ideas start here®

engineering
shape the future

You're creative. You want to make a difference. And you've got the smarts to back it up.

Waterloo combines North America’s best engineering and architecture programs with hands-on learning that takes students beyond the classroom.
You’re creative. You want to make a difference. And you’ve got the smarts to back it up. Waterloo combines North America’s best engineering and architecture programs with hands-on learning that takes students beyond the classroom.

Gain work experience in the world’s largest co-op program. Get hands-on experience in state of the art facilities using real-world processes and technology. Learn from the latest startups in the heart of Canada’s most entrepreneurial region. By graduation, you’ll be creating technologies of the future.

Become a Waterloo Engineer. See your impact on the world.

faculty of engineering

Architecture » page 10
Biomedical » page 22
Chemical » page 14
Civil » page 11
Computer » page 17
Electrical » page 16
Environmental » page 12
Geological » page 13
Management » page 19
Mechanical » page 20
Mechatronics » page 21
Nanotechnology » page 15
Software » page 18
Systems Design » page 23
co-op: earn as you learn

100% of Waterloo Engineering and Architecture students are in co-op
Learn to navigate the job market before you enter it.
Gain important career contacts and experiences.
Move seamlessly into your career.

Benefit from the largest co-op program on the planet, with connections to over 6,300 employers.

$15,000 average earnings per term over 6 co-op terms to help pay for tuition, books, housing, or anything else you need.

1,400+ Waterloo Engineering students every year work abroad, taking international co-op jobs.

Build professional skills, including résumé writing, interviewing, presenting, and networking.

98% employment rate in 2015.

Gain up to 2 years of relevant experience before you graduate.

Count up to 1 year of your co-op experience toward your professional engineering licence.

Enterprise co-op (E Co-op)
E Co-op, exclusively offered at Waterloo Conrad Business, Entrepreneurship and Technology Centre, lets entrepreneurial students use a work term to start their own business. Gain full access to the University’s entrepreneurial ecosystem – including mentors, awards, and networking opportunities – while earning a co-op credit.

The Entrepreneurship Option
Gain fundamental knowledge in intellectual property, marketing, and financing while pursuing your Engineering degree. Offered by the Conrad Business, Entrepreneurship and Technology Centre, the Entrepreneurship Option provides electives in Venture Creation and Corporate Entrepreneurship, focused around an E Co-op or Capstone Design experience.

uwaterloo.ca/engineering/entrepreneurship
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 most popular Engineering streams, or co-op sequences, along with the Architecture co-op sequence.

<table>
<thead>
<tr>
<th>STREAM</th>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>YEAR 4</th>
<th>YEAR 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F W S</td>
<td>F W S</td>
<td>F W S</td>
<td>F W S</td>
<td>F W S</td>
</tr>
<tr>
<td>Stream 4</td>
<td>Study</td>
<td>Work</td>
<td>Study</td>
<td>Work</td>
<td>Study</td>
</tr>
<tr>
<td>Stream 8</td>
<td>Study</td>
<td>Study</td>
<td>Work</td>
<td>Study</td>
<td>Work</td>
</tr>
<tr>
<td>Architecture</td>
<td>Study</td>
<td>Study</td>
<td>Off</td>
<td>Study</td>
<td>Work</td>
</tr>
</tbody>
</table>

F = fall term (September to December); W = winter term (January to April); S = spring term (May to August)

WHAT STREAM IS MY PROGRAM?

Visit uwaterloo.ca/findoutmore/programs to see detailed co-op sequences.

Getting 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 JobMine employment system.

create your own experience

Shiping, an Electrical Engineering student, recognized early that choosing a variety of companies and roles during his co-op terms would allow him to get the most out of his co-op experience and best prepare him for his future after graduation. In his 6 co-op terms, he has worked at 5 different companies in 5 quite distinct roles.

Invaluable, worldwide work experience

“Some of my co-op jobs were in the Toronto area, so I was able to experience a commute to work every day. Others were in the San Francisco Bay Area, where I lived and worked in the heart of Silicon Valley. Some of my friends have had the opportunity to work in Asia or Europe for their co-op terms.”

