Science at the University of Waterloo is at the forefront of innovation. Go beyond your existing limits — participate in groundbreaking research and engage in hands-on opportunities. Prove yourself while setting new limits — all while earning your Honours Bachelor of Science degree. This and more is possible in the Faculty of Science.

Science gives us solutions to the limitations that we, as humans, face every day — such as resource constraints or the pressures our bodies cannot tolerate. Science takes us beyond our limits into a world of infinite possibilities.

At Waterloo, your curiosity will push the boundaries of science using unique tools, technologies, and innovations. You’ll explore the ways that science helps us in, and beyond, our world. Whether it’s through our integrated programs or diving into pure science, we’ll equip you with the skills and knowledge you need to succeed here and into your future.
Life is beautiful

UNDERSTAND THE COMPLEXITIES OF LIVING ORGANISMS

From unravelling DNA strands to uncovering the mysteries of neuroscience, Life Sciences majors focus on discovering the world of living systems while gathering hands-on experience in labs, in the field, and on co-op terms.

Life sciences help to improve the quality and standard of all life and life systems in fields such as health, agriculture, the environment, and education. At Waterloo, this entry program groups together subjects of major interest that you can study starting in your first year.

(Psychology students confirm their major at the end of first year.)

#BEYOND IDEAS

While completing his degree in Biology, Remi gained an interest in computer science that led him to pursue the Bioinformatics Option within the Faculty of Science. Students pursuing this option learn, in an interdisciplinary environment, how to apply the power of computers to solve complex biological problems. During one of his co-op terms, Remi used these skills to analyze the genomes of cancer patients — looking for abnormalities that could aid in understanding a rare form of childhood cancer.

#1 IN CANADA

amongst comprehensive universities
for experiential learning (Maclean’s)
LIFE SCIENCES MAJORS

Happy splice, happy life

Study the subjects that most interest you, right from day one.

Life Sciences majors prepares you for exciting careers, inspiring graduate programs, and admittance into professional schools such as medicine, pharmacy, or optometry.

A degree in Biochemistry, as well as Chemistry, fulfill the requirements for a professional membership in the

CHEMICAL INSTITUTE OF CANADA

Apply to Life Sciences on OUAC*, choosing one of the subjects of major interest outlined here. You’ll begin studying your chosen major in your first year.

BIOCHEMISTRY

Study the chemical processes in living organisms, and utilize your foundation in chemistry to better understand biological systems. You have the option to specialize in biotechnology, positioned to be a dominant industry over the next 50 years.

BIOLOGY

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. Optional specializations are available in animal biology, biotechnology, environmental biology, microbiology, molecular genetics, or plant biology. You can also choose our Bioinformatics Option, which combines biological studies and computer science.

BIOMEDICAL SCIENCES

Study human systems and their functions related to health, disease, and the healing process. Prepare for careers in health care, such as medicine, optometry, and pharmacy. This major gives you the flexibility to pursue other courses outside of science, providing you with a well-rounded education that professional schools value.

LIFE PHYSICS

Harness the power of physics and apply it to biological systems. By accessing our state-of-the-art labs and applying your knowledge through experiential learning, you’ll be prepared to work in the fast-evolving and interdisciplinary fields of health technology, such as radiation oncology and medical imaging. Optional specializations are available in medical physics or biophysics.

PSYCHOLOGY

Explore human behaviour and mental functions and connect the physiological and biological processes that underlie neuroscience. Gain hands-on skills in labs and seek to understand the scientific foundations of psychology when you work toward your Honours Bachelor of Science degree. Confirm this major at the end of your first year.

*Ontario Universities’ Application Centre

CO-OP AVAILABLE

OPTION TO ADD A CONESTOGA COLLEGE BIOTECHNOLOGY TECHNICIAN DIPLOMA
We’ve got great chemistry

STUDY NONLIVING SYSTEMS AND THEIR APPLICATIONS TO SCIENTIFIC THEORIES AND PHENOMENA

Learn about the physical world around you, from particles and the elements, to the earth and the universe. Physical Sciences majors push the boundaries of knowledge in chemistry, physics, and earth sciences. Expand your skills in our state-of-the-art labs and create research opportunities that help gain valuable experience.

