



**UNIVERSITY
OF ALBERTA**



**FACULTY OF
SCIENCE**

VIEWBOOK 2025-2026

WE ARE

Making discoveries.

Pushing boundaries.

Responding to global
and societal changes.

We are training the next generation
of scientists to meet the challenges
on the horizon.

Territorial Acknowledgement

The University of Alberta acknowledges that we are located on Treaty 6 territory, and respects the histories, languages, and cultures of First Nations, Métis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our vibrant community.

Outside the Centennial Centre for Interdisciplinary Science (CCIS) building at the U of A.

Our Programs Are Top Ranked



#1
IN CANADA FOR
EARTH SCIENCES



#1
IN CANADA FOR
ARTIFICIAL INTELLIGENCE



#2
IN CANADA FOR
BIOLOGICAL SCIENCES



#3
IN CANADA FOR
PALEONTOLOGY



#4
IN CANADA FOR CHEMISTRY,
GEOLOGY AND GEOPHYSICS



\$9.7M
IN FINANCIAL SUPPORT
AWARDED ANNUALLY



\$80M
IN RESEARCH FUNDING
THIS YEAR

Our undergraduate Science degrees are extraordinarily customizable programs – encompassing a breadth of topics spanning 12 teaching departments and 29 areas of study.



Inside the CCIS Building.

DEPARTMENTS



Biological Sciences



Chemistry



Computing Science



**Earth and
Atmospheric Sciences**



**Mathematical and
Statistical Sciences**



Physics



Psychology



**Medical and
Health Sciences**

Degree types

You can choose from three degree types. Each degree provides a holistic understanding of the chosen field, and can be applied to numerous industries.

BSc (MAJOR)

- Major, double major or major/minor for most subject areas
- Choose from full-time or part-time course load
- Internships available

BSc (HONORS)

- Honors or Honors/minor for most subject areas
- Double major not permitted
- Includes a mandatory capstone or research experience
- Higher level of academic performance is expected
- More specialized courses required
- Choose from full-time or part-time course load
- Internships available

BSc/BEd

- 5 year program
- Dual degree (BSc Specialization and BEd Secondary)
- 7 major/minor combinations
- Highly structured, full-time course load only
- Internships available

DID YOU KNOW?

Optional minors are available for Major/Honors programs from Science, Arts, Native Studies, Agriculture, Nutrition, Human Ecology and Business!



CAREERS

Aquatic technician
Environmental consultant
Environmental law enforcement
Food and water quality technician
Forensic biologist
Government of Canada research assistant
Medical librarian
Outdoor education specialist
Pest management

DID YOU KNOW?

16 courses can be used towards a Biological Sciences degree: Biochemistry, Botany, Genetics, Immunology & Infection, Microbiology, Neuroscience and Zoology... to name a few!

Thea, an Immunology and Infection student on internship at the Northern Forestry Centre, with supervisor, Forest Pathology Technical Expert, Colin L. Myrholm.

Biological Sciences



Ranked #2 in Canada, this program studies the environment, climate change, and its effects on life and biodiversity. This includes plants, animals, microorganisms and ecosystems, genetics, health, cellular structures, past life forms, and evolution. Approximately half of our biology related courses contain a laboratory component for valuable hands-on work. Enhance your learning by visiting our various teaching museums with millions of specimens ranging from mammals and reptiles, to dried plants and insects.

Available Majors/Honors:

- Biological Sciences
- Ecology, Evolution & Environmental Biology
- Integrative Physiology
- Molecular, Cellular & Developmental Biology



U of A Science students working in a chemistry lab.

Chemistry



Chemistry is connected to all scientific disciplines in one way or another, making it a highly practical degree to branch out to almost anything. As one of the most active chemistry research departments in North America, and **ranked #4** in Canada, we are home to several state-of-the-art instrumentation laboratories and focus on significant time in the lab perfecting techniques and experimentation to optimize training. Courses span general, analytical, organic and physical chemistry, as well as mathematics and the environment.