Immediate opportunities after graduation

With a full-time job offer from his last co-op employer, a leading electronics company based in Silicon Valley, California, Shiping immediately begin his career upon graduation. “Many of my friends are doing the same thing - effectively jump-starting their careers after school and avoiding another round of job searching. Everyone seems to have a slightly different plan, but their participation in the co-op program has undeniably had a big impact in their action plans.”
JOIN ONE OF OUR 25+ STUDENT DESIGN TEAMS. PROJECTS RANGE FROM SNOWMOBILES TO ROCKETS AND SYNTHETIC BIOLOGY.

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 hard – sing with an a capella group, play on a varsity team, become a leader – whatever your interests, you’ll be in good company.

Canada’s most active student society
The Waterloo Engineering Society (EngSoc) represents your best interest, and offers endless ways to get involved. In your first week of classes, you’ll have access to EngSoc’s support with résumé critiques and mock interviews from upper-year students. Throughout your time at Waterloo, you’ll discover many EngSoc traditions as diverse as acting in theatre productions, hosting charity events, proudly wearing your coveralls, and celebrating the EngSoc mascot – The Tool.

A supportive community
The Waterloo Engineering Endowment Foundation (WEEF) collects donations each term to enhance lab equipment, purchase computer upgrades and other academic tools, and support student design teams. WEEF also hires upper-year teaching assistants, who dedicate a work term to teaching first-year students. They’ll be ready to guide you through projects and assignments!
your first year

Direct entry

Unlike most universities, you’ll choose your program when you apply. Direct entry lets you start tailoring your studies right away, giving you a head start to build valuable skills within your field. In first-year courses, you’ll expand your knowledge in math and science and dive into the elements specific to the type of engineer you want to 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 cohort, building unbeatable friendships. They may even become future business relationships!

financing your education

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>AMOUNTS</th>
<th>SEPARATE APPLICATION?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering and Architecture Co-op</td>
<td>All Waterloo Engineering students participate in co-op.</td>
<td>On average, $50,000 to $90,000 earnings over 6 work terms</td>
</tr>
<tr>
<td>Waterloo Entrance Scholarships</td>
<td>85-89.9%</td>
<td>$1,000</td>
</tr>
<tr>
<td></td>
<td>90-94.9%</td>
<td>$2,000</td>
</tr>
<tr>
<td></td>
<td>95%+</td>
<td>$2,000 Entrance Scholarship PLUS $1,500 International Experience Award AND/OR $1,500 Research Award*</td>
</tr>
<tr>
<td>Engineering EntranceScholarships</td>
<td>Demonstrated academic strength and Admissions Information Form (AIF) score</td>
<td>$1,000-$10,000</td>
</tr>
</tbody>
</table>

*International Experience and Research Awards are available in upper years, should you choose to claim them. Students must complete their first-year courses with an 80% average. The International Experience Award is only available to Canadian citizens or Permanent Residents.

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>EXPENSES</th>
<th>CANADIAN CITIZEN OR PERMANENT RESIDENT</th>
<th>INTERNATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>Tuition*</td>
<td>$8,800</td>
<td>$33,000</td>
</tr>
<tr>
<td></td>
<td>Books and supplies</td>
<td>$4,300</td>
<td>$4,300</td>
</tr>
<tr>
<td>Engineering</td>
<td>Tuition*</td>
<td>$13,400</td>
<td>$33,000</td>
</tr>
<tr>
<td></td>
<td>Books and supplies</td>
<td>$2,000</td>
<td>$2,000</td>
</tr>
</tbody>
</table>

*Additional costs include co-op fee ($658) and incidental fees ($900-$2,000).

Amounts shown are estimated averages based on 2016 figures. Exact amounts for 2016-2017 will be available in July 2016.
what’s the secret to your success?

