DISCOVER YOUR STORY IN SCIENCE
Destination discovery.

Science drives humanity forward by never being satisfied with the status quo. Our curiosity, ingenuity, and ambition are the reasons we’ve been able to image black holes 55 million light years away and perform intricate surgery using the most intense laser pulses ever created.

Become a part of a science community that’s challenging, supportive, and fun. At Waterloo, you’ll use unique tools, technologies, and innovation to push boundaries. Whether you focus on one or many disciplines within science, you’ll be equipped with the skills and knowledge you need to succeed here and in the future.

*Let’s explore your story in the Faculty of Science at Waterloo.*

---

You+
Waterloo

#1 in Canada for reputation among comprehensive universities (2021 Maclean’s University Rankings)
“What’s happening here in Waterloo is truly special – a dedication to the kind of deep, fundamental science that will benefit generations to come.”

STEPHEN HAWKING

WHAT’S INSIDE

YOUR SCIENCE COMMUNITY 2
FIRST-YEAR YOU 4
YOUR LABS 6
EXPLORE SCIENCE 8
PROGRAMS AND MAJORS 12
BIOLOGY 12
BIOMEDICAL SCIENCES 14
PSYCHOLOGY 15
BIOCHEMISTRY 16
MEDICINAL CHEMISTRY 17
CHEMISTRY 18
MATERIALS AND NANOSCIENCES 20
LIFE PHYSICS 21
PHYSICS 22
MATHEMATICAL PHYSICS 24
PHYSICS AND ASTRONOMY 25
EARTH SCIENCES 26
ENVIRONMENTAL SCIENCE 27
SCIENCE AND BUSINESS 28
BIOTECHNOLOGY/CPA 29
SCIENCE AND AVIATION 30
HONOURS SCIENCE 31
ADMISSIONS 32

MORE TO EXPLORE

Meet us online for more tips and stories:

Instagram: @waterloosci
YouTube: UWScience
Facebook: @waterlooscience

BOOST YOUR POTENTIAL

AISHWARYA
PHYSICS, CO-OP
ECONOMICS MINOR

Opening yourself up to new experiences can be exciting and intimidating. For Aishwarya, starting university meant learning to navigate a new culture too.

Even before leaving India, he found his home away from home in Science where people “are always willing to help. They’re just one message away from meeting with you, discussing what they’re doing and how they got there.”

Once he arrived on campus, the Science Academic Cluster, UW Indian Cultural Association, and clubs like Improv and Muay Thai became valuable sources of friendship and support.
Being in the Faculty of Science isn’t just about the academics. We’re a community that supports and nurtures talented, innovative, and confident scientists that are ready to revolutionize the world.

“SCI” SOCIETY

Our students often say that the science community here at Waterloo was one of the best aspects of their experience – it wasn’t what they were looking for, but definitely what they needed. Find that community through Science Society (or SciSoc, as it’s known around campus). It’s our student-run government that offers academic and social activities and also represents Science students within our student union, the Waterloo Undergraduate Student Association (WUSA).

SciSoc offers seven student-run clubs that are aligned to our programs and majors, like the Biology Undergraduate Society (BUGS) or ChemClub. Take advantage of fun events like trivia challenges, de-stressing activities, and volunteer opportunities. No matter how you get involved, Sci Soc will make your time memorable and positive.
SUPPORT IN SCIENCE

Nearly every student in university needs a little help and guidance at some point in their academic career. Whether it’s switching majors, dropping courses, adjusting workloads, or talking about career opportunities, we’ve got the people to support you.

The Science Undergraduate Office (SUO) is where you’ll book appointments with advisors, drop in for MATES (Mentor Assistance Through Education and Support; staffed by upper-year peers), and seek guidance on how unexpected changes to your personal situation might impact your academics.

We also have career advisors, mental health resources, counselling services, advisors for your specific major, and so much more. No matter what you need, we have a support system to help you be the best you can be.

SCIENCE ACADEMIC CLUSTERS IN RESIDENCE

Sometimes living near people who are going through the same experiences as you is comforting. There’s no better way to do this than with a Science Academic Cluster, where you’ll live close to other first-year students from the Faculty of Science. You’ll be placed together within larger Campus Housing communities – so you can still experience the diversity of friendships that typical residence provides, with the added bonus of having more of your peers along for the ride.

You’ll be able to walk to class with Science mates, help each other with lab reports, and get together to study for tests. Back in residence you can grab food in the dining hall, hang out in the residence lounge, or attend residence programming like drop-in tutoring sessions. It’s all part of an amazing university experience.

H₂O LO₂ SCIENCE ROCKS AT WATERLOO!

