INDUSTRIAL ENGINEERING (MS)

Master of Science in Industrial Engineering (IE MS)
Unit: Speed School of Engineering (http://engineering.louisville.edu)(GS)

Department: Industrial Engineering (https://engineering.louisville.edu/academics/departments/industrial/)
Academic Plan Code(s): IE_ _MS, IE__MSO

Program Information

This program can be completed in a traditional classroom format or entirely online *(*http://louisville.edu/online/programs/masters/online-master-of-science-in-industrial-engineering/*).*

General Information

The MS degree program is suitable for individuals with an accredited baccalaureate degree in engineering or from any other discipline (e.g. mathematics, business, psychology, physics, and alike). Applicants with a baccalaureate degree other than Industrial Engineering should consult with the Director of the MS program in the Department of Industrial Engineering on their readiness and necessary remedial work in order to succeed.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (http://catalog.louisville.edu/graduate/general-policies-procedures-requirements/degree-requirements/) section of this catalog.

Admission Standards

The admission standards for the master of science program in industrial engineering are as follows:

a. All admission applications for the program shall include:
   i. A completed graduate application (http://louisville.edu/graduate/futurestudents/apply-materials/application/) for the Graduate School
   ii. An application fee
   iii. Resume
   iv. At least two letters of recommendation
   v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and professionally translated verbatim into English.

b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.

c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).

d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background. The minimum curricular requirements for the master's program are:

Code	Title	Hours
Core Courses		
IE 560	Probability and Statistics for Engineers	3
IE 563	Experimental Design in Engineering	3
Focus Area Courses [1,2]		9
5XX and/or 6XX Technical Electives [3,4]		9
Select one of the following:		**6**
Course Only Option		
5XX and/or 6XX Technical Electives [3,4]		
Thesis Option		
IE 690	Master of Science Thesis in Industrial Engineering [5]	
Project Option		
IE 699	Industrial Engineering Master's Degree Project	
5XX and/or 6XX Technical Elective [3,4]		
Minimum Total Hours		**30**

1. See Focus Area Options below with the courses included in each area.
2. Focus area is not required. Student could plan a "General" MS Industrial Engineering degree if coursework does not fit into a specific focus area.
3. Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level.
4. Electives must be chosen so that at least fifteen (15) credit hours of coursework are in IE.
5. For the thesis option, a student is required to select both an approved MS thesis topic and the thesis director and members of the thesis committee. The thesis director must give approval for enrollment in IE 690.

Focus Areas

Data Analytics and Operations Research

Code	Title	Hours
IE 515	Operations Research Methods	3
IE 541	Simulation	3
IE 561	Developing Decision Support Systems with Excel	3
IE 662	Predictive Analytics for Decision Making I	3

Logistics and Supply Chain

Code	Title	Hours
IE 515	Operations Research Methods	3
IE 621	Facilities Planning	3
IE 625	Production and Inventory Control	3

Advanced Manufacturing

Code	Title	Hours
IE 600	Additive Manufacturing Processes	3
IE 629	Quality Control	3
IE 619	Advanced Manufacturing Systems	3

Human Factors

Code	Title	Hours
IE 580	Introduction to Human Factors Engineering and Ergonomics	3
IE 581	Advanced Topics in Human Factors Engineering	3
IE 585	Usability Engineering	3
IE 682	Quality of Care and Patient Safety	3
IE 684	Health IT and Clinician Support	3