

CHEMICAL ENGINEERING

Life. Energy. Environment. Global solutions through chemistry. While population growth, economic development, and changing demographics create a higher demand for energy, food, healthcare, and more, climate emergency reinforces the need to use resources wisely. Production of everything – from food to factories to pharmaceuticals – must be efficient and sustainable. Chemical engineers solve these complex and important problems while considering safety, sustainability, and cost from many perspectives.

Learn about life science and material science, discover how the structure and function of materials are related, and analyze and design manufacturing processes. Get first-hand experience in state-of-the-art labs, through co-op jobs and during your capstone design project. Join the discipline best suited to address the many complex problems our world faces. Whether you're creating the next generation of life-saving pharmaceuticals, cybernetic systems, or alternative energy, you'll be part of the solution as a chemical engineer.

uwaterloo.ca/chemical-engineering

99% of Chemical Engineering students found co-op jobs in the Fall 2021 term

YOUR FIRST YEAR

FIRST TERM

- > Chemical Engineering Concepts 1
- > Chemical Engineering Design Studio 1
- > Chemistry
- > Linear Algebra
- > Calculus 1
- > Computer Literacy and Programming

SECOND TERM

- > Chemical Engineering Concepts 2
- > Chemical Engineering Design Studio 2
- > Mechanics
- > Engineering Biology
- > Calculus 2
- > Communication Skills Elective

KICK-START YOUR IDEAS – EXVIVO LABS

We provide the support you need to bring your ideas to life. You'll have access to well-equipped maker spaces, entrepreneurship courses, mentorship, and vast funding opportunities to help launch your venture!

Chemical Engineering student Eric Blondeel co-founded ExVivo Labs, a company that is revolutionizing allergy testing. With help from the Velocity Fund, Eric and his co-founder Moufeed Kaddoura won the financial resources to take their business to the next level.

CO-OP

Waterloo offers the

WORLD'S LARGEST CO-OP PROGRAM



CO-OP AT WATERLOO = REAL WORLD EXPERIENCE

Here's your unrivalled opportunity to gain relevant, paid work experience before you graduate. 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.

Chemical Engineering has two co-op sequences you can choose from: Stream 4 and Stream 8.

STREAM 4 AND 8 STUDY AND CO-OP SEQUENCES

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

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!

uwaterloo.ca/engineering-student-ambassadors

OUT IN THE WORLD

Chemical engineering is involved in almost every product you know. As a chemical engineer, you could build the batteries of the future, tackle climate crisis, and develop new energy sources.

With the knowledge to design cleaner and more effective products, and optimize the processes used to make them, you have the power to make the world a better place for everyone.

68%

of Chemical Engineering students graduate with a specialization

SPECIALIZATIONS AVAILABLE

Designated specializations appear on your degree and are earned by completing the required advanced technical electives:

1. Energy and Environmental Systems and Processes
2. Materials and Manufacturing Processes
3. Chemical Process Modelling Optimization and Control



SCAN TO WATCH A VIDEO OF CHEMICAL ENGINEERING LABS

EMPLOYMENT OPPORTUNITIES

- > Pharmaceutical manufacturing
- > Clean energy development
- > Food processing
- > Consumer goods manufacturing
- > Environmental protection and remediation
- > Commodity and specialty chemical process industries
- > Automotive and aviation industries

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