

# WE WANT YOU. TO JOIN OUR TEAM.



UNIVERSITY OF ALBERTA  
FACULTY OF ENGINEERING

**WE WANT YOU.**

STARTER  
LEAVE A  
DOER.



**Welcome to the  
University of  
Alberta Faculty of  
Engineering, where  
we've been turning  
thinkers into doers  
since 1908.**

You're not one to shrug your shoulders when presented with a challenge. You've always thought there is a solution to every problem, and sometimes more than one. Are you ready for the next step?

Do you have a head for science and math? Do you approach challenges creatively? Looking at every angle, exploring all possibilities? Engineers do that. They're problem solvers. Trailblazers. Innovators. From advanced robotics to food and water safety, clean energy to computer hardware and software, health care to housing, engineers use their knowledge and education to develop creative approaches and deliver solutions that make a difference the world over.

[uab.ca/engineering](http://uab.ca/engineering)

# IT'S YOURS TO TAKE ALL THE THINGS YOU CAN SEE HOW TO LOOK AT THEM

Where others see problems, you see solutions. Where there is confusion, you find clarity. Where there is mediocrity, you get creative.

While the study of engineering requires an aptitude for math and science, it also offers an opportunity for unlimited creative expression, exploration and innovation. There's no telling what you can achieve.

Now, are you up for the challenge?  
[uab.ca/engstudy](http://uab.ca/engstudy)

# First-Year Engineering

**When it comes to teaching engineering, we're not boasting when we say that we're good at this.**

Real good in fact. For over 110 years, the University of Alberta's Faculty of Engineering has provided excellence in engineering education through our world-class facilities, diverse and innovative programming, and award-winning teachers and researchers. We offer 21 fully accredited undergraduate degree programs, ranking us among the top engineering faculties in North America.

[uab.ca/engprograms](http://uab.ca/engprograms)

The Faculty of Engineering has the second-largest co-operative education program in Canada—providing you paid, real-world experience as part of your degree. We offer an innovative learning environment, the chance to learn inside and outside the classroom, and a highly supportive student community.

[uab.ca/engcoop](http://uab.ca/engcoop)

This is where it all begins. Your first year gives you a solid foundation and introduces you to the many facets of engineering and how you can make a difference.

## Term 1

CHEM 103

ENGG 100

ENGG 130

ENGL 199

MATH 100

PHYS 130

## Term 2

CHEM 105

ENCMP 100

ENGG 160

EN PH 131

MATH 101

MATH 102

Following your first-year program, you'll be able to apply to the different areas of specialization—including choosing between the Traditional and Co-operative (Co-op) education routes. Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more details.

## First-Year Engineering in French: The Campus Saint-Jean Cohort

Êtes-vous un génie? Le Campus Saint-Jean, en collaboration avec la Faculty of Engineering de l'Université de l'Alberta, offre la possibilité aux étudiants de faire leur première année du Baccalauréat en génie (BSc Eng) en français. Visitez [uab.ca/genie](http://uab.ca/genie) pour plus d'informations.



# Biomedical Engineering

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This is truly life-changing stuff. Biomedical engineers use their skills to solve problems in medicine and biology. Working with human structures and systems, they apply engineering principles to advance health care and treatment to improve the quality of life for people around the world.

**Studying biomedical engineering will not only change your life, but also give you the opportunity to change the lives of others—for the better.**

## Programs

Mechanical Engineering:  
Biomedical Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.



# Chemical Engineering

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People say it's a process. And chemical engineers are all about the process. Always looking to design, create and

improve ways of turning raw materials into finished products. You can see their work in all facets of daily life from consumer products like cosmetics and pharmaceuticals to industrial products like oil and natural gas.

You'll have a chance to learn from the best as our Chemical Engineering program is regarded as one of the leading programs in North America and is recognized for its energy and biomedical research.

**It's not just about if you can make it, but rather if you can make it better.**

## Programs

Chemical Engineering  
Computer Process Control Option  
Oil Sands Elective Stream

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.





