WORK HARD, PLAY HARD
Getting involved is what makes Zahra’s student experience unforgettable.

She’s doing it all: from testing theory in the lab and building essential components on a Formula One design team to speaking at events and inspiring future engineers and women in STEM. For Zahra, a little bit of good old-fashioned elbow grease goes a long way.

Challenge the status quo, collaborate, innovate, and learn to create. You might just change the world.

Waterloo combines North America’s best engineering and architecture programs with a hands-on, immersive learning experience that will take you beyond the classroom.

You’ll gain valuable work experience in our world-renowned co-op program, develop your skills in state-of-the-art facilities using real-world processes and technology, and learn from cutting-edge startups in the heart of Canada’s most entrepreneurial region.

By graduation, you’ll be creating the technologies of the future.
BEYOND IDEAS

Waterloo Engineering is the epicentre of technology talent. We’re a global leader in engineering education and research, attracting some of the most intelligent and collaborative minds in the world, from faculty members to students like you. With a strong foundation built on innovation and co-op education, our students are sought-after by renowned technology and engineering companies.

YOUR FIRST YEAR

DIRECT ENTRY
With our direct entry programs, you’ll be pursuing your passions from the beginning. You choose your specialty when you apply, allowing you to gain tailored knowledge and a robust, field-specific skill set from day one. In first year you’ll expand your learnings in math and science, while diving into the elements unique to the type of engineer you’ll become.

COHORTS
We’re Canada’s largest Faculty of Engineering, but our class sizes – or cohorts – never exceed 150 students. From your first day of class, you’ll share all required courses with your program cohort and build unbeatable friendships. They may even lead to future business ventures.

A TOP 50
Engineering School in the world
(QS World University Rankings 2020)

#1
in Canada for most undergraduate programs producing startup founders
(Pitchbook Universities 2019)

GET ADVICE FROM EXPERIENCED PROS
The FirstYear Engineering Office is your one-stop shop for both academic and personal support – from study schedules to counselling services.

BROADEN YOUR STUDIES

RESEARCH OPPORTUNITIES
Are you driven by unanswered questions and passionate about new discoveries? Dive deeper and pursue research with some of our leading experts. With both full-time (Undergraduate Student Research Award during a co-op term) and part-time (Undergraduate Research Assistantship during an academic term) opportunities, you can even be paid for your work while you study.

INTERNATIONAL OPPORTUNITIES
Take part in Canada’s largest engineering exchange program. Expand your horizons and learn from other cultures by taking advantage of more than 80 exchange opportunities in 27 countries.

uwaterloo.ca/engineering/international

GRADUATE STUDIES: YOUR PROFESSIONAL EDGE
At Waterloo, you can tap into the world of graduate studies and speed up your academic career with the Accelerated Master’s program. You’ll take graduate-level courses and gain research experience before finishing your bachelor’s degree! Plus, you’ll shorten the time spent earning a master’s degree by up to a year. Your dedication will impress employers and give you a greater depth of knowledge within a specialized field.

A CULTURE OF INNOVATION

Waterloo Engineers are known for launching top technology ventures across the globe. And our policies, programs, funding opportunities, and culture all help support these innovators throughout their entire journey.

CAPSTONE DESIGN
Capstone Design is the culmination of the undergraduate student experience. Supported by numerous financial awards, these final year design projects (FYDP) require student teams to conceptualize and design a project related to their chosen discipline. Capstone also challenges student teams to push their own boundaries while applying the knowledge and skills learned in the classroom and on co-op work terms.

YOUR WORK, YOUR PROPERTY
100% of the ideas developed at Waterloo are owned by their creators.
CO-OP: EARN AS YOU LEARN

100% of engineering and architecture students are in co-op.

The jobs you complete through co-op will put you on the fast track to a great career after graduation. You’ll be able to try a variety of roles in different industries or, if you’ve already got a specific field in mind, you can focus your skills there and build expertise over multiple work terms – the experience is what you make it!

YOUR FIRST JOB
Presenting your knowledge and skills to an employer is an art. That’s why we created the Co-op Fundamentals course. Before you jump into the hiring process, you’ll receive guidance on résumés, interviews, and our WaterlooWorks employment system.

