

INDUSTRIAL ENGINEERING, MS

for the degree of Master of Science in Industrial Engineering (on campus & online)

The Department of Industrial & Enterprise Systems Engineering offers both an MS with thesis and an MS non-thesis program. Students in the MS with thesis program are required to have a research advisor and applicants are encouraged to contact department faculty (<https://ise.illinois.edu/directory/faculty.html>) in their areas of interest to inquire about possible research and funding opportunities.

Opportunity exists for specializing in i) advanced analytics via the Advanced Analytics in Industrial & Enterprise Systems Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/advanced-analytics-industrial-enterprise-systems-engineering/>) optional graduate concentration and ii) computational science and engineering via the Computational Science & Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>) optional graduate concentration.

Department Research

Faculty research by ISE faculty is pursued in the following fields:

- computer-aided design
- data analytics
- optimization
- design systems
- manufacturing systems
- nondestructive testing and evaluation
- system dynamics and simulation
- control
- robotics
- real-time decision making
- reliability engineering
- financial engineering
- operations research
- management science
- biomechanics
- human factors
- supply chain logistics

Members of the ISE Department have access to a wide range of excellent research facilities. These laboratories support a wide range of activity and are described at the department's research laboratories website (<https://ise.illinois.edu/research/labs/>).

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The Department of Industrial and Enterprise Systems Engineering offers the non-thesis option in the Master of Science in Industrial Engineering in

an online delivery format. Requirements mirror those for the on-campus non-thesis delivery format.

For additional details and requirements refer to the department's Graduate Programs website (<http://ise.illinois.edu/graduate/>) and the Graduate College Handbook (<http://grad.illinois.edu/gradhandbook/>).

This degree program can be completed with or without a thesis; either on campus or online, the requirements are listed below:

Thesis Option

Code	Title	Hours
IE 599	Thesis Research <small>A maximum of 8 credit hours of IE 599 (or other approved thesis) may be counted toward the degree</small>	8
IE 590	Seminar (registration for 0 hours every term while in residence)	0
500-level IE Courses		12
STEM course from outside of major <small>STEM course must be approved and be from a College of Engineering department, including ABE and CHBE (or other approved department). Excludes TE and ENG courses.</small>		4
Electives in consultation with advisor <small>A maximum of 4 hours of IE 597 (or other approved independent study/project design) may be applied toward the elective coursework requirement.</small>		8
Total Hours		32

Other Conditions and Requirements (may overlap)

Requirement	Description
Other Requirements and Conditions may overlap	
Minimum 500-level credit hours applied toward the degree:	12
Minimum GPA:	3.0

Non-Thesis Option

Code	Title	Hours
IE 597	Independent Study	4
IE 590	Seminar (registration for 0 hours every term while in residence)	0
500-level IE Courses		12
STEM course from outside of major <small>STEM course must be approved and be from a College of Engineering department, including ABE and CHBE (or other approved department). Excludes TE and ENG courses.</small>		4
Electives in consultation with advisor <small>A maximum of 4 additional credit hours of IE 597 (or other approved independent study/project design) may be counted toward the elective coursework requirement.</small>		16
Total Hours		36

Other Requirements and Conditions (may overlap)

Requirement	Description
Other Requirements and Conditions may overlap	
Minimum 500-level credit hours applied toward the degree:	12
Minimum GPA:	3.0

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Graduate-level students should be able to:

1. Apply theory and methodologies to areas of research that address areas within Industrial and Enterprise Systems Engineering.
2. Effectively relate and communicate their data findings to peers, faculty and possibly peer-reviewed journals.
3. Formulate and solve complex problems with ISE by applying appropriate techniques and tools.
4. Write and defend a thesis that is designed with scientifically accepted methods and can be applied to improve a design or other real-world issue.
5. Teach concepts critical to the discipline of Industrial and Enterprise Systems Engineering at the university level.

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Admission Requirements

Applicants who have completed degree requirements in an accredited engineering program or its equivalent are eligible to apply for admission. A minimum grade point average of 3.25 (A = 4.00) for the last two years of undergraduate study is required.

Based upon the previous preparation of the student for either program, prerequisite courses may be specified by the advisor, but the credit may not be applied toward a degree.

All applicants whose native language is not English are required to submit TOEFL (<http://www.toefl.org/>) or International English Language Testing System (IELTS) (<http://www.ielts.org/>) scores as evidence of English proficiency. Minimum admission requirements (<https://grad.illinois.edu/admissions/instructions/04c/>) are set by the Graduate College. Students applying to the online program must satisfy the full status admissions requirement.

Financial Aid

Qualified students may compete for financial assistance in the form of teaching/graduate/research assistantships, fellowships, grants, and tuition waiver scholarships. Under certain conditions, fellowships may be augmented by part-time assistantships.

All applicants, regardless of US citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate spoken English language proficiency (<http://grad.illinois.edu/admissions/taengprof.htm>) by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT or 8 on the speaking subsection of the IELTS. For students who are unable to take the iBT or IELTS, a minimum score of 4CP is required on the English Proficiency Interview (http://cte.illinois.edu/testing/oral_eng/epi_overview.html) (EPI), offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching (<https://citl.illinois.edu/citl-101/teaching-learning/grad-academy-for-college-teaching/>) conducted prior to the start of the semester.

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Department of Industrial & Enterprise Systems Engineering

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Department of Industrial & Enterprise Systems Engineering website (<https://ise.illinois.edu/>)

Department of Industrial & Enterprise Systems Engineering faculty (<https://ise.illinois.edu/directory/faculty.html>)

Program website (<https://ise.illinois.edu/graduate/degrees-and-programs/master-science-industrial-engineering/>)

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Grainger College of Engineering

Grainger College of Engineering website (<https://grainger.illinois.edu/>)

Admissions

Department of Industrial & Enterprise Systems Engineering Overview of Admissions & Requirements (<https://ise.illinois.edu/graduate/admissions/>)

Graduate College Admissions & Requirements (<https://grad.illinois.edu/admissions/apply/>)