CLUBS IN SCIENCE

 › Biochem Student Association (BSA)
 › Biology Undergraduate Society (BUGS)
 › Chemistry Club (ChemClub)
 › Materials and Nanosciences Society (MNS)
 › Physics Undergraduate Society (PhysClub)
 › Science and Business Students’ Association (SBSA)
 › Earth and Environmental Science Club (WATROX)
First-Year You

Memorable Firsts

Science offers a wealth of first experiences that you may already be looking forward to (hello first pair of goggles and lab coat), but it also has surprise moments that you’ll remember for the rest of your life. Check out what our Science students say about what made their first year unforgettable.

No matter where you’re from or what major you choose, it’s going to be an incredible year.
FIRST DAY

“Orientation was absolutely life changing, it’s where I met one of my closest friends. Lots of first-years have reservations about putting themselves out there, but attending O-week was one of the best decisions I made.”

- Ana, Biochemistry major

FIRST LECTURE

“I was amazed to see how large the class sizes were and how many people shared the same passions I did! The profs really want you to succeed. They provide a lot of supports throughout your first year to feel good with the material.”

- Lindsay, Honours Science major

FIRST LAB

“I remember leaving my chem lab and walking back to residence with goggle lines on my face and my lab coat still on and billowing behind me – all with a great sense of confidence. It was just so exciting.”

- Lilli, Chemistry major

FIRST CLUB

“For me, it was running for and joining PhysClub. The people were superbly friendly and it helped create a sense of belonging for someone who is thousands of kilometres from home.”

- Azzam, Physics and Astronomy major

FIRST SCIENCE OPEN HOUSE

“The energy of the whole event was amazing. Science opened its doors to the community and I ran a station where we used a special powder to show how important proper hand washing was. The look on the little kids’ and their parents’, faces ... priceless!”

- Kristina, Psychology major

FIRST LET’S TALK SCIENCE

“I didn’t realize how much I loved communicating science to others until I volunteered at my first outreach event, Let’s Talk Science. Demonstrating my passion for science in my community has been a highlight of my time here.”

- Jenny, Biological Sciences major
YOUR LABS

A SCIENTIST’S PLAYGROUND

Here at Waterloo, you get the advantage of modern, bright, and spacious teaching labs – all with passionate and enthusiastic instructors who want to make experimentation fun and enlightening. With over 700 labs housed within the Faculty of Science, we’re confident you’ll achieve the hands-on learning and expertise that research centres and employers are looking for. If you love tinkering with science and understanding how new discoveries are made, you’ll fit in here.

First-year chemistry lab in the Science Teaching Complex.

THE INNOVATION GAME

We love to see students dabble in experimentation. That’s why we’ve developed the Science Innovation Hub – an interdisciplinary organization aimed to help you progress as a future global science leader and budding entrepreneur.

The Hub provides you with research-ready laboratory workspaces and equipment, as well as access to a network of advisors. Whether you’re an undergraduate student just starting out with an idea or part of a Science student team (like the International Genetically-Engineered Machine team; iGEM), the Science Innovation Hub is ready for you.
When it comes to experimentation, there are few more passionate about labs than Donna Strickland. She’s revolutionizing the new first-year labs for Physics students. Not only will they change physically, but also how they’re taught fundamentally. They’ll show you how to be an experimentalist. You’ll learn to interpret data and relate it to models, discover how to design good experiments yourself, and explore how to build representations of physical systems. We take the lab, spin it around, and put you squarely in the driver’s seat. You’ll do more than just follow instructions – you’ll be the person developing them. It’s an innovative new way to think of labs – and it’s happening at Waterloo.

“Experiments move science forward. New areas of science begin when the totally unexpected is observed. Science is also driven by new theories, but experiments prove the theories true.”
Science is an incredible field of study (if we do say so ourselves), but it can be tricky to know which discipline is right for you. To help, we’ve developed this map that shows the majors offered by the Faculty of Science and how they connect to each other.

**CONNECT TO YOUR SCIENCE**

In high school you get to take three or four main disciplines of science. Yet, when you arrive at university, you’re exposed to a much wider array of choices. How do you choose?

Our map starts with those core branches of science: biology, chemistry, and physics. Notice those arrows? They’ll lead you to other fields that are connected to that core science. From here, you can begin your research into what discipline of science fits your goals and interests best.

**KNOW YOUR SCIENCE**

You’ll start your major in first year, so knowing which field you’re interested in is very important. But don’t worry – if you change your mind, we’ll help you with that.

You may notice on the following pages that many of our majors are grouped into entry programs – notably Life Sciences and Physical Sciences. This helps you identify the primary branch of science you’re studying, but it’s your major that determines what your course schedule will look like in first year.
YOU’VE GOT SKILLS

Scientists are in high demand and work all over the globe – pushing the boundaries of discovery and innovation for the benefit of all.