It’s all in the exceptional experiences you will have from day one on campus. From our renowned co-op program that immerses you in relevant real-world work environments to North America’s largest student design centre, where 30+ student-led teams give you the opportunity to design, develop, build, and compete across the engineering spectrum – you’re always an active participant in your education.

It’s the combined momentum of these types of enhanced experiences – found only at Waterloo Engineering – that uniquely prepares you to make meaningful contributions to our world and enjoy a career with purpose.

a space to call your own

The Sedra Student Design Centre is dedicated to our student design teams and their projects. It’s 20,000 square feet of enhanced experiential education space under one roof. Join a student team as early as the first week of your education, or wait until you decide which award-winning team interests you the most. The choices are plentiful and each offer unique opportunities.

The student-led teams span every aspect of engineering and encourage cross-discipline participation. You’ll get a real-world team experience that not only furthers your education, it often becomes a highlight of your Waterloo experience.

You will have engineering resources and tools readily available – dedicated garages, sanding bay, paint room, CAD workstations, electronics assembly and test spaces, 3D print machines, meeting rooms, and easy access to our Engineering student machine shop.
yes, we have an entrepreneurial culture

Waterloo Engineering students and alumni are known for confidently launching world-class ventures. If you are interested, we can help you achieve your aspirations through our values, policies, entrepreneurship programs, curriculum and funding opportunities - all of which uniquely equip you for success.

Engineering Ideas Clinic™

You’ll be “engineering” from the very start of your education at Waterloo. The one-of-a-kind Engineering Ideas Clinic will give students hands-on experience through group activities. You’ll reverse-engineer everyday products such as coffeemakers and engines, build brushless DC motors and develop food-grade emulsions. Throughout your years at Waterloo, the Engineering Ideas Clinic will provide progressively more challenging opportunities to understand the essentials of engineering in a very real way.
broaden your studies

**Engineering Options**
Expand your perspective and gain a secondary emphasis in another subject or career area. Our list of engineering options can be completed using your electives, and options will be recognized on your diploma upon graduation.

- Biomechanics
- Computer engineering
- Entrepreneurship
- Environmental engineering
- International studies in engineering
- Life sciences
- Management sciences
- Mathematics
- Mechatronics
- Physical sciences
- Society, technology and values
- Software engineering
- Statistics
- Water resources

Enhance your degree with an option, minor, or concentration. Learn more at uwaterloo.ca/engineering/broadening-your-studies.

**Research opportunities**
Are you driven by unanswered questions and passionate about new discoveries? Go deeper in your studies and pursue research with some of our leading experts. With both full-time (Undergrad Student Research Award to be conducted on a co-op term) and part-time (Undergrad Research Assistantship to be conducted on an academic term) opportunities, you can even be paid for your work.

**International opportunities**
Take part in Canada’s largest engineering exchange program. Expand your horizons and learn from other cultures by taking advantage of 81 exchange opportunities in 30 countries. Find out more at uwaterloo.ca/engineering/international.

Fourth-year Architecture students will live and study in our Rome campus, the only permanent international facility maintained by a Canadian architecture school. uwaterloo.ca/architecture/rome.
ideas start here®

Waterloo Engineering attracts some of the brightest minds in the world. Our students come from the top of their classes, and our professors are involved in research that is changing the way we live. Being directly connected to business incubators and a startup culture, with many local companies founded by Engineering students and grads, has its perks too.

Grad studies = your professional edge

At Waterloo, you can tap into the world of grad 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 could shorten the time spent on 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.

YOUR WORK, YOUR PROPERTY

100% of your ideas developed at Waterloo are owned by their creators
architecture

Designing our world

At Waterloo’s internationally renowned School of Architecture, you’ll encounter design from day one. You’ll design buildings of all scales – from houses to high-rises. You’ll learn about the design of buildings, structures, materials, and technologies, each understood within larger cultural transformations in the world. Located in the historic centre of Galt in Cambridge, Ontario, just 24 kilometres from Waterloo’s main campus, Architecture’s beautiful historic building has all the tools to inspire you – design studios, computer labs, and a full-scale workshop. Top students choose our program for its integrated design studios, strong student body, award-winning professors, collaborative culture, 6 co-op terms, the Rome program, and its unique cultural history stream.