Physical sciences can be applied to every facet of the world around us. It leads to a wide range of careers including forensics, alternative energy, geophysics, pharmaceuticals, astrophysics, and medicine. This entry program groups together subjects of major interest that you can devote yourself to starting in your first year.

#BEYONDIDEAS

When Christian first started in the Biomedical Sciences program at Waterloo he thought he had his future figured out. However, when he experienced that feeling of uncovering something new, coupled with his interest in chemistry, he decided to switch into the Medicinal Chemistry program. He now pursues his passions for synthetic chemistry and the drug discovery process through his co-op terms working for leading researchers and pharmaceutical companies.
PHYSICAL SCIENCES MAJORS

TOP 5 in Canada for Materials Science

TOP 5 in Canada for Physics and Astronomy

Up and atom!

Apply to Physical Sciences on OUAC, choosing one of the subjects of major interest outlined here. You’ll begin studying your chosen major in your first year.

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 using advanced chemical instrumentation and participate in the department’s cutting-edge research. Optional specializations are available in bio-based chemistry, computational chemistry, or materials chemistry.

MEDICINAL CHEMISTRY
Study as a chemist who can design, synthesize, and evaluate potential drugs. Gain hands-on experience through synthetic labs and co-op terms that will uniquely qualify you for careers in a rapidly evolving industry.

MATERIALS AND NANOSCIENCES
Dive into the world of nanoparticles and learn about the properties of materials, such as superconductors, insulators, and biomaterials, and how they’re designed and synthesized. You’ll prepare for careers in fields such as nanotechnology, quantum materials, bionic research, or the energy sector. Also, you will be able to take advantage of our affiliation with the Waterloo Institute for Nanotechnology.

PHYSICS
Explore matter, energy, and forces at the deepest level, including experiential learning opportunities in co-op programs and upper-year research projects. You’ll take courses and labs covering a broad range of topics, including quantum mechanics, electromagnetism, optics, condensed matter, gravitation, and relativity. An optional specialization is available in applied physics.

MATHEMATICAL PHYSICS
Apply your love of mathematics to the understanding of how the natural world works. Solve problems in physics by studying theories and laws in areas such as quantum physics, electricity, magnetism, and mechanics. Graduates are prepared for a wide range of careers in research and development, from theoretical foundations of quantum technologies to the mathematically-intensive unified theories of nature.

PHYSICS AND ASTRONOMY
Study our vast universe, from subatomic particles to planets, stars, and galaxies — while learning about the origin, evolution, and fate of the whole cosmos. Engage with professors who are using state-of-the-art satellites and telescopes to explore space while you prepare for careers in fields such as astrophysics and space science.

EARTH SCIENCES
Learn about the world under your feet by exploring topics such as geology, geophysics, geochemistry, and hydrogeology. As part of one of the best curriculums in Canada, the courses, hands-on field trips, and lab studies you take could qualify you with the Association of Professional Geoscientists of Ontario. You’ll be prepared for careers in exploration, environmental protection, oil and gas, and consulting. Specialize in hydrogeology, geophysics, or geology.

*Ontario Universities’ Application Centre
SCIENCE MEETS BUSINESS

Bridging the gap

COMBINE YOUR PASSION FOR SCIENCE WITH PRACTICAL BUSINESS SKILLS IN ONE OF OUR UNIQUE PROGRAMS

SCIENCE AND BUSINESS

Incorporate courses in science with expertise in business disciplines such as law, economics, accounting, and marketing. You’ll be part of a dynamic class with access to award-winning professors and one-of-a-kind workshops that allow you to apply your scientific expertise and analytical skills to business situations and opportunities. Optional specializations are available in biochemistry, biology, biotechnology, chemistry, earth sciences, environmental sciences, or physics.

BIOTECHNOLOGY/CHARTERED PROFESSIONAL ACCOUNTANCY

Understand how biological processes are used to develop new technologies while gaining knowledge and expertise in financial management, accounting, auditing, and taxation. Companies value the transferable skills you’ll develop, especially in the subject of biotechnology, one of the most rapidly growing industries in North America. You can also gain up to 16 months of paid co-op experience to count toward your Chartered Professional Accountant designation.

