

# ENGINEERING: ENGINEERING DATA ANALYTICS, MENG

This is a named option within the Engineering MEng. (<https://guide.wisc.edu/graduate/engineering-college-wide/engineering-meng/>)

The named option Engineering Data Analytics (<https://interpro.wisc.edu/online-degrees/engineering-data-analytics/>) is an online master's degree that teaches students how to lead and contribute to projects that turn data into meaningful information. Become the engineer who confidently leads the transformation of big data into informed, high-impact actions.

The program offers students an opportunity to become leaders in:

- Using data analysis tools and methods to drive improvements to products, processes, research, design, testing, and operations.
- Applying best practices for the capture, storage, cleaning, querying, and data visualization.
- Evaluating and implementing effective modeling techniques and machine learning.

Explore the curriculum for this program (p. 2).

UW-Madison's online engineering graduate programs are world-class degrees and are consistently ranked in the Top 20 online engineering master's programs by *U.S. News & World Report*.

## 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	Refer to the Graduate School: Minimum Requirements for Admission policy: <a href="https://policy.wisc.edu/library/UW-1241">https://policy.wisc.edu/library/UW-1241</a> ( <a href="https://policy.wisc.edu/library/UW-1241/">https://policy.wisc.edu/library/UW-1241/</a> )
Other Test(s) (e.g., GMAT, MCAT)	n/a

Letters of Recommendation Required 2

Applications are accepted and reviewed on a rolling basis for fall, spring and summer terms.

The degree may be earned by engineers who have:

- A BS in science, technology, engineering, computer science 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

## FUNDING

### FUNDING GRADUATE SCHOOL RESOURCES

[The Bursar's Office provides information about tuition and fees associated with being a graduate student. Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information is available from the Graduate School.](#)

Be sure to check with your program for individual policies and restrictions related to funding.

### PROGRAM RESOURCES

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

Students in these programs cannot enroll in other graduate programs nor take courses outside the prescribed curriculum. If you intend to combine study in this program with other academic programs at UW-Madison, please contact Interdisciplinary Professional Program's Student Services Department ([studentservices@interpro.wisc.edu](mailto:studentservices@interpro.wisc.edu)).

### Scholarships

Learn about scholarship opportunities (<https://scholarships.wisc.edu/>).

### Employer Support

Many students receive some financial support from their employers. Often, students find it beneficial to sit down with their employer and discuss how this program applies to their current and future responsibilities. Other key points to discuss include how participation will not interrupt your work schedule.

### Federal Loans

Students who are U.S. citizens or permanent residents are eligible to receive some level of funding through the federal direct loan program. These loans are available to qualified graduate students who are taking at least four credits during the Fall and Spring semesters, and two credits during Summer. Private loans are also available. Learn more about financial aid (<https://financialaid.wisc.edu/>).

## REQUIREMENTS

### MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum degree requirements (<https://guide.wisc.edu/graduate/#requirementstext>) and policies (<https://guide.wisc.edu/graduate/#policiestext>), 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

Requirements	Detail
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: <a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a> ( <a href="https://policy.wisc.edu/library/UW-1244/">https://policy.wisc.edu/library/UW-1244/</a> ).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: <a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a> ( <a href="https://policy.wisc.edu/library/UW-1203/">https://policy.wisc.edu/library/UW-1203/</a> ).
Other Grade Requirements	Must retake any courses for which a grade below C is recorded.

Assessments and Examinations No formal examination required.

Language Requirements None.

### REQUIRED COURSES

Code	Title	Credits
<b>Core Courses</b>		
Students must complete at least 15 credits from the following courses:		15
E P D 416	Engineering Applications of Statistics	
I SY E 412	Fundamentals of Industrial Data Analytics	
I SY E/M E 512	Inspection, Quality Control and Reliability	
I SY E/COMP SCI/ E C E 524	Introduction to Optimization	
I SY E 603	Special Topics in Engineering Analytics and Operations Research (Topic: Applied Temporal Data Analytic)	
I SY E 649	Interactive Data Analytics	
M E 459	Computing Concepts for Applications in Engineering	
M E/COMP SCI/ E C E 532	Matrix Methods in Machine Learning	
M E 548	Introduction to Design Optimization	
M E/COMP SCI/ E C E/E M A/ E P 759	High Performance Computing for Applications in Engineering	
<b>Electives</b>		
Students choose up to 15 elective credits from courses numbered 400 and above within Engineering Management, Manufacturing Systems, Polymer Engineering, and Sustainable Systems Engineering in consultation with their advisor. Courses not listed here may count as electives with program approval.		15
E P D 611	Engineering Economics and Management	
E P D 612	Technical Project Management	
E P D 619	Fostering and Leading Innovation	
I SY E 615	Production Systems Control	
I SY E 618	Quality Engineering and Quality Management	
I SY E/M E 641	Design and Analysis of Manufacturing Systems	

E P D 660	Core Competencies of Sustainability
E P D 690	Special Topics in Engineering Professional Development
OTM 770	Sustainable Approaches to System Improvement
E P D 455	Python for Applications in Engineering
E P D 614	Marketing for Technical Professionals
E P D 637	Polymer Characterization
E P D 678	Supply Chain Management for Engineers
E P D 706	Change Management
E P D 708	Creating Breakthrough Innovations
E P D/GEN BUS/ M H R 783	Leading Teams
M E 446	Introduction to Feedback Control

**Total Credits** **30**

### Other Policy

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/>) serve as the official document of record for Graduate School academic and administrative policies and procedures and are updated continuously. Note some policies redirect to entries in the official UW-Madison Policy Library (<https://policy.wisc.edu/>). Programs may set more stringent policies than the Graduate School. 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 credit maximum. Refer to the Graduate School: Maximum Credit Loads and Overload Requests (<https://policy.wisc.edu/library/UW-1228/>) policy.

### 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://employeedisabilities.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 Interpro's Grievance Advisor to discuss the practice.

The Interpro Grievance Advisor is:

### Heather Smith

Director of Graduate Programs

[heather.smith@wisc.edu](mailto:heather.smith@wisc.edu) (<https://guide.wisc.edu/graduate/engineering-college-wide/engineering-meng/engineering-engineering-data-analytics-meng/heather.smith@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](mailto: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.

### COLLEGE OF ENGINEERING RESOURCES

The Interdisciplinary Professional Programs office in the College of Engineering offers a number of professional development opportunities in the form of short courses, certificates, and custom courses designed to enhance professional growth and provide opportunities for career advancement. Learn more about our professional development o (<https://interpro.wisc.edu/courses/>)fferings (<https://interpro.wisc.edu/courses/>).