Concentrations
» Building technology
» Culture
» Design
» Environment
» Media and design technology

Career possibilities

Supervision on construction sites
Designing buildings
Inspection of historic buildings

UP TO 56% OF ARCHITECTURE CO-OP JOBS ARE OUTSIDE OF CANADA.
ONLY AT WATERLOO CAN YOU WORK FOR DISTINGUISHED INTERNATIONAL FIRMS AS EARLY AS SECOND YEAR!
Civil

Design and build a better tomorrow

Civil engineers play a central role in the creation of tomorrow’s society, improving public transit systems, designing green buildings, rehabilitating our aging infrastructure, and more. In one of Canada’s largest Civil Engineering programs, you can customize your studies. Professors with expertise spanning 5 different programs – including Earth Sciences and Architecture – will give you a broad perspective and offer a wide range of upper-year electives. By the end of your degree, you’ll be ready to design, analyze, construct, and manage everything from airports and skyscrapers to bridges, cellular network towers, transportation networks, and more.

Career possibilities

- Construction of entertainment facilities
- Rehabilitation of structures
- Implementation of public transportation systems

Concentrations

- Engineering mechanics
- Geotechnical engineering
- Project management
- Structural engineering
- Transportation engineering
- Urban and municipal systems
- Water resources engineering

During his third co-op job, Kevin spent his time analyzing climate data – something he never expected from an engineering job.

“I probably would not have considered this job to be an aspect of civil engineering before working there. It really gave me a deeper understanding.”
Having an in-depth perspective has changed the way Elliot has perceived the importance of individuals in his field.

It has definitely helped me appreciate what goes into all the environmental services, like drinking water treatment plants, wastewater treatment, and solid waste removal that we take for granted, and realize how important environmental engineers are in society.

Think global impact
With urbanization, population growth, and resource exploitation, the demand for environmentally conscious and technically savvy engineers continues to grow. Waterloo’s Environmental Engineering program will turn your passion for the environment, mathematics, and science into a fulfilling career. You’ll get a broad education in environmental sciences while developing engineering skills to manage, protect, and rehabilitate our natural environment. By graduation, you’ll have the expertise to clean our world of contaminants and prevent future environmental damage.

Concentrations
» Environmental modelling
» Hydrology
» River restoration
» Water and soil quality
» Water and wastewater engineering

Career possibilities
- Protection and revitalization of ecosystems
- Clean-up of water contaminants
- Implementation of water treatment processes
NOT SURE WHICH IS RIGHT FOR YOU?
EASILY SWITCH BETWEEN CIVIL, ENVIRONMENTAL, AND GEOLOGICAL ENGINEERING PROGRAMS IN FIRST YEAR.

DOUBLE THE OPPORTUNITY!
GEOLOGICAL ENGINEERING GRADS QUALIFY FOR BOTH THE PROFESSIONAL ENGINEERING (P.ENG.) AND GEOLOGIST (P.GEO.) DESIGNATIONS.

geological

Career possibilities

- Exploration planning for mines and quarries
- Hazard and risk assessment for earthquakes
- Design of subway tunnels

Hands-on exploration

Apply engineering concepts to understand and predict the behaviour of earth materials. In the Geological Engineering program, you’ll gain the skills to design safe and durable structures, locate and explore natural resources, and design strategies to mitigate environmental disasters. You’ll get outside the classroom more than any other Engineering program, letting you apply your theoretical learning to real-world field investigations. Then, you can explore further, with co-op jobs located around the globe. Our experienced grads are in demand in mining, construction, oil and gas, and government.