Available Majors/Honors:

- Chemistry (accredited & non-accredited options available)

The accredited degree option can lead to designation as a Professional Chemist!

CAREERS

Brewing industry laboratory technician
Cosmetic chemist
Food & drug inspector
Forensic laboratory analyst
Gilead nanomaterial processor
Hazardous waste management technologist
Quality control manager

Four undergraduate Chemistry students who completed CHEM 299 & 399 research courses were selected amongst other students from around the globe to participate in the esteemed DAAD: Rise (Research Internships in Science and Engineering) program in Germany this past summer!



CAREERS

Animator
Application analyst
Corporate security specialist
Database design and management
Healthcare analyst
Software or interface developer
Video game developer

DID YOU KNOW?

Computing Science offers unique certificates in artificial intelligence, applied data science and computer game development that any student can add to their degree!

Emma, a computing science student, working in the Rutherford Library on U of A's North Campus.

Computing Science



The first of its kind established in Canada, this program is **ranked #1** in Canada for AI and Machine Learning research. You can combine a computing science background with another topic of your choice to create a flexible and applied program. Students build strong theoretical and mathematical foundations, including hardware and software design and processes. You can even train in artificial intelligence, user interface design and telecommunications.

Available Majors/Honors:

- Computing Science
- Computing Science – Artificial Intelligence option
- Computing Science – Software Practice option



Select program streams lead to designations as a Professional Geoscientist and Registered Professional Planner!

First-year students participating in geology field school in Crowsnest Region, close to Coleman, British Columbia.

Earth and Atmospheric Sciences



Ranked #1 in Canada, our programs examine the Earth, its structure and evolution, and the atmosphere above us. Experiential learning is enhanced by diverse specimens in labs and museum collections, plus our students have access to the most coveted field locations in the world.

Available Majors/Honors:

- Earth Sciences
- Environmental Earth Sciences
- Geology
- Paleontology
- Planning (Honors – non-direct entry from high school)

CAREERS

City planner
Coal and diamond exploration specialist
Energy policy analyst
Environmental health officer
Government of Canada environmental consultant
Meteorologist
Museum curator
Oil sands data and decision specialist
Pollution control technologist

Introducing our new minor, Climate Dynamics: explore ocean physics and chemistry, and learn about weather prediction models and atmospheric composition.



Students in an undergraduate mathematics class on U of A's North Campus.



Danielle, a former Astrophysics student and The Shack's technician. The Shack is located in the CCIS building.

CAREERS

Apprentice economist
Biostatistician
Economic forecaster
Financial risk manager
Government of Canada data analyst
Statistics Canada enforcement investigator

Mathematical and Statistical Sciences



Consistently ranked in the **Top 4** in Canada, our program provides fundamental tools for analyzing and addressing some of today's most pressing issues, like climate change, epidemiology and economic forecasting. Whether it is the application of mathematics and statistics to real-world problems or the concept of the ideas, courses will challenge your imagination and increase your capacity for independent and creative thinking.

Available Majors/Honors:

- Applied Mathematics
- Mathematics
- Mathematics & Economics
- Mathematics & Finance (non-direct entry from high school)
- Statistics

Physics



One of the **Top 10** physics programs in Canada. Students build a strong background in modern physics, mechanics, thermodynamics, electromagnetism, relativity, quantum mechanics, statistical physics and laboratory work. Topics in the fields of laser spectroscopy, optics, electronics, nuclear physics, particle physics, stellar atmospheres and interiors, field theory, condensed matter and fluid dynamics are introduced in later years of the program.

Available Majors/Honors:

- Astrophysics
- Geophysics
- Mathematical Physics
- Physics

CAREERS

Diagnostic imaging physicist
Laser spectroscopy specialist
Nanotechnology research scientist
Nuclear energy worker
Radioactive waste technician
Satellite systems developer

DID YOU KNOW?

