous Improvement Methods	3
ISE 5313	Survey of Operations Research	3
Systems Engineering Concentration (Optional)		
ISE 5382	Systems Science and Its Applications to Resolving Complex Problems	3
ISE 5383	Enterprise and Systems Architecting	3
ISE 5384	Fundamentals of Model-Based Systems Engineering Approaches	3
Electives (Select up to 15 credits to fulfill 30 credits req.)		
ISE 5000	Master's Research and Thesis (Max 6 credits)	1-16
ISE 5990	Non-thesis Master's Research (Max 3 credits)	1-16
ISE 5185	Capstone Integration	1
Elective - Any of the courses in the Concentration area		
EM 5130	Leading Technical Organizations	3
EM 5100	Engineering and Technology Management Fundamentals	3
ISE 5371	Engineering Project Management	3
Elective - Any 5000 level computer science, modeling, or data science course (Max. 6 credits)		

A total of 30 credits is required for the degree.

Program Outcomes:

1. Conduct research or produce some other form of creative work.
2. Demonstrate mastery of subject material.
3. Conduct scholarly or professional activities in an ethical manner.

Student Outcomes: By graduation, students will be able to attain the following learning outcomes:

1. Ability to conduct research or produce creative work.
2. Ability to communicate highly technical content professionally, in both verbal and written formats.
3. Ability to apply their selected subject matter expertise in their research or creative work.