# Civil & Environmental Engineering

▲  
**Lucy Kootenay, Fort McMurray/Alexander First Nation, Civil & Environmental Engineering student**

Lucy wanted to use her skills in science and math for a higher purpose and discovered career possibilities as an environmental engineer. "I come from Fort McMurray and my dad worked in the oilfield for 24 years, so sustainability has always been in the back of my mind," says Lucy. "Environmental engineering is the perfect blend of productivity and sustainability. I aspire to create green solutions in our industry-heavy society."

You've always dreamed of building a better world. Here's your chance.

By planning, building and maintaining the infrastructure needed to survive diverse climates, extreme weather and the needs of an aging population, civil and environmental engineers are building communities. And by addressing environmental impacts and sustainability concerns they are building a better future.

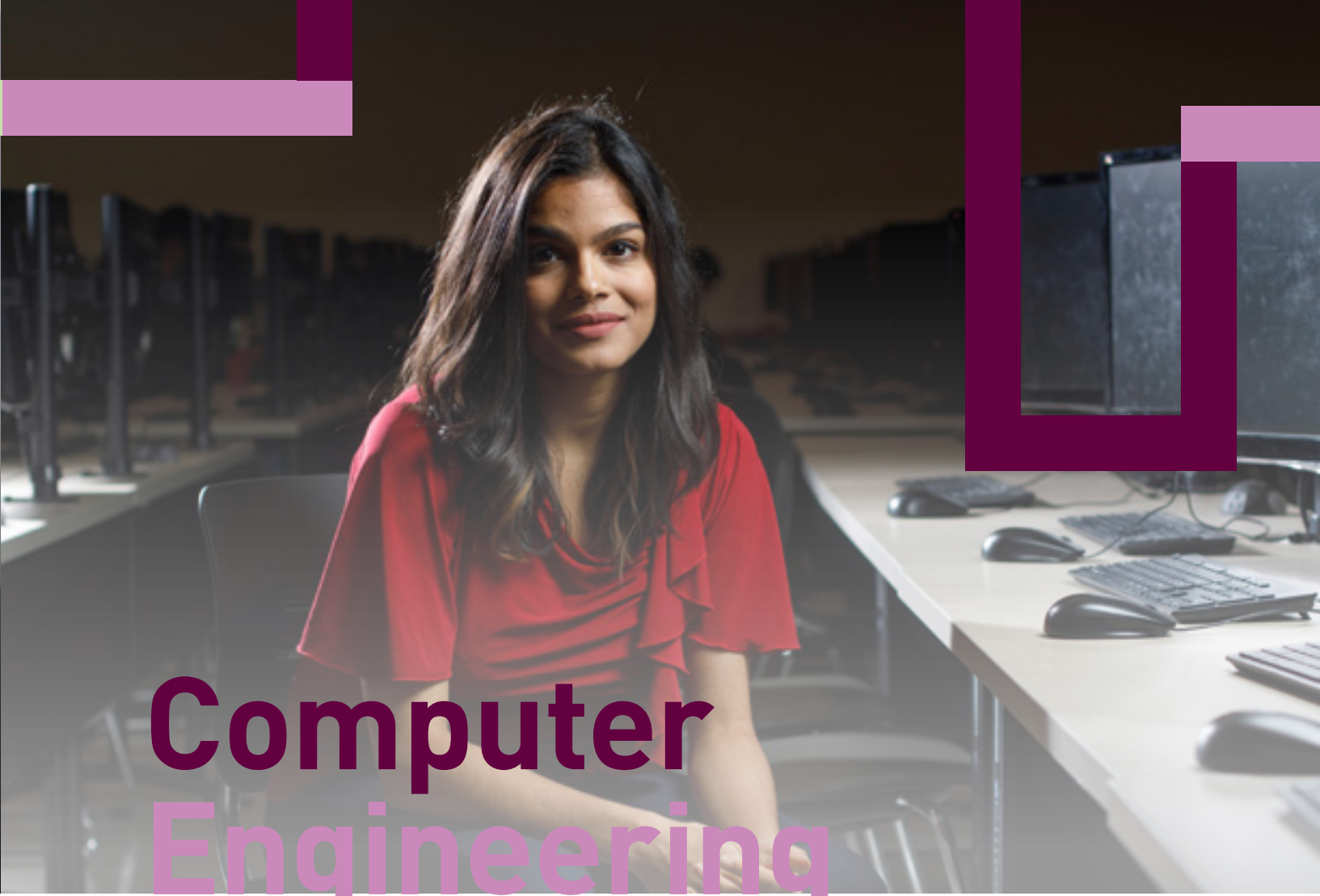
Our proximity to Alberta's booming construction economy and connections to industry offers you valuable hands-on learning and unmatched research and career opportunities.