Concentrations

- Geomechanics
- Hydrogeology
- Resource exploration
Opportunities in every industry

As a Chemical Engineering student, you’ll learn from some of the world’s leading experts in fuel cells and biodiesel, water purification, and air pollution. You’ll learn how to transform raw materials into useful products, with courses in materials science, chemical reaction engineering, process control, and more. Plus, co-op will give you opportunities in a wide range of industries, including petrochemical, biomedical, alternative fuel, and alternative energy. You’ll be inspired by the impact chemical engineers have on everything we touch, see, taste, and smell.

Career possibilities

- Design and control of chemical plants
- Production of pharmaceuticals and bio-products
- Polymer syntheses and processing

Concentrations

- Biochemical engineering/biotechnology
- Energy and environmental systems and processes
- Materials and manufacturing processes
- Process modelling, optimization, and control
nanotechnology

**Challenge the frontiers of technology**
Nanotechnology engineers manipulate structures at the atomic and molecular scales to create nanomedicine for cancer treatment, functional materials for renewable energy storage, manufacturing processes to reduce cost and environmental impact, and more. In this multidisciplinary program, you’ll learn and combine the fundamentals of chemical and electrical engineering, chemistry, materials science, quantum physics, and biology. Hands-on labs in state-of-the-art facilities will give you first-hand opportunities to work, learn, and build at the nanoscale. By graduation, you’ll be ready to create innovative technologies in a variety of industries – chemical, pharmaceutical, biotechnology, energy, electronics, information and communication technology, and consumer products.

**Career possibilities**
- Material design for energy storage
- Development of biomedical devices
- Design and manufacture of nano/micro-electronics

**Concentrations**
- Nano-electronics
- Micro and nano-instruments
- Nanobiotechnology
- Nano-engineered materials

Nanotechnology Engineering is a program at the crossroads between fundamental and applied sciences. It gives us, as students, the know-how to address challenges on both of these fronts.

— BEN, SECOND-YEAR STUDENT

CANADA’S ONLY UNDERGRADUATE NANOTECHNOLOGY ENGINEERING PROGRAM.
electrical

Anywhere you find information, power, or energy
Combine electricity management, manipulation, and transfer with modern applications and engineering principles. In the Electrical Engineering program, you can specialize and gain experience in a range of fields, including power generators, hybrid cars, telecommunications devices and circuits, and green energy. You’ll learn from leaders in the future of energy and information transfer and get more hands-on experience in state-of-the-art labs than any other program. By graduation, you’ll be up to speed with real industry knowledge and ready to jump into a challenging career.

Career possibilities
Product development of telecommunications systems
Design and fabrication of CPUs
Manufacturing of circuit breaker systems

Concentrations
» 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

LARGEST GROUP OF ELECTRICAL ENGINEERING PROFESSORS IN CANADA GIVING YOU MORE UPPER-YEAR ELECTIVES TO CHOOSE FROM.

Being able to take knowledge learned in the classroom and give it life is one of the most rewarding experiences according to third-year Electrical student Bonnie.

Lab work and hands-on learning in co-op placements have really helped me solidify my knowledge of the concepts learned in school. It forces you to look at the bigger picture and understand how all the different concepts learned over the years come together.
Process, transfer, and store the world’s information

Become an expert in hardware-software interactions, and how they perform in real-world settings. At Waterloo, you’ll discover multi million-dollar labs that reflect today’s latest research and development, like wireless technology and smartphones. A focus on design and a large variety of upper-year electives will let you apply your computer engineering knowledge to any industry relying on digital systems – including automotive and aerospace, automation and robotics, power and energy, health care, and security.

Career possibilities
- **Design of computer architecture**
- **Manufacturing of telecommunications devices**
- **Development and analysis of application software**

Concentrations
- Communications and wireless systems
- 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
software

Solve real-world problems by building software systems

Use computer programming and engineering problem-solving to create usable, affordable, and faster software. Discover how to develop software systems that ensure the reliability, performance, and usability demanded by today’s industrial and business applications. With this program, you’ll gain the skills to create software with the user in mind. Plus, the focus on teamwork and collaboration will enhance your communication, business, and reasoning skills, making you ready for the workforce.

