

Ryerson Engineering

Be greater than



Ryerson
University

Admissions 2019

A student with short brown hair and safety glasses is focused on working on a drone. The drone is a quadcopter with a black frame, red legs, and a camera mounted on the front. The student is wearing a dark blue long-sleeved shirt. The background is a blurred workshop or classroom setting.

**Be greater
than ordinary**

A large, stylized blue greater-than symbol (>) is positioned to the left of the main text.

**So much
more than
a symbol.**

At Ryerson Engineering, the greater-than symbol represents our students' drive to continuously improve themselves, their profession and the world. They're always forging ahead, always pushing the boundaries of innovation, and never ceasing to develop as well-rounded engineers, entrepreneurs and people.
Join us, and be greater than, too.

Be

the engineer you want to be **04**

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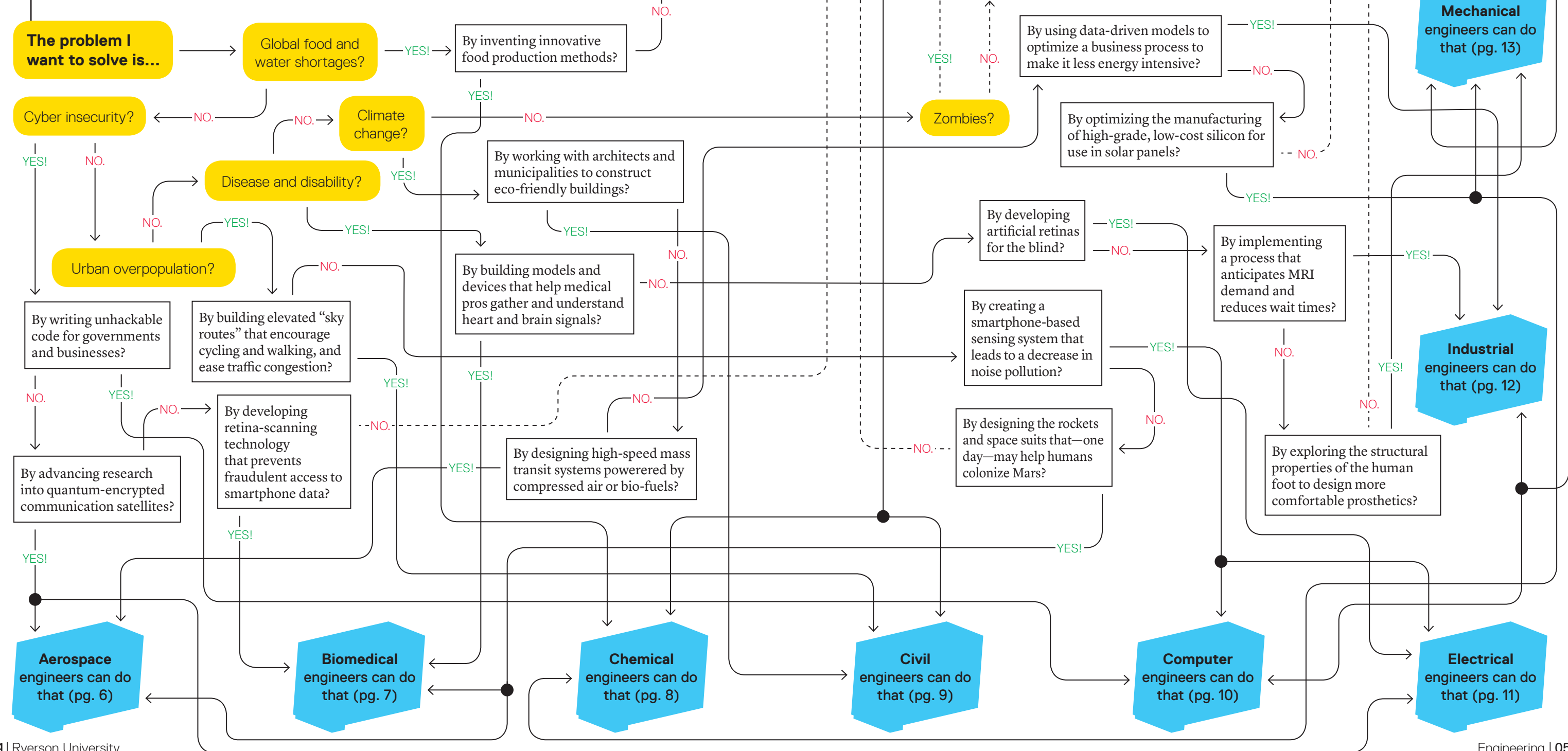
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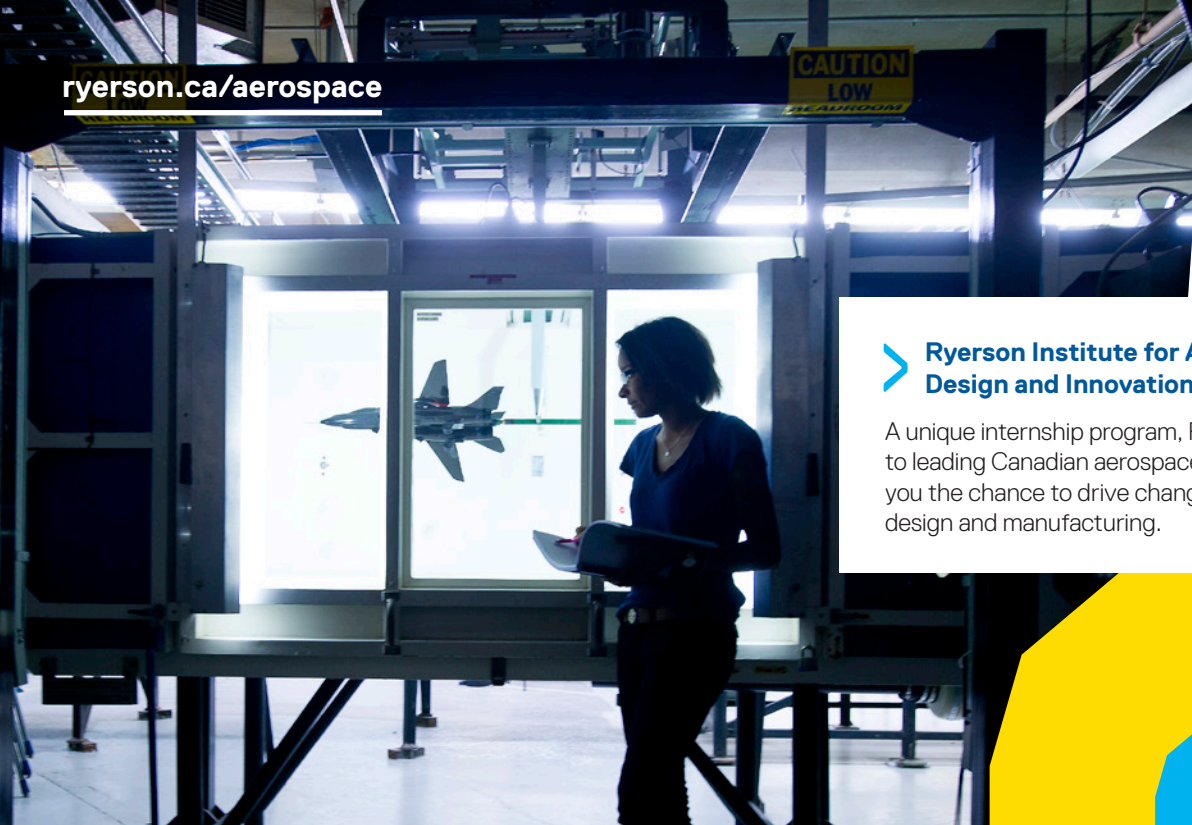
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Be the engineer you want to be

