Our Mission

Our mission in the Department of Engineering Science and Mechanics is to develop a holistic approach for forming national and international leaders of engineering, academia, industry, politics, governments, the professions (including business, law, and medicine), and public service; and to apply a solid foundation in scientific and engineering principles in order to impact the well-being of the global society and its environment.

Student Organizations

Students can join several engineering student organizations that enhance the academic and social experience of both undergraduate and graduate students, and that provide a medium for the exchange of ideas among students, faculty, alumni, professionals in industry, and others active in engineering science.

- ASM International
- Engineering Science and Mechanics Graduate Student Council
- Society for the Advancement of Materials and Process Engineering
- Society of Engineering Science
- Tau Beta Pi

Degrees Awarded in Department [2020-21]

- 13 Master's
- 11 Ph.D.
- 50 Undergraduate

74 TOTAL DEGREES
Research Labs and Facilities

- Advanced Microscopy Lab
- Biodetection Lab
- Biomimetics Lab
- Bioprinting Lab
- CNEU Teaching Cleanroom
- Composites Materials Lab
- Corrosion Research Lab
- Fourier Optics Lab
- Mechanical Behavior Lab
- Nanofabrication Lab
- Nonlinear Dynamics Lab
- Optoelectronics Lab
- Penn State Ultrasonics Lab
- Semiconductor Spectroscopy Lab
- Soft Matter Mechanics Lab
- Tribology/Materials Processing Lab

Research Areas

- Advanced Materials and Devices
- Applied Mechanics and Biomechanics
- Brain Science and Neural Engineering
- Dynamic Systems, Acoustics, and Vibrations
- Emerging Manufacturing Processes for Materials, Tissues, and Devices
- Energy Infrastructure, Storage, and Devices
- Multiscale and Multiphysics Modeling, Computational Analysis
- Nanoscience, Bionanoscience, and Engineering
- Optoelectronics, Photonics, and Lasers
- Structural and Human Health Monitoring

Degrees Offered

- Undergraduate Minor in Engineering Mechanics
- Undergraduate Minor in Nanotechnology
- Bachelor of Science in Engineering Science (B.S.)
- Integrated Undergraduate/Graduate Program (B.S./M.S.)
- Master of Engineering in Engineering Mechanics (M.Eng.)
- Master of Science in Engineering Science and Mechanics (M.S.)
- Master of Science in Engineering at the Nano-scale (M.S.)
- Doctor of Philosophy in Engineering Science and Mechanics (Ph.D.)
- Doctor of Medicine/Doctor of Philosophy in Engineering Science and Mechanics (M.D./Ph.D.)

Young Investigator Awards

50 Fellows in 24 Professional Societies

Centers and Institutes

- Applied Research Lab
- Center for Innovative Sintered Products
- Center for Nanotechnology Education and Utilization
- Center for Neural Engineering
- Center for Research on Advanced Fiber Technologies
- Center for Innovative Materials Processing by Direct Digital Deposition
- Huck Institutes of the Life Sciences
- Institute for Computational and Data Sciences
- Institutes of Energy and the Environment
- Materials Characterization Lab
- Materials Research Institute
- Penn State Neuroscience Institute