INTRODUCTION TO COE AND ECE

Master’s students in the College of Engineering (COE) are among an elite group of people who have chosen to advance their education at one of the premier engineering colleges in the country. The academic programs in UW–Madison’s College of Engineering are highly ranked, and our faculty are widely recognized as leaders in their fields. Here you will find a community in which you will excel. You will find faculty, staff, and peer students who are supportive and committed to your success. You will find rigorous coursework that will prepare you to achieve your goals. You will experience an environment highly conducive to collaboration—and you will meet faculty with a broad range of research interests and connections both on campus and around the world.

The Department of Electrical and Computer Engineering has a long tradition of excellence in educating, mentoring, and inspiring future leaders; conducting research that is of vital importance to society; and serving Wisconsin, our nation, and the world through professional pursuits.

Our Vision is to improve the world through bold research, educational excellence, effective technology transfer, and impactful service.

Our Mission is to foster a diverse and inclusive community that advances the frontiers of engineering, disseminates discoveries and inventions, and prepares students to make the world a better place for all.

ECE M.S. DEGREE OPTIONS

ECE offers four master’s degree named option programs that lead to the M.S. Electrical and Computer Engineering degree:

- Research—traditional two-year master’s program culminating in a thesis or research project.
- Professional—accelerated, course-based master’s program with the opportunity to choose a specialty area.
- Machine Learning and Signal Processing—accelerated, course-based master’s program tailored to the area of machine learning and signal processing.
- Power Engineering—online, off-campus program in power engineering designed for working professionals.

ADMISSIONS

Students apply to the Master of Science in Electrical and Computer Engineering through one of the named options.

- Electrical and Computer Engineering: Machine Learning and Signal Processing, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-machine-learning-signal-processing-ms/)
- Electrical and Computer Engineering: Power Engineering, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-power-engineering-ms/)

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:

- Research
- Professional
- Machine Learning and Signal Processing
- Power Engineering (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-engineering-ms/electrical-engineering-power-engineering-ms/#fundingtext) (Online)

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

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

MAJOR REQUIREMENTS

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
<th>30 credits</th>
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<tbody>
<tr>
<td>Minimum Credit</td>
<td>Requirement</td>
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<tr>
<td>Minimum Residence</td>
<td>Requirement</td>
<td>See Named Options for policy information.</td>
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<tr>
<td>Minimum Graduate</td>
<td>Coursework Requirement</td>
<td>See Named Options for policy information.</td>
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<tr>
<td>Overall Graduate GPA</td>
<td>Requirement</td>
<td>3.00 GPA required.</td>
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</table>
Other Grade Requirements
Assessments and Examinations
Language Requirements
See Named Options for policy information.

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 Electrical and Computer Engineering must select one of the following named options:

- ELECTRICAL AND COMPUTER ENGINEERING: MACHINE LEARNING AND SIGNAL PROCESSING, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-machine-learning-signal-processing-ms/)
- ELECTRICAL AND COMPUTER ENGINEERING: POWER ENGINEERING, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-power-engineering-ms/)
- ELECTRICAL AND COMPUTER ENGINEERING: PROFESSIONAL, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-professional-ms/)
- ELECTRICAL AND COMPUTER ENGINEERING: RESEARCH, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-research-ms/)

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

- Electrical and Computer Engineering: Machine Learning and Signal Processing, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-machine-learning-signal-processing-ms/)
- Electrical and Computer Engineering: Power Engineering, M.S. (http://guide.wisc.edu/graduate/electrical-computer-engineering/electrical-computer-engineering-ms/electrical-computer-engineering-power-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.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING RESOURCES
UW–Madison, the College of Engineering, and ECE have an abundance of professional development opportunities for students to take advantage of in order to better prepare themselves for internships and job positions during and following their education. First of all, the ECE Department strongly encourages students to utilize the Graduate School’s professional development resources (https://grad.wisc.edu/professional-development/). Engineering Career Services (ECS) (http://ecs.wisc.edu/) hosts multiple career fairs each semester where students can directly interact with prospective employers, schedule interviews, and find internships and full-time jobs. ECS also maintains job listings and hosts a variety of professional development workshops each semester. The ECE Department provides unique opportunities throughout the year for students to attend and participate in various lectures, workshops, and trainings. The ECE Graduate Student Association (GSA) organizes professional development opportunities for fellow students. Students are made aware of events and opportunities via email and other communications.

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

PEOPLE

PROFESSORS
Susan Hagness (Chair)
David T. Anderson
Nader Behdad
John Booske
Dan Botez
Azadeh Davoodi
John A. Gubner (Associate Chair for Operations)
Yu Hen Hu
Hongrui Jiang (Associate Chair for Graduate Studies)  
Irena Knezevic  
Bernard Lesieutre (Associate Chair for Undergraduate Studies)  
Mikko Lipasti  
Zhenqiang Ma  
Luke J. Mawst  
Robert Nowak  
Parameswaran Ramanathan  
Bulent Sarlioglu  
William A. Sethares  
Daniel van der Weide  
Barry Van Veen  
Giri Venkataramanan  
Amy E. Wendt

ASSOCIATE PROFESSORS
Steven Fredette  
Mikhail Kats  
Daniel Ludois  
Paul H. Milenkovic  
Umit Ogras  
Dimitris Papailiopoulos  
Andreas Velten  
Zongfu Yu

ASSISTANT PROFESSORS
Joseph Andrews  
Kassem Fawaz  
Dominic Gross  
Chirag Gupta  
Robert Jacobberger  
Younghyun Kim  
Bhuvana Krishnaswamy  
Kangwook Lee  
Chu Ma  
Pedro Morgado  
Shubhra Pasayat  
Line Roald  
Joshua San Miguel  
Eric Severson  
Eric Tervo  
Ramya Korlakai Vinayak  
Ying Wang

TEACHING FACULTY
Mark C. Allie  
Eduardo Arvelo  
Setareh Behroozi  
Eric Hoffman  
Joe Krachey  
Srdjan Milicic

See also Electrical and Computer Engineering Faculty Directory (https://directory.engr.wisc.edu/ece/faculty/).