CO-OP FOR ENTREPRENEURS

ENTERPRISE CO-OP (E CO-OP)
E Co-op is exclusively offered at Engineering’s Conrad School of Entrepreneurship and Business. The program lets entrepreneurial students use a work term to start their own business. You’ll gain full access to the University’s entrepreneurial ecosystem – including mentors, awards, and networking opportunities – while earning a co-op credit.

BRIDGING ENTREPRENEURS TO STUDENTS (BETS)
This specialized co-op program – also offered through Conrad – brings together first-year co-op students and early-stage startups. BETS students have one week of focused workshops and seminar training, followed by three five-week startup placements, giving you valuable, transferable employment skills in diverse, emerging tech areas.

HOW CO-OP WORKS
Alternate between school and work terms, supplementing academic study with high-quality, paid work. Your co-op schedule depends on your program. Here are the two primary Engineering streams, or co-op sequences:

GAIN 2 YEARS
of work experience before you even graduate

91.8%
of graduates were employed within six months of graduation

$8,400–$19,200 CAD
average earnings domestically per term. Earnings over six co-op terms will help pay for tuition, books, housing, and everything in between

8.36 OUT OF 10
Engineering students rating for their work term experience based on the end of term Rate my Work Term survey (Winter 2017–Fall 2019)

BEYOND BORDERS
While on co-op, Bryn had the opportunity to work in the environment department at a remote mine in northern Nunavut over their summer season. During this placement, she worked on several programs that monitored the diverse and unique impacts of mining activities on the environment. Due to the location’s isolated nature, her daily commute often required using helicopters or snowmobiles. After graduating, Bryn returned to this position for another summer season, looking forward to applying knowledge gained from her previous co-op.

LEARN TO NAVIGATE
THE JOB MARKET
BEFORE YOU ENTER IT
Grow your professional network, gain valuable experience, and move seamlessly into your career. Many co-op work terms result in immediate, full-time job opportunities after graduation. Many programs have unique variations on these standard streams. To see detailed co-op streams view online.

BRYN
ENVIRONMENTAL ENGINEERING GRADUATE ’20

LEARN TO NAVIGATE
THE JOB MARKET
BEFORE YOU ENTER IT
Grow your professional network, gain valuable experience, and move seamlessly into your career. Many co-op work terms result in immediate, full-time job opportunities after graduation. Many programs have unique variations on these standard streams. To see detailed co-op streams view online.

uwaterloo.ca/engineering/streams

NOTE: The School of Architecture program has its own distinct streaming system.
Artificial Intelligence (AI) is changing our lives, transforming everything from how we communicate and interact to how we predict natural disasters and treat diseases. The future is now, and it’s everywhere.

By equipping you with these in-demand, valuable technical skills, our new AI degree option helps give you an edge in virtually any industry.

BRINGING THE REAL WORLD INTO THE CLASSROOM

Early experiential education is what makes Waterloo Engineering extraordinary. From first year to fourth year you’ll be given real-world problems inside the classroom, providing you with practical skills and developing your critical engineering judgment. Engineering Design Days, Teamwork Training, and stand-alone activities are uniquely integrated into the curriculum across all disciplines and throughout your entire education.

ENGINEERING OPTIONS

Expand your perspective and gain unique expertise in another subject or career area. Where specializations are offered based on your specific engineering discipline, these options are open to all students within the Faculty. Options can be completed using your electives.

- Artificial Intelligence
- Biomechanics
- Entrepreneurship
- Environmental Engineering
- International Studies in Engineering
- Life Sciences
- Management Sciences
- Mechatronics
- Physical Sciences
- Society, Technology, and Values
- Statistics

MAKE IT OFFICIAL

Engineering options and program-specific specializations are recognized directly on your diploma upon graduation and help highlight your technical expertise to potential employers!
YOUR SPACE TO CREATE

Design, prototype, and develop.

THE IDEAS CLINIC
At the core of engineering is curiosity about the world around us, how the things around us work, and, most importantly, how we can make them better.
In the IDEAS Clinic, you’ll be putting your creativity to the test solving real-world problems from the very start of your education at Waterloo. Our one-of-a-kind Engineering IDEAS Clinic will give you hands-on experience through group activities. You’ll reverse-engineer engines, construct a brushless DC motor from scratch, and develop biomaterials.
This is the place to express your ideas, sharpen your communication skills, and build more challenging devices and products throughout your education. These activities will help you understand the fundamentals of engineering in new ways, while giving you the opportunity to bring your visions to life.