**Right place. Right time. You've come to the right place—and the right time to change the world is now.**

## Programs

Civil Engineering  
Environmental Engineering Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.



# Computer Engineering

▲  
**Riya, Edmonton/India, Computer Engineering Co-op student**

Riya believes that engineering is about making things better for other people on a number of levels. "Software engineering lets you create something out of nothing," says Riya. "It's a world that allows you to think differently and solve problems however you want to."

When you hear people say "There's an app for that" it's most likely because of the work of computer engineers. They play a key role in the design, construction and operation of the computer systems and software that change our lives on a daily basis.

Your studies will provide you a broad background in the theory and application of hardware and software technologies, qualifying you for careers ranging from software developer and computer systems designer to electronics circuit designer and nanoscale system designer.

**There's no telling what tomorrow will bring and where computerization will take us, but you will be right there making it happen.**

## Programs

Computer Engineering  
Nanoscale Systems Design Option  
Software Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.



# Electrical Engineering

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Electrical engineers focus on the design and development of electrical, electronic and electromagnetic systems, ranging from the devices and modern conveniences we rely on every day to advanced robotics and instrumentation to large-scale telecommunications and data storage applications. It really is the spark of genius.

Electrical Engineering students are involved in the development of electrical devices and work with systems that transmit, distribute, store, control and use electromagnetic energy or electrically coded information.

**The power to invent the technology of the future is in your hands.**

## Programs

Electrical Engineering  
Nanoengineering Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.

# Materials Engineering

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If you can make something stronger, why wouldn't you? If you can make it lighter and still maintain the strength, even better. And if you can make it environmentally friendly and economically viable, then you're really onto something.

While you may not see it, materials engineers have a hand in pretty much every product that is manufactured, produced or processed. As the only western Canadian university to offer a Materials Engineering program, our graduates are sought after and in demand around the world.

**It's not just what you build, it's what you build it with that matters.**

## Programs

Materials Engineering

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.

