UBC is consistently ranked among the top 1% of universities globally

UBC Vancouver has 54,236 students/
5,678 Engineering undergraduates
British Columbia, Canada, is one of the most beautiful places on the planet. UBC Engineering’s two campuses—in Vancouver and the Okanagan—are set in these awe-inspiring surroundings, creating a learning, living and playing environment like no other. Explore 12 different engineering disciplines. Pursue collaborative academic coursework. Meet like-minded solution seekers. Discover your passions. Unlock your potential, all while revelling in a natural nirvana. UBC Engineering is the perfect place to build school-work-life balance. And then some.
VISIONARIES WELCOME HERE

Engineers share an immense curiosity about how the world works and an intense desire to make it work better. The practice of engineering opens doors to a remarkable number of career opportunities—in scientific, technical, humanitarian and social fields, where creativity and imagination meet technical rigour and real-world practicality and purpose.

Lucas Jungmann: “Since I was on co-op, living and working in Canmore, Alberta during the summer of 2013, I got first-hand experience at emergency response engineering. Our office was responsible for initial response, prevention, cleanup and rebuilding throughout the flooding in and around Canmore. This photo was taken during an extraordinary moment. Due to the flooding, the Trans-Canada Highway was wiped out, and engineers and construction crews were working to get it repaired as fast as possible.”
UBC Engineering has 26 student design teams.

UBC Engineering students come from more than 100 countries around the world.

THE UNIVERSITY OF BRITISH COLUMBIA

Known worldwide and across Canada for its leadership in educational excellence, the University of British Columbia is big, bold and one of our country’s most prestigious research and teaching institutions. UBC regularly ranks among the top 40 universities in the world and consistently places among the top 10 in North American university rankings for commercialization and patenting activities.

We nurture an environment where innovation and entrepreneurship are celebrated, and where our research, resources and programming work to elevate the human experience.

UBC ENGINEERING

UBC Engineering provides students with extraordinary learning opportunities. Our world-class faculty and researchers are committed to an instructional approach that is varied, experiential and engaging. You start by gaining a broad understanding of engineering principles before selecting one of 12 engineering programs on the Vancouver campus or one of three on the Okanagan campus. All lead to a Bachelor of Applied Science (BASc) degree. Course content is amplified through lectures, in cutting-edge laboratory facilities, in team-based projects, through early design experience and through Engineering Co-op. You’ll also be immersed in active industry and community involvement.

This multi-faceted approach makes UBC Engineers stand apart on a firm foundation from which to build an exciting and rewarding career on your own terms. We nurture an environment where innovation and entrepreneurship are celebrated, and where our research, resources and programming work to elevate the human experience.

Visit us at engineering.ubc.ca.
Pioneers, like engineers, are unafraid of being first: first to explore a new country, first to find new methods and knowledge, first to initiate and be catalysts for change. UBC Engineering students, faculty and alumni are continually forging new frontiers around the globe. Here are a few snapshots of our people around the world and the programs and resources that support their efforts.

**UBC SAILBOT** Your ambitions can flourish here. UBC Sailbot has won the International Robotic Sailing Regatta for the last three years. Now their ambition is to sail across the Atlantic. Expand your boundaries. [ubcsailbot.org](http://ubcsailbot.org)

**GO GLOBAL** You can build independence, initiative and adaptability by living, studying and working abroad. UBC partners with more than 200 universities and institutions to provide worldwide perspectives for our students. [students.ubc.ca/goglobal](http://students.ubc.ca/goglobal)
Completing an Engineering Co-op work term abroad allows students to gain international insight while developing their technical skills. Students work in over 26 countries annually in places such as Australia, China, Germany, India, Japan and the US. coop.apsc.ubc.ca

Do you have a desire to effect positive change globally? Engineers Without Borders (EWB) welcomes you. EWB students work in Canada, Malawi, Ghana, Uganda and Zambia. ubc.ewb.ca