Career possibilities

- Development of programming tools
- Development and analysis of application software
- Design of internet-scale software systems

THE BEST OF BOTH WORLDS

THE SOFTWARE PROGRAM PULLS FROM WORLD-RENOVED EXPERTISE IN THE ELECTRICAL AND COMPUTER ENGINEERING DEPARTMENT AND WATERLOO’S DAVID R. CHERITON SCHOOL OF COMPUTER SCIENCE.
Revolutionize management decision-making

Making the best use of resources and meeting customer expectations are at the top of every company’s priorities. In Canada’s first and only Management Engineering program, you’ll use industrial and software engineering principles, advanced analytics, information science and human factors to improve decision making and increase efficiency. You’ll gain the knowledge and skills to design, implement, and manage a wide variety of complex management systems upon which organizations depend. Our confident grads are in demand, working in and consulting for a wide variety of industries, including software, finance, supply chain, health care, and manufacturing.

Concentrations
» Data analytics
» Human-computer interaction
» Logistics and supply chain management
» Operations management and optimization
» Search engines
» Socio-technical systems

Career possibilities

- Design and implementation of decision support systems
- Operations, logistics, and supply chain management
- Business analysis and new strategy development

I chose Management Engineering because I have a passion for making things better! I wanted a challenging program that would help me develop a diverse skill set, allowing me to optimize processes in any field, and Management Engineering has done exactly that!

— Pallavi, Second-Year Student
From participating in the Formula Motorsports student design team to becoming President of the Engineering Society, Leila has immersed herself in her community. Choose Waterloo if you want a challenge and a full university experience. There are lots of opportunities to get involved – even in your first year!

Mechanical systems that improve the world

Design mechanical parts from the best materials, using advanced manufacturing processes. In the Mechanical Engineering program, you’ll get hands-on experience right away, dissecting and building technologies that improve society. You’ll use a broad, multi-disciplinary set of skills, using in-depth knowledge of controls, fluids, and energy systems while combining a variety of factors, like environment, public health, and resources. With such a flexible program, your career possibilities are endless – from aircraft to green energy, to robotics.

Concentrations

» Automation and control, robotics and autonomous vehicles
» Fluid mechanics and micro-fluidics, fire safety
» Materials engineering and processing, manufacturing processes, welding and joining
» Solid body mechanics and machine design
» Thermal engineering, heat transfer and combustion, green energy

Career possibilities

- Development of satellite equipment
- Design of next-generation wind turbines
- Integration of hybrid vehicles
mechatronics

**Electro-mechanical designers**
Use a multi-disciplinary and systems-based approach to develop the "intelligent" electro-mechanical devices present in our daily lives – ATMs, anti-lock braking systems, satellite systems, auto-pilot aircraft, and wearable tech. In Mechatronics Engineering, you'll combine the powerful elements of machines, electricity, computers, and software in the classroom, with hands-on labs and co-op. Our multifaceted grads are prepared for the integrated nature of real-world engineering – something employers love!

**Career possibilities**
- Design and implementation of robot control systems
- Design and creation of wearable tech
- Development of 3D printing systems
An innovative approach to health

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

Concentrations
» Biodevices
» Biomechanics
» Neuroscience
» Signal and image processing
» Sports engineering

Career possibilities
- Research and development of medical devices
- Biomedical data analysis
- Product design of sporting equipment
systems design

Tackling interdisciplinary problems

Everything on our planet interacts – ecosystems, transportation networks, energy transfer, and biological systems. In Systems Design Engineering, you’ll use creativity, systems modelling, and analysis tools to design “big picture” answers for problems that span across multiple engineering disciplines. With a design course every term and access to over 300 electives, you’ll graduate with skills in engineering design, project management, and teamwork. By graduation, you’ll be ready to develop comprehensive, ground-breaking solutions for the toughest engineering problems.

Being the team lead of the Midnight Sun design team has provided fourth-year Systems Design student Zack with an added appreciation for elements of his program.

