

Materials Science and Engineering

Materials enable all 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/>)

Distance Website (<https://online-distance.ncsu.edu/program/master-of-materials-science-and-engineering/>)

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

Ola Harrysson

Douglas Irving

Jacob L. Jones

Djamel Kaoumi

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

Associate Professors

Veronica Augustyn

Rajeev Gupta

Jagannadham Kasichainula

Raymond Unocic

Kinga Unocic

Nina Wisinger

Assistant Professors

Bharat Gwalani

Timothy Horn

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

Practice/Research/Teaching Professor

Albert Kwansa

Emeritus Faculty

Charles Balik

Elizabeth Dickey

Carl C. Koch

Yuntian Zhu