By joining one of 26 student design teams, you can develop skills employers are looking for—teamwork, design skills, problem solving and creativity—and travel internationally to places like Germany, Turkey, Mexico, the US, the Netherlands, Brazil and China. teams.engineering.ubc.ca

UBC’s International Service Learning (ISL) program lets you participate in projects led by community partners around the world, connecting academic studies with the real world. students.ubc.ca/ISL
Meet Jory Wong. She grew up with a passion for the outdoors, documentary filmmaking and a deep desire to help others. After graduating from high school and working as a photographer, she enrolled at UBC Engineering. Why?

**SUPERMILEAGE** Real world design, creativity, problem solving and collaboration are all skills Jory can develop for her career. This team pushes the boundaries of fuel-efficiency performance in vehicles they design and build. supermileage.ca

**HANDS-ON OPPORTUNITY** Jory appreciates the entrepreneurial focus and freedom at UBC Engineering. Her ultimate goal? “I want to develop renewable energy technology that can be applied to environmental sustainability and poverty alleviation.”
"I saw social and environmental issues that needed solutions, and I realized engineering is the most action-oriented way to create positive change."

A DAY IN THE LIFE OF JORY

Jory’s days at UBC Engineering are full throttle, intense and exhilarating. And that’s the way she prefers it.

Her first class is circuit analysis, where she’s learning fundamental analysis techniques for electronic circuits. Then it’s mechanics of materials, multi-variable calculus and Java coding. But the best part of the day is in the lab, where she discovers the practical applications of theoretical physics, like measuring the bandwidth of an LCR circuit. When the lab is over, she realizes how it could be used in a radio.

In her spare time, Jory may head to the UBC Farm, where she volunteers helping to harvest locally grown fruits and vegetables. It’s one of dozens of diverse volunteer options for UBC students. She may also spend some time 3-D modelling the steering wheel of the fuel-efficient vehicle she’s designing with her Supermileage teammates.

Engineers Without Borders is another group Jory is keenly involved with, serving as the liaison with local high school students to facilitate school presentations that raise awareness about social issues. And for recreation, she might go on a climbing trip with UBC’s Varsity Outdoor Club.

Jory’s busy schedule blends serious academic pursuit with the personal interests she’s most passionate about. She says, “The best part of my engineering program is how it empowers you to influence the things you care about. It’s so powerful to blend engineering and physics. You learn how to solve problems you’ve never seen before, which is amazing.”
Meet alumnus and current biomedical engineering master’s student Florin Gheorghe. He was born in Romania and grew up in Ontario. During his engineering undergraduate studies at UBC, he completed three co-op work terms. The first, in Zambia with the UBC Chapter of Engineers Without Borders (UBC EWB), changed his entire life.
“Engineering makes such a tangible and dramatic difference in saving and improving lives, and the biomedical field is super ripe for innovation.”

FLORIN’S PATH

Florin’s engineering journey literally took off at UBC, where he quickly found himself drawn to engineering problems with human equations.

On his first co-op work term with UBC’s Engineers Without Borders, Florin applied his systematic, problem-solving approach to the way a group of local farmers in Zambia were organized—leading to improved crop yields and greater economic stability for local villagers.

That experience led to a second placement in Africa—this time working with impoverished industrial workers on the outskirts of Kumasi, Ghana. There he was able to convince local branches of several multinational companies to award business contracts for welding projects to the artisans, showcasing their considerable talents while securing brighter economic futures.

A few years later while conducting research for his biomedical engineering master’s studies, he worked with surgeons in an orthopedic trauma ward in Uganda to understand the realities of medical practice in a developing country context. This led UBC engineers to a biomedical breakthrough—a sterile surgical drill cover that allows surgeons to safely use a $100 hardware drill in place of a $30,000 surgical drill. The innovative drill cover speeds operating room time and improves outcomes.