Our Geophysics program can lead to accreditation as a Professional Geophysicist!



U of A student Makboolee in the neurology lab using an electroencephalogram on a fellow researcher.



U of A medical sciences student working in cell biology lab.

CAREERS

Community engagement specialist
Employment counselor
Group home coordinator
Probation officer
Psychometrist

Introductory Psychology courses require students to act as research participants. It's a great way to learn about current research being conducted by the department!

Psychology



Shared between the Faculty of Science and the Faculty of Arts, our Department of Psychology offers students comprehensive opportunities to study two different aspects of the field. A science degree in psychology focuses on how the brain functions as well as how we perceive, learn and forget things. Students study perception and motivation, behaviour and cognitive development with emphasis on the physical, biological and mathematical sciences.

Available Majors/Honors:

- Psychology (Honors – non-direct entry from high school)

Medical and Health Sciences



In collaboration with the Faculty of Medicine & Dentistry, we offer a number of outstanding programs in health.

Available Majors/Honors:

- Biochemistry:** Explore complex chemical reactions that occur in a wide range of biological systems
- Cell Biology:** Integrates all life sciences to study cells and how they function
- Immunology & Infection:** Focus on infectious diseases from pathogen and host immune systems
- Neuroscience:** Interdisciplinary program covering all aspects of brain function
- Pharmacology:** Explore the chemical substances affecting living organisms
- Physiology:** Integrative study of cellular and whole-body function

CAREERS

Food science technologist
Forensic laboratory analyst
Health Canada product compliance officer
Healthcare consultant
Medical librarian
Pharmaceutical sales
Quality control manager
Research assistant

DID YOU KNOW?

You can apply to the Doctor of Medicine Program with **any** Bachelor degree.



U of A students learning VR teaching technology in the Education building.

Bachelor of Science (Specialization) / Bachelor of Education (Secondary) Combined

Would you like to teach science at the secondary education level? The BSc/BEd combined degree is a dual program offered jointly with the Faculty of Education. Students spend the first two years studying in the Faculty of Science and the remaining three in the Faculty of Education. At graduation, they receive both a science specialization degree and a secondary education degree.

Degree Features:

- 2 degrees in 5 years
- Secondary education only
- Structured course curriculum (requirements for both degrees and teacher certification must be completed within 5 years)

Major and Minor combinations:

- Biological Sciences Major/Mathematical Sciences Minor
- Biological Sciences Major/Physical Sciences Minor
- Mathematical sciences Major/Biological Sciences Minor
- Mathematical sciences Major/Physical Sciences Minor
- Physical sciences Major/Biological Sciences Minor, chemistry concentration
- Physical sciences Major/Biological Sciences Minor, physics concentration
- Physical sciences Major/Mathematical Sciences Minor

The major and minor combinations accommodate the variety of subject studies needed in secondary school teaching.

“

One of the most rewarding parts of my degree has been applying what I have learned in class into actual research. I am currently involved in a cognitive neuroscience lab that uses fMRI, a form of neuroimaging, to understand how people learn, specifically in terms of their reading comprehension. I am incredibly lucky to be where I am today with the surreal places the neuroscience program has brought me.”

ADWOA

4th Year, BSc Honors Neuroscience



“

The University of Alberta is the perfect place to explore the applications of AI in Alberta’s film and animation industries. I hope to use my knowledge of computer science to help prevent mass AI misinformation, and educate people on the benefits and dangers of this rapidly advancing technology through games, films and virtual reality.”

COLIN

2nd Year, BSc Honors Computer Science



“

I was able to pursue more opportunities at the University of Alberta than I ever thought possible, from certificates and research to studying abroad in Berlin last summer. I also got involved in multiple student groups like Women in Leadership and the Students Invested in Health Association, which allowed me to meet so many wonderful and inspiring people.”

