COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

Graduate Programs

While the undergraduate program in engineering offers a challenging basic education, graduate studies provide the opportunity for advanced or special studies in particular areas of interest. Particularly in an era of rapid technological and scientific advancement, many students find continued study a decided advantage. It offers an attractive opportunity to pursue their special interests and acquire a more thorough preparation for their professional careers.

The College of Engineering and Computer Science (CECS) offers 20 master's degrees, two Doctor of Engineering, and 4 Ph.D. programs. Our partnerships with major domestic automobile companies and automotive suppliers have led to many educational and research opportunities for students and faculty.

Many graduate programs and courses are offered online. Students interested in this flexible and convenient course option can visit https://umdearborn.edu/cecs/cecs-online (https://umdearborn.edu/cecs/cecs-online/) to learn more.

Post-Baccalaureate Programs

The post-baccalaureate programs in engineering at the UM-Dearborn are geared to the demands of the student and the desires of society to further the technical background of the practicing engineer. Working students are accommodated by course offerings late in the afternoon and evening. Master's level study is offered in the field of engineering and computer science. A full list of these programs and their specific requirements are discussed in the following sections or at the following CECS Master's Website (https://umdearborn.edu/cecs/graduate-programs/masters-programs-1/).

Master of Science in Engineering (MSE) and Master of Science (MS) Programs

The College of Engineering and Computer Science (CECS) offers 20 master's degrees, with many of our courses are offered in the evening, and most master's degree programs may be completed fully online through CECS Online (https://umdearborn.edu/cecs/cecs-online/). Students have the opportunity to receive a unique graduate education in the College of Engineering and Computer Science. Our partnerships with major domestic automobile companies and automotive suppliers have led to many educational and research opportunities for students and faculty. Our programs are designed to provide a thorough and vigorous educational experience for the student who plans to enter the engineering profession after completing the requirements and for the student who wishes to pursue a Ph.D. This is accomplished by the curricula, which provides appropriate breadth while at the same time permitting the students considerable freedom in the selection of both engineering science and professionally oriented courses in their special interests, and through an environment in which faculty and graduate students may work together on a broad spectrum of research projects.

Students planning part-time studies can begin their work during any of the three terms. Class schedules are arranged to accommodate part-time, later afternoon, and evening students from local industrial firms. Information on this kind of program, which provides many advantages to both employer and student, can be obtained from the graduate program advisor.

Doctor of Philosophy (Ph.D.) and Doctor of Engineering (D.Eng.)

The College of Engineering and Computer Science (CECS) offers 6 doctoral programs: 4 full-time Ph.D. programs and two Doctor of Engineering (D. Eng.) programs. The D.Eng. programs accept students for both part-time and full-time study. In CECS, we are committed to excellence. Our doctoral programs are administered and taught by tenure-track faculty with active theoretical and translational research interests. Students and faculty work collaboratively and develop strong mentor relationships.

Located in the automotive industry's global epicenter in Metro Detroit, the university has developed strategic partnerships with major automobile companies and suppliers. Faculty and students have a variety of opportunities and regularly collaborate on innovative research with industry partners.

Time-Limits for Enrollment and Degree Completion

CECS Master's Program-

A student is expected to complete all work within five (5) years from the date of first enrollment into a CECS Master's Program. Students exceeding this limit must submit a petition to your program department, with their reasons for the request and specific plans for the completion of the degree program.

CECS DENG Program-

The D.Eng.in ASM & ECE program has a time limit of three (3) years for completion. Students are expected to complete the degree within two (2) years after achieving candidacy, but no more than three (3) years from the date of the first enrollment in the program. Students exceeding this limit must submit a petition to your program department, with their reasons for the request and specific plans for the completion of the degree program.

CECS PhD. Program- (Rackham)

Students are expected to complete their degree within five (5) years of achieving candidacy, but no more than seven (7) years from the date of the first enrollment in their PhD program. A student who does not pass the final defense within the required deadline can be placed on academic probation, unless the student petitions their department's committee for an extension of time to degree because of extenuating circumstances, with a plan for completion. A student who does not complete the degree after two (2) years of extension may be returned to pre-candidacy status and required to meet candidacy requirements again.

Course Descriptions

The following lists include all courses normally offered at UM-Dearborn. However, not all courses are offered every year, and periodically courses are added and deleted. For details, students should consult the *Schedule of Classes* for each term.

Master's Programs

- Artificial Intelligence (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/artificial-intelligence/)

- Automotive and Mobility Systems Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/automotive-mobility-systems-engineering/)
- Bioengineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/bioengineering/)
- Computer and Information Science (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/computer-information-science/)
- Computer Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/computer-engineering/)
- Cybersecurity & Information Assurance (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/cyber-security-information-assurance/#mastertext)
- Data Science (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/data-science/)
- Electrical Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-engineering/)
- Energy Systems and Sustainability Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/energy-systems-20sustainability-engineering/)
- Engineering Management (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/engineering-management/)
- Human-Centered Design and Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/human-centered-design-engineering/)
- Industrial and Systems Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/industrial-systems-engineering/)
- Information Systems and Technology (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/information-systems-technology/#mastertext)
- Manufacturing Systems Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/manufacturing-systems-engineering/)
- Materials Science and Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/materials-science-engineering/)
- Mechanical Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/mechanical-engineering/)
- Program and Project Management (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/program-project-management/)
- Robotics Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/robotics-engineering/)
- Software Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/software-engineering/)

Doctorate Programs

- D.Eng. in Automotive Systems and Mobility (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/automotive-systems-mobility/#doctoratetext)
- Ph.D. in Computer and Information Science (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/computer-information-science/#doctoratetext)
- D.Eng. in Electrical and Computer Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-and-computer-engineering/)
- Ph.D. in Electrical, Electronics, and Computer Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-computer-engineering/#doctoratetext)
- Ph.D. Industrial and Systems Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/industrial-systems-engineering/#doctoratetext)
- Ph.D. in Mechanical Sciences and Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/mechanical-sciences-engineering/#doctoratetext)

Dual Degree Programs

- Industrial and Systems Engineering (MSE) and Master of Business Administration (MBA) (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/industrial-systems-engineering/#dualdegreetext)

Certificates

- Automotive Materials and Design (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/automotive-materials-design/)
- Automotive Noise, Vibration & Harshness (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/automotive-nvh/)
- Automotive Powertrains (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/automotive-powertrains/)
- Control Systems (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/control-systems/)
- Electric Energy Technology (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electric-energy-technology/)
- Electrical System Analytics (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-system-analytics/)
- Electrical System Equipment (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-system-equipment/)
- Electrical System Planning (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-system-planning/)
- Electrical System Protection and Control (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/electrical-system-protection-control/)
- Engineering of Electrified Vehicular Systems (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/engineering-electrified-vehicular-systems/)
- Game Design (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/game-design/)
- Industrial Mechatronics (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/industrial-mechatronics/)
- Intelligent Systems in Engineering Applications (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/intelligent-systems-engineering-applications/)
- Materials for Manufacturing (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/materials-manufacturing/)
- Modeling and Simulations in Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/modeling-simulations-engineering/)

- Plastic & Composite Materials (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/plastic-composite-materials/)
- Program & Project Management (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/program-project-management/#certificatetext)
- Software Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/software-engineering/#certificatetext)
- Systems Engineering (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/systems-engineering/)
- Vehicle Electronics & Controls (http://catalog.umd.umich.edu/graduate/college-engineering-computer-science/behicle-electronics-controls/)

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