ENGINEERING
INTERESTED IN ENGINEERING?

Engineering has more impact on our day-to-day lives than any other profession. Using creativity and collaboration, engineers and their teams solve global problems, such as providing clean water to communities, stewarding natural resources and even improving the ease of your commute to school. Engineering gives you the chance to make a difference in the world in whichever area you are most passionate about.

Why engineering at uSask?

The College of Engineering at the University of Saskatchewan (uSask) is known for graduating students who are not only technically competent, but who are excellent problem solvers and also able to work as part of effective teams.

As an engineering student at uSask, you will have the opportunity to enhance your degree with one of several specializations, such as entrepreneurship, mining, petroleum and biochemical; or you can obtain a Certificate in Professional Communication in conjunction with your engineering degree.

As a student here, you will find a tight-knit community of friends and colleagues who will stay with you for the rest of your life and who will push you to improve. Our students go on to be entrepreneurs, olympians and the CEOs of companies—they excel not only in the classroom, but also in the field and in industry.
Our students

Engineering students come from many different backgrounds, but what they have in common is their spirit of engagement and community pride. Many of our students are volunteers, mentors and leaders in both on- and off-campus organizations, and we work hard to provide the support students need for success in both academics and extracurricular pursuits.
Most engineering graduates find employment as professional engineers, but there are many fields in which the skills that you will develop while earning your engineering degree will prove valuable and are highly sought after by employers.
Engineering Professional Internship Program (EPIP)

Receive a richer learning experience as a member of a real engineering team through EPIP. You could have the opportunity to complete an internship, usually between third- and fourth-year, for an 8-, 12-, or 16-month placement. Earn while you learn—gain valuable work experience in engineering. You may apply up to 12 months of your work experience towards becoming a licensed professional engineer.

Indigenous Peoples Industry Partnership Program (IPIPP)

IPIPP is an industry partnership between our college and participating organizations in which students work as summer employees and receive funding that they can use towards tuition and living expenses. Students will be paired with an employee mentor at their organization, earning valuable work experience and making industry connections to enhance their studies in engineering and build their careers.
OUR PROGRAMS

Chemical Engineering
Chemical engineers—sometimes known as process engineers—design, implement and improve technology to make life more comfortable and safe, while minimizing the effect that we have on the environment. We have an excellent undergraduate chemical engineering laboratory, superb faculty and first-rate support staff. Our students have the opportunity to take options in petroleum or biochemical engineering.

Civil Engineering
Civil engineering deals with much of the infrastructure that is part of an urban society, including the buildings in which humans live and work, roads and highways, tunnels, water and wastewater treatment, as well as protection against flooding. The civil engineer is involved with aspects of both the development of new works and, in an increasingly significant way, the maintenance and preservation of existing works.

Computer Engineering
Computer engineering is the design, development and integration of computer programs and technology into devices and systems that improve how we interact with our world every day. Computer technology is built into almost every new product today. Computer engineering graduates will enter a rapidly growing, leading-edge field to design "smart" devices such as cellular phones, GPS navigators, video entertainment systems, medical imaging, monitoring devices and much more.

Electrical Engineering
Electrical engineering is the design and development of energy systems, communications networks and a multitude of electronic products that are transforming and improving our way of life. Learn about our changing world through electrical systems like sensors, nanotechnology, photonics, digital X-rays, digital signal processing. Our program will prepare you to help provide reliable, sustainable energy to meet the needs of society. The program can also prepare you to create the systems and networks that will deliver services such as Internet, text, voice and video information around the globe.

You can further enhance your education by taking additional specialized training in:

ENGINEERING ENTREPRENEURSHIP
Learn to deal with all aspects of a successful entrepreneurship enterprise.

MINING
This option is available in our mechanical and geological engineering programs.
Engineering Physics

Engineering physics is a bridge between pure and applied science in which students hone their analytical and technical skills. Students in this field study both engineering and physics in great depth while building the critical mathematical skills that are needed to quantify abstract physics concepts. You will learn to excel with analytical and numerical analysis techniques, gain hands-on experience with experimental methods and learn to apply statistical methods in this highly technical field. Engineering physicists come with diverse talents and strong adaptability to tackle any project.

Environmental Engineering

Environmental engineering is the application of science and engineering principles for the protection and improvement of public health and the environment, including air, water and land resources. Some work in water treatment, water and air pollution control, land protection and reclamation, industrial and hazardous waste containment and treatment and municipal solid waste management, including the recycling of materials and energy recovery. They are tasked with finding solutions to the environmental challenges associated with urbanization, resource development, industrial production and many other aspects of our modern technological society.

Geological Engineering

Geological engineering is the application of engineering principles to the natural materials and fluids found in the earth, including rocks, soils, groundwater, petroleum and natural gas. Geological engineers are trained to characterize and predict the behaviour of natural materials and fluids. They work to find and develop the resources that society needs for its survival (energy, mineral sources) and in the disposal of society's wastes (mine tailings, municipal and industrial waste) in a manner that results in the least possible disturbance to the environment. They also work to design and develop stable building foundations, bridges, dams, highways, landfill sites and waterways.

