Twin Cities Campus

Nanoparticle Science and Engineering Minor

Mechanical Engineering

College of Science and Engineering

Link to a list of faculty for this program.

- **Students will no longer be accepted into this program after Fall 2015. Program requirements below are for current students only.**
- **The minor in Nanoparticle Science and Engineering is no longer accepting students.**

Contact Information:
Graduate Minor Program in Nanoparticle Science and Engineering, Integrative Graduate Education and Research Traineeship Program, University of Minnesota, 2101 Mechanical Engineering, 111 Church Street S.E., Minneapolis, MN 55455 (612-625-4028; fax: 612-625-4344)
Website: http://www.nanoigert.umn.edu

- Program Type: Graduate free-standing minor
- Requirements for this program are current for Fall 2019
- Length of program in credits (Masters): 6
- Length of program in credits (Doctorate): 12
- This program does not require summer semesters for timely completion.

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

The Integrative Graduate Education and Research Traineeship Program offers a minor in nanoparticle science and engineering for M.S. and Ph.D. students. The curriculum is designed to allow completion of the minor without an increase in overall course load. The minor requires one or two core courses and electives relevant to nanoparticle research. The program of courses is tailored in advance consultation between the student and director of graduate studies.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

Other requirements to be completed before admission:
Admission to a master's or doctoral degree-granting program in the College of Science and Engineering and preparation of a minor program of coursework approved by the director of graduate studies is required. Students in programs outside the College of Science and Engineering must be approved by the director of graduate studies.

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

M.S. students must complete NPSE 8001 - Introduction to Nanoparticle Science and Engineering (3 cr) and 3 elective credits. Ph.D. students must complete NPSE 8001 and 8002 - Nanoparticle Science and Engineering Laboratory (3 cr) and 6 elective credits.

Electives must be chosen from existing courses relevant to nanoparticle research. Examples include CHEM 8021 - Computational Chemistry, EE 5624 - Optical Electronics, ME 8361 - Introduction to Plasma Technology, PHYS 5701 - Solid State Physics for Engineers and Scientists, CHEN 8301 - Physical Rate Processes I: Transport, and MATS 8212 - Solid State Reaction Kinetics.