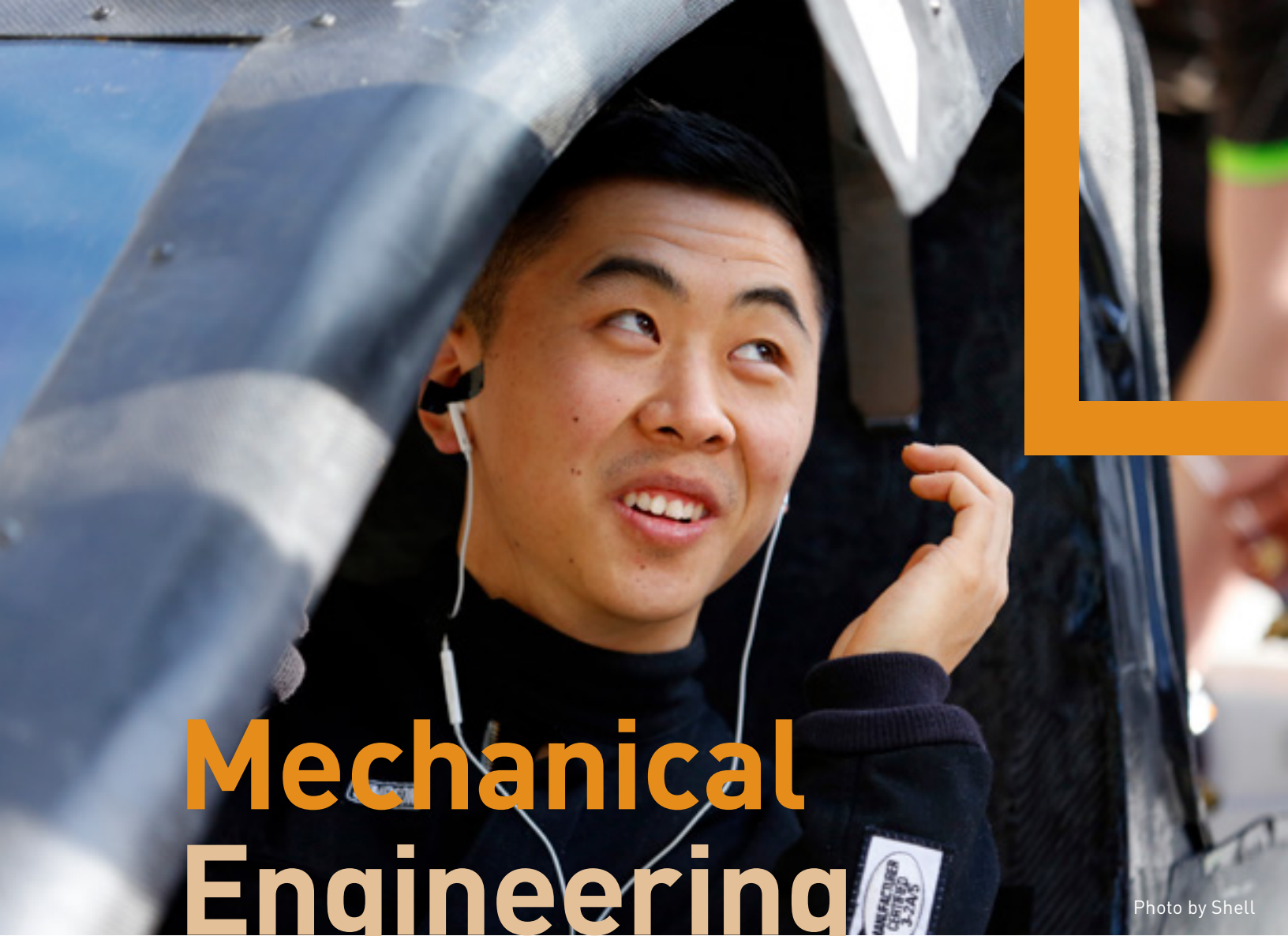


Photo by Shell

# Mechanical Engineering

▲ **Jason Wang, Edmonton/Netherlands, Mechanical Engineering Co-op graduate**

"You meet people you would never have met before, you are exposed to these great minds who approach problems differently, and you are humbled by people who have different insights into the world," says Jason, who is pursuing his master's degree in the Netherlands. "And you are also inspired because you see how you can work together to make the world a better place."

Never satisfied with the way things are, mechanical engineers are constantly rethinking and redesigning the machines and mechanical systems we depend on. From tiny life-saving devices to the engines, machines and plants that power our world, the impact of mechanical engineering is profound.

This broad-based program provides you with opportunities to integrate theoretical knowledge with practical, hands-on application and design to push the limits of the physical world.

**If you think that constantly rethinking, reimagining, rebuilding and reworking is rewarding, you're right.**

## Programs

Mechanical Engineering  
Biomedical Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.

# Mining Engineering

To say that mining engineers are very resourceful is an understatement, as well as a bad pun. Mining engineers are involved in every aspect of responsible resource extraction from planning, designing and managing projects that provide the world with precious and base metals, synthetic crude, coal, and industrial minerals, to planning remediation of the land.