Florin is a big fan of the entrepreneurial focus at UBC. He flourished in the New Venture Design course and is already a co-founder of his first company—enabling him to embrace his passion for design and emerging markets. “We are rethinking the way medical device markets can serve the poor—profitably,” he says.
UBC Engineering values and encourages the development of your professional skills during your studies. You will gain real-world experience working in teams, doing community service, collaborating and problem-solving, and through participation in an unparalleled array of choices: Co-op (paid internships), Coordinated International Experience programs, International Service Learning, Go Global Exchange, Community-Based Experiential Learning, Student Design Teams and more.
Get a competitive edge before you graduate as you network with employers, gain paid work experience, and hone your professional skills.

In today’s competitive job market, UBC Engineering students with co-op experience are highly sought after by top employers. These graduates stand out from their peers because of the real-world experience they’ve gained from participating in UBC’s highly respected co-op program.

As a co-op student, you will alternate between academic and co-op work terms. These paid technical employment opportunities are designed to complement your academic specialization, giving you impressive professional experience while expanding your career network with local, national and international employers.

With over 4,500 employer, industry and research partnerships, the UBC Engineering Co-op Program has facilitated thousands of connections for our students. According to our Engineering Co-op employers, over 90% are interested in hiring co-op students for permanent positions upon graduation.

Co-op is an option available to students in any engineering discipline at the UBC Vancouver and Okanagan campuses, and students of any citizenship can participate.

www.coop.apsc.ubc.ca

Above: Co-op students gain relevant, paid work experience in all sectors, from biomedical to mining.
There are 325,000 UBC alumni in 140 countries

There are 29,562 Engineering alumni in 84 countries

Visionaries, innovators, pioneers, challengers, humanitarians—these are a few of the words that describe UBC Engineering students. Join a cohort of like-minded peers, and show the world what the best and brightest can achieve.

FOUNDATION YEAR

BUILDING SUCCESS—FROM DAY ONE

UBC Engineering’s foundation year is designed to prepare all first-year engineering students with the strong knowledge base from which to build a solid and rewarding academic and professional career.

All engineering students are grounded in the principles of math, chemistry, physics and English—the fundamentals that will move you forward. Engineering design projects, experiential learning and professional experience from the start enable first-year students to explore before selecting one of 12 specialized programs.

EXPAND YOUR EDUCATION

ENHANCE YOUR DEGREE

Consider one of the following:
- Co-op Program
- Dual degree in Arts and Engineering
- Minor in Arts
- Minor in Commerce
- Minor in Honours Mathematics
- Minor in Science
- Pre-Med Alternative Path (additional application due May 15)

Build a degree that fits your interests and inspiration.
PROGRAMS

CHEMICAL ENGINEERING

Chemical engineers are universal engineers, creatively and innovatively solving global energy, water and environmental issues while transforming raw materials into products that society depends on.

Fusing the physical and chemical sciences with mathematics, process engineering, design and economics, a degree in Chemical Engineering opens doors to diverse opportunities, like clean-energy generation, nanotechnology and new material generation.

At UBC, you’ll learn how to design, build and operate the manufacturing and industrial processes used to create the products and services essential to everyday life—from energy, food and fertilizers to pharmaceuticals, plastics and paper. Our emphasis is on instruction from world-class researchers, hands-on experience in learning labs, industrial site visits, and interaction with practicing engineers and industry partners. We foster a learning environment of inclusiveness, teamwork and creative thinking.

Play a role in research; engineer safer, greener product formulations and processes; and help discover and develop new ways to minimize society’s environmental footprint, while maximizing value in the real world.

Vancouver Campus
Visit us at chbe.ubc.ca

CHEMICAL & BIOLOGICAL ENGINEERING

Chemical and biological engineers are stewards of the environment, helping to harness the globe’s natural riches and improve the quality of our lives by developing sustainable and green manufacturing technologies for the production of superior medicines, clean water, cleaner fuels and materials, and cutting-edge medical technologies.