BIOTECHNOLOGY/ECONOMICS

Make an impact in areas such as commercialized biotechnology, medical diagnostics, or pollution monitoring by applying your science knowledge with skills in economics. With hands-on workshops and 20 months of co-op experience, you’ll examine technology from a business perspective and use scientific analysis to solve business problems. Opportunities include consulting companies and research firms.

CAREER POSSIBILITIES

- Technology development
- Finance and accounting
- Pharmaceuticals and medical technology

TOP 10 in Canada for Accounting and Finance

#BEYONDIdeAS

Nicole is part of the tight-knit community that is Science and Business — a unique program that brings business perspectives to science and technology while building connections in specialized workshops and co-op work terms. From staining microscope slides to interviewing start-up companies, Nicole is preparing to enter the workforce with confidence.
ENVIRONMENTAL SCIENCE

A good planet is hard to find

Understand the challenges facing our environment and Earth’s ecological systems.

Explore the realms of ecology, biology, chemistry, and geoscience to better understand the impacts of human and nonhuman influences on environmental sustainability, biodiversity, and hydrology/hydrogeology. With experience through hands-on field labs and lectures, you could qualify with the Association of Professional Geoscientists of Ontario.

Specialize in ecology, geoscience, or water science.

CAREER POSSIBILITIES
- Environmental consulting
- Geoscience research
- Environmental assessment

Science and Aviation

Things are looking up!

Earn your Honours Bachelor of Science degree and a commercial pilot licence — it’s possible at Waterloo.

Build a career as a pilot while studying the scientific foundations associated with flight and the field of aviation. You’ll benefit from our partnership with the Waterloo Wellington Flight Centre (WWFC), one of Canada’s largest flight-training facilities. Optional specializations are available in earth sciences or physics.

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 Waterloo Regional International Airport in Breslau, Ontario — a 20 minute drive from the University.

#BEYONDIDEAS

When Katherine, an Environmental Science student, first came to Waterloo she was uncertain what her path would be. Through her diverse co-op terms, living in St. Paul’s GreenHouse residence, and being active in her student community, Katherine made connections and found her passions: environmental outreach and education.

KATHERINE

#BEYONDIDEAS

Doing something different is what inspired Clement, a Science and Aviation student at Waterloo, to pursue his pilot licence. He has always enjoyed science, and flying gives him the ability to see the world from a completely different perspective. Now in his third year, Clement has gained over 175 hours of flight time while working toward completing his degree. When he graduates, he’ll have both the knowledge and the skills to follow his dream of working with a world-leading airline.
Anything’s possible!

Honours Science

Craft your own degree by taking courses that fit with your passions and interests, or align your labs and lectures to the requirements of any professional school you want to attend. With Honours Science, you have the freedom of discovery.

School of Optometry and Vision Science

Optometrists focus on eye health and vision care to help their patients see their world better.

Learn with confidence about biomedical, vision, and clinical sciences while taking advantage of our state-of-the-art facilities and advanced clinical training. With a Doctor of Optometry degree (OD) from Waterloo, you’ll have the skills and knowledge to enjoy a successful career as an optometrist.

Graduate with 2 degrees by choosing a Waterloo Science program prior to attending our School of Optometry and Vision Science — Canada’s only Doctor of Optometry degree program taught in English.

School of Pharmacy

Pharmacists help patients achieve the best possible outcomes of their drug therapy.

Learn about the science behind pharmacy such as chemistry, biology, and mathematics, while honing your skills in pharmacy business management, communication, entrepreneurship, and patient care.

A program like no other, Waterloo’s School of Pharmacy offers Canada’s only co-op-based Doctor of Pharmacy degree program. This gives you valuable experience and skills that will allow you to practice with confidence.

Use a Waterloo Science program as a pathway to Pharmacy and graduate with 2 degrees: BSc (Honours Science) and PharmD (Doctor of Pharmacy) in as little as 6 years.

The fastest routes from our undergraduate programs into our professional schools are through Honours Science, Biology, and Biomedical Sciences. You can major in other subjects, but keep in mind it will take longer to achieve the admission requirements for our professional schools.
IT’S A SCIENTIST’S LIFE FOR ME!

Rocks and atoms and cells, oh my!