The skills you’ll achieve at Waterloo while earning your Bachelor of Science degree will set you apart. Not only will you learn exceptional technical skills in the laboratory but you can also expand your confidence and interpersonal skills through co-op work terms (or our EDGE program for those who are in our regular system of study). You’ll be prepared for the careers of the future, equipped with abilities that are in demand within industry, government, academia, corporations, and consulting firms. With an open mind and a drive to face challenges, you’ll find great success in science.

#25 IN THE WORLD for Graduate Employability
(2020 QS World Graduate Employability Rankings)
Seriously impressive skills.

**ANALYTICAL CAPABILITIES**
Dive deep into problems and explore creative solutions.

**CRITICAL THINKING**
See things without bias and always ask questions.

**EXPERIMENTATION**
Test your theories and understand the results.

**COMMUNICATION**
Master your verbal and written skills for clarity and proficiency.

**TIME MANAGEMENT**
Effectively juggle classes and labs – plus some time to have fun!

Your interest in science is clear – but you might be wondering how that translates to real-world opportunities. We can definitely point you in the right direction in terms of career fields. Each program page has sample career fields listed – it’ll give you an idea of what’s possible.

**CUSTOMIZING YOUR DEGREE**
Focus your studies on what you’re interested in by tailoring your degree with minors, options, and specializations.

**Minors** are a set of around eight courses that offer additional (and often complementary) concentration to your degree. **Options** work much the same way as minors but are typically only offered to students in a specific faculty and may require fewer courses to complete. **Specializations** are modifications built into a major that you may opt into. Available specializations are listed on the individual program pages.

**MINORS AND OPTIONS THROUGH SCIENCE**

- Astrophysics
- Biochemistry
- Bioinformatics
- Biology
- Biophysics
- Chemistry
- Earth Sciences
- Medical Physiology
- Physics

50+ **MINORS**
available to Science students at Waterloo
TOP 10 IN CANADA
for Biology (2021 Maclean’s University Program Rankings)

ONE OF THE RECOMMENDED UNDERGRADUATE PROGRAMS
for those seeking a degree in optometry or pharmacy
**SMALL SUBJECT MATTER, BIG OPPORTUNITY**

**TIM**
**BIOLOGY ‘19**
**MSC CANDIDATE**

Throughout Tim’s undergraduate degree, he was interested in the roles bacteria play in different environments. He’s now completing his Master’s degree studying cyanobacteria in source waters.

As a teaching assistant, he’s had the opportunity to share his knowledge and passion with students in labs that once inspired him to pursue microbiology. He heads a lab experiment to compare the morphology and diversity of bacterial communities that grow from various water samples – which he extracts right from the creek outside of our Science Teaching Complex.

We’re cultured! Explore all aspects of life and living creatures – from cells and genes to species and diversity. Biology at Waterloo is at the cutting edge of research and continues to expand its disciplinary range so that your course selection is highly diverse and stimulating. With a flexible course load that includes more than ten electives in any subject, plus more options within science subjects, you’ll be able to customize your Biology degree to meet your personal goals.

**POSSIBLE CAREER FIELDS**

- Health care
- Genetics
- Microbiology

**Biology, meet computer science.**

Bioinformatics is the merging of substantial biological data (think the human genome with its three billion lines of code) with the power of computer science. And it has far reaching applications - we can apply this to all aspects of life and diversity for incredible discovery potential.

Meet AnnoTree – pictured above – one of the innovative bioinformatics tools created on campus. Andrew Doxey and his colleagues developed a “microbial tree of life” database that merges protein science with computational genomics.

With an estimated one trillion species of microbes on Earth, and 99.9 per cent of them still waiting to be discovered, Andrew’s research analyzing microbial genomes paves the way for discovering new bacterial proteins such as toxins.

We offer an option (similar to a minor) in bioinformatics, where you’ll take courses in biology and computer science, and it’s open to all Faculty of Science students.

**APPLY TO**

the Life Sciences entry program on OUAC, selecting Biology as your subject of major interest.

**CO-OP AVAILABLE**
Deep selected the Biomedical Sciences major because it has all of the mandatory courses he needs to apply for dentistry school. Having summers off, Deep was able to volunteer at his local dental office, where he analyzed various teeth moulds – looking for crowding, chips, gaps, and evidence of grinding.

Life is beautiful. Study human systems and their functions related to health, disease, and the healing process. Prepare for professional schools such as optometry, pharmacy, and medicine – or look to work in health care once you graduate. This major gives you the flexibility to study other subjects outside of science, providing you with a well-rounded education that professional schools value. You’ll also have the opportunity to pursue your MSc or PhD in research areas like molecular genetics, physiology, or developmental biology.