REHMA

Recent BSc Honors Psychology Graduate



STUDENT GROUPS + CLUBS

To get the most out of your degree, we highly encourage participation in our student groups – there are numerous ways to connect with others through your passion for science!

Interdepartmental Science Students Society (ISSS)

As an undergraduate student in the Faculty of Science, you're automatically a member of the Interdepartmental Science Students Society – the official voice of students within the faculty. Run entirely by students, ISSS (pronounced "ICE") delivers useful services and fun events to the science community. This includes locker rentals, science-specific orientation and other community-building events.

Other department clubs:

- Chemistry Students' Association
- Immunology and Infection Students' Association
- Mathematical Sciences Society
- Molecular Biology Student Association
- Organization of Botany Students
- P.S. Warren Undergraduate Geological Society
- Undergraduate Association of Computing Science
- Undergraduate Physics Society
- Undergraduate Psychology Association
- University of Alberta Chapter of The Wildlife Society
- University of Alberta Paleontological Society

Department clubs run fun events throughout the year; the Chemistry Students' Association hosts an annual lab coat tie-dye event and the Organization of Botany Students hosts an annual plant sale and River Valley scavenger hunt!



Student supports

Students can access a dedicated team of advisors and academic support services, including:

- Science Student Services Office
- Decima Robinson Support Centre
- Chemistry Tutorial Centre
- Physics Tutorial Centre

Science Mentor Program

All incoming Science students have the opportunity to be paired with a mentor! The Science Mentor Program connects new students to a senior student for one-on-one, non-academic support during the first fall semester. uab.ca/sciencementor

The Central Academic Building, a favourite study spot, and home to the Decima Robinson Centre.

Decima Robinson Support Centre

DROP-IN HELP. WEEKLY REVIEW SEMINARS. EXAM STUDY SESSIONS.

What more could students taking introductory mathematics and statistics courses want? This centre also offers mathematics primer courses to help high school students make the transition to university.

Students receive math and statistics tutoring assistance at the Decima Robinson Support Centre.

DID YOU KNOW?

Decima Eveline Robinson was the very first Bachelor of Science in Mathematics graduate at the University of Alberta in 1911!



Students using the U of A Astronomical Observatory, located on the roof of the Centennial Centre for Interdisciplinary Sciences.

Spaces for Undergraduates

We have a multitude of lab spaces and special facilities to support learning. Hands-on experiences are important, and we have unique facilities to provide practical training in a safe environment.

Take a virtual tour: uab.ca/scitours

- **The Science Hardware Makerspace, AKA the Shack**, is a student hackerspace equipped with 3D printers, CNC milling machines, computers and electronics.
- **The Department of Physics Astronomical Observatory** houses three telescopes for solar and night sky observing on the roof of the Centennial Centre for Interdisciplinary Sciences.
- **The Petrology Undergraduate Laboratory** helps students refine their petrographic skills in igneous, metamorphic and sedimentary petrology using one of 20 polarizing microscopes.
- **The Planning Studio and Teaching Space** houses state-of-the-art equipment for teaching and ongoing studio projects in the Urban Planning program.
- **The Virtual Environments and Spatial Cognition Lab** is where we investigate human spatial cognition using behavioral and neuroimaging methods, including augmented reality (virtual reality), eye tracking, fMRI and ERP.
- **The Biotron** consists of an aquatic facility, greenhouse complex and large controlled environment facility. Environmental conditions can be tightly controlled for the study of animal and plant life.

Student Innovation Centre

The Student Innovation Centre is a collaborative workspace in the Faculty of Science for you to take your ideas beyond the classroom — creating real-world impact. Students from all types of programs use this space to collaborate on projects in areas like:

- Artificial intelligence
- Synthetic biology
- Space science
- Media (visual and audio) design and production
- Virtual reality
- Game development

This cutting-edge project space boasts:

- Drop-in space for planning and building your next prototype
- Breakout rooms for collaborations
- Ongoing workshops, events and seminars to boost creativity and ideation
- Resources for groups transitioning to entrepreneurship
- Access to technology including:
 - High-performance computing stations
 - Podcast studio space (including professional sound mixers)
 - Microsoft HoloLens

uab.ca/innov8



The Student Innovation Centre (SIC) was pivotal in scaling the U of A's International Genetically Engineered Machine (iGEM) student project which landed the team a silver medal at the 2023 Global iGEM Grand Jamboree in Paris. The SIC provided collaborative spaces, computing resources, a production studio for promotional videos and other essential assets for the project!