Mechanical Engineering

Mechanical engineering is the design, production, and use of mechanical systems that control and transform energy. Mechanical engineers are trained in statics, dynamics and vibrations, heat transfer and fluid mechanics, solid mechanics and biomechanics, robotics, controls and mechatronics, materials science, analysis and synthesis of mechanical systems and manufacturing. This extensive training prepares mechanical engineering graduates to work in a wide variety of industries around the world.

Petroleum, Mineral Processing and Biochemical

These options are available in our chemical engineering program.

Professional Communication

Learn how to negotiate the political, rhetorical, ethical and interpersonal challenges of communicating in a professional environment.
**Hands-on learning**

Engineering at uSask involves hands-on education. You will use state-of-the-art technology in the lab to learn, experiment and test your ideas. From our wind tunnel to our anechoic chamber, our facilities can help you make textbook concepts tangible.

Education in our college is about more than sending you home with challenging assignments. You can work with students from your classes and other disciplines to get the most from your education, whether working on homework, building a space elevator, racecar, remote control plane or art display, or finishing a design project.

The Engineering Student Centre works very hard to support students academically through advising and administering facilitated study sessions every week.

**Capstone Design Project**

Every student will complete several design projects throughout their degree, but perhaps the most exciting is our fourth-year Capstone Design Projects. The Capstone Design allows students to apply top-down design principles to a year-long project, starting with a basic description of the product or system and culminating in a presentation of a final working design. Students gain first-hand experience in the application of a formal design process while earning credit toward their degrees.

**Getting involved**

Our engineering students have a reputation for helping out and supporting our local community, the world’s developing nations and everywhere in between.

Our students have accomplished amazing things in the areas of space design, mining competitions and agricultural design, and have been involved in projects where they aim to make a difference in developing nations through providing access to clean water, food and sustainable energies.

We are very proud of how active and engaged our student body is, which shines through in the diversity and activity of our student groups. Whether you are interested in refining your creativity skills by collaborating with art students, developing a product to help someone with accessibility needs, traveling across the world to help build a well in Africa or designing/building a race car or airplane, we have a student group for you!
YOUR FIRST YEAR

Engineering students are required to complete a common first year of general engineering courses and electives before choosing a specialization.

Your first-year schedule
Here’s what a typical first-year schedule will look like:

TERM 1
- Chemistry 114.3 General Chemistry for Engineers
- Commerce 102.3 Introduction to Business Management
- General Engineering 101.1 Introduction to the Engineering Profession
- General Engineering 111.3 Engineering Problem Solving
- General Engineering 124.3 Engineering Mechanics I
- Mathematics 123.3 Calculus I for Engineers

TERM 1 OR TERM 2
- Junior humanities/social science elective

TERM 2
- General Engineering 121.3 Engineering Design
- General Engineering 125.3 Engineering Mechanics II
- Mathematics 124.3 Calculus II for Engineers
- Physics 155.3 Introduction to Electricity and Magnetism
- Natural science elective:
  - Biology 120.3 The Nature of Life
  - Chemistry 115.3 General Chemistry II Chemical Processes
  - Geology 121.3 Earth Processes
  - Physics 125.3 Physics and Technology

Academic and personal support
In your first year and throughout your time in the college, we work hard to provide you with the support you need to be successful. You can take part in facilitated study sessions, visit one of our help desks, find a tutor through one of our tutor lists and receive academic advising and referrals to a variety of on-campus services and support through the Engineering Student Centre.
**Admission requirements**

Find up-to-date and province-specific admission requirements online at: [explore.usask.ca](http://explore.usask.ca)

In general, to gain admission to the College of Engineering, you will need the following:

- complete high school-level standing
- a competitive 5-subject admission average
- the following Grade 12-level subjects or equivalents:
  - pre-calculus mathematics*
  - calculus*
  - chemistry*
  - physics*
- English language proficiency

*A minimum of 70% is required in each of these prerequisite courses.

**Choosing a major**

Regardless of your discipline of interest, you will take a common set of courses in your first year.

At the end of your first year, you will select your preferred disciplines in which you plan to pursue a degree. You will be asked to rank your top three program choices (from mechanical, civil, environmental, engineering physics, geological, chemical, electrical and computer), and we will consider you for your preferred programs based on a competitive average calculated using your first-year engineering courses.

Your junior humanities/social science elective, science elective or commerce class will not be used in the average calculation.
Paint the town red with engineering pride

Engineering is one of the most spirited colleges on campus. Throw on your toga, hop in the back of our red pickup truck and cruise through the heart of campus! We paint the town red with engineering pride and provide opportunities for an unparalleled student experience. We dominate college challenges and Friday Night Lights Huskie home games and enjoy a friendly rivalry with the Agros. We can’t wait for you to join the fun!
EXPLORE.USASK.CA