DESIGN TEAM GARAGES
The Sedra Student Design Centre has dedicated garages for our student design teams and their projects. You’ll be able to join a student team as early as your first week. Quite literally, the sky is the limit with any team you choose. You could be doing everything from launching rockets at international competitions to racing a concrete tobogan, or a Formula One car.
Student-led teams span every aspect of engineering design and encourage cross-discipline participation, so you’ll get to work with engineering students from different programs and even students from other faculties. You’ll get a real-world team experience that not only furthers your education, but also becomes a highlight of your Waterloo experience.

LABS, MACHINE SHOPS, AND STUDIOS
Tools are an engineer’s best friend! You’ll have access to all of the engineering resources and equipment you could ever need, including design studios, sanding bays, paint rooms, laser cutters, computer-aided design workstations, electronics assembly and test spaces, 3D-printing machines, meeting rooms, and the various engineering machine shops.

uwaterloo.ca/engineering-ideas-clinic

uwaterloo.ca/student-design-centre
GET IN ON THE ACTION

Believe us, you’ll do more than study!

Waterloo Engineering has a vibrant community of students who love to work hard and play harder. Sing with an a cappella group, join a varsity team, become an Engineering ambassador – whatever your interests, you’ll be in good company.

CANADA’S MOST ACTIVE STUDENT SOCIETY

The Waterloo Engineering Society (EngSoc) aims to promote a positive undergraduate experience. EngSoc will represent your interests and opinions as well as provide academic, professional, and social support. In your first week of classes, you’ll have access to EngSoc’s résumé critiques and mock interviews from upper-year students. Throughout your time here, you’ll also discover many EngSoc traditions: acting in theatre productions, hosting charity events, proudly wearing your coveralls, and celebrating the EngSoc mascot – The Tool. There are endless ways to get involved.

A SUPPORTIVE COMMUNITY

The student-led and student-supported Waterloo Engineering Endowment Foundation (WEEF) provides funding each term to enhance lab equipment, purchase computer upgrades and other academic tools, and support student design teams. The First Year Office also hires upper-year teaching assistants who dedicate a work term to teaching first-year students. They’ll be on hand to help you with projects and assignments.

AN EMPHASIS ON DIVERSITY

At Waterloo, we are committed to improving equity, inclusivity and diversity on campus. Waterloo’s Women in Engineering (WiE) committee aims to encourage and promote an environment where women can pursue scientific work and study. We’re also home to the only WiE Living-Learning Community in the country, an Engineering residence located at St. Paul’s University College for women-identified first-year students. St. Paul’s is also home to the Waterloo Indigenous Student Centre. The Centre facilitates the sharing of Indigenous knowledge and provides culturally relevant information and support services for the Waterloo community. There are also many student groups and peer support programs on campus that celebrate diversity. For example, EngiQueers is a drop-in, anonymous chapter of the not-for-profit EngiQueers Canada focused on connecting LGBTQIA+ students in Engineering. RAISE (Racial Advocacy for Inclusion, Solidarity, and Equity) aims to address and dismantle systems of xenophobia and discrimination on campus.

20+ student design teams with projects from solar cars to synthetic biology

16% of all varsity athletes are engineering students

uwaterloo.ca/engineering/student-life
THE SCIENCE OF DESIGN
Combine robust technical engineering and architectural thinking with a unique focus on communication, collaboration, and design. As an architectural engineer, you’ll be equipped with the necessary tools to address some of society’s most pressing issues, such as the impact of design choices on a building’s energy efficiency and carbon footprint, and the challenge of what to do with our aging buildings.

Graduates of this program will be full-fledged engineers, able to uniquely collaborate with architects and other key stakeholders on building projects. This program provides students with knowledge encompassing the whole scope of building design, construction, assessment, and refurbishment, plus the communication skills needed for leadership in the construction industry.

A PERFECT HYBRID
This program combines world-class co-op, design-driven studio courses each term, and a year of study at the University of Waterloo’s School of Architecture in Cambridge.

CIVIL
DEVELOP SOLUTIONS FOR A BETTER TOMORROW
Population growth, climate change, and aging infrastructure are some of the grand challenges that today’s civil engineers tackle in the quest for smart cities and a sustainable future. As a civil engineer, you’ll lead the creation, maintenance, and management of the large-scale infrastructure we all depend upon.

