

NANOTECHNOLOGY, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description

The Nanotechnology minor is designed to help prepare students from diverse disciplines for careers in a broad range of industries innovating with nanotechnology. The minor builds on the singular strengths of Penn State's nanofabrication facilities including its class 1 and class 10 clean rooms, its faculty, and existing academic programs. The minor provides students with fundamental knowledge and skills in simulation, design, modeling, syntheses, characterization, properties, processing, manufacturing, and applications at the nano scale.

As nanotechnology increasingly bridges across disciplines, a basic understanding of mathematics, physics, biology, and chemistry is recommended. To complete the 18 credit nanotechnology minor, students will take two prescribed courses (6 credits) in nanoscience fundamentals, and then select four additional courses (12 credits) from a growing list of courses that address the areas described in the previous paragraph.

In addition to nanotechnology career opportunities in microelectronics, information storage, optoelectronics, bioelectronics, pharmaceuticals, agriculture, medicine, life sciences and the sciences, the minor prepares undergraduate students to support major new nanotechnology research programs as graduate students. Interested 3rd and 4th year students from related fields in engineering, the chemical, physical, and the biological sciences, medicine, life, and agricultural sciences are encouraged to enroll.

What is Nanotechnology?

Nanotechnology is inherently interdisciplinary and bridges across physics, biology, materials science, and chemistry. It is a general purpose, enabling technology that is already impacting a broad spectrum of human endeavors, from medicine and catalysis to textiles and quantum computing.

You Might Like This Program If...

- You are interested in an interdisciplinary minor that bridges across physics, biology, materials science, and chemistry.
- You are interested in gaining fundamental knowledge and skills in nanoscale simulation, design, syntheses, characterization, properties, processing, manufacturing, and applications.