Academic Programs

Norfolk State University offers two graduate programs for individuals seeking careers in the interdisciplinary field of materials for advanced technologies.

The Ph.D. in Materials Science and Engineering program prepares students for careers in industry, federal or private research laboratories, and academia. The program transitions students from physical sciences, engineering, and related fields into the discipline of materials science while broadening their professional opportunities.

The M.S. in Materials Science program provides students with analytical and technical skills and research experience necessary for doctoral programs. Graduates are also prepared for professional jobs involving materials science and engineering principles.

Opportunities for Students

Graduate students have the opportunity to work on projects with external research organizations including national laboratories, industries and universities. Among our partners are NASA Langley Research Center, Thomas Jefferson National Laboratories, Cornell University, University of Michigan, University of Arizona, and Purdue University. Students regularly attend national and international conferences and seminars.

Research Laboratories

- MInA Class 100/400 Cleanroom
- NMR and ESR Labs
- Thin Film Lab
- Crystal Growth Lab
- Materials Characterization Lab
- Laser Spectroscopy Lab
- Polymer Synthesis and Characterization Lab

Degree Requirements

The M.S. degree requires 33 credit hours of graduate coursework and the preparation and successful defense of a thesis. The program is designed to be completed in 2 years.

The Ph.D. degree requires 12 credit hours of core courses, 16 credit hours of electives, and 45 credit hours of research courses, including doctoral research and thesis preparation. Students entering with the Master's degree may transfer up to 21 credit hours of graduate courses. Students must complete a minimum of 75 graduate credit hours that comprise at least 39 credit hours of coursework and 36 hours of research-based courses including 27 hours of Ph.D. research and 9 hours for a doctoral dissertation.

Financial Assistance

Teaching Assistantship – provides a stipend, tuition and fees for the academic year. Duties include teaching, grading, laboratory instruction, and educational responsibilities.

Research Assistantship – covers the full calendar year and includes a stipend, tuition, and fees. Recipients work directly with faculty on research projects. Candidates are selected based on academic qualifications, research potential, and recommendations.

STIPENDS UP TO $30,000 YEARLY

Admission Requirements

Bachelor's or Master's degree in chemistry, physics, engineering, or related field from an accredited university.

English proficiency based on TOEFL scores or demonstrated working knowledge of the language.

GRE Scores (PhD program)

Completed application, statement of purpose, resume, official transcripts, and three letters of recommendation.
Graduate Faculty

Bahoura, M. J., Associate Professor of Engineering
  • Multifunctional thin films
  • High-dielectric materials
  • Nano-materials

Black, Suely, Professor of Chemistry
  • Electronic structure modeling
  • Optoelectronic properties

Bonner, Carl, Professor of Chemistry
  • Non-linear optics for organic polymers and lasers

Noginov, Mikhail, Professor of Physics
  • Optical Spectroscopy
  • Non-linear optics
  • Meta-materials
  • Nano-plasmonics and lasers

Noginova, Natalia, Associate Professor of Physics
  • Magnetic resonance and spin relaxation in solid-state systems

Pradhan, Aswini, Professor of Engineering
  • Nanomaterials
  • Nano-crystalline epitaxial and multilayered films
  • Bio-sensing

Rakhimov, Rashim, Professor of Chemistry
  • Organic and organo-element free radicals
  • Reduction/oxidation processes

Ramesh, Govindarajan, Professor of Biology
  • Nano bio-materials and bio-toxicity

Song, Kye, Professor of Engineering
  • Optical materials science and engineering
  • Microwave biomaterial interaction

Sun, Sam-Shajing, Professor of Chemistry
  • Organic and polymeric materials
  • Optoelectronic materials and devices

Temple, Doyle, Professor of Physics
  • Ultrafast Laser Spectroscopy
  • Single Crystal Growth
  • Plasmonic Sensors

Williams, Frances, Associate Professor of Engineering
  • Biomedical nanomaterials
  • Neural sensing
  • Nano-electronic materials and devices

Black, Suely, Professor of Chemistry
  • Electronic structure modeling
  • Optoelectronic properties

Bonner, Carl, Professor of Chemistry
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Elective Courses

MSE 607 Materials for Nanotechnology
MSE 609 Introduction to Computational Materials
MSE 635 Optical Materials
EEN 650 Microelectromechanical Devices
PHY 653 Solid State Physics
MSE 660 Organic Optoelectronic Materials and Devices
EEN 663 Solid State Devices
PHY 675 Electricity and Magnetism
MSE 703 Materials and Devices for Solar Energy Conversion
MSE 704 Thin Film Phenomena

Infinite POSSIBILITIES
GRADUATE PROGRAMS IN MATERIALS SCIENCE AND ENGINEERING

Materials Science and Engineering Program
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