This is a degree with lots of flexibility; you’ll have access to a wide range of electives, allowing you to customize your education to suit your interests and career goals. By the end of your degree, you’ll be ready to design, analyze, construct, and manage everything from airports and skyscrapers to bridges, transportation networks, municipal water systems, and more.

AREAS OF STUDY
- Geotechnical engineering
- Construction engineering and management
- Structural engineering
- Transportation engineering
- Water resources engineering

CAREER POSSIBILITIES
- Construction engineering and management for infrastructure projects
- Design of buildings, bridges and underground networks
- Planning and implementation of public transportation systems
- Design of municipal water networks

uwaterloo.ca/architectural-engineering
uwaterloo.ca/cee/civil-engineering
CLOSE TO HOME
You won’t have to travel far to put your knowledge to work in the real world. With the largest group of environmental engineering professors in Canada and several unique bodies of water close at hand, you’ll be able to learn from the best and quickly build your skills. Rebeca argues this hands-on experience is the best part of the program. “In the labs, we are able to practice the concepts we have learned in class – this aspect is what helps us understand how to operate in the real world.”

ENVIRONMENTAL

IMPACT ON A GLOBAL SCALE
As climate change and resource scarcity accelerate at an alarming rate, it’s critical that we design solutions that protect the planet we all call home. In this program, you’ll gain the skills needed to design smarter water treatment and distribution, clean contaminated soil, or even prevent E. coli outbreaks. As an environmental engineer, you can help combat the unique and critical environmental challenges facing our natural and built structures.

The demand for cleaner, more resource-efficient production and consumption is growing faster than ever. At Waterloo, you can nurture your passion for sustainability, mathematics, and science and learn how to apply them to our built environment, water systems, atmosphere, and energy infrastructure. You’ll develop the robust skills needed to lead and innovate smart environmental design in any sector.

uwaterloo.ca/cee/environmental-engineering

AREAS OF STUDY
- Environmental assessment and modeling
- Pollutant remediation and mitigation
- Waste and water treatment
- Environmental hydrology
- Environmental energy systems
- Air quality
- Greenhouse gas emissions modeling

CAREER POSSIBILITIES
- Design and management of water, air, and land treatment processes
- Protection and revitalization of ecosystems
- Public health engineering
- Industrial sustainability and compliance

GEOHAZARD INVESTIGATION
The chance to get outdoors and learn through hands-on field trips is one of the highlights of the Geological Engineering program. Trips can range from Northern Ontario to exotic destinations like Lake Palcacocha in the Peruvian Andes. Due to climate change, this glacial lake has now become a geohazard. On this trip, students investigated the impact and risks that a potential outburst would have on the nearby city of Huaraz.

uwaterloo.ca/cee/geological-engineering

AREAS OF STUDY
- Geohazards
- Geology
- Geophysics
- Geotechnical Engineering
- Hydrogeology

CAREER POSSIBILITIES
- Designing sustainable mines for critical materials
- Resource exploration and risk management
- Earthquake and landslide risk assessment

GEOLOGICAL
THE WORLD IS YOUR OFFICE
From some of the farthest corners of the Earth, to the most tech-savvy environments, Geological Engineering offers adventure and the ability to make a difference. This program merges geoscience with innovative design to guide humanity’s interaction with Earth materials and Earth system processes. You’ll engineer smart and sustainable solutions for natural hazards, infrastructure design, and natural resource development, all while incorporating the latest innovations including integrated sensor technology, artificial intelligence for analyzing complex environmental data, and high-resolution satellite imagery to mitigate natural disasters.

Don’t want to be stuck at a desk all day? You’ll have the opportunity to examine geological processes first-hand through extensive field courses. Our experienced graduates are in demand in the fields of natural resource exploration, infrastructure, energy, natural disasters, and environmental assessment.

uwaterloo.ca/cee/geological-engineering

AREAS OF STUDY
- Geohazards
- Geology
- Geophysics
- Geotechnical Engineering
- Hydrogeology

CAREER POSSIBILITIES
- Designing sustainable mines for critical materials
- Resource exploration and risk management
- Earthquake and landslide risk assessment

LAKE PALCACOCHA, PERU
STUDENTS IN MAY 2017

GEOHAZARD INVESTIGATION

DOUBLE THE OPPORTUNITY!
Geological Engineering grads can qualify for both the Professional Engineer (P.Eng.) and Geoscientist (P.Geo.) designations.
As a Chemical Engineering student, you’ll develop a foundation in physics, chemistry, biology, and math. Through specialized engineering courses, you’ll discover how to transform raw materials into useful products, conserve and convert energy, design and control complex physical and chemical processes, and more. You’ll gain the in-demand skills needed to solve urgent problems in energy, the environment, and health care.

