For more information, visit mae.rutgers.edu

Mechanical Engineering at Rutgers

Are you interested in finding new ways for producing sustainable, clean, and affordable energy; developing innovative technologies for improving health, designing innovative prosthetics, developing the new generation of 3D printers, 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 and extending into a wide range of industries, including robotics, energy generation and distribution, advanced manufacturing, automotive, aerospace, naval, materials development, pharmaceuticals and mechanobiology, and much more.

At Rutgers, mechanical engineering is about learning how to conceive new ideas and bring them to life through design and manufacturing. 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 ME Degree?”

Design and manufacture mechanical devices and machines
Manufacture, characterize, and test prototypes
Computationally analyze tools, engines, and machines
Manage the integration of sensors, controllers, and machinery
Oversee production testing and quality control
Pursue research and development in industrial and government laboratories

“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

ME 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 Engineering

Degrees Offered and Curricular Options

BS
- Concentrations:
  - Aerospace
  - Energy
- BS/BA Dual Degree
- BS/MS Five-year Dual Degree Program
- BS/MBA Five-year Dual Degree Program
- MS ME PhD
Imagine wearing clothes with layers of paper that protect you from dangerous bacteria. A Rutgers-led ME research team invented an inexpensive, effective way to kill bacteria and sanitize surfaces with devices made of paper.

ME’s Naviator, a one-of-a-kind drone equally adept at flying through the air and navigating under water, is a YouTube sensation with more than 10 million views.

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.

Students work in teams on culminating senior design projects, putting classroom learning to real-life use.

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.

An aerospace concentration, consisting of three senior courses in the aerospace field, 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. The concentration is for the student interested in a basic certification in aerospace engineering without pursuing an aerospace degree.

The energy systems concentration, consisting of three major courses, 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.

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.

Established in 1864, the School of Engineering at Rutgers University-New Brunswick 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 3,800 undergraduate and 1,000 graduate students, and generates more than $69 million in research funding annually.