NANOTECHNOLOGY STUDIES (NTS)      Fall 2019 Bulletin

Nanotechnology Studies (NTS)
Interdisciplinary Minor in Nanotechnology Studies

Department of Materials Science and Chemical Engineering, College of Engineering and Applied Sciences

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Nanotechnology Studies (NTS)
The minor in Nanotechnology Studies (NTS) is an interdisciplinary, research-intensive program intended for students in majors from the College of Engineering and Applied Sciences or the College of Arts and Sciences who wish to learn about the emerging field of nanotechnology. The coursework in the minor will provide a broad background in the science, design, manufacture, and societal, health, and environmental impacts of nanomaterials and nanoscale structures and their applications in engineering and health related areas. The inclusion of a minimum of two semesters of research in the students' own major areas, as well as choice of technical electives, will allow for integration into current interests and disciplines, and will provide knowledge and skills valuable to students planning to seek employment or graduate studies in fields related to the engineering, business, policy or the broader impact of nanotechnology.

Requirements for the Minor in Nanotechnology Studies (NTS)
All courses for the minor must be passed with an average grade of B or higher.
Completion of the minor requires 18-22 credits and consists of the following requirements:

For all majors, except for Chemical and Molecular Engineering (CME):

1. ESM 213 Introduction to Nanotechnology Studies
2. Two semesters (at least 6 credits) of independent research (299, 499 or 488). Research topics must be approved by the director of the NTS minor for courses to be accepted to the NTS minor.
3. Two technical electives, chosen from among the following courses:
   a. BME 381 Nanofabrication in Biomedical Applications
   b. ESM 339 Microfabrication and Thin Film Processing of Advanced Materials
   c. PHY 472 Solid State Physics
   d. ESE 231 Introduction to Semiconductor Devices
   e. CHE/ESM 378 Materials Chemistry
   f. MEC 470 Introduction to Tribology
   g. EST 391 Technology Assessment
   h. ESM 212 Introduction to Environmental Materials Engineering

Other upper division technical elective courses may be substituted with permission of the director of the minor.

4. ESM 400 Research and Nanotechnology

For students who are majoring in Chemical and Molecular Engineering (CME):

1. Completion of the three course requirement for the specialization in Nanotechnology (for the CME major)
2. Two semesters (at least 6 credits) of independent research (299, 499 or 488). Research topics must be approved by the director of the NTS minor for courses to be accepted to the NTS minor.
3. ESM 400 Research and Nanotechnology

Notice: As all courses are not offered every semester, please check the schedule of courses for current scheduling information.
No courses are associated with this academic program.