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 nanobiotechnology. 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.

YOUR FIRST YEAR

**FIRST TERM**
- Nanotechnology Engineering
- Nanotechnology Engineering Practice
- 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

We provide the support you need to bring your ideas to life. This includes the Sedra Student Design Centre, Velocity, and entrepreneurial funding opportunities.

Nanotechnology students Matt Lavrisa and Ryan Marchewka collaborated to found the startup Halion Displays, creating a reflective display technology. It harnesses ambient light to increase battery longevity and improve the usability of devices in bright conditions. Thanks to support and funding from Spectrum 28, Engineering the Future Fund, and Enterprise Co-op, these graduates are well on their way to launching a successful business.
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**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TERM</th>
<th>STREAM 8S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fall</td>
<td>Study (1A)</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Study (1B)</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Work</td>
</tr>
<tr>
<td>2</td>
<td>Fall</td>
<td>Study (2A)</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Study (2B)</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Work</td>
</tr>
<tr>
<td>3</td>
<td>Fall</td>
<td>Work</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Work</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Study (3A)</td>
</tr>
<tr>
<td>4</td>
<td>Fall</td>
<td>Study (3B)</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Work</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Work</td>
</tr>
<tr>
<td>5</td>
<td>Fall</td>
<td>Study (4A)</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Study (4B)</td>
</tr>
</tbody>
</table>

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

**BEYOND THE CLASSROOM**

As a Waterloo Engineer, 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!

[www.uwaterloo.ca/engineering-student-ambassadors](http://www.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**

Our program lets you specialize based on your interests:
- Nano-engineered materials
- Nano-electronics
- Nano-instrumentation
- Nano-biosystems

**EMPLOYMENT OPPORTUNITIES**

- Nanoscale therapeutics development
- Implantable device design
- Academic research
- Biosensor design
- Environmental purification and cleanup
- Nanomaterial development

**FACULTY OF ENGINEERING**

UNDERGRADUATE ADMISSIONS

enginfo@uwaterloo.ca

[www.uwaterloo.ca/UWaterlooEngineering](http://www.uwaterloo.ca/UWaterlooEngineering)  
[@WaterlooEng](https://twitter.com/WaterlooEng)  
[@UWaterlooEng](https://www.instagram.com/UWaterlooEng)

**UNIVERSITY OF WATERLOO**

200 UNIVERSITY AVE. W., WATERLOO, ON, CANADA N2L 3G1

[www.uwaterloo.ca/future-students](http://www.uwaterloo.ca/future-students)