Through our world-class co-op program, you’ll have the opportunity to apply your knowledge in a wide range of industries, including those that deal with fine chemicals, pharmaceuticals, medical equipment, alternative energy, advanced materials and manufacturing, food production, and consumer products.
EVERYWHERE AND ANYWHERE
Our modern world is built on electricity – learn to harness the power of it to create the next generation of electronics, sensors, and information networks. In the Electrical Engineering program, you can choose to specialize or gain experience in a range of fields including power generation, hybrid cars, automation and robotics, radio-frequency tracking systems, telecommunications devices and circuits, and green energy. You’ll learn from leading professors and get more hands-on experience in state-of-the-art labs than any other engineering program. By graduation, you’ll be armed with real industry knowledge and be ready to jump into a challenging, in-demand, and rewarding career.

uwaterloo.ca/ece/electrical-engineering-undergrad

DISCOVER YOUR PASSION
With the largest group of electrical engineering professors in Canada, you’ll have more upper-year electives to choose from.

CREATE AND MANAGE THE LATEST TECH
Become an expert in computer hardware-software interactions and create the computer systems that meet real-world performance needs. At Waterloo, you’ll have access to multimillion-dollar labs that help you gain experience with cutting-edge technologies, such as embedded systems and wireless technology. Thanks to a focus on design and a wide variety of upper-year electives, you can apply your computer engineering knowledge to any industry relying on digital systems: enterprise software, automotive, aerospace, automation and robotics, networks and databases, health care, and security.

uwaterloo.ca/ece/computer-engineering-undergrad

AREAS OF STUDY
- Control and robotics
- Digital communication systems
- Electronic devices, circuits, and systems
- Energy distribution, motors/generators, power electronics, and energy marketing
- Microwave (radio frequency) or photonic devices and systems
- Networks and distributed computing
- Signal processing
- Computer architectures and embedded systems
- Control and robotics
- Networks and distributed computing
- Signal processing and computational intelligence
- Software design and architecture
- Software security and embedded software

CAREER POSSIBILITIES
- Design and fabrication of CPUs and GPUs
- Creation of communications and wireless devices and networks
- Design and maintenance of energy distribution systems
- Development of medical and biochemical sensors and imaging systems
- Design of embedded systems
- Design of computer architecture
- Creation of telecommunications devices
- Development and analysis of application and embedded software
SOLVE REAL-WORLD PROBLEMS USING ALGORITHMS

Use computer programming and engineering problem-solving to create usable, reliable, and efficient software. You’ll develop in-depth technical skills in computer science while learning the fundamentals of computer hardware, giving you the ability to bridge the gap between people and machines through programming.

You’ll learn how to develop software systems that ensure the reliability, performance, and usability demanded by today’s industrial and business applications. You’ll understand the importance of identifying and meeting user needs and optimizing a user’s experience. As an added bonus, our program’s focus on teamwork and collaborative learning will enhance your communication, business, and reasoning skills, preparing you for the workforce you’ll encounter in co-op and after graduation.

THE BEST OF BOTH WORLDS

Software Engineering benefits from world-renowned expertise in our Department of Electrical and Computer Engineering and in Waterloo’s David R. Cheriton School of Computer Science.

CAREER POSSIBILITIES

Design of Internet-scale software systems
Development of programming tools
Development and analysis of application software
Software consulting

MANAGEMENT

ANALYTICS AND ENGINEERING FOR OPTIMIZED PERFORMANCE

In Canada’s first Management Engineering program, you’ll learn to use industrial engineering principles, advanced analytics, math, and computer programming to optimize and improve processes in any organization. You’ll gain the knowledge and skills to design and implement solutions to complex technical and operational problems.

The program’s unique combination of knowledge in mathematical modelling, software engineering, and behavioural science will prepare you for an exciting career in a wide variety of industries, including software, finance, supply chain, logistics, manufacturing, and health care.

