

MANUFACTURING SYSTEMS ENGINEERING: MANUFACTURING ENGINEERING, MS

The named option in Manufacturing Systems Engineering (<https://epd.wisc.edu/online-degrees/manufacturing-systems-engineering-master-of-engineering/>) is an online master's degree designed to prepare engineering professionals to lead their manufacturing operations now and in the future. Students will gain cross-functional expertise to drive creative product and process improvement leveraging advanced tools, technologies, and automation systems.

Students in this program will learn how to:

- Analyze, compare, and contrast technical and business systems to optimize operations
- Simulate production processes and evaluate large data sets to identify areas of improvement and develop long-term strategies
- Solve problems and drive innovation to remain competitive
- Understand advanced automation and smart manufacturing technologies that will change the manufacturing processes and positively affect the business

More information about this graduate degree can be found here (<https://engineering.interpro.wisc.edu/programs/masters-degree/manufacturing-systems-engineering/>).

ADMISSIONS

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet the minimum requirements (<https://grad.wisc.edu/apply/requirements/>) of the Graduate School as well as the program(s).** Once you have researched the graduate program(s) you are interested in, apply online (<https://grad.wisc.edu/apply/>).

Requirements	Detail
Fall Deadline	July 1
Spring Deadline	November 1
Summer Deadline	May 1
GRE (Graduate Record Examinations)	Not required.

English Proficiency Test	Every applicant whose native language is not English, or whose undergraduate instruction was not exclusively in English, must provide an English proficiency test score earned within two years of the anticipated term of enrollment. Refer to the Graduate School: Minimum Requirements for Admission policy: https://policy.wisc.edu/library/UW-1241 (https://policy.wisc.edu/library/UW-1241/).
Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	2

The degree may be earned by engineers who have:

- A BS in science, technology, or a related field with sufficient coursework and professional experience to demonstrate proficiency in engineering practice OR at least 16 credits of math and science coursework from an ABET-approved program.
- A minimum undergraduate grade-point average (GPA) of 3.00 on the equivalent of the last 60 semester hours (approximately two years of work) or a master's degree with a minimum cumulative GPA of 3.00.

Interested applicants with BS degrees in related fields should contact the graduate advisor for more specific admission information at gradadmissions@interpro.wisc.edu. For more details, see the program website. (<https://interpro.wisc.edu/online-degrees/manufacturing-systems-engineering/>)

FUNDING

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 INFORMATION

Students enrolled in this program are not eligible to receive tuition remission from graduate assistantship appointments at this institution.

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.

NAMED OPTION REQUIREMENTS MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
No	No	Yes	No	No

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW–Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement Detail

Minimum
Credit
Requirement

Minimum 30 credits

Residence
Credit
Requirement

Minimum 16 credits
Graduate
Coursework
Requirement

15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement 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, and the Department of Computer Sciences.

Overall
Graduate
GPA
Requirement

3.00 GPA required.
Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: <https://policy.wisc.edu/library/UW-1203> (<https://policy.wisc.edu/library/UW-1203/>).

Other Grade
Requirements

Must retake any courses for which a grade below C is recorded.

Assessments
and
Examinations

No language requirements.

REQUIRED COURSES

Code	Title	Credits
E P D 611	Engineering Economics and Management	3
E P D 612	Technical Project Management	3
E P D 678	Supply Chain Management for Engineers	3
ISY E 412	Fundamentals of Industrial Data Analytics	3
ISY E 615	Production Systems Control	3
ISY E 618	Quality Engineering and Quality Management	3
ISY E/M E 641	Design and Analysis of Manufacturing Systems	3
M E 529	Design & Applications of Smart Manufacturing Processes	3
Electives¹		6
Total Credits		30

¹ Students choose elective courses in consultation with their advisor.

Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval. Students in this program cannot enroll concurrently in other undergraduate or graduate degree programs.

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

NAMED OPTION-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Credits Earned at Other Institutions

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

Undergraduate Credits Earned at Other Institutions or UW–Madison

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

Credits Earned as a Professional Student at UW–Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

Credits Earned as a University Special Student at UW-Madison

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

PROBATION

Refer to the Graduate School: Probation (<https://policy.wisc.edu/library/UW-1217/>) policy.

