Materials Science and Engineering

Materials enable all of the engineering and high-technology fields that are an integral part of our society. Graduate programs in this department focus on understanding the structure, structure modification and properties of materials and the development of new or improved materials and advanced processing methods that are critical links between the design and the realization of new systems for manufacturing, nanotechnology, energy, and biomaterials.

The M.S. and Ph.D. programs are research-based degree programs focusing on faculty-mentored, state-of-the-art materials research that leads to a thesis or dissertation.

The Master of Materials Science and Engineering is a non-thesis degree program designed for students from a variety of technical backgrounds interested in furthering their understanding of materials processing, characterization and properties. This program is appropriate for distance-education Masters students.

The Master of Nanoengineering is a multidisciplinary non-thesis degree program designed so students can declare a concentration in one of the following three areas:

1. Materials Science in Nanoengineering;
2. Nanoelectronics and Nanophotonics; or
3. Biomedical Sciences in Nanoengineering.

This program is appropriate for distance-education Masters students.

Master’s Degrees Requirements

The Master of Science degree (M.S.) requires 30 credit hours of coursework/research and a research thesis. The Master of Materials Science and Engineering degree (M.M.S.E.) requires 30 credit hours of coursework only. The Master of Nanoengineering (M.NAE.) requires 30 credit hours of coursework only.

Doctoral Degree Requirements

The doctoral degree (Ph.D.) requires 72 credit hours of coursework/research, a qualifying exam, and a research dissertation.

Student Financial Support

Students in the M.S. and Ph.D. graduate programs normally receive financial support in the form of research or teaching assistantships or fellowships.

Other Relevant Information

The department reflects the interdisciplinary nature of the field of Materials Science and Engineering. A substantial number of current graduate students majored in fields other than but related to materials, and the department has associated graduate faculty from other departments supervising thesis and dissertation research.

Materials Science and Engineering Program Website (https://www.mse.ncsu.edu/)

Admission Requirements

In addition to the general admission requirements as set by the Graduate School, the department requires submission of GRE scores. Non-native English speakers also require a minimum TOEFL score as established by the Graduate School.

Applicant Information

- Delivery Method: On-Campus, Online, Hybrid
- Entrance Exam: GRE
- Interview Required: None

Application Deadlines

- Fall: March 1 (MMSE only) US & Intl
- Spring: October 1 (MMSE only) US & Intl
- Summer 1: March 1 (MMSE only) US & Intl

Degrees

- Materials Science and Engineering (MR) (http://catalog.ncsu.edu/graduate/engineering/materials-science-engineering/materials-science-engineering-mr/)
- Materials Science and Engineering (MS) (http://catalog.ncsu.edu/graduate/engineering/materials-science-engineering/materials-science-engineering-ms/)
- Materials Science and Engineering (PhD) (http://catalog.ncsu.edu/graduate/engineering/materials-science-engineering/materials-science-engineering-phd/)
- Materials Science and Engineering (Minor) (http://catalog.ncsu.edu/graduate/engineering/materials-science-engineering/materials-science-engineering-minor/)
- Materials Informatics (Certificate) (http://catalog.ncsu.edu/graduate/engineering/materials-science-engineering/materials-informatics-cert/)
- Materials Science and Engineering (Certificate) (http://catalog.ncsu.edu/graduate/engineering/materials-science-engineering/materials-science-engineering-certificate/)

Faculty

Professors

Harald Ade
Aram Amassian
David Aspnes
Salah M.A. Bedair
Donald Brenner
Ramon Collazo
Jerome Cuomo
Jan Genzer
Reza Ghiladi
Materials Science and Engineering

Ola Harrysson
Douglas Irving
Jacob L. Jones
Djamel Kaoumi
Frederick Kish
Frederick Kish
Thomas LaBean
James D. Martin
John F. Murth
Korukonda Murty
Jagdish Narayan
Roger Jagdish Narayan
Gregory N. Parsons
Melissa Pasquinelli
Zlatko Sitar
Franky So
Richard Spontak
Martin Thuo
Joseph B. Tracy
Daryoosh Vashaee
Yaroslava Yingling
Xiangwu Zhang
Yong Zhu

Yin Liu
Yin Liu
Martin Seifrid
Ruijuan Xu

Research Professor
Christopher Rock

Teaching Assistant Professor
Alexey Gulyuk

Adjunct Professors
Barry Farmer
John Prater

Adjunct Associate Professor
Charles Guarnieri

Emeritus Faculty
Charles Balik
Elizabeth Dickey
Carl C. Koch
Yuntian Zhu

Associate Professors
Veronica Augustyn
Rajeev Gupta
Jagannadham Kasichainula
Kinga Unocic
Raymond Unocic
Nina Wisinger

Assistant Professors
Bharat Gwalani
Timothy Horn