MECHANICAL ENGINEERING

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MISSISSIPPI STATE UNIVERSITY™

MECHANICAL ENGINEERING

Preparing engineers for the challenges and discoveries of the 21st century

MISSISSIPPI STATE UNIVERSITY™
JAMES WORTH BAGLEY COLLEGE OF ENGINEERING

me.msstate.edu

WHAT IS MECHANICAL ENGINEERING?

Mechanical engineering (ME) is the application of science and mathematics to the design, development, and operation of mechanical and energy systems. Examples of these systems include mechanical machines from simple linkages and gears to complex automated robots and energy machines from basic water pumps to high-performance jet engines. Since the range of applications is so broad, virtually all industries employ mechanical engineers in various capacities. Some of the major areas for employment are the manufacturing, chemical, paper, aerospace, utility, construction, transportation, petroleum, electronics, and computer industries.

In addition to their strong foundation in the sciences, mechanical engineers must develop speaking and writing skills and spend much of their time creating complex design processes.

WHY CHOOSE MECHANICAL ENGINEERING @ MSU?

- RESEARCH EXPERIENCE. Many Bagley College of Engineering ME students have the opportunity to engage in significant research opportunities available for both graduate students and undergraduate students.
- BE PREPARED. Mechanical's faculty have excellent academic credentials and extensive industrial experience.
- JOIN US. The ME department has a long history of quality engineering education and research and is the largest of the engineering programs at MSU.
- YOU'RE OUR MISSION. The mission of the Department of Mechanical Engineering is to educate students in fundamental engineering principles, thus enabling the understanding of existing and next generation technologies relevant to research and engineering practice. All graduates will receive a broad education that will enable them to be successful in industry or academia, the profession, and the community.

OFFERED THROUGH ME

B.S. Mechanical Engineering
M.S. Mechanical Engineering
Ph.D. Mechanical Engineering

While You're Here

- **Build leadership skills** by engaging in research projects or joining a professional society such as the American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), American Foundry Society (AFS), Mechanical Engineering Ladies Organization (MELO), Mechanical Engineering Minorities Organization (MEMO), Society of Automotive Engineers (SAE), Pi Tau Sigma, Tau Beta Pi, and Kappa Beta.
- **Make connections** with alumni and engineering experts who visit MSU's campus. Students are able to gain insight into the professional world of engineering.
- **Enhance your engineering skills** by engaging in a number of opportunities outside of the classroom, from studying abroad to enrolling in the cooperative education program or earning an entrepreneurship certificate.
- **Participate in competitions and events,** like EcoCar, Habitat for Humanity, the Formula SAE Car, and our annual Engineering Week.

Financial Aid & Scholarships

- For undergrads, a variety of scholarships and fellowships are available.
- Both MSU and the BCoE award scholarships to mechanical engineering students.
- Graduate teaching and research assistantships are also available.

"The challenges and opportunities I encounter while working around the globe in oil & gas continue to validate the world class engineering education that Mississippi State offers."

Paula Jean Kardos
(B.S. '04)
ExxonMobil

Research Interests

The faculty of the Department of Mechanical Engineering is very active in research and graduate education, with degrees offered at both the master's and doctoral levels. In keeping with the broad technical mission of mechanical engineering education, the department has both the faculty expertise and the facilities to conduct a wide variety of design, analysis, and testing functions. The primary research strengths of the faculty are in the areas of heat transfer, fluid mechanics, mechanical systems, solid mechanics, materials, and manufacturing.

Current research includes: computational fluid dynamics, solidification modeling, combustion engines, energy conservation, thermal and fluid systems modeling, advanced HVAC technology, uncertainty analysis, finite element analysis, materials, and computational materials engineering.

Job Opportunities

MSU ME graduates have gone on to work for some of the world's top companies.

- ABB Inc.
- Baker Hughes
- Caterpillar Inc.
- Chevron
- Dow Chemical
- Entergy
- ExxonMobil
- Ford
- General Motors
- Georgia-Pacific
- Halliburton
- Honda
- International Paper
- Marathon Petroleum
- Nissan
- Nucor
- PACCAR
- Raytheon
- Siemens
- Southern Company
- Steel Dynamics
- Toyota
- Trane
- Yokohama
- and many more.