**POSSIBLE CAREER FIELDS**

- Medicine
- Dentistry
- Nursing

**TOP 10 IN CANADA**

for Anatomy and Physiology (2021 QS World University Subject Rankings)

**APPLY TO**

the Life Sciences entry program on OUAC, selecting Biomedical Sciences as your subject of major interest.

**REGULAR SYSTEM OF STUDY ONLY**
LIFE SCIENCES

PSYCHOLOGY

Mind over matter. Explore human behaviour and mental functions while connecting the physiological and biological processes that underlie neuroscience. Gain hands-on skills in labs and seek to understand the scientific foundations of psychology as you work toward your Honours Bachelor of Science degree. And with the Centre for Mental Health Research and Treatment right on campus, you’ll be around some of the most knowledgeable faculty in the field of psychology.

Sharyn, an international student from Barbados, chose to study psychology to understand how people tick. She was impressed at how expansive this field of study was. Over the course of her degree, Sharyn’s had lots of opportunity to study theories and concepts about humans and their interactions. And she’s been able to apply them, too – working as a cognitive psychology research assistant and writing her honours thesis in social psychology.

“Thanks to the wealth of psychology courses offered by the University of Waterloo, I can explore my passion to my heart’s delight!”

POSSIBLE CAREER FIELDS

- Psychiatry
- Neuroscience research
- Clinical psychology

APPLY TO
the Life Sciences entry program on OUAC, selecting Psychology as your subject of major interest.

CO-OP AVAILABLE

#4 IN CANADA
for Psychology (2021 QS World University Subject Rankings)
Our bonds are strong. Biochemistry is a challenging interdisciplinary field that increases our understanding of living systems at the cellular and molecular levels. Explore topics in areas such as chemistry, genetics, and microbiology – providing you with robust skills that are essential in many career fields.

“\textbf{CLARE} \\
\textbf{BIOCHEMISTRY, CO-OP} \\

“I love how everything in our body is run by super tiny, intricate machinery – like how cells, molecules, and chemicals manage our metabolism and immune responses.”

\textbf{APPLY TO} \\
the Life Sciences entry program on OUAC, selecting Biochemistry as your subject of major interest.

\textbf{CO-OP AVAILABLE}

\textbf{PROFESSIONAL MEMBERSHIP} \\
With a degree in Biochemistry, you’ll fulfill the requirements to become a member of the Chemical Institute of Canada (CIC).
FLIPPING THE LAB

WILLIAM
MEDICINAL CHEMISTRY, CO-OP

The advanced organic synthesis lab has been the most challenging, yet rewarding, experience of William’s academic career. Vastly different from his other labs, it places the responsibility directly on him to plan out the experiments.

This kind of student-driven experimentation imitates the real world – where the answers aren’t always easy or clear. William gained many transferable skills along with a wealth of advanced organic synthesis techniques that have prepared him to work in any organic chemistry lab.

PHYSICAL SCIENCES

MEDICINAL CHEMISTRY

We’ve got great chemistry. Learn how to design, synthesize, and evaluate potential drugs. Gain hands-on experience through synthetic labs and co-op terms that’ll uniquely qualify you for a career in a rapidly evolving industry. You’ll learn in highly specialized teaching labs that match (or are even better than) those in industry. Work with researchers in universities, hospitals, and pharmaceutical companies while you enhance your skills in experimentation, critical thinking, and analysis.

APPLY TO

the Physical Sciences entry program on OUAC, selecting Medicinal Chemistry as your subject of major interest.

CO-OP ONLY

POSSIBLE CAREER FIELDS

Pharmacology, drug discovery and design
Industrial research and development
Experimental researcher

PROFESSIONAL MEMBERSHIP

With a degree in Medicinal Chemistry, you’ll fulfill the requirements to become a member of the Chemical Institute of Canada (CIC).
EMILY
CHEMISTRY, CO-OP
COMPUTATIONAL CHEMISTRY SPECIALIZATION

Emily adjusts a separatory funnel while performing an experiment in her chemistry lab.

PHYSICAL SCIENCES

CHEMISTRY

TOP 10 IN CANADA
for Chemistry (2021 QS World University Subject Rankings)

PROFESSIONAL MEMBERSHIP
With a degree in Chemistry, you’ll fulfill the requirements to become a member of the Chemical Institute of Canada (CIC).
Feel the chemistry. Harness the power of chemistry by studying the composition, structure, and properties of matter. Gain more than 500 hours of valuable, hands-on experience synthesizing compounds and characterizing them using advanced chemical instrumentation. In upper years, you'll also have the opportunity to participate in a cutting-edge research project (of your own design), preparing you for careers in research and industry.