A solar car needs to be light weight, fast, safe, and meet regulations and guidelines. In order to build the best possible vehicle, a depth of knowledge is required, and Systems Design Engineering has facilitated me to gain that depth in my studies.

Career possibilities

- Design and creation of wearable tech
- Product design of medical devices
- Implementation of water treatment systems

Concentrations

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

PURSUE MINORS AND CONCURRENT DEGREES.

SYSTEMS DESIGN IS OUR MOST FLEXIBLE ENGINEERING PROGRAM, GIVING YOU MORE FREEDOM WITH YOUR COURSES.
how to apply

1. Apply online and pay fees by March 1, 2017 for Engineering through the Ontario Universities Application Centre (OUAC).

2. Watch for an acknowledgement email with your next steps and Waterloo ID number.

3. Submit any required documents by March 31 and your Admission Information Form by March 17 (or February 3 to be considered in our first round of offers).

4. Check your mailbox and online application. Admission decisions are made in late February (-30%) and mid-May (-70%).

5. Accept your Offer of Admission through OUAC and submit your Residence Community Ranking Form with a deposit.

QUESTIONS?
enginfo@uwaterloo.ca
uwaterloo.ca/engineering/applying

tell us more
uwaterloo.ca/engineering/aif

Are you an athlete or musician? Do you have a passion for student council? Are you a tireless volunteer? Tell us what makes you uniquely qualified to be a Waterloo Engineer on the Admission Information Form (AIF). We read every AIF, using them to help us make admission decisions. Here’s what you need to include:

» Your second and third choices for Engineering programs (the program you indicate on your OUAC application is your first choice)

» Your extra-curricular and other interests (high school, community, leadership, etc.)

» Extenuating circumstances (if applicable), that may have impacted your studies (including reasons for repeated courses)

Without the AIF, you won’t be admitted or considered for Faculty scholarships.

ARCHITECTURE ADMISSION PROCESSES AND TIMELINES DIFFER
Please refer to the School of Architecture website for detailed information
uwaterloo.ca/architecture/future-students/how-apply

IT’S WORTH THE WAIT! We take the time to learn all about you and factor this information into our admission decisions, with the Admission Information Form. That’s why Engineering applicants often have to wait a little longer for their Offer of Admission. Approximately 30% of admission decisions are made in late February, and the rest in mid-May.
admission requirements

<table>
<thead>
<tr>
<th></th>
<th>ONTARIO</th>
<th>OTHER CANADIAN PROVINCES AND TERRITORIES</th>
<th>INTERNATIONAL BACCALAUREATE</th>
<th>AMERICAN SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Requirement</td>
<td>6 4U/4M courses</td>
<td>5-6 Grade 12 academic courses</td>
<td>5 IB courses at the Higher or Standard Level</td>
<td>6 senior academic courses, plus SAT or ACT</td>
</tr>
<tr>
<td>Architecture (Required Subjects)</td>
<td>English (minimum 75%)</td>
<td>English (minimum 75%)</td>
<td>English A1</td>
<td>English A1</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics</td>
<td>Physics (HL recommended)</td>
<td>AP Physics (or 2 Physics courses)</td>
<td>AP Calculus</td>
</tr>
<tr>
<td>Advanced Functions</td>
<td>Mathematics/Algebra</td>
<td>Mathematics (HL recommended)</td>
<td>Pre-Calculus (Algebra)</td>
<td>Pre-Calculus (Algebra)</td>
</tr>
<tr>
<td>Calculus &amp; Vectors</td>
<td>Calculus</td>
<td></td>
<td>AP Calculus</td>
<td>AP Calculus</td>
</tr>
<tr>
<td>Engineering Programs* (Required Subjects)</td>
<td>English</td>
<td>English A1</td>
<td>English A1</td>
<td>English A1</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics</td>
<td>Physics (HL recommended)</td>
<td>AP Physics (or 2 Physics courses)</td>
<td>AP Calculus</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Chemistry</td>
<td>Chemistry</td>
<td>Chemistry</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Advanced Functions</td>
<td>Mathematics/Algebra</td>
<td>Mathematics (HL recommended)</td>
<td>Pre-Calculus (Algebra)</td>
<td>Pre-Calculus (Algebra)</td>
</tr>
<tr>
<td>Calculus &amp; Vectors</td>
<td>Calculus</td>
<td></td>
<td>AP Calculus</td>
<td>AP Calculus</td>
</tr>
<tr>
<td>Minimum Grades in Each Course</td>
<td>70%</td>
<td>70%</td>
<td>4</td>
<td>75%</td>
</tr>
</tbody>
</table>

