What is Engineering Mechanics? (EM)

Our undergraduate engineering mechanics program offers a comprehensive curriculum in structural mechanics, mechanics of materials, and dynamics. The objective of the program is to provide students with a broad background in the fundamental physical sciences and applied mathematics, coordinated with both theoretical and applied engineering methods and experimental techniques. A degree in engineering mechanics provides a broad scientific background which enables its graduates to tackle challenging problems in most fields of engineering.

The EM program contains a large number of elective credits that allow students to pursue their own personal interests and professional goals.

What Can You Do with an EM or EMA Degree?

Engineering mechanics graduates are sought by most industries, and governmental agencies including, in particular, those participating in the newly developing areas of engineering such as space technology and performance of new structural materials.

Their work often involves participation in design, research and development projects where the problems are sufficiently complex or unusual that their solutions require engineers with (1) a thorough understanding of the fundamentals of engineering, (2) advanced education in the established experimental and analytical methods, and (3) the ability to develop new experimental and analytical methods to attack problems for which standard methods, formulas, and materials have not yet been developed. The program also provides excellent preparation for graduate study in a variety of related disciplines.

Aerospace Engineering option

Roughly half of EM majors choose to pursue the Aerospace Engineering option.

As part of our undergraduate mechanics program, we offer an option in aerospace engineering. This program includes the fundamental courses in mechanics, and supplements those fundamentals with courses such as satellite dynamics, astrodynamics, aerodynamics, and controls systems.

The Aerospace Engineering option provides an excellent background for a wide variety of interesting and exciting jobs in industry and government laboratories.

Upon completion of common core courses taken during the Freshman and Sophomore years, students are well prepared to emphasize one of the many areas of special interest within the Department or to pursue the Aerospace Engineering degree option.
Internship & Co-op Opportunities
A co-op or internship is an excellent way to get engineering experience while working in a company, either for a summer or a semester. Many students have found these programs extremely valuable in enhancing their education and are frequently in a favored position to gain employment with the company after graduation.

Academic credit is earned through EMA 001; up to 3 credits may be used as a technical elective.

Research Opportunities
Students can earn academic credit for working with a professor in their lab. Participating in research can help students explore Engineering Mechanics and allows those considering graduate school to compare areas of research. Up to 3 credits of EMA 599 may be used as Engineering Mechanics electives.

Student Organizations/Leadership
American Institute of Aeronautics and Astronautics (AIAA):
https://aiaa.coerse.wisc.edu/
  - Rockets
  - X-HAB
  - ZeroG

Capstone Design
The capstone design sequence scheduled for the senior year provides students with excellent opportunities to integrate and apply knowledge gained in required technical courses to mechanics and aerospace related design projects.

A Small Sample of Employers

Set yourself apart! Visit www.engr.wisc.edu/ep today and discover more about this program!