Not sure which discipline is right for you? Take a journey through our infographic. (This infographic is for informational purposes only, and is not a substitute for other guidance resources, including those detailed on pages 14, 18, 22 and 23.)





Ryerson Institute for Aerospace Design and Innovation (RIADI)

A unique internship program, RIADI connects you to leading Canadian aerospace companies—giving you the chance to drive change in areas like design and manufacturing.

Aerospace

Invent the vehicles of the future.

If transportation is your passion, you'll graduate with the knowledge you need to reinvent how we travel across water, land, sky or space. You'll decide how fast we move, how safe and cost-effective transit can become, and just how far the limits can be pushed.

In first and second year, you'll advance your understanding of foundational engineering science, and take courses specific to your program such as aerospace design and flight mechanics. In third year, you'll study one of three streams: aircraft, spacecraft, or avionics. In fourth year, you'll work on a student team to design and analyze your own aircraft or spacecraft, and present your final project to industry representatives.

Some career possibilities

avionic instrumentation design · electronic navigation systems design · research · satellite technology + manufacturing, operations and maintenance of everything from jets and space-exploration vehicles to high-speed cars and hovercraft

Some employers

Air Canada · Boeing · Bombardier · Canadian Space Agency · Celestica · CFN Precision Ltd. · Honeywell · NASA · National Research Council of Canada · Pratt & Whitney · Safran Electronics · SpaceX · SPP Canada Aircraft, Inc. · Transport Canada · UTC Aerospace Systems + many more

> For information on co-operative internships, turn to page 26.

Make a difference in the health of humanity.

As a biomedical engineer, you'll blend the physical, chemical, mathematical and computational sciences with biology, medicine, behaviours and health. The results? New medications, materials, devices and processes that prevent, diagnose and treat disease and injury.

In first and second year, you'll study the foundations of engineering science, and explore topics specific to your program, such as biomedical physics. In third year, you'll focus on microprocessor systems, fluid mechanics, biomedical transducers, bioinformatics, biostatistics, signals and systems, control systems and instrumentation. In fourth year, you'll be a member of a student team tasked with developing, prototyping and proving your own design.