Students walking through the Student Innovation Centre.



Science student Reihaneh during her internship at the Royal Alexandra Hospital as part of the Science Internship Program (SIP).

RECENT INTERNSHIP PLACEMENTS

- Gilead
- Google
- Government of Canada
- Snolab
- Stemcell
- Suncor Energy
- Tesla
- Zymeworks

Science Career Centre

Our in-house science career centre hosts events and provides career resources and services to current students. See all the possibilities based on your area of study at uab.ca/sciencecareers

Internships During Your Degree

Science Internship Program

Explore career options with our Science Internship Program (SIP) and gain real-world work experience before you graduate.

Students in all science degrees are eligible to participate in 4, 8, 12 or 16-month paid work terms starting as early as second year.

SIP placements allow you to:

- Apply classroom knowledge to hands-on, real life situations
- Build your strengths, and clarify your interests and goals
- Graduate with a resume packed with relevant work experience
- Boost your chances of landing a great job after graduation
- Begin growing a professional network

uab.ca/sip

Research, Certificates and Online Learning

At the University of Alberta, research isn't limited to graduate students and faculty. We encourage our undergraduate students to ask their own questions and get involved with research early in their careers. Our training services, courses and certifications will teach you about scientific inquiry, data collection, analysis and reporting.

Certificates

Certificates allow for further study in a special area of interest that is not easily identifiable on a student's transcript. Our certificates are embedded – meaning they are taken alongside regular courses and completed over the course of your degree. By obtaining a certificate, you will enhance your degree and receive official recognition for the high level of skills you have developed.

We offer the following embedded certificates:

- Artificial Intelligence Everywhere
- Certificate in Applied Data Science
- Certificate in Computer Game Development
- Research Certificate in Science (Biological Sciences)
- Research Certificate in Science (Psychology)

Science students can also earn a certificate offered through other faculties. Examples include:

- Certificate in Biomedical Research
- Certificate in Innovation & Entrepreneurship
- Certificate in Sustainability

Online Learning

The Faculty of Science is a leader in online learning, collaborating with multiple faculties and developing digital courses free to the community and some for-credit for U of A students. Learn from experts through interactive, self-paced, online modules ranging from environment, space and paleontology to software design and management.

Popular courses include:

- Astro 101: Black Holes
- Bugs 101
- Dino 101
- Indigenous Canada
- Mountains 101
- Understanding Video Games

Check out the growing list of courses at uab.ca/mooc

Undergraduate Research

Add research to any science degree by taking courses (as early as year 1), a research certificate, working or volunteering in a departmental research lab, taking on a research internship term or completing research abroad.

The Undergraduate Research Initiative (URI) supports students through hands-on research and creative activities. uab.ca/uri



At Dotdash, it wasn't just about managing complex applications and contributing to seamless user experiences, but also about getting to apply the skills you learn in university."

RANA,
4th Year Computing Science student
on a 12 month internship at Dotdash in Edmonton

STUDY ABROAD PROGRAM

95 Science students attended our Education Abroad program in 2023-24!

IF YOU ARE A FIRST OR SECOND YEAR SCIENCE STUDENT, explore the exciting opportunities offered through Education Abroad and plan your degree with an academic advisor. The U of A has over **260 study abroad programs** in **over 46 countries**, with over a million dollars in funding available.