British Columbia is one of the world’s largest bioenergy-producing regions and also home to one of the largest biopharmaceutical clusters in North America. In this environment, UBC’s acclaimed program in Chemical & Biological Engineering uniquely prepares students to be leaders and trendsetters in the new bio-economy. The curriculum blends rigorous training in the physical sciences and mathematics with biotechnology, bioprocess engineering and the life sciences.

Classroom learning is combined with interactive, hands-on instruction in well-equipped learning laboratories. Students further expand their horizons through co-op placements and industrial-site visits and through research opportunities with our world-leading, award-winning research faculty.

With these credentials, you’ll be equipped to excel in a number of fast-growing and highly paid fields, including biotechnology, food, environmental services, bioenergy, forestry, biopharmaceuticals, health care and biomedical engineering. Several of our graduates also pursue medical studies.

We invite you to join the bio-revolution and become an active part of shaping the future.

Vancouver Campus
Visit us at chbe.ubc.ca

CIVIL ENGINEERING

Civil engineers shape the world we live in by analyzing, planning, designing, constructing and maintaining the “built” environment—the communities and infrastructure we rely on for safe, healthy and sustainable living.

You’ll learn about the many subdisciplines that comprise civil engineering such as environmental, construction, geotechnical, hydrotechnical, materials, structural, transportation and urban engineering.

Courses and lab work in topics such as soil mechanics and foundation design, construction management, design of steel, concrete and timber structures, as well as municipal infrastructure design, coastal engineering and environmental impact studies will inspire you to learn more.

Civil engineers are in high demand, working for example as project managers or design consultants, across all industrial sectors and government.

Focus your creativity and help build tomorrow’s world.

Okanagan Campus
Visit us at engineering.ok.ubc.ca

Vancouver Campus
Visit us at civil.ubc.ca
**COMPUTER ENGINEERING**

Computer engineers can change the world. Whether it is the systems that control our phones, cars, planes or robots—every automated device has a software or hardware engineer helping to create it.

As a student in UBC’s Computer Engineering program, you will learn how to develop, design and test software, computer networks, and protocols. After your first year, you will have the opportunity to bring your classroom learning to life in a Design Studio course. In your fourth year, you will have the option to collaborate with industry partners in a team-based Capstone project, or create your own business plan and prototype in the New Venture Design course.

Don’t miss your chance to engineer your successful future—in real time.

Vancouver Campus
Visit us at ece.ubc.ca

**ELECTRICAL ENGINEERING**

If you call a friend, flip a light switch, play a video game or drive a car, you are touching the work of an electrical engineer. Electrical engineers impact almost every aspect of our lives. They make essential medical equipment, design wireless communications networks, predict earthquakes, and invent new ways to generate and conserve energy. Electrical engineers will be leaders in meeting global challenges in energy, health, communication and safety.

As a student in UBC’s Electrical Engineering program, you will learn essential skills in electronics, circuit analysis and electromagnetics. After your first year, you might decide to customize your program by taking specialized courses in nanotechnology, biomedical engineering or renewable energy. Whatever options you choose, you will have the opportunity to work on real-world engineering problems throughout your program.

Okanagan Campus
Visit us at engineering.ok.ubc.ca

Vancouver Campus
Visit us at ece.ubc.ca

**ENGINEERING PHYSICS**

Do you want to be an inventor? A research engineer? A technology entrepreneur? Engineering Physics (EngPhys) encourages creativity, stimulates intellects and celebrates big-picture thinking in a collegial, smaller class setting while offering science depth and engineering breadth to develop technology leaders and pioneers.

EngPhys students build a solid foundation in applied physics and a blend of electrical and mechanical engineering, while gaining extensive engineering design experience. EngPhys offers unmatched breadth and freedom for intellectual development—six electives allow you to shape the program toward your field of interest while encouraging the rigorous pursuit of innovation.