Some career possibilities

IT and software solutions · medical research · medical device design and manufacturing · nanotechnology and micro-machine development · rehabilitation technologies + a Ryerson biomedical engineering education opens doors to medical, dental and veterinary schools

Some employers

Celestica · Dräger · Enbridge · GE Healthcare · Hydro One · Johnson & Johnson · Institute for Biomedical Engineering, Science and Technology (iBEST) · Medtronic · Sanofi Pasteur · Siemens · St. Michael's Hospital · Toshiba Medical Systems + many more

> For information on co-operative internships, turn to page 26.

Biomedical





Chemical Co-op

Choose your own adventure.

Chemical engineering is an incredibly versatile discipline that combines engineering and the sciences of chemistry, biology and physics. Your career could take you in many exciting directions, from producing cleaner water and better-tasting food, to developing microchips, beauty products and medicines.

Your program will begin with introductory courses in engineering principles and sciences, and you'll explore topics specific to your program, such as organic chemistry. In third, fourth and fifth years, you'll study specialized subjects such as wastewater treatment, biochemical engineering, air pollution control, food processing, and process optimization.

A co-operative internship is a mandatory component of this program, enhancing your degree and helping you to make informed career decisions.

Some career possibilities

cosmetics formulations · environmental management · industrial safety · petrochemicals · process design and development · pollution control and waste management · risk assessment · semiconductor manufacturing · water treatment + leadership roles in business, education and entrepreneurship

Some employers

3M · AGAT Laboratories · Apotex Canada Inc. · Atomic Energy of Canada Limited (AECL) · Dow Chemical · DuPont · Husky Energy · Imperial Oil · Maple Leaf Foods · Ministry of the Environment and Climate Change · Sanofi Pasteur · Suncor Energy + many more

> For information on co-operative internships, turn to page 26.

"Choosing Ryerson was the best decision I ever made to kick-start my career."

> **Navneet Kaur, System Engineer at Ontario Power Generation Chemical Engineering '16**

Solve environmental problems and make communities safer.

Can you imagine a world without buildings, bridges, water supply or power? Neither can we. Thank goodness for civil engineers. These highly-trained and knowledgeable professionals design crucial facilities and infrastructure systems, as well as manage, operate and maintain them 24/7.

You'll learn the fundamentals in your first two years, and how environmental, geomatics, geotechnical, structural, and transportation engineering come together. In upper years, you'll choose to specialize in structural, environmental or transportation engineering with courses in construction management, advanced concrete/structural design, highway engineering and solid waste management.

Some career possibilities

city planning · consulting · offshore construction · power and water supply · project management · waste treatment facility design · sustainable construction + designing bridges, buildings, dams, roads and more

Some employers

AECOM · Aecon Group Inc. · Canadian Natural Resources · CIMA · Dillon Consulting Ltd · EllisDon · EXP · Genivar · Golder Associates · Hatch Group · Hydro One Networks · Lafarge · Metrolinx · Ministry of Transportation · PCL Construction Management · SNC-Lavalin · Stantec · The Boring Company · The Walt Disney Company · WorleyParsons + many more

> For information on co-operative internships, turn to page 26.

Civil



Computer



Design the next digital phenomenon.

Computer engineers advance technology and help make all of our lives more efficient, entertaining and interconnected. Whether you want to create cool new interfaces, design computers or develop firmware, you'll be part of an industry that moves lightning fast, and sparks social and economic revolutions.

Throughout your degree, you'll study engineering fundamentals, plus computer architecture, microcomputer systems, digital electronics, real-time operating systems and control theory. You'll dive deeply into networks, circuits, microprocessors, software systems and more. In fourth year, you'll be part of a student team tasked with developing, prototyping and proving your own design.

Some career possibilities

Big Data · communications · health care systems · human-computer interaction · intelligent and adaptive systems · network security · research and development · social media analytics · web mining + developing computer chips, systems on a chip, circuit equipment and more

Some employers

AMD · Apple · Bell Mobility · Celestica · Electronic Arts · Enbridge · Esna · Hydro One · Google · IBM · Intel · Litens Automotive Group · Microsoft · Ontario Power Generation · Sanofi Pasteur · Siemens Canada · Suncor · Telus Digital · Toronto Hydro + many more

> For information on co-operative internships, turn to page 26.

Shape the technology that powers our world.

By learning how to harness and manipulate electricity, electrical engineers are crucial to the continual advancement of civilization. With deep knowledge of the systems and phenomena that impact every engineering discipline, technology and human being, your expertise will be in demand.

After you learn the first-year engineering fundamentals, you'll move on to core subjects such as analog and digital electronic circuits and systems. In third year, you'll concentrate on one of four areas: energy systems, microsystems, multimedia systems, or robotics and control systems. In fourth year, you'll be part of a student team tasked with developing, prototyping and proving your own design.

Some career possibilities

artificial intelligence · battery design · electrical circuit relationship design · integrated circuits · Internet of Things · medical imagery · quality control · renewable energy · robotics · signal processing · telecommunications + generation, transmission and distribution of power

Some employers

AMD · Apple · Bell Mobility · BMW Group · Boeing · Celestica · Enbridge · Esna · GE · Google · Hydro One · IBM · Litens Automotive Group