



The Capstone Semester

Your pathway to a career in nanotechnology

The Nanofabrication Manufacturing Technology (NMT) Partnership, hosted by the Center for Nanotechnology Education and Utilization (CNEU), is a unique collaboration aimed at equipping a new generation workforce with nanotechnology-based manufacturing and new product development skills companies need to move life-changing nano-scale applications out of the laboratory and into the marketplace.

All students enrolled in qualifying associate degree, baccalaureate degree, and certification programs at their NMT partner institutions are eligible for the Capstone Semester in nanotechnology at Penn State's University Park campus.

"Having a resource where students gain experience day one in a cleanroom is invaluable. It's still a very expensive prospect to hire someone new even with that background. But without it, it would make it that much more difficult."

Michael Rogosky, Nanovus

Have a Hand in Creating Your Future

As an NMT Capstone Semester student, you will receive the most current, hands-on exposure available in nanofabrication manufacturing and characterization technology. You'll work in groups with other students from different schools and diverse backgrounds, enhancing the experience of everyone in the group, as you learn a new skill set that makes you uniquely qualified to work in the cross-disciplinary field of nanotechnology.

The skill set, established by the NMT National Advisory Council, includes:

- Basic nanotechnology environmental, health, and safety awareness
- Equipment and processing foundation skills
- Patterning
- Fabrication
- Characterization
- Professional skills

Benefits

Hands-on training with the latest nanotechnology fabrication and characterization equipment.

Exclusive access to a powerful job network through receiving industry announcements and job postings.

18 credits earned in the six-course Capstone Semester apply to either two-year associate or four-year baccalaureate degree programs at NMT partner institutions. When taken as part of a two-year degree program, the 18 credits you earn in your Capstone Semester can later be transferred into select four-year degree programs.

Nanotechnology is Driving a Revolution

Advanced manufacturing and new product development is changing the way we live and learn on our planet—and the way we may solve some of our biggest challenges.



Detect and clean up hazardous chemicals in the environment



Enable medical devices that can eliminate the need for surgery



Create smaller and faster electronic components



Make sunscreen and cosmetics more effective

Create your own nanotechnology-driven career in virtually any industry.



Ensure that food stays fresher longer



Create functionalized nanoparticles for targeted drug delivery



Give antibacterial properties to cell phones, refrigerators, and toys



Produce cleaner, more affordable energy



Produce odor-free shoes, socks, and clothing



Develop nanoparticles for fluorescence imaging of tumors

“We haven’t tapped into all of the possibilities of what we can use nanomaterials for and we haven’t created all of the possible nanomaterials yet, so there are going to be exciting new companies, exciting new products, and exciting new services ... the nanotechnology industry is going to grow and grow and grow.”

Peter Kazarinoff, Seattle Hub for Industry Driven Nanotechnology Education

Want to learn more about what students, employers, and educators say about the future of nanotechnology?

▶ View our video: tinyurl.com/FutureOfNMT

“While finishing the Nanofabrication Manufacturing Technology Partnership [capstone at Penn State], I was able to interview with a few companies. The program really helped set me on a path upwards.”

Dylan Huska, Northrop Grumman, spring 2018 NMT, Harrisburg Area Community College

Nanofabrication Manufacturing Technology Partnership

To learn how to pursue a degree or certificate in nanotechnology, visit bit.ly/NMTCapstone for:

- Full course descriptions
- Eligibility requirements
- A complete list of NMT partner institutions
- Application and contact information

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Building College-University
Partnerships for Nanotechnology
Workforce Development



PennState
College of Engineering

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