

MANUFACTURING SYSTEMS ENGINEERING, M.S.

The Master of Science in Manufacturing Systems Engineering (MSE) is a multidisciplinary degree, drawing courses and faculty and instructors from engineering, business, and Interdisciplinary Professional Programs. As the first program of its kind in the United States, and among the first in the world, MSE has long been recognized as a leading provider of resourceful engineers for global and dynamic manufacturing firms. Hands-on projects, along with classes taught by internationally recognized experts and state-of-the-art technology, provide an ideal foundation for anyone entering today's advanced manufacturing environment.

MSE graduates leave the program skilled in both technical and leadership domains. Students are exposed to practical problems and cutting-edge concepts, resulting in engineers who combine management skills with advanced technical abilities. Courses cover a broad range of manufacturing issues, while reinforcing a systems approach. The coursework is a combination of required and elective courses.

The student body of the MSE program is predominantly composed of students working for their degrees while employed. Students have an engaged learning experience, applying what they learn in their work environment.

Specifically, the program addresses solutions to problems in the design, development, implementation, operation, evaluation, and management of modern manufacturing systems.

ADMISSIONS

Students apply to the Master of Science in Manufacturing Systems Engineering through one of the named options:

- Manufacturing Engineering (<http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-engineering-ms/>)
- Manufacturing Systems Engineering (<http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-systems-engineering-ms/>) (suspended, will be discontinued)

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (<https://grad.wisc.edu/funding/>) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

Funding information for each named option program is available on the corresponding pages:

- Manufacturing Engineering (<http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-engineering-ms/>) (online)
- Manufacturing Systems Engineering (<http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-systems-engineering-ms/>) (on campus)

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

MAJOR REQUIREMENTS CURRICULAR REQUIREMENTS

Requirement Detail	
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Details can be found in the Graduate School's Minimum Graduate Coursework (50%) policy (https://policy.wisc.edu/library/UW-1244) (https://policy.wisc.edu/library/UW-1244/). The department recommends taking coursework in College of Engineering, the School of Business, the Department of Statistics, the Department of Biological Systems Engineering, or the Department of Computer Sciences.
Overall Graduate GPA Requirement	3.00 GPA required. This program follows the Graduate School's policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).
Other Grade Requirements	See Named Options for policy information.
Assessments and Examinations	See Named Options for policy information.
Language Requirements	No language requirements.

REQUIRED COURSES

Select a Named Option (p. 2) for courses required.

NAMED OPTIONS

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral. Students pursuing the Master of Science in Manufacturing Systems Engineering must select one of the following named options:

View as listView as grid

- MANUFACTURING SYSTEMS ENGINEERING: MANUFACTURING ENGINEERING, M.S. ([HTTP://GUIDE.WISC.EDU/GRADUATE/ENGINEERING-COLLEGE-WIDE/MANUFACTURING-SYSTEMS-ENGINEERING-MS/MANUFACTURING-SYSTEMS-ENGINEERING-MS/](http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-engineering-ms/))
- MANUFACTURING SYSTEMS ENGINEERING: MANUFACTURING SYSTEMS ENGINEERING, M.S. ([HTTP://GUIDE.WISC.EDU/GRADUATE/ENGINEERING-COLLEGE-WIDE/MANUFACTURING-SYSTEMS-ENGINEERING-MS/MANUFACTURING-SYSTEMS-ENGINEERING-MANUFACTURING-SYSTEMS-ENGINEERING-MS/](http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-systems-engineering-ms/))

POLICIES

Students should refer to one of the named options for policy information:

- Manufacturing Engineering (<http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-engineering-ms/>)
- Manufacturing Systems Engineering ([http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-systems-engineering-ms/](http://guide.wisc.edu/graduate/engineering-college-wide/manufacturing-systems-engineering-ms/manufacturing-systems-engineering-manufacturing-systems-engineering-manufacturing-systems-engineering-ms/))

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (<https://grad.wisc.edu/pd/>) to build skills, thrive academically, and launch your career.

PROGRAM RESOURCES

THE INDIVIDUAL DEVELOPMENT PLAN ([HTTPS://GRAD.WISC.EDU/PD/IDP/](https://grad.wisc.edu/pd/idp/))

An Individual Development Plan helps with self-assessment, planning, and communication:

- An Individual Development Plan can help you communicate your professional development and career planning needs and intentions.

- An Individual Development Plan lays out your intended courses and timing.
- The current job market is challenging and research has shown that individuals who perform structured career planning achieve greater career success and satisfaction.

The IDP is for on-campus Manufacturing Systems Engineering named option. The IDP is your responsibility and remains private to you, and you choose which parts to share with which mentors. Through the IDP process, you may decide to identify various mentors to whom you can go for expertise and advice. .

ENGINEERING CAREER SERVICES ([HTTPS://ECS.WISC.EDU/](https://ecs.wisc.edu/))

Julie Rae, Assistant Director for Graduate Student Career Services, **graduate** students in all engineering programs

- Resumes and Cover Letters (<https://ecs.wisc.edu/students/resumes-and-cover-letters/>)
- Job Search Strategies
- Job Offers and Negotiation (<https://ecs.wisc.edu/students/offers-and-negotiation/>)
- CPT for Graduate Students (<https://ecs.wisc.edu/students/co-op-and-internship/>)
- Student Appointments: Schedule Here (<http://go.wisc.edu/ecs-grad-appt/>)
- Employer Recruitment List for Industrial Engineering Students (<https://ecs.wiscweb.wisc.edu/wp-content/uploads/sites/86/2017/03/IE-Employer-Recruitment-List.pdf>)

UW WRITING CENTER ([HTTP://WRITING.WISC.EDU/](http://writing.wisc.edu/))

6171 Helen C. White Hall
608-263-1992

The UW Writing Center provides free of charge face-to-face and online consultations that focus on a number of different writing scenarios (i.e. drafts of course papers, resumes, reports, application essays, cover letters, theses, etc). Writing Center instructors will not edit or proofread papers. Instead, their goal is to teach students to edit and proofread on their own in order to become a better, more confident writers.

LEARNING OUTCOMES

1. Demonstrate a strong understanding of mathematical, scientific, and engineering principles in the field.
2. Demonstrate an ability to formulate, analyze, and solve advanced engineering problems.
3. Apply the latest scientific and technological advancements, advanced techniques, and modern engineering tools to these problems.
4. Recognize and apply principles of ethical and professional conduct.

PEOPLE

PROFESSORS

- Frank Pfefferkorn (MSE Director; Mechanical Engineering) (https://directory.engr.wisc.edu/me/Faculty/Pfefferkorn_Frank/)

- Kaibo Liu ((https://directory.engr.wisc.edu/ie/Faculty/Liu_Kaibo/)Industrial and Systems Engineering (https://directory.engr.wisc.edu/ie/Faculty/Li_Jingshan/)) (https://directory.engr.wisc.edu/ie/Faculty/Liu_Kaibo/)
- Jeffrey S. Russell (Vice Provost for Lifelong Learning/ Dean of Continuing Studies) (<https://continuingstudies.wisc.edu/staff/russell-jeff-s/>)
- Susan Ottmann (Interdisciplinary Professional Programs) (https://directory.engr.wisc.edu/interpro/Faculty/Ottmann_Susan/)
- Peter Lukszys (Wisconsin School of Business) (<https://business.wisc.edu/directory/profile/peter-b-lukszys/>)
- Tina Xu (Industrial and Systems Engineering) (https://directory.engr.wisc.edu/ie/Faculty/Xu_Jiao/)
- David Ding (Interdisciplinary Professional Programs)