**POSSIBLE CAREER FIELDS**

- Industrial research and development
- Bio-based materials research
- Polymer research

**OPTIONAL SPECIALIZATION**

> Computational Chemistry

**CREATE A REACTION**

All Science majors at Waterloo take chemistry. Why? It's foundational to everything you study. Chemistry is all around us. It's in the coffee you drink and the fuel in your car. It's in big catastrophic reactions and in slow environmental changes. Understanding chemistry will give you a deeper appreciation of the world around you.

At Waterloo, your first lab will be a chemistry lab where you'll learn important concepts and techniques. Our instructors and lab spaces are the best of the best. And if you major in chemistry, these labs will become a second home.
KSHITI MATERIALS AND NANOSCIENCES, CO-OP

Kshiti examines a solution of silver nitrate, sodium hydroxide, tartaric acid, ammonia, and D-glucose that will apply a mirror finish to a microscope slide – an experiment that helps teach how the characteristics of a material can change based on the size of its particles.

FUN NANO FACT:
Lipid nanoparticles are used to stabilize and deliver messenger RNA (mRNA) VACCINES

PHYSICAL SCIENCES

MATERIALS AND NANOSCIENCES

Don’t sweat the big stuff. Dive into the world of nanoparticles and learn about the properties of various materials, such as superconductors, insulators, and biomaterials. Prepare for a variety of careers including nanotechnology, quantum materials, bionic research, and the energy sector while taking advantage of our affiliation with the Waterloo Institute for Nanotechnology. You’ll also be prepared for graduate-level studies in topics like nanomaterials, materials engineering, nano-electronics, and more.

APPLY TO
the Physical Sciences entry program on OUAC, selecting Materials and Nanosciences as your subject of major interest.

CO-OP AVAILABLE

#4 IN CANADA for Materials Science (2021 QS World University Subject Rankings)

POSSIBLE CAREER FIELDS

- Renewable energy
- Materials research and development
- Nanotechnology

NANO DEFINED

Looking at the extremely small scale of nanoparticles means examining objects and materials one-billionth the size of a standard metre.
PHYSICAL SCIENCES
LIFE PHYSICS

Develop X-ray vision. Channel the power of physics and apply it to biological systems. Learn how medical imaging systems work by accessing our state-of-the-art labs and taking courses focused on human physiology and quantum mechanics. Expand your knowledge through experiential learning opportunities, and prepare for graduate studies or employment in the growing interdisciplinary field of biomedical technology.

APPLY TO
the Physical Sciences entry program on OUAC, selecting Life Physics as your subject of major interest.

CO-OP AVAILABLE

POSSIBLE CAREER FIELDS
- Medicine
- Cancer treatment
- Medical imaging

OPTIONAL SPECIALIZATIONS
- Biophysics
- Medical Physics

AMBER
LIFE PHYSICS, CO-OP MEDICAL PHYSICS SPECIALIZATION

“I believe we need interdisciplinary approaches to create innovative solutions to new problems – reaching new heights in our understanding of medicine and physics.”

TAKE ADVANTAGE OF OUR PARTNERSHIP WITH THE GRAND RIVER REGIONAL CANCER CENTRE
and work with medical physicists during co-op work terms.
David Hawthorn is one of your physics professors. He’s looking through a viewing chamber in a custom instrument for inverse photo-electron spectroscopy of quantum materials. Translation? He’s using this equipment to better understand the physical limits of superconductors (a quantum material). Currently, superconductors only operate at cryogenic temperatures. David’s trying to discover a superconductor that works at room temperature.

Superconductors can allow electricity to flow with zero energy loss. A superconductor that works at a higher temperature would revolutionize the world – and that’s just what David Hawthorn and his team hope to do.

#4 IN CANADA for Physics & Astronomy (2021 QS World University Subject Rankings)
SMALL SCALE, BIG IMPACT

The word quantum is thrown around a lot. But what is it? Quantum, as it turns out, is a broad term for anything being studied at the atomic and subatomic level – matter’s smallest particles and the energy that’s between them. While physicists have been studying the quantum nature of reality for over a century, our generation is applying it to create powerful new technologies in areas such as computing, materials, energy generation and storage, artificial intelligence, and more.

Explore your potential (energy). Study matter, energy, and forces at fundamental levels while building your knowledge and skills through co-op terms, laboratory experiments, and upper-year research projects. Learn about a broad range of topics, including quantum mechanics, electromagnetism, optics, condensed matter, gravitation, and relativity. Go even further with our graduate programs in areas like optics and photonics and quantum computation.

POSSIBLE CAREER FIELDS

- Experimental and theoretical physics research
- Computer hardware and software development
- Financial analysis and forecasting

APPLY TO

the Physical Sciences entry program on OUAC, selecting Physics as your subject of major interest.