*Applicants to Software Engineering must demonstrate experience in developing modular programs, through a course, contest, or work.

NOTE: For other countries or educational system requirements, visit uwaterloo.ca/findoutmore/requirements.

admission averages

<table>
<thead>
<tr>
<th>ENGINEERING PROGRAMS</th>
<th>GRADE RANGE</th>
<th>PROBABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical, Software</td>
<td>80-84</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>85-89</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>90-94</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>95+</td>
<td>70%</td>
</tr>
<tr>
<td>Civil, Environmental, Geological, Management, Nanotechnology, Systems Design</td>
<td>80-84</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>85-89</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>90-94</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>95+</td>
<td>90%</td>
</tr>
<tr>
<td>Chemical, Computer, Electrical, Mechanical, Mechatronics</td>
<td>80-84</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>85-89</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>90-94</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>95+</td>
<td>80%</td>
</tr>
</tbody>
</table>

All courses and grades are normalized to Ontario Secondary School requirements and are based on 2016 averages. Stated grade averages do not include results from Admission Information Forms, and are reflective of admitted student averages in 2016.

what if I repeat a course?

Repeating a course may result in a penalty of up to 5% 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.

Of course, life doesn’t always go as planned. If there are extenuating circumstances that impacted your studies, tell us on the AIF and the penalty may be reduced or waived.

english language requirements

If English is not your first language and your 4 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.

<table>
<thead>
<tr>
<th>OPTION 1</th>
<th>OPTION 2</th>
<th>OPTION 3</th>
<th>OPTION 4</th>
<th>OPTION 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet-based TOEFL (iBT)</td>
<td>IELTS</td>
<td>MELAB</td>
<td>CAEL</td>
<td>PTE (Academic)</td>
</tr>
<tr>
<td>90; 25 writing; 25 speaking</td>
<td>7.0</td>
<td>85; 80 per section; 3 speaking</td>
<td>70 overall; 60 per band; 70 writing; 70 speaking</td>
<td>63 overall; 65 writing; 65 speaking</td>
</tr>
</tbody>
</table>

English language score a little low? You may be eligible for admission through Waterloo’s Bridge to Academic Success in English (BASE) program. uwaterloo.ca/findoutmore/base
CONTACT US

FACULTY OF ENGINEERING
Ryan Pyear
Marketing and Undergraduate Recruitment Specialist
519-888-4567, ext. 30309
enginfo@uwaterloo.ca
University of Waterloo
200 University Avenue West
Waterloo, Ontario, Canada N2L 3G1

Facebook
facebook.com/UWaterlooEngineering
Twitter
WaterlooEng

SCHOOL OF ARCHITECTURE
Donna Woolcott
Undergraduate Student Services Coordinator
519-888-4567, ext. 27604
archinfo@uwaterloo.ca
7 Melville Street South
Cambridge, Ontario, Canada N1S 2H4

NEXT STEPS

Fall Open House
November 5, 2016

March Break Open House
March 18, 2017

Waterloo Engineering tours and visits
uwaterloo.ca/engineering/visit-us

Waterloo Architecture tours
Upon request: 519-888-4567, ext. 27604
archinfo@uwaterloo.ca

Chat with our Ambassadors
uwaterloo.ca/engineering-student-ambassadors

ORDER A BROCHURE
Choose from 21 admissions brochures at uwaterloo.ca/findoutmore/order

WATERLOO | ENGINEERING