MechSE

Undergraduate Degree in **Engineering Mechanics (EM)**



I ILLINOIS

Mechanical Science & Engineering GRAINGER COLLEGE OF ENGINEERING

What is Engineering Mechanics?

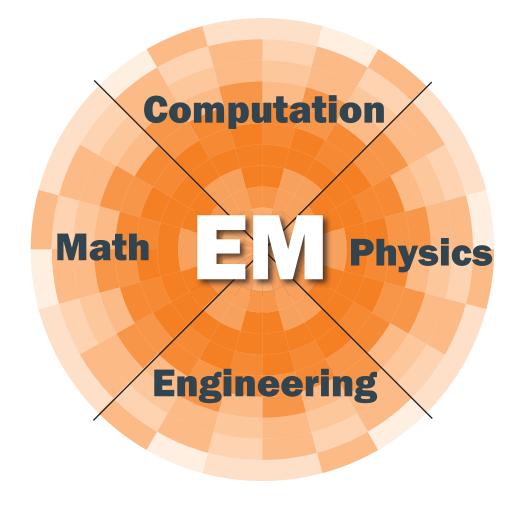
One of the most highly regarded areas of study there is! The Engineering Mechanics (EM) major is the ideal choice for students who combine a love of engineering with a passion for mathematics, physics, computation, and other sciences. While the student experience also includes applied topics and lab classes, the EM program places strong emphasis on a scientific approach, with a foundation of math and physics classes, followed by courses in statics, dynamics, mechanics of solids, mechanics of fluids, continuum mechanics, mechanics of materials, computational mechanics, and engineering design.

Unlike in most engineering majors, students in the EM program select a Secondary Field Option to build a set of specialized skills. Mechanics underlies all aspects of engineering, so there are many exciting secondary field options. EM students will be well positioned to make a strong impact in the area they choose.

In all, there are seven named secondary field options:

- Biomechanics
- Computational Mechanics
- Engineering Science and Applied Math
- Experimental Mechanics
- Fluid Mechanics
- Mechanics of Materials
- Solid Mechanics

Also, EM students with special interests can work with their faculty advisors to personalize their own secondary field!



What can I do with an EM degree?

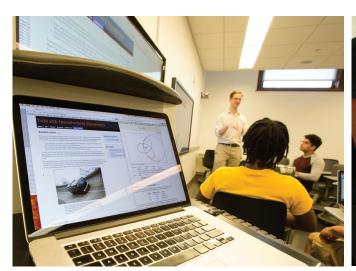
The list of options is almost limitless! The versatile problem-solving abilities of EM graduates serve them well in all walks of life. About half of our EM graduates continue their education in graduate school, and about half take positions in industry. Our EM students who continue into graduate school find themselves well prepared for graduate work in a wide range of studies—from medicine to materials science. They often attend the most highly regarded schools in the world, including the Massachusetts Institute of Technology; Stanford University; the University of California, Berkeley; the California Institute of Technology; and of course Big Ten schools including the University of Illinois. Those opting to head directly to industry or national research labs have gone to hundreds of top destinations, including:

AbbVie Accenture Argonne National Lab Astec Mobile Screens Bechtel Boeing Capital One Caterpillar **Charles Industries** The Clorox Company Collins Aerospace ConradAD Cummins Dell **Deublin Company Electric Boat** Electro-Motive Diesel

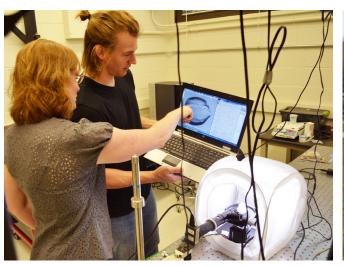
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Pentair

PERI Formwork Systems Remke Industries Sargent & Lundy Schlumberger Shell Oil Company Sherman Mechanical Spherion Thomas Engineering Toyota U.S. Army Corps of Engineers' Construction Engineering Research Laboratory (CERL) U.S. Patent Office Vibrodynamics Woodward, Inc. Yaskawa America











"I chose EM because I had a strong interest in physics and research. The curriculum was challenging yet rewarding, and it brought me close to a group of students who became my best friends. I discovered that I wanted to research alternative energy sources, so I customized my secondary field to include thermodynamics, heat transfer, and energy systems. My unique course work and design project experience helped me earn a Graduate Research Assistance position at Georgia Tech experimenting with solar thermal power."
—Gregory Wilk, EM graduate 2013

"Among the strongest applicants to our graduate program at MIT are those from the Engineering Mechanics program at UIUC. The rigor, breadth, and depth of their education provide them with a very strong foundation on which to build a career in research."

—Rohan Abeyaratne, Quentin Berg Professor of Mechanics, Massachusetts Institute of Technology

"We value Illinois Engineering Mechanics students because they are very strong in the fundamentals and have an appreciation for complex problems and research."

—Juan G. Santiago, Professor of Mechanical Engineering, Stanford University

"The advantage of the Illinois Engineering Mechanics program is not only that it is unique among the top U.S. Engineering programs, but that it is so designed that the students in the program receive a state-of-the-art modern education because they have access to a large selection of the advanced courses that are offered throughout the entire Illinois College of Engineering and Math Department. *In addition, EM graduates are educated solidly in* fundamental science, which allows them to understand the complex mathematical and mechanical principles behind advanced research problems. This unique understanding positions an EM graduate to be able to engage with a diverse set of scientists in industrial settings and apply for a wide variety of jobs or positions in graduate programs throughout the country." -Professor Petros Sofronis.

Associate Head for Mechanics Programs at Illinois

"Choosing Engineering Mechanics at UIUC was one of the best decisions in my life! The first thing that attracted me to Engineering Mechanics was the smaller student body and smaller student-to-teacher ratio. The close relationships I made with students and faculty helped me to make our huge university small."

—Stephanie Ott-Monsivais, Academic Advisor in MechSE

"I look to recruit Illinois Engineering Mechanics students into my laboratory at Michigan because they're well prepared for graduate work thanks to the rigorous course load in mathematics and mechanics at Illinois, and I know they can succeed here."

—Ellen Arruda, Professor of Mechanical Engineering, University of Michigan

"We are looking for Illinois Engineering Mechanics students for our graduate program at Caltech because of their excellent preparation and their potential to undertake advanced research. They are proven to be exceptionally bright and have outstanding communication skills."

—G. Ravichandran,
Director of Graduate Aerospace Laboratories,
California Institute of Technology



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