CO-OP AVAILABLE
"My favorite course is Quantum Physics because, just like a different language, it introduces me to a different realm with its own rules and ideas. When those are applied correctly, you achieve a great eloquence."

We’re on the same wavelength. Apply your love of mathematics to understanding how the world works at a deeper theoretical level. Study advanced quantum physics and electromagnetism. Explore areas such as relativity, particle physics, astrophysics, and pure mathematics. Graduates are prepared for MSc and PhD programs or a wide range of careers in research and development – from quantum technologies to applications of advanced theoretical tools.
PHYSICAL SCIENCES

PHYSICS AND ASTRONOMY

Here, the sky’s definitely not the limit. Study our vast universe, from subatomic particles to planets, stars, and galaxies, while learning about the origin, evolution, and fate of the entire cosmos. Engage with world-acclaimed professors who use state-of-the-art satellites and telescopes to explore space, while expanding your knowledge of one of the oldest branches of science and its extraordinary impact on modern-day physics.

POSSIBLE CAREER FIELDS

- Aerospace
- Remote sensing and imaging
- Astronomy research

APPLY TO

the Physical Sciences entry program on OUAC, selecting Physics and Astronomy as your subject of major interest.

CO-OP AVAILABLE

Azzam and Ridhee set up their Edmund Astroscan telescopes for observations of the night sky. Physics and Astronomy students learn about the universe through direct observation, including opportunities to attend labs in our Gustav Bakos Observatory and field trips to Columbia Lake, located right on campus.
Find a career that rocks. Learn about the world under your feet by exploring topics in the realms of geology, geophysics, geochemistry, and hydrogeology. From rocks and soil to water and the effects of climate change, dive into a fascinating science that shows how the Earth is a constantly changing entity. Take advantage of a versatile curriculum where your courses, field trips, and lab studies will prepare you for a variety of prominent and exciting careers.

As an undergraduate student who took Earth Sciences because he loved the outdoors, Carson found his home in the Faculty of Science. Today, he’s a scientist investigating the complexities of the natural world.

He’s passionate about earth science – from the chemical makeup of water and rocks to the physics that controls the Earth’s landscape. He now works towards a more sustainable future by studying the Earth’s past.

APPLY TO the Physical Sciences entry program on OUAC, selecting Earth Sciences as your subject of major interest.

CO-OP AVAILABLE

POSSIBLE DESIGNATION
Professional Geoscientist (P.Geo.)

TOP 10 IN CANADA
for Earth & Marine Sciences, Geology, Geophysics (2021 QS World University Subject Rankings)
Evan loves his ecology labs and has been able to use his knowledge while on co-op work terms. His favourite experiences? Research in the fields of aquatic ecology and ecosystem ecology.

“I continue to love this program thanks to the variety of hands-on experiences examining specimens in the lab and in the field.”

A good planet is hard to find. Explore the realms of ecology, biology, chemistry, and geoscience to better understand the impact of human and non-human influences on environmental ecosystems, natural resources, and water. Round out your education with fieldwork that connects you with nature, the Earth, and your community.

**APPLY TO**
the Environmental Science program on OUAC.

**POSSIBLE DESIGNATION**
Professional Geoscientist (P.Geo.) with the Geoscience specialization
CLOSE-KNIT ISN’T JUST FOR SWEATERS

HAYLEY
SCIENCE AND BUSINESS, CO-OP

Hayley had heard that the Science and Business community was tight-knit, but she didn’t totally appreciate those words until she started attending classes. By the end of first year, she knew all of her peers by name, and (more importantly) her Science and Business instructors knew her name.

With friends who both challenge her and have her back, she’s thriving in an environment that makes Science and Business an amazing student experience.

BUSINESS IN THE FRONT, SCIENCE IN THE BACK

Business in the front, science in the back. Incorporate courses in science with expertise in business disciplines such as marketing, economics, accounting, and law. Be part of a dynamic cohort with access to award-winning instructors and unique workshops that allow you to apply your scientific knowledge and analytical skills to business situations.
We account for everything. In Biotechnology/Chartered Professional Accountancy (CPA), you'll learn how biological processes are used to develop new technologies. You'll also gain expertise in financial management, accounting, auditing, and taxation. Companies value the transferable skills you'll develop, especially in biotechnology – one of the most rapidly growing industries in North America. Plus, you'll gain 16 months of paid co-op experience that counts toward your CPA designation.

