Mechanical and Aerospace Engineering Degrees Offered and Curricular Options

BS
Options:
- Aerospace
- Energy

BS/MA Dual Degree
BS/MS Five-year Dual Degree Program
BS/MBA Five-year Dual Degree Program

MS ME PhD

MAE Highlights

» Among top 50 graduate engineering programs (USNWR rankings).
» Leading edge facilities include rapid-prototyping facilities and multi-material 3D printer.
» Design and manufacturing experience begins in sophomore year.
» Home to the Emil Buehler Supersonic Wind Tunnel.
» Rutgers Formula Racing Team competes nationally.

Mechanical & Aerospace Engineering at Rutgers

Are you interested in designing the next-generation of space flight vehicles; finding new ways for producing sustainable, clean, and affordable energy; developing innovative technologies for improving health, or building original robots? Virtually every object around us has passed through the hands of a mechanical engineer, making this field of engineering one of the most broad-based, extending into a wide range of industries, including robotics, energy generation, distribution, advanced manufacturing, automotive, aerospace, naval, materials development, and more.

At Rutgers, mechanical engineering is about learning how to conceive new ideas and bring them to life through design and manufacturing. MAE students acquire basic principles in design, analysis, and modeling of physical components and processes, while building core knowledge in fluids, thermal, and structures.

WHAT CAN YOU DO WITH A MAE DEGREE?

Design
Research
Manufacturing
Automation
Automobiles and aircraft
Electric power generation plants
Medical and consumer products
Sales

“What The Computer Aided Drafting course allowed me to reverse engineer the mechanical components of everyday machines, while teaching me the skills to create models in the machine shop.”

Raheem O. Balogun
MAE Out Front

The department was recently selected to receive a $1.5 million award from the Emil Buehler Perpetual Trust to provide additional enhancements to the Emil Buehler Supersonic Wind Tunnel that simulates high speed conditions for testing equipment and systems related to rockets, fighter jets, and space crafts.

Hands-On Experience

Students have access to state-of-the-art equipment in nearly 20 advanced labs and centers to apply their classroom learning in creating designs and conducting experiments.

Internships provide practical professional experience in business and industrial settings.

Research Opportunities

Design and control
Solid mechanics
Materials and structures
Fluid mechanics
Thermal science

Program Highlights

A solid foundation of mathematical, scientific, and technical knowledge provides students with opportunities for meaningful research and prepares them for a globally competitive, diverse workplace in industry, government, and academia. Students learn in lecture settings as well as hands-on laboratory facilities, beginning in the sophomore year.

Aerospace Concentration

An aerospace concentration is available for students interested in the development of new aircraft and space vehicles. Students pursue a concentration in aerospace and receive a certificate in addition to a mechanical engineering degree.

Energy Systems Concentration

The energy systems concentration includes course and lab work in understanding technologies and practices in the fields of alternative, nuclear, and traditional energy sources. Students pursue a concentration in energy systems and receive a certificate in addition to a mechanical engineering degree.

Design and Manufacturing Project

The senior year project challenges students to apply mechanical engineering fundamentals to model, analyze, design, and realize physical systems, components, or processes in developing and building a functional prototype of a product. Recent student projects included a hybrid piezoelectric wind generator system, automated pipette pump for nanoparticle drug delivery systems, carbon fiber reinforced wheels for a formula Society of Automotive Engineers car, artificial airway for clinical monitoring, and an autonomous motorcycle.

Rutgers

Established in 1864, the School of Engineering at Rutgers, The State University of New Jersey, is home to educational opportunity and innovation, pursuing work of enormous relevance to society and the economy. With seven academic departments and world-renowned research centers, the School of Engineering currently enrolls more than 3,300 undergraduate and 700 graduate students, and generates more than $60 million in research funding annually.

For more information, visit mae.rutgers.edu