



UNIVERSITY
OF ALBERTA

FACULTY OF SCIENCE

VIEWBOOK
2027
2028



WE ARE

Making discoveries.

Pushing boundaries.

Responding to global
and societal changes.

**Our mission is to shape the world by
bringing extraordinary science up close
and personal.**

Territorial Acknowledgement

The University of Alberta respects the sovereignty, lands, histories, languages, knowledge systems and cultures of all First Nations, Métis and Inuit nations.

The University of Alberta, its buildings, labs and research stations are primarily located on the territory of the Nêhiyaw (Cree), Niitsitapi (Blackfoot), Métis, Nakoda (Stoney), Dene, Haudenosaunee (Iroquois) and Anishinaabe (Ojibway/Saulteaux), lands that are now known as part of Treaties 6, 7 and 8 and homeland of the Métis.



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



#1
IN CANADA FOR
BIOLOGICAL SCIENCES



#3
IN CANADA FOR
COMPUTER SCIENCE



#3
IN CANADA FOR
PALEONTOLOGY



#4
IN CANADA FOR
CHEMISTRY



#4
IN CANADA FOR GEOLOGY
AND GEOPHYSICS



#4
IN CANADA FOR
ENVIRONMENTAL SCIENCE



\$11.3M
IN FINANCIAL SUPPORT
AWARDED ANNUALLY



\$90M
IN RESEARCH FUNDING
THIS YEAR

Our undergraduate Science degrees are extraordinarily customizable programs. Topics span 12 teaching departments and 33 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 in Science and Education and BEd in Secondary Education)
- 6 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!



Victor Shegelski, collection manager of the E.H. Strickland Entomological Museum, shows a group of undergraduate students a display of a variety of preserved insects.



U of A Science students working in a chemistry lab.

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!

Biological Sciences



Ranked #1 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

Chemistry



Chemistry is connected to all scientific disciplines, making it a highly practical degree. 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.

This program includes significant time in the lab where students perfect techniques and experimentation. 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) in Germany!



Instructor Mohammed Elmorsy (centre) teaches a group of students in the University Commons building about computing science techniques to carry out image compression.



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

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!

Computing Science



The first of its kind established in Canada, this program is **ranked #3** in Canada for computer science. 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 (5 year)
- Data Science
- Data Science – Computing Option

Mathematical and Statistical Sciences



Consistently ranked in the **Top 5** 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 foundational tools of analysis, courses will challenge your imagination and increase your capacity for independent and creative thinking.

Available Majors/Honors:

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

CAREERS

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

Our new Data Science program offers three option streams: Computing, Mathematics and Statistics.

Select program streams lead to designations as a Professional Geoscientist or Registered Professional Planner.



Undergraduate students in the mineralogy lab.



Undergraduate students using a gravity well table in the astronomical observatory space in CCIS.

CAREERS

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

Climate Dynamics Minor:
Explore ocean physics and chemistry, and learn about weather prediction models and atmospheric composition.

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)

Physics



This program is consistently ranked as 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 designation as a Professional Geophysicist!



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



Medical sciences student working in a cell biology lab.

CAREERS

Community engagement specialist
Employment counsellor
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 that affect living organisms.
- Physiology:** Immersive 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 of Science program.



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

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

Would you like to teach science at the secondary education level? This is the program for you!

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 (grades 7-12)
- Structured course curriculum

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
- Physical Sciences Major / Mathematical Sciences Minor

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

“

It's been so rewarding to form so many great relationships with both fellow classmates and professors. In particular, my undergrad supervisor has had such a huge impact on me, both academically and personally. Never at any point in pursuing my degree have I felt alone because there are always so many amazing people around me.”

EVELINA

4th year, BSc Double Major in Astrophysics and Math



“

My university journey began through the Transition Year Program (TYP), which really helped me adjust and introduced me to peers in similar circumstances, many of whom became my close friends.