**POSSIBLE CAREER FIELDS**
- Audit and tax
- R&D monitoring and assessment
- Pharmaceutical and medical technology

**#6 IN CANADA**
for Finance & Accounting (2021 QS World University Subject Rankings)

**Biotechnology/CPA + Master of Accounting (MAcc) = ALL THE CREDITS YOU NEED FOR CPA ACCREDITATION**
SCIENCE
AND AVIATION

You’re on our radar. Pursue a career as a pilot while studying the scientific foundations associated with flight and the field of aviation. Benefit from our partnership with the Waterloo Wellington Flight Centre (WWFC), one of Canada’s largest flight-training facilities.

POSSIBLE CAREER FIELDS
- Aviation industry
- Flight education
- Aerial surveying

APPLY TO
the Science and Aviation program on OUAC.
REGULAR SYSTEM OF STUDY ONLY

WATERLOO WELLINGTON FLIGHT CENTRE
The WWFC provides exceptional training programs for private and professional pilots. Our partner in flight education, the WWFC is located at the Region of Waterloo International Airport in Breslau, Ontario, a 20-minute drive from the University.

200+ flight hours gained by graduation

POSSIBLE DESIGNATIONS
Commercial Pilot Licence (CPL) and Integrated Airline Transport Pilot (ATP) (written exams)
MAGGIE
HONOURS SCIENCE
BIOLOGY MINOR

“Honours Science really allows you to personalize your own degree and work at your own pace. It’s so flexible you can take anything – from mythology to languages – while you gain skills and knowledge in the sciences you love. I benefitted from this greatly.”

HONOURS SCIENCE

Anything is possible. Craft your own degree by taking courses that fit your interests, or align your labs and lectures to the requirements of the professional school of your choice.

The Honours Science major sets a few guidelines on how much science you need in order to finish your degree, but what those science courses turn out to be is mostly up to you. And by incorporating minors, you can add additional focus and depth to your learning. It’s also possible to have a joint program with other faculties, like Health or Math. With Honours Science, you have the freedom of discovery.

ONE OF THE RECOMMENDED UNDERGRADUATE PROGRAMS

for those seeking a degree in optometry or pharmacy
CHOOSING FROM TWO SYSTEMS OF STUDY

CO-OP (5-YEAR DEGREE)

In most Science majors, you can choose our co-op program to add work experience to your degree.

› Alternate study terms with paid work terms.
› Explore a variety of careers and make valuable networking contacts.
› Graduate with up to two years of work experience – developing the skills and knowledge that employers want.

The University of Waterloo offers the WORLD’S LARGEST CO-OP PROGRAM OF ITS KIND

\( \text{uwaterloo.ca/coop} \)

REGULAR (4-YEAR DEGREE)

Graduate a full year sooner than in co-op and enjoy continuity in your campus activities.

› Plan your summers with ease, for work, travel, volunteering, or extra courses.
› Enhance your academic, co-curricular, and work experience with EDGE, our certificate program for those in the regular program of study.
› Utilize our EDGE and career advisors to enhance and market your skills.

Popular choice for those applying to PROFESSIONAL SCHOOLS

\( \text{uwaterloo.ca/edge} \)

TYPICAL CO-OP AND REGULAR WORK-TERM SEQUENCES

The order of study and work terms, for those in the co-op program, depends on your major. This chart illustrates our most common co-op study/work-term sequence.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TERM</th>
<th>CO-OP</th>
<th>REGULAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fall</td>
<td>Study</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Study</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>2</td>
<td>Fall</td>
<td>Study</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Work</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Study</td>
<td>Off</td>
</tr>
<tr>
<td>3</td>
<td>Fall</td>
<td>Work</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Study</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Work</td>
<td>Off</td>
</tr>
<tr>
<td>4</td>
<td>Fall</td>
<td>Study</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Work</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Work</td>
<td>Off</td>
</tr>
<tr>
<td>5</td>
<td>Fall</td>
<td>Study</td>
<td>Study</td>
</tr>
<tr>
<td></td>
<td>Winter</td>
<td>Study</td>
<td></td>
</tr>
</tbody>
</table>

HOW TO APPLY TO CO-OP

Check the co-op circle on OUAC. If you’re not offered a space in co-op, you’ll automatically be considered for the regular program. Not sure if you want co-op? We recommend you apply to the co-op program, if available, to secure a space within the program. It’s easier to opt out than to opt in.