ADVISOR / COMMITTEE

All students have an academic advisor (typically the program director or academic director for each program); programs without a fixed curriculum are required to meet with their advisor to outline an approved plan of study by the end of their first academic year.

CREDITS PER TERM ALLOWED

15 credits

TIME LIMITS

Refer to the Graduate School: Time Limits (<https://policy.wisc.edu/library/UW-1221/>) policy.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (<https://doso.students.wisc.edu/bias-or-hate-reporting/>)
- Graduate Assistantship Policies and Procedures (<https://hr.wisc.edu/policies/gapp/#grievance-procedure>)
- Hostile and Intimidating Behavior Policies and Procedures (<https://hr.wisc.edu/hib/>)
 - Office of the Provost for Faculty and Staff Affairs (<https://facstaff.provost.wisc.edu/>)
- Employee Assistance (<http://www.eao.wisc.edu/>) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (<https://employee disabilities.wisc.edu/>) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (<https://grad.wisc.edu/>) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office Student Assistance and Support (OSAS) (<https://osas.wisc.edu/>) (for all students to seek grievance assistance and support)
- Office of Student Conduct and Community Standards (<https://conduct.students.wisc.edu/>) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (<http://www.ombuds.wisc.edu/>) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (<https://compliance.wisc.edu/titleix/>) (for concerns about discrimination)

Grievance Procedures

Students who feel that they have been treated unfairly have the right to a prompt hearing of their grievance. Such complaints may involve course

grades, classroom treatment, advising, various forms of harassment, or other issues. Any student or potential student may use these procedures.

Procedures for proper accounting of student grievances:

1. The student should speak first with the person toward whom the grievance is directed. In most cases, grievances can be resolved at this level.
2. If that does not resolve the grievance, the student should contact the program's director.
3. Should a satisfactory resolution not be achieved, the student should contact one of the Interpro's Grievance Advisors to discuss the practice. The Interpro Grievance Advisors are:

Susan Ottman

Graduate Program Director
608-262-3516
sottmann@wisc.edu

Ed Borbely

Associate Dean
608-263-0982
borbely@wisc.edu

If the student prefers to talk with someone outside of Interpro, contact:

David Noyce

Executive Associate Dean
College of Engineering
danoyce@wisc.edu
608-265-1882

The Grievance Advisor is responsible for facilitating any complaints or issues of students. The Grievance Advisor first attempts to help students informally address the grievance prior to any formal complaint. Students are also encouraged to talk with their advisors regarding concerns or difficulties if necessary.

University resources for sexual harassment concerns can be found on the UW Office of Equity and Diversity website and are included in the next section.

4. If the issue is not resolved to the student's satisfaction, the student can submit the grievance to the Grievance Advisor in writing, within 60 calendar days of the alleged unfair treatment.
5. On receipt of a written complaint, a committee will be convened by the Grievance Advisor to manage the grievance. The program committee will obtain a written response from the person toward whom the complaint is directed. This response will be shared with the person filing the grievance.
6. The committee will determine a decision regarding the grievance. The Grievance Advisor will report on the action taken by the committee in writing to both the student and the party toward whom the complaint was directed within 15 working days from the date the complaint was received.
7. At this point, if either party (the student or the person toward whom the grievance is directed) is unsatisfied with the decision of the committee, the party may file a written appeal. Either party has 10 working days to file a written appeal to the College of Engineering.
8. Documentation of the grievance will be stored for at least seven years. Significant grievances that set a precedent will be stored indefinitely. The Graduate School has established policies governing student conduct, academic dishonesty, and sexual and racial harassment. The Graduate

School also has procedures for students wishing to appeal a grievance decision made at the College of Engineering level.

The Graduate School has procedures for students wishing to appeal a grievance decision made at the school/college level. These policies are described in the Graduate School's Academic Policies and Procedures: <https://grad.wisc.edu/documents/grievances-and-appeals/>

OTHER

Students are strongly discouraged to pursue positions as Project Assistants, Teaching Assistants or Research Assistants during their time in this program. Students in this program will not receive the tuition remission that is typically part of the compensation package for a graduate assistantship.

PROFESSIONAL DEVELOPMENT

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.

PEOPLE

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 (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)