

NANOTECHNOLOGY ENGINEERING

Manipulate matter at the atomic level. Some of today's most innovative scientific and engineering breakthroughs are happening at scales smaller than we ever thought possible. You'll use concepts from quantum physics, chemistry, and electronics to research, design, and manipulate systems measured in billionths of a metre.

In first year, you'll take courses in fundamental science and engineering principles, becoming immersed in a specialty that crosses boundaries between traditional disciplines. In upper years, you'll specialize in the topics that interest you most through your choice of interdisciplinary, design-based courses such as nano-electronics and nano-biotechnology. Top it off with hands-on labs, two years of work experience, and a fourth year design project, and you'll be ready to use your knowledge of materials, electronics, and nanomedicine to revolutionize technologies in a variety of industries.

uwaterloo.ca/nanotechnology-engineering

96% of Nanotechnology Engineering students found co-op jobs in 2022

STATE OF THE ART

labs and facilities in the Mike and Ophelia Lazardis Quantum-Nano Centre

YOUR FIRST YEAR

FIRST TERM

- > Introduction to Nanotechnology Engineering
- > Programming
- > Linear Algebra
- > Chemical Principles
- > Societal and Environmental Impacts of Nanotechnology
- > Calculus 1

SECOND TERM

- > Nanomaterials Health Risks
- > Computational Methods
- > Materials Science and Engineering
- > Physics
- > Linear Circuits
- > Calculus 2

TINY BUT MIGHTY

After establishing a strong foundation in chemistry, physics, electrical engineering, and chemical engineering, you'll develop technical expertise in materials science, circuit design, micro- and nano-fabrication, and biotechnology. Using our state-of-the-art facilities at the Mike & Ophelia Lazardis Quantum-Nano Centre and unique lab spaces like our dedicated cleanroom, you'll learn how to apply your knowledge in the real world and gain advanced, hands-on expertise.



UNIVERSITY OF
WATERLOO

CO-OP

Waterloo offers the

WORLD'S LARGEST CO-OP PROGRAM



CO-OP AT WATERLOO = REAL WORLD EXPERIENCE

We'll help you navigate job applications, résumés, and interviews. You'll benefit from trying different roles and/or industries to find the one that fits you while building your work experience and reinforcing your in-class learning. It all adds up to a competitive advantage for your post-graduation job search.

Nanotechnology Engineering students are part of the Stream 8S sequence.

STREAM 8S STUDY AND CO-OP SEQUENCE

YEAR	TERM	STREAM 8S
1	Fall	Study (1A)
	Winter	Study (1B)
	Spring	Work
2	Fall	Study (2A)
	Winter	Work
	Spring	Study (2B)
3	Fall	Work
	Winter	Work
	Spring	Study (3A)
4	Fall	Study (3B)
	Winter	Work
	Spring	Work
5	Fall	Study (4A)
	Winter	Study (4B)

Fall term: September to December
Winter term: January to April
Spring term: May to August

BEYOND THE CLASSROOM

As a Waterloo Engineering student, it's easy to get in on the action. You can join the Engineering Society, make a difference with Engineers Without Borders, or apply your studies with a student design team. If you have questions about student life or want to shadow a student for a day, our Engineering Ambassadors can help!

uwaterloo.ca/engineering-student-ambassadors

OUT IN THE WORLD

The rapidly expanding field of nanotechnology is pushing the boundaries of innovation. Nanotechnology engineers can help build faster, smaller, and more powerful computing devices, create more accurate medical diagnostic equipment, and use nanoparticles to improve medication delivery.

EXPLORE YOUR INTERESTS

Customize your degree by choosing electives based on your interests in:

- > Nano-engineered materials
- > Nano-electronics
- > Nano-instrumentation
- > Nano-biosystems



SCAN TO WATCH THE NANOTECHNOLOGY ENGINEERING VIDEO

EMPLOYMENT OPPORTUNITIES

- > Nanoscale therapeutics development
- > Semiconductor manufacturing
- > Academic research
- > Biosensor design
- > Environmental purification and cleanup
- > Nanomaterial development

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