Recent study abroad opportunities:

- University of Oslo Canorock Step Exchange
- City University of Hong Kong Science Exchange
- DAAD Rise Research Internship in Germany
- KAUST – Visiting Student Research Program in Saudi Arabia

uab.ca/goabroad

Bamfield Marine Sciences Centre

Your oceanside campus.

Attend Canada's premier coastal research and training facility — located on the exposed west coast of Vancouver Island. Earn credit while taking unique undergraduate field courses during the summer and fall semesters in coastal marine sciences. Live on-site and learn in a first-class, experiential environment with state-of-the-art research facilities. This partnership maximizes marine science opportunities for U of A students!



“

My work in the German Academic Exchange program “DAAD” involves a lot of fun training using positive reinforcement to provide enrichment for each animal while teaching commands relevant to our research methods. I have been enjoying the hands-on nature of my research, as well as the applicability of this experience to all aspects of my degree: double major in biology and psychology with certificates in sustainability and international learning.”

KIARRA

4th Year, Biological Sciences, Psychology Major





Class change in the CCIS Building. This LEED-certified building hosts cutting-edge research and collaboration across all science departments.



KEEYA
4th Year, Honors Geophysics,
from Entwistle, AB

“

As one of the only undergraduate students pursuing a major in Geophysics, I am the physics department’s hidden secret, but I have made it my mission to highlight this amazing program and how fascinating geophysics truly is.

When I tell people my major, I hear “Do you study how fast rocks can be thrown?” or “What even is geophysics?” Firstly, geophysics is the exploration of the processes that drive the Earth’s intricate planetary system. For me, geophysics is a way to understand the interconnected 22 relationships between life, culture, and nature.

My program has even prepared me for an opportunity to spend two months off the grid, traversing the Juneau Icefield to study components of the glacial environment. This has inspired me to become a successful Indigenous woman leading my own geophysical expeditions to beautiful regions of the world. I hope this showcases the incredible field of geophysics and inspires prospective students to consider environmental studies!”

“

When I started university, I had a vague idea of what I wanted to accomplish but creating new social connections and friendships was never my priority. Luckily, my sister encouraged me to apply to become an ambassador, and it ended up being my golden ticket to understanding the importance of friendships and fun. I will never forget the time spent carving pumpkins, playing Campus Cup, or volunteering at Open House. Student life can be stressful, so it is important to cherish these experiences that we will carry with us throughout our lives.”

DHARMA
3rd Year, Immunology + Infection Major



READY, SET, APPLY!

Engage in Scientific Discovery

Join us in the Faculty of Science for an unparalleled education, and let our world-renowned instructors teach you, train you and help you develop the specific skills needed to excel in your discipline.

SEE YOURSELF HERE!

Students in a lecture hall in CCIS, the largest on North Campus.

ACADEMIC REQUIREMENTS

Admission to the Faculty of Science is competitive and requirements vary depending on applicant type (directly from high school or post-secondary transfer) and program.

Required Alberta Grade 12 Courses (or equivalents)

- English 30-1
- Math 30-1
- Two Science courses from:
 - Biology 30
 - Chemistry 30
 - Physics 30
 - Math 31
 - Computing Science ADV (CTS - 5Cr)
- One additional course:
 - Fine Arts
 - Humanities
 - Languages other than English
 - Math/Sciences

*In addition to admission requirements, programs may require specific Grade 12 prerequisites to register in university courses: uab.ca/sciprereq

**BSc/BEd requires the two science courses to be Biology 30 & Chemistry 30

Programs and admission requirements (including non-direct entry programs): uab.ca/programs

Historical admission averages by faculty: uab.ca/averages

Apply for scholarships and awards: uab.ca/awards

University access program for Indigenous students Transition Year Program: uab.ca/typ

Important deadlines and to apply: uab.ca/apply

FIND YOUR **PURPOSE**

uab.ca/science

ASK US

You've got questions.

We've got advisors.

science.recruiting@ualberta.ca

uab.ca/advising

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