Through team-based design courses and state-of-the-art fabrication equipment, you will learn to build complex electro-mechanical systems, bringing your innovative science ideas to life as real products, patents and entrepreneurial opportunities.

Vancouver Campus
Visit us at engphys.ubc.ca
As one of the most beautiful places anywhere, British Columbia is an ideal location to pursue an Environmental Engineering degree. You’ll learn how to make a difference to air, land, water and living systems in this high-demand profession. Industries like pulp and paper, agriculture, fisheries, oil and gas, forestry and mining all rely on the skills of environmental engineers to lower their footprint, develop clean-energy technologies and minimize pollution.

UBC’s Environmental Engineering program is the only one of its kind in Western Canada and is jointly offered between the University of Northern British Columbia (UNBC) and UBC, in a four-and-a-half-year format.

Our curriculum features green engineering, waste-water and air pollution control technologies, geo- and mining environmental engineering, fluid dynamics and industrial-process design.

Joint program with UNBC & UBC Vancouver Apply at UNBC unbc.ca/environmental-engineering Visit us at enve.ubc.ca

If you are passionate about the outdoors and intrigued by digging deeper, you may thrive as a Geological Engineer.

UBC’s Geological Engineering program prepares students for exciting careers that often involve travel and on-site investigations in far-flung locales, as well as exposure to state-of-the-art engineering tools.

Employed by consulting firms, government agencies or large corporations, geological engineers assess the physical landscapes where dams, mines, roads, pipelines, railways, forestry and other extractive operations are planned.

UBC offers the Geological Engineering program in collaboration with the Faculty of Science, blending aspects of earth sciences, civil engineering and mining engineering with a fundamental understanding of the earth’s surface and near-surface environments.

You’ll learn about geotechnical engineering, geo-environmental engineering, applied geophysics, and mineral and energy resources. Feasibility studies for large energy and infrastructure projects, landslide-hazard management strategies, water-resource engineering, site-remediation technologies and geotechnical design are other important focus areas.

Vancouver Campus Visit us at geoeng.ubc.ca

Transcend boundaries and prepare to work collaboratively in today’s increasingly cross-functional workplaces.

UBC’s Integrated Engineering degree provides baseline education in core engineering subjects like materials, solid mechanics, fluid mechanics and systems involving biological, chemical and electromechanical components.

Technology entrepreneurship, project management, industrial engineering, economic analysis and computer simulation are other key subjects, but the most compelling focus is design.

Our program includes three full-year design courses—more than any other engineering degree. This provides an unparalleled opportunity for students to work cooperatively as they design, build and test products and devices—and graduate with a design portfolio to present to prospective employers.

Integrated Engineering graduates excel in diverse fields of engineering including construction, product/project management, manufacturing, advanced technology development and resource industries. Design a multi-faceted career where creative collaboration is celebrated.

Vancouver Campus Visit us at igen.ubc.ca
What’s it made of and why?
If you ask these questions about the products that surround you or dream about creating the building blocks for substances that haven’t yet been invented, you should explore materials engineering.

Materials engineers understand the scientific principles that govern how a material performs and its structure and composition. They also are involved in every stage of a material’s life cycle—from its initial extraction to the recycling of the product it helped create.

At UBC’s Materials Engineering program, you start with the core material groups—metals, ceramics, polymers and composites. By fourth year, you’ll be solving process-design problems and materials-selection solutions for diverse applications in transportation systems, fuel cells, supersonic aircraft, advanced computers, sports equipment and biomedical devices.

From the smallest nano-particles to massive mining challenges—materials engineering expertise is sought after in multiple industries worldwide.

Vancouver Campus
Visit us at mtrl.ubc.ca

Vancouver Campus
Visit us at mtrl.ubc.ca

Encompassing multiple engineering disciplines, mechanical engineering is a practical, hands-on way of creating and improving physical systems. If you are a “big idea” person with the drive to take a concept through design, analysis and prototyping—then mechanical engineering could be where you belong. Mechanical engineers are in high demand in a wide range of industries, from aircraft and energy development to biomedical, mechatronics and manufacturing industries.