I also found my home away from home at First Peoples' House, where I find the staff to be incredibly supportive. As a Nêhiyaw woman from a small reservation, representation and community mean a lot to me. Every day I continue to learn from those surrounding me, and that has motivated me to give back in the same way.”

LILY

2nd year, BSc Physics, from Montana First Nation, AB

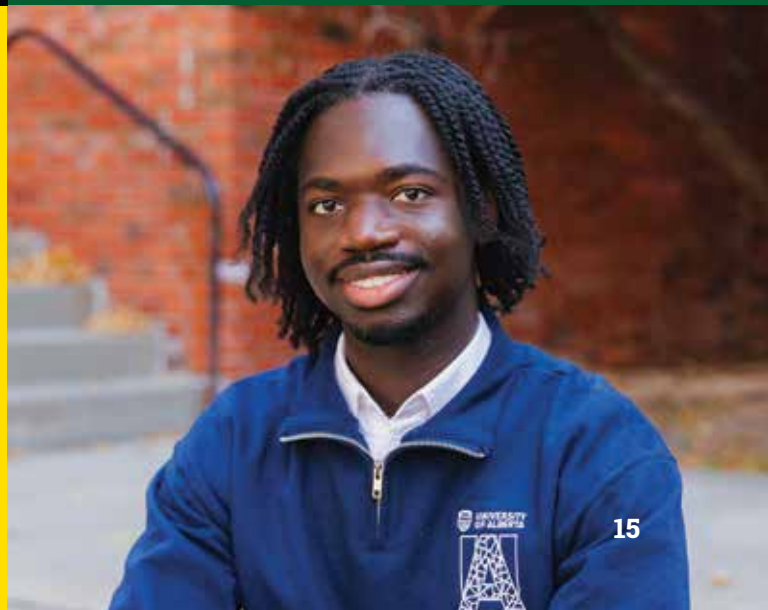


“

Last year, I travelled to Mexico and England to compete in a global competition where my initiative helped to provide solar-powered battery packs to communities lacking access to reliable electricity in my home country of the Democratic Republic of the Congo. I saw how far small ideas can go and the impact that can come from listening and taking action.”

MICHAEL

4th year, BSc Biological Sciences



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 this group – the official voice of students within the faculty.

Run entirely by students, ISSS delivers useful services and fun events. issss.ca

Other clubs:

- Chemistry Students' Association
- Immunology and Infection Students' Association
- Indigenous in STEM Student Association (ISSA)
- 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

Get excited for these events! 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
- Physics Help 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.*

Decima Robinson Support Centre

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

This centre offers:

- Drop-in help for math and statistics
- Weekly review seminars
- Exam study sessions
- Math primer courses to help high school students make the transition to university

DID YOU KNOW?

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

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





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

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 evening observing on the roof of the Centennial Centre for Interdisciplinary Science.
- **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 behavioural and neuroimaging methods, including augmented reality (virtual reality), eye tracking, fMRI and ERP.
- **The Biotron** consists of an aquatic facility, a greenhouse complex and a large controlled environment facility. Tightly-controlled environmental conditions are 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 and create real-world impact. U of A students from any faculty can 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 collaboration
- Ongoing workshops, events and seminars to boost creativity and ideation
- Access to technology including:
 - AI-embedded robots
 - VR Headsets
 - Cinematography equipment (Cameras, Portable photo studio light box, Gimbals, Lapel mic)
 - Wacom Cintiq pro creative tablets for 3D and animation design
 - Advanced gaming console
 - Productivity Software Suite
 - And more!
- A structured venture pathway guiding students from ideation through validation and toward launch

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 gold medal at the 2024 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.



RECENT INTERNSHIP PLACEMENTS

ATCO
Canadian Museum of Nature
City of Edmonton
Gilead
Government of Canada
Millard Health
PCL Construction
PulseMedica
Sanofi Pasteur
TD Bank
WestJet

Frances, a current computing science student, on internship with the City of Edmonton as part of the Science Internship Program (SIP). During her internship she built applications and performed data analysis to help the horticultural and snow removal teams optimize their day-to-day operations.