Our Mining Engineering program is the largest in the world and covers subject areas ranging from surface and underground mining to physical and mathematical sciences.

**The resources are there, the challenge is how to get them out safely and smartly.**

## Programs

Mining Engineering

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.



# Nanotechnology Engineering

Sometimes it's okay to think small. Really, really small. Nanotechnology is the study, design and fabrication of materials less than a micrometre (0.000001 metres) in size. New discoveries in nanotechnology have thousands of potential consumer and industrial applications ranging from the speed of computers to the quality of drinking water in developing and remote communities.

Our campus is home to the \$52-million Nanotechnology Research Facility. This centre houses the National Research Council-UAlberta Nanotechnology Initiative and offers opportunities for you to learn from some of the foremost experts in the world.

**It only stands to reason that if good things come in small packages, even greater things come in even smaller packages.**

## Programs

Computer Engineering:  
Nanoscale Systems Design Option

Electrical Engineering:  
Nanoengineering Option

Engineering Physics:  
Nanoengineering Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.

# Engineering Physics

How can we make it better? That's the question that drives engineering physicists when tackling new and existing technologies and techniques. Focusing on areas as diverse as applied science, information technology and health and safety, breakthroughs in engineering physics help us discover more about ourselves. By constantly challenging current thinking, students explore the potential for even greater innovation.

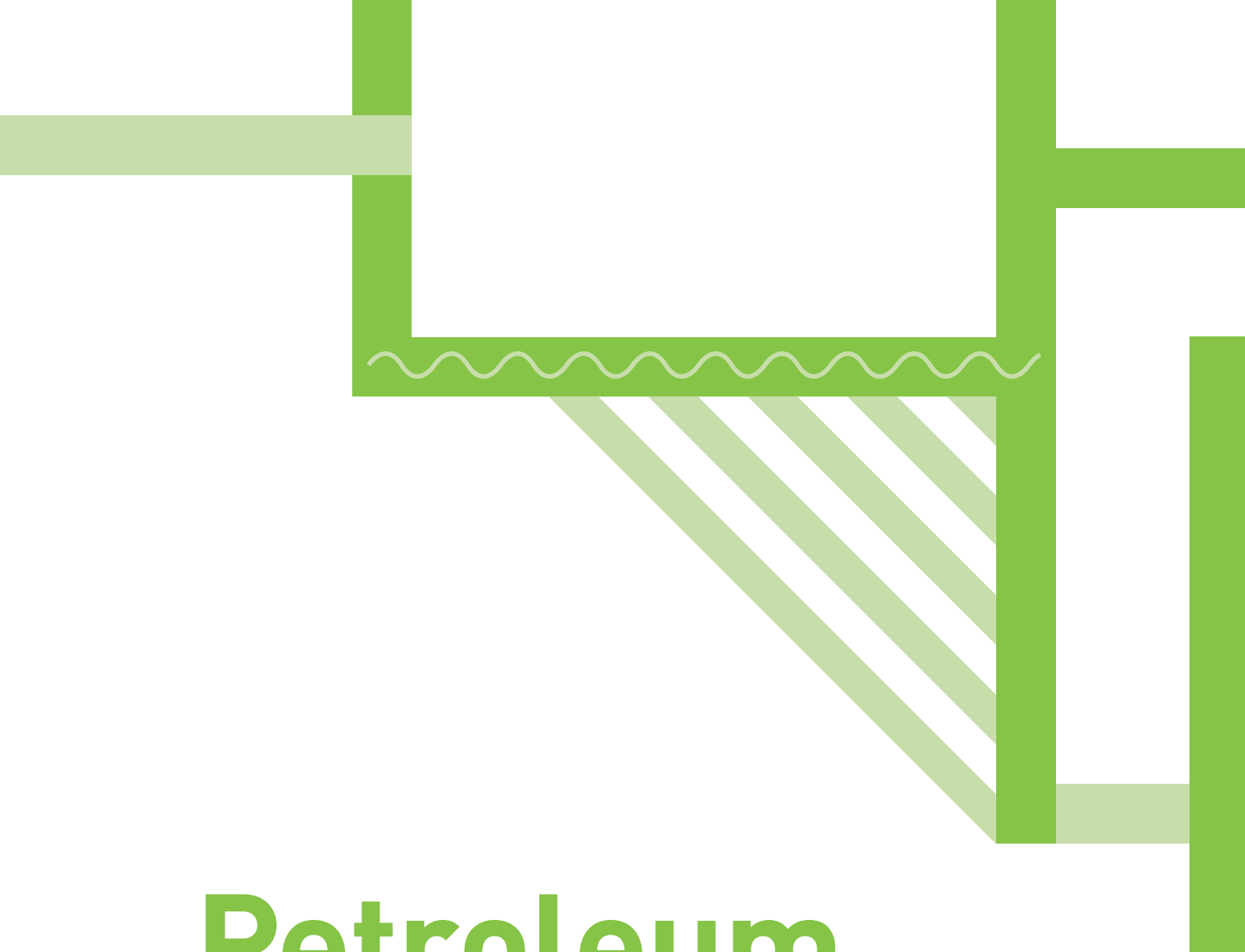
In this program, you'll start with a strong foundation in math and physics and build upon these through active research projects in areas such as fusion energy, microelectronics, robotics systems and fibre-optic communications.