\( \text{\$8,400-\$15,600+ potential co-op earnings per Canadian work term (2020)} \)

570+ science-active employers
## ADMISSIONS

<table>
<thead>
<tr>
<th>ENTRY PROGRAM</th>
<th>SUBJECTS OF MAJOR INTEREST</th>
<th>ADMISSION AVERAGE*</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotechnology/CPA Co-op</td>
<td></td>
<td>High 80s</td>
<td>Six grade 12 U or M courses, including:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Advanced Functions – min. 70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Calculus and Vectors – min. 70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>English (ENG4U) – min. 70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Any two of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Biology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Biomedical Sciences (regular only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Psychology</td>
</tr>
<tr>
<td>Environmental Science Co-op or regular</td>
<td></td>
<td>Low 80s</td>
<td></td>
</tr>
<tr>
<td>Honours Science Regular</td>
<td></td>
<td>Low 80s</td>
<td>Six grade 12 U or M courses, including:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Advanced Functions – min. 70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Calculus and Vectors – min. 70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>English (ENG4U) – min. 70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Any two of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Biology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Chemistry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Earth and Space Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Mathematics of Data Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Physics</td>
</tr>
<tr>
<td>Life Sciences Co-op or regular</td>
<td></td>
<td>Low 80s</td>
<td></td>
</tr>
<tr>
<td>Physical Sciences Co-op or regular</td>
<td></td>
<td>Low 80s</td>
<td></td>
</tr>
<tr>
<td>Science and Aviation* Regular</td>
<td></td>
<td>Low 80s</td>
<td></td>
</tr>
<tr>
<td>Science and Business Co-op or regular</td>
<td></td>
<td>Low 80s</td>
<td></td>
</tr>
</tbody>
</table>

### SPECIAL CONSIDERATIONS

#### OUTSIDE OF ONTARIO

For Canadians applying from outside of Ontario, or international students with a valid study permit, check specific admission requirements online.

[uwaterloo.ca/future/admissions](http://uwaterloo.ca/future/admissions)

#### TRANSFERS

Transferring from a college, another university, or a CEGEP? Review your requirements and see if you’re eligible for transfer credits or if there’s a pathway from your college program.

[uwaterloo.ca/future/transfer](http://uwaterloo.ca/future/transfer)

#### ENGLISH LANGUAGE REQUIREMENTS

If English is not your first language and your four most recent years of full-time education have not been in an English language school system, you’ll need to provide an English language test score. Review which tests are accepted, the deadlines, minimum scores, exceptions, and other details.

[uwaterloo.ca/future/elr](http://uwaterloo.ca/future/elr)

*Averages are based on previous years’ entering classes. Final admission averages are affected by the number of applicants and space available and will not be known until mid-May 2022.

^ Program Information Session and Transport Canada Category 1 Medical Certificate are also required.

[uwaterloo.ca/aviation/faq](http://uwaterloo.ca/aviation/faq)

## FINANCING YOUR EDUCATION

[uwaterloo.ca/future/financing](http://uwaterloo.ca/future/financing)

[uwaterloo.ca/future/aif](http://uwaterloo.ca/future/aif)

### SCIENCE SCHOLARSHIPS

**BASED ON CONTEST RESULTS**

- **CHEM 13 NEWS RESEARCH AWARDS**
  - [uwaterloo.ca/chemistry/chem13](http://uwaterloo.ca/chemistry/chem13)
  - Up to $1,000 based upon results of the Chem 13 News Exam.
  - Required to work with a Chemistry professor and/or research group.
  - Qualifying Majors: > Biochemistry
  - > Chemistry
  - > Materials and Nanosciences
  - > Medicinal Chemistry

- **SIR ISAAC NEWTON SCHOLARSHIPS IN PHYSICS**
  - [uwaterloo.ca/sir-isaac-newton-exam](http://uwaterloo.ca/sir-isaac-newton-exam)
  - $1,000 to $5,000 based on the Sir Isaac Newton Examination rankings.
  - Qualifying Majors: > Life Physics
  - > Mathematical Physics
  - > Physics
  - > Physics and Astronomy

### BASED ON ACADEMIC ACHIEVEMENT

- **PRESIDENT’S SCHOLARSHIP OF DISTINCTION**
  - (95% or higher)
  - $2,000 for first year plus up to $3,000 available in upper years

- **PRESIDENT’S AND MERIT SCHOLARSHIPS**
  - (90-94.9% + $2,000; 85-89.9% + $1,000)
  - $1,000 or $2,000 for the first year

- **FACULTY ENTRANCE SCHOLARSHIPS**
  - $500 for the first year to $80,000 over four years

You’ve worked hard to meet our requirement and we want to reward you for your effort. In addition to what’s listed here, information about a number of additional Faculty of Science scholarships is available online. We may also read your Waterloo Admission Information Form (AIF) for automatic consideration for scholarships, so be sure to consider this when completing it.
ACKNOWLEDGEMENT OF TRADITIONAL TERRITORY

The University of Waterloo acknowledges it is situated on the Haldimand Tract, land granted to the Haudenosaunee of the Six Nations of the Grand River in the Haldimand Treaty of 1784. The Haldimand Tract and surrounding area, including our Stratford campus, is the traditional territory of the Attawandaron, Anishinaabeg, and Haudenosaunee.