AREAS OF STUDY

- Big data analytics
- Operations management and optimization
- Logistics and supply-chain management
- Software and user experience (UX)
- People, organizations, and technology

CAREER POSSIBILITIES

Management consultant
Business analyst
Industrial engineer
Project and product manager
Data scientist

THE DREAM TEAM

In Management Engineering, you’ll learn to draw insights from big data. In her co-op position at Tile, Pallavi worked in a cross-functional team and used data analytics to determine optimal app features and settings to enhance product functionality.

uwaterloo.ca/software-engineering

uwaterloo.ca/management-engineering

PALLAVI
GRADUATE ‘19

THE DREAM TEAM

In Management Engineering, you’ll learn to draw insights from big data. In her co-op position at Tile, Pallavi worked in a cross-functional team and used data analytics to determine optimal app features and settings to enhance product functionality.

uwaterloo.ca/software-engineering

uwaterloo.ca/management-engineering

PALLAVI
GRADUATE ‘19
MECHANICAL SYSTEMS THAT IMPROVE THE WORLD

In the Mechanical Engineering program, you’ll get a hands-on experience from the beginning, and become a skilled problem solver and mechanical system expert ready to build the technologies that improve society. You’ll learn and use a broad, multidisciplinary set of skills – in areas such as control, materials, solid mechanics, and fluid and energy systems – while considering the impact of your work on the environment, public health, and available resources. Mechanical engineering is a flexible program, setting you up for endless career possibilities.

uwaterloo.ca/mme/mechanical-engineering-undergrad

AREAS OF STUDY
- Fluid mechanics
- Machine design and solid mechanics
- Materials engineering and processing
- Automation and control
- Thermal engineering

CAREER POSSIBILITIES
- Manufacturing and next-generation material design
- Design of next-generation renewable energy systems
- Engineering of automotive and aerospace systems
- Development of robotic and biomechanical systems

MECHATRONICS

ELECTRO-MECHANICAL DESIGNERS

Use a multidisciplinary and systems-based approach to develop the “intelligent” electromechanical devices and integrated systems present in our daily lives – including smartphones, 3D printers, satellite systems, intelligent vehicle systems, and wearable devices. In Mechatronics Engineering, you’ll combine the powerful elements of machines, electronics, machine learning, and software. You’ll learn in the classroom, in hands-on labs, and during co-op work terms. Multi-faceted mechatronics grads are prepared for the integrated nature of real-world engineering. Employers love it!

uwaterloo.ca/mme/mechatronics-engineering-undergrad

CAREER POSSIBILITIES
- Design and implementation of robotic-control systems
- Design and creation of wearable devices
- Development of next-generation additive manufacturing (3D printing) systems
- Design and development of electric, hybrid, and autonomous vehicles

My favourite part about Waterloo Engineering was co-op. It’s still unbelievable to me that I got to travel the world while earning my undergraduate degree. Even better, I got paid to work around the world and used that money to fund my degree. The University of Waterloo gave me the opportunity to build robots in Germany with Siemens and develop new programs in Seattle with Microsoft. It was an experience that’s hard to beat.

CRAIG, GRADUATE, ’18
NATIONAL RECOGNITION

While on co-op at Harvard University’s Wyss Institute, Nathan helped develop a novel bio-ink that can be used to decrease the amount of time it takes to 3D-print kidney tissues. In addition to the on-campus recognition he received for his work, Nathan won the Co-operative Education & Work-Integrated Learning Canada’s (CEWIL’s) National Co-op Student of the Year Award.

ENGINEERING INNOVATIVE SOLUTIONS FOR HEALTH

Combine biology with applied sciences and engineering to solve health-related problems and develop tools for medical diagnosis, treatment, and prevention. In the Biomedical Engineering program, you’ll develop knowledge in design, physiology, biomechanics, and instrumentation. Hands-on labs will give you experience modelling and designing biomedical systems. You’ll have a broad base of knowledge, helping you communicate across the many areas of expertise used in this field. By graduation, you’ll be ready to design and build tomorrow’s innovative technologies and engineering solutions – from new diabetic monitoring and cancer-imaging systems to the latest sporting equipment.

uwaterloo.ca/biomedical-engineering

AREAS OF STUDY

- Biomedical signals and imaging
- Biomechanics
- Biomedical devices

CAREER POSSIBILITIES

- Biomedical data analysis
- Research and development of medical devices
- Design of sporting equipment
- Development of pathology imaging systems