**There's always a better way, a smarter way, of looking at problems and developing solutions.**

## Programs

Engineering Physics  
Nanoengineering Option

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.



# Petroleum Engineering

More than just oil and gas, petroleum engineers apply scientific understanding and technology in the exploration and management of hydrocarbon resources while preserving and protecting the environment.

We offer the only accredited Petroleum Engineering degree program in Canada. Situated in Canada's primary oil- and natural gas-producing region, you'll have an opportunity to contribute to numerous research and collaborative partnerships within the petroleum industry.

**Getting oil and gas safely out of the ground is only half the equation. What you do with it once you have it is equally important.**

## Programs

Petroleum Engineering

Visit [uab.ca/engprograms](http://uab.ca/engprograms) for more information.

WHERE  
IMAGINATION  
AND POSSIBILITY  
MEET

The University of Alberta Faculty of Engineering is consistently ranked as one of the top engineering schools in Canada. Studying at a research-intensive university gives you access to leading-edge research experience.

[uab.ca/engresearch](http://uab.ca/engresearch)

# STUDY HERE, WORK ANYWHERE

Your engineering degree from the University of Alberta is your ticket to the world. The education you receive is recognized internationally—and prepares you to work as an engineer anywhere.

[uab.ca/engemploy](http://uab.ca/engemploy)

Allan P. Markin  
Canadian Natural Resources Limited  
Natural Resources Engineering Facility



## Campus life

We're here to help you succeed and that's why we encourage you to make the most of the services available to you. The Faculty of Engineering and the University of Alberta offer a comprehensive range of student services including academic advising, tutorial services, career counselling, and physical and mental health services supporting student wellness. Visit [uab.ca/englife](http://uab.ca/englife) to find out more.

## Join the club

We don't just want you to learn here, we want you to love it here. Being part of the Faculty of Engineering offers you a top-quality education and a chance to enjoy and thrive in a vibrant, diverse community. Through our many extra-curricular clubs, projects and organizations you could find yourself working on an emissions-free car or launching a cube satellite you helped design into orbit. Who says enhancing your technical, communications, project management and leadership skills can't be fun? Visit [uab.ca/engclubs](http://uab.ca/engclubs) to find out more.

## Let's talk about Edmonton

It's a great city and we can't say enough about it. Home to over one million, Edmonton offers all the amenities of a large urban centre without losing its small town friendliness. There's a thriving arts and festival scene, plenty of family activities, top ranked health care services, North America's largest stretch of urban parkland, a vast array of sports and fitness opportunities, and you're just a few hours away from a mountain getaway.