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:

- Learn effective ways of connecting with employers
- Gain insight into workplace expectations while applying your classroom knowledge
- Advance your communication skills
- Develop effective job search strategies
- Build and grow your professional network
- Explore various career paths and opportunities

uab.ca/sip

Robert, a current science student, on internship with the RCMP forensics team as part of the Science Internship Program (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 to 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 you to study a special area of interest and receive official recognition on your transcript once you've completed them. It's a focused credential made up of 4-6 courses (12-18 credits) that you can seamlessly integrate into your degree program.

The Faculty of Science offers the following embedded certificates:

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

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

- Certificate in Innovation & Entrepreneurship
- Certificate in Sustainability

Online Learning

Since 2014 and the launch of our first Massive Open Online Course (MOOC), Dino 101 – recently named one of the Top 50 MOOCs of all time – the Faculty of Science has cemented its place as a world leader in the production of MOOCs (which are free to anybody in the world) and as accredited undergraduate options for Faculty of Science students.

MOOCs you can take right now:

- Astro 101: Black Holes
- Bugs 101: Insect-Human Interactions
- Introduction to the Arctic: Climate
- Paleontology: Ancient Marine Reptiles
- Paleontology: Early Vertebrate Evolution
- Paleontology: Theropod Dinosaurs and the Origin of Birds
- Problem Solving, Programming and Video Games (PVG)
- Understanding Video Games

Check out the growing list 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



STUDY ABROAD PROGRAM

**113 Science
students
attended**
our Education
Abroad program
in 2025-26!

IN YOUR FIRST AND SECOND YEAR YOU CAN explore the exciting opportunities offered through Education Abroad and plan your degree with an academic advisor. The U of A has over **240 study abroad programs** in **over 50 countries**, with over a million dollars in funding available.

Recent study abroad opportunities:

- BIOL 395: Field Studies in Science and Leadership (Costa Rica)
- Peking University - Summer Program (China)
- School in Cortona - Spring (Italy)
- University of Leeds Research Internship (UK)
- Waseda University - Summer Program (Japan)

uab.ca/goabroad



“

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

Recent graduate, Biological Sciences and Psychology Major

The area surrounding the Bamfield Marine Sciences Centre, located on Vancouver Island.

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!





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



PRAGATI
2nd year, BSc Computing Science,
from India

“During my first year, I was required to withdraw from my initial BSc program in Computer Science and enrol in the Fresh Start Program. Everyone’s lives were turned upside down with the COVID-19 pandemic. The pandemic was an opportunity for me to confront myself without the chaos of life. It wasn’t just academic recovery; it was a shift in identity. I recognized that I have a lot of compassion for children. This compassion pointed me towards who I wanted to be.

I returned to the Faculty of Science and pursued my passion in Psychology, and since then have made a strong return to the academic research, and clinical scene.”

HOGAN
5th year, BSc Psychology



“New city, new culture, new people — my university journey began with everything being unfamiliar except my determination.

During my first semester, I explored every resource I could. I began booking Career Centre appointments, exploring research opportunities and joining student clubs. These experiences helped me build meaningful friendships while learning the importance of diversity and effective communication.

By second semester, I was tutoring at the Students’ Union and competing in my first hackathon. Office hours became my favourite routine for both academic help and genuine mentorship from supportive professors who never minded my countless questions. Looking back, this journey has helped me grow by teaching me adaptability, curiosity and the courage to reach out.”

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 CCIS lecture hall — 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 and 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

ASK US

You've got questions
and we've got advisors.
science.recruiting@ualberta.ca
uab.ca/advising

FOLLOW US

 @UAlbertaScience
 @UAlbertaScience
 @UAlbertaScience

FIND YOUR PURPOSE

uab.ca/science