As a student in UBC’s Mechanical Engineering stream, you’ll begin by mastering the fundamentals, building a knowledge base in solid mechanics, fluid mechanics, dynamics, thermodynamics, vibrations, heat transfer, controls and design. You can also delve deeper into areas you are passionate about, such as biomechanics, robotics and mechatronics, alternative-fuel technologies and energy-efficient design.

In Mechanical Engineering, we believe education is about more than just your academic courses. Our community values industry experiences, team-based collaborations, and co-curricular and extracurricular activities. This is the right place for students who are looking for an education that extends beyond their classroom walls.

Okanagan Campus
Visit us at engineering.ok.ubc.ca

Vancouver Campus
Visit us at mech.ubc.ca

Mining engineers focus on finding ways to extract minerals or metals from the earth. Their expertise in mining, mineral processing and mine waste management is highly sought after around the world, wherever mines are located.

UBC’s Mining Engineering program is consistently ranked among the top in Canada. We offer a broad professional degree program that integrates courses on engineering principles, earth sciences, and mining and mineral processing with content covering health, safety, management, economics, and environmental and social issues. The integration is done by means of case studies, field trips, guest speakers and design projects.

Mining engineers address a wide range of challenges, from building mines in remote areas or at large depths to finding ways to reduce the environmental and social impact of mining operations. At UBC, you’ll be equipped to meet these challenges and be prepared to participate in the many significant opportunities available in the global mining industry.

Okanagan Campus
Visit us at mining.ubc.ca

Vancouver Campus
Visit us at mining.ubc.ca
ADMISSION: YOU.UBC.CA

Thank you for your interest in UBC Engineering in the Faculty of Applied Science. Our full admission requirements can be found in the UBC Calendar, at you.ubc.ca or engineering.ubc.ca/welcome. You can find all the information about applying to UBC, key dates, housing, tuition, scholarships, bursaries and other financial aid at you.ubc.ca. For engineering-specific questions, start here: engineering.ubc.ca/welcome. We look forward to meeting you.

ADMISSION FROM HIGH SCHOOL

UBC Engineering attracts the best and the brightest. We consider a combination of grades and your personal profile. We will look at your achievements holistically. Admission is typically based on the average of senior-level coursework in English, math, chemistry and physics. Other science courses may be considered.

COLLEGE, UNIVERSITY OR INTRA-UBC TRANSFERS

If you have completed one or more years of study at UBC or another college or university you may apply to transfer to UBC Engineering. With enough transfer credits you may qualify for advanced standing.

Several community colleges in BC offer Engineering Transfer Programs corresponding to UBC’s first-year Engineering program. You can gain guaranteed direct entry to second-year UBC Engineering by completing the program and satisfying a number of conditions.

INTERNATIONAL ADMISSION

We value diversity and we welcome applications from well-qualified international students. Services and support are available for you to transition to Canada and to ensure success.

SCHOLARSHIPS & FINANCIAL AID

University is a big investment. UBC recognizes the significant contribution you and your family make toward your education. Support is available for you through financial advising, scholarships, bursaries and other assistance programs. US students may be eligible for subsidized or unsubsidized Stafford or PLUS loans. Check you.ubc.ca for more details.

HOUSING

UBC offers a First Year Guarantee: If you are coming to UBC graduating straight from high school or are a first- or second-year international student, you can now live on campus and benefit from the exceptional academic and social support offered through our residence program. Check you.ubc.ca for further details and criteria.

Enrolment Services—UBC Vancouver
604.822.9836
Toll-free (within North America) 1.877.272.1422
www.you.ubc.ca

Enrolment Services—UBC Okanagan
250.807.8521
Toll-free (within North America) 1.877.807.8521
www.you.ubc.ca