## Become a Junior Instructor with DiscoverE

Just finishing Grade 12 and looking for a great summer volunteer opportunity? Get a jump start on your engineering studies through our DiscoverE program. As a Junior Instructor, you'll be eligible to receive a scholarship for your undergraduate study. You'll also build up your leadership skills and inspire future generations of engineers by delivering workshops and programs about engineering, science and technology in over 80 communities across Edmonton, northern Alberta and the Northwest Territories. Visit [uab.ca/DiscoverE](http://uab.ca/DiscoverE) to find out more.

## Minors and specializations

Looking to get even more out of your engineering degree? After completing all your courses in academic terms five and six, and holding at least a 3.0 GPA, you can expand your knowledge and apply to complete a minor in arts, business, mathematics or science.

## Engineering Co-op

Earn while you learn. Our Engineering Co-op Program provides you with paid, supervised engineering work placements across Canada and around the world. Please note that the 20 months of paid work experience will add a year to your degree.

[uab.ca/engcoop](http://uab.ca/engcoop)

## Engineering Employment Centre

It's all about the work. The right work. Whether you're a first-time job seeker looking for a summer job or a seasoned veteran looking for a career change, the Engineering Employment Centre will help you with your job search. The friendly and knowledgeable staff are happy to share their expertise with you. All services are free and available to traditional and co-op students, as well as alumni.

[uab.ca/engemploy](http://uab.ca/engemploy)

## Areas of employment

Engineers are always needed in a wide variety of industries, including:

- Aerospace
- Automotive
- Biomedicine
- Biotechnology
- Communications Control Systems
- Construction
- Consulting
- Design and Manufacturing
- Electronics
- Energy and Natural Resources
- Environmental Health and Safety
- Nanotechnology
- Structural Design
- Transportation
- Water Resources





# IT'S ALL ABOUT THE IRON RING

Engineers bear a serious responsibility to society. Canadian engineers wear an Iron Ring on the little finger of their dominant hand. It's a reminder of the vow they have made to protect the public through ethical, responsible professional practices—to serve the public good.

[uab.ca/ironring](http://uab.ca/ironring)



# IT STARTS WITH YOU

We won't kid you. In some ways the study of engineering is not as hard as it looks. In other ways it's harder. It all depends on you. The kind of person you are. Creative. Innovative. Curious. Resourceful. If you're up for the challenge, the possibilities of what you can achieve are endless.

[uab.ca/engineering](http://uab.ca/engineering)

## Admission requirements

Most students enter the Faculty of Engineering directly from high school. To be admitted, you must have successfully completed the following five Alberta Grade 12 courses, or their equivalents:

Chemistry 30

English Language Arts 30-1

Math 30-1

Math 31 (Calculus)

Physics 30

The minimum admission average is determined annually. If you are not applying directly from high school or are applying from outside of Alberta, please visit [uab.ca/engapply](http://uab.ca/engapply) for more information on admission and transfer processes.

## Mark your calendar

Applications open October 1

Applications close March 1

## Scholarships

The Faculty of Engineering and the University of Alberta offer generous entrance and continuing studies scholarships. More than \$1.5 million is made available annually in the Faculty of Engineering alone. Visit [uab.ca/awards](http://uab.ca/awards) for the most up-to-date information on these scholarships.

## Apply yourself

Are you creative, innovative, good at math and science, love to solve problems and are relentlessly curious? We would love you to consider the Faculty of Engineering at the University of Alberta. The possibilities of what you can achieve are endless.





**Apply today at [uab.ca/apply](http://uab.ca/apply)**

# Contact Us

Faculty of Engineering  
2-300 Donadeo Innovation Centre for Engineering  
University of Alberta  
Edmonton, AB T6G 1H9

**Phone:** 780.492.1715  
**Toll Free:** 1.800.407.8354

**[uab.ca/engineering](http://uab.ca/engineering)**  
[engginfo@ualberta.ca](mailto:engginfo@ualberta.ca)

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