VAISHNAVY
Gives salads to fellow students during the Science Society’s Wellness Wednesday campaign.

AUSTIN
Works with friends between classes in the Materials and Nanosciences (MNS) Society room — one of 7 Science Society clubs — located in the Science Teaching Complex (STC).

TIM
Helps a student during one of his Science Student Help Team sessions.

COLIN
Performs the Secret Science Dance with his classmates, a unique dance that each graduating class learns in their first year.

RAEANA
Motivates and excites students with a new cheer during orientation week.

STEPHANIE
Chats with high school students during our Fall Open House, outlining the benefits of the Environmental Science program.

JESSICA
Chats with members of the Science and Business Student’s Association while enjoying snacks at the local Taco Farm establishment.
AT WATERLOO, WE VALUE THE ONGOING CONTRIBUTIONS TO SCIENCE AND DISCOVERY MADE BY OUR STUDENTS. THAT’S WHY WE’VE INVESTED SO MUCH INTO CAREER PREPARATION AND WORLD-CLASS RESEARCH.

1,200 jobs created by Velocity companies

RESEARCH
As an undergrad student at Waterloo, you don’t have to wait until after graduation to participate in world-class research — it’s already happening within Science!

ENTREPRENEURSHIP
We’re home to Velocity Science, a partnership between the Faculty of Science and Velocity, a leading entrepreneurial program and the largest free startup incubator in the world. If you have a life science or materials science startup idea you’ll have access to a discovery lab, as well as mentoring and coaching.

VELOCITY SCIENCE
velocity.uwaterloo.ca/programs/velocity-science

GRADUATION PATHWAYS
Choose your own adventure!

What are your post-graduation plans? For some of our undergrads, it’s continuing onto graduate or professional school. For others, it’s straight into work or travel.

6% TRAVEL
Some graduates decide to travel before moving onto the next phase of their lives.

37% START WORKING IMMEDIATELY
Top career fields include health care and social services, scientific and technical services, education, finance, and manufacturing.

28% ENTER PROFESSIONAL SCHOOL
Top professional schools include medicine, optometry, pharmacy, nursing, teaching, and dentistry.

29% ENTER GRAD SCHOOL
More than half of students who go on to graduate studies stay at the University of Waterloo.

22nd in the world for graduate employability (QS 2017 Graduate Employability Rankings)
For those applying from outside Ontario or as an international student on a study permit, check specific requirements online.

Transferring from a college, another university, or a CEGEP? Contact transfer@uwaterloo.ca about transfer credits and acceptable courses.

Choosing from 2 Systems of Study

**Regular**
Move on to a career or further education (e.g., professional or graduate school) a full year sooner than in co-op. Enjoy continuity in campus activities.

**Plan Your Own Summers**
for work, travel, volunteering, or extra courses

**Co-op**
In most science majors you can choose the co-op system of study.

› Alternate study terms with 4- or 8-month paid work terms.
› Explore a variety of careers and make valuable networking contacts.
› Graduate with almost 2 years of work experience — from entry-level to more advanced positions.

The University of Waterloo offers the
**World’s Largest Co-op Program**

Regular, with an Edge
Pair the consistency of September to April study and summers off with our experiential education certificate program, EDGE®.

EDGE allows you to enhance your academic, co-curricular, and work experiences with professional development. You’ll learn how to market the skills you’ve gained inside and outside the classroom to set you apart from the competition.

› Complete your degree in 4 years.
› Use summer jobs, volunteer experiences, and experiential course-work towards your EDGE certificate.
› Have greater flexibility to study abroad.
› Enjoy continuity of studies, social life, and living arrangements.
› Graduate with an action plan developed in partnership with career advisors.

*Available for regular system of study only.

**FINANCING YOUR EDUCATION**
You’ve worked hard to meet our requirements and we want to reward you for your efforts. In addition to what’s listed below, learn more about a number of additional Faculty of Science scholarships online.

**TYPICAL CO-OP AND REGULAR WORK-TERM SEQUENCES**

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**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 the results of an English language test. Review which tests are required, the timelines, minimum scores, and other details online.

Visit uwaterloo.ca/chemistry/chem13 for more information on specific program requirements.

For more information on our other programs:

uwaterloo.ca/science/programs