MSE Highlights

» Materials, the basis of all engineering technologies, is a fast growing field.
» $9 million research program supports a large faculty.
» State-of-the-art labs include polymer injection molding, electron microscopy, solar energy devices, X-ray diffraction, and Raman spectroscopy.
» The Corning Glass Science and Engineering Laboratory features the latest in advanced glass melting capabilities.

Materials Science and Engineering Degrees Offered and Curricular Options

BS
Options:
- Biomaterials, Nanomaterials, Metals, Polymers, Fiber Optics, Manufacturing, Packaging Materials, or specially designed curriculum.

BS/BA Dual Degree
BS/MS Five-year Dual Degree Program
BS/MBA Five-year Dual Degree Program
MS PhD

WHAT CAN YOU DO WITH A MSE DEGREE?

Development engineer
Process engineer
Manufacturing engineer
Production management
Semiconductors
Automotive industry
Consumer products
Computer systems
Medical devices
Marketing
Research
Advanced Studies

"Hands on lab experience, small class sizes, and a super helpful and caring faculty have played a huge part in shaping my great experience at Rutgers. I know my MSE degree will open a lot of doors in many fields."
Alexa Abdelaziz

Materials scientists and engineers create innovative high-value products by designing at the atomic, molecular, and up to macroscopic levels to contribute to all fields of engineering. MSE majors use the fundamental principles of physics and chemistry as well as the practical knowledge about the microstructure and processing of advanced materials of all types. They might use plastics and other disposable materials to develop high-performance fabrics or develop carbon nanotubes or graphene as materials to help sense bacteria, chemicals, and other dangers in our food and water supply.

The MSE curriculum at Rutgers equips students with solid training in chemistry, applied physics, and processing, preparing them for careers in a variety of different fields. With access to world-class facilities and laboratory equipment, students work to solve engineering problems as they learn how to apply their theoretical knowledge to practical situations.
**Hands-On Experience**

A research intensive department, MSE students are encouraged to participate in funded research projects alongside faculty members.

State-of-the-art equipment exposes students to the preparation and evaluation of newer types of ceramics, metals, polymers and composites required in aerospace advanced engine, biotechnology, photonics, and electromagnetic applications.

**MSE Out Front**

MSE faculty and students are studying ways to take recycled plastics and convert them into structural materials for bridges and marine structures that have properties greater than steel and last for nearly 100 years. The secret is in the sophisticated melt processing of these polymers that produces a microscopic interlocking structure that takes advantage of the strong chemical backbone bonds in polyethylene and polypropylene.

**Program Highlights**

Throughout their studies, students solve problems related to the design, processing and evaluation of conventional and specialty materials. MSE features a laboratory intensive curriculum giving students hands-on access to all the major instrumentation and processing equipment used in industry, including x-ray diffraction, Raman spectroscopy, electron microscopy, extrusion, kilns, and injection molding. The senior capstone courses allow students to obtain industrial-level research and design experience.

A broad array of specialization and concentration options that allow students to customize their degree to target specific career interests, including biomaterials, electronic and optical materials, energy conversion and storage materials, nanomaterials, polymers, and packaging materials.

Internships provide an opportunity to practice and/or apply knowledge and skills in various ceramic or materials engineering professional environments. Intended as a capstone to the student's undergraduate studies, a real world engineering work experience might include the fundamentals of materials, equipment, processing, plant design, and product performance.

For more information, visit mse.rutgers.edu