SYSTEMS DESIGN

UNLIMITED INNOVATION OPPORTUNITIES

Everything on our planet interacts—transportation networks, energy transfer, and biological systems—but how do they work together? In Systems Design Engineering, you’ll learn the fundamentals in electrical, mechanical, and software engineering with an overarching focus on engineering design and systems-driven thinking. You’ll learn how to develop solutions from small-scale to large-scale, multidisciplinary problems, putting you on the fast track to a career filled with diverse opportunities. By graduation, you’ll be ready to develop comprehensive, groundbreaking solutions for the toughest engineering problems; think everything from health-care management to advanced cyber-physical-security and energy systems.

uwaterloo.ca/systems-design-engineering

AREAS OF STUDY

- Human systems engineering
- Intelligent systems engineering
- Societal and environmental systems
- Systems modelling and analysis

CAREER POSSIBILITIES

- Design and creation of wearable tech
- Product design of medical devices
- Machine learning and artificial intelligence
- Software design and systems development

PURSUE YOUR ENGINEERING PASSIONS

Take advantage of System Design Engineering’s dedicated Maker Lab and Design Equipment Nexus, coupled with a wide range of technical electives to nurture your specific engineering interests.
SCHOOL OF ARCHITECTURE

DESIGNING OUR WORLD
At Waterloo’s internationally renowned School of Architecture, you’ll design at all scales: from small prototypes to high-rises. You’ll learn about architectural design, structures, materials, and sustainable practices and technologies. Waterloo Architecture is located in a stunning location on Ontario’s Grand River in the historic centre of Cambridge, a 35-minute drive from Waterloo’s main campus. The building has all the tools to inspire you: design studios, computer labs, a library, and a fabrication lab and workshop. Top students choose our program for its integrated design curriculum, strong student body, award-winning professors, and international co-op experiences, as well as its unique cultural history stream and campus in Rome, Italy.

LOCAL AND GLOBAL ENGAGEMENT
You can work for distinguished international firms as early as second year, immerse yourself in history when partaking in the fourth-year Rome program, and learn about architects’ key environmental roles both locally and globally.

uwaterloo.ca/architecture

AREAS OF STUDY
- Architectural design
- Cultural history and theory
- Technology and environment
- Urbanism and landscape
- Visual and digital media

CAREER POSSIBILITIES
- Architecture and urban design
- Construction industry and restoration
- World heritage and sustainable development
- Landscape and regional planning

CONRAD SCHOOL OF ENTREPRENEURSHIP AND BUSINESS

LEARN ENTREPRENEURSHIP
Entrepreneurs aren’t born – many of them are made at the Conrad School of Entrepreneurship and Business. At the Conrad School you can learn the vital lessons of entrepreneurship and business with our specialized courses and programs designed specifically for engineering students. Our programs build upon Waterloo’s reputation for excellence in experiential education to create high-impact learning experiences.

MORE TOOLS TO SUCCEED
Whether it’s entrepreneurship or intrapreneurship, you will add valuable skills that are immediately applicable for startups or co-op terms. Plus, we are the only engineering school in Canada with its own embedded business school, so you have a distinct advantage if you want to start a venture or become a strategic thinker and decision-maker in a business.

PROGRAMS AND COURSES
- Enterprise Co-op
- Entrepreneurship Options in Engineering
- Bridging Entrepreneurs to Students (BETS)
- Business, Entrepreneurship, and Technology (BET) courses

YOUR PATH TO A MASTER’S
The Conrad School offers an accelerated one-year Master of Business, Entrepreneurship and Technology (MBET) degree, as well as a part-time three-year MBET option to ensure you’re at the forefront of entrepreneurial learning.
**How to Apply**

1. Apply online and pay fees by February 1, 2021 for Engineering through the Ontario Universities Application Centre (OUAC).
2. Watch for an acknowledgement email with your next steps and Waterloo ID number.
4. Accept your Offer of Admission through uwaterloo.ca/engineering/applying.
5. Watch for an acknowledgement email with your next steps.
6. Complete the Online Video Interview.

**Admission Requirements**

### Architecture

- **Required Subjects**: Chemistry, Physics, Mathematics
- **Recommended Subjects**: English, Advanced Functions

### Engineering Programs

- **Required Subjects**: Calculus, English, Physics
- **Recommended Subjects**: Chemistry, Advanced Functions, Mathematics

### Minimum Grades in Each Course

- 75% across 4 with minimum total of 32 (excluding Diploma points)

### Admissions Average

<table>
<thead>
<tr>
<th>Program</th>
<th>Grade Range</th>
<th>Probability of Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical, Software</td>
<td>85-89</td>
<td>4%</td>
</tr>
<tr>
<td>Computer, Electrical, Mechanical, Mechatronics, Systems Design</td>
<td>90-94</td>
<td>59%</td>
</tr>
<tr>
<td>Architectural, Chemical, Civil, Environmental, Geological, Management, Nanotechnology</td>
<td>85-89</td>
<td>25%</td>
</tr>
</tbody>
</table>

**English Language Requirements**

If English is not your first language and your four most recent years of full-time education have not been taught in English, you’ll be required to submit a test of English language proficiency.

### English Language Scores

<table>
<thead>
<tr>
<th>Program</th>
<th>TOEFL IELTS</th>
<th>CAEL</th>
<th>PTE Academic</th>
</tr>
</thead>
<tbody>
<tr>
<td>90+ writing, 25 speaking</td>
<td>6.5 overall, 6.5 writing</td>
<td>70 overall, 60 per band, 60 speaking</td>
<td>63 overall, 61 writing, 61 speaking</td>
</tr>
<tr>
<td>85-89</td>
<td>6.0-6.5</td>
<td>65-69</td>
<td>59-62</td>
</tr>
<tr>
<td>90-94</td>
<td>7.0-7.5</td>
<td>70-74</td>
<td>66-70</td>
</tr>
<tr>
<td>95+</td>
<td>8.0+</td>
<td>75-80</td>
<td>71+</td>
</tr>
</tbody>
</table>

**Scholarships**

<table>
<thead>
<tr>
<th>Program</th>
<th>Amounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterloo entrance scholarships</td>
<td>$1,000 - $2,000</td>
</tr>
<tr>
<td>Engineering entrance scholarships</td>
<td>$1,000 - $9,000</td>
</tr>
</tbody>
</table>

**Telling Us More**

- **Are you an athlete or musician?** Do you have a passion for student council? Are you a tireless volunteer or have previous work experience? Tell us what makes you uniquely qualified to be a Waterloo engineer on the AIF.
- **Your extracurricular and other interests (high school, community, leadership, etc.)**

**Admission Information Form (AIF)**

The AIF is required for admission. If you have not yet completed your AIF, you can do so through the online video interview.

**Online Video Interview**

This is your chance to showcase your ability to respond to questions in an interview setting. After being given a short amount of time to prepare for two questions, you’ll have one chance to record each answer. The interview requires less than 30 minutes to complete. It’s optional for admission, but required for some scholarship considerations.

**Admission Averages**

- **Engineering Programs**
- **Grade Range**: 85-89 | 90-94 | 95+
- **Probability of Acceptance**: 4% | 25% | 82%

**Financing Your Education**

- **Programs**: Annual Expenses | Canadian Citizen or Permanent Resident | International
- **Architecture**: Books/supplies | $1,800 | $2,400
- **Engineering**: Books/supplies | $3,200 | $4,300

**What if I Repeat a Course?**

Repeating a course may result in a penalty of up to five per cent off your overall admission score. Seeing the material a second time will likely improve your grade, but it doesn’t help you prepare for university.

**What if I Take a Course Outside of Regular School?**

Results in courses taken outside regular day school may also be adjusted. This includes summer school, night school, and online courses. Reasons for taking courses outside of regular school must be indicated on the AIF.

**Can I Switch to Another Engineering Program Once I’m Admitted?**

Recent experience suggests that it is not likely to happen due to space limitations in most programs – even after first year. Different engineering programs have no obligation to take transfers, and many lack capacity to do so. We cannot guarantee that a program change will be possible, and in most cases it does not happen.

**English Language Score a Little Low?**

You may be eligible for admission through Waterloo’s Bridge to Academic Success in English (BASE) program or intensive summer iBASE program.

**Architectural Admission Processes and Timelines Differ**

Please refer to the School of Architecture website for detailed information.

For more information, visit uwaterloo.ca/architecture/future/undergraduate-students.
ACKNOWLEDGEMENT OF TRADITIONAL TERRITORY

We acknowledge that the University of Waterloo is located on the traditional territory of the Neutral, Anishnaabeg, and Haudenosaunee people. The University is situated on the Haldimand Tract, the land promised to the Six Nations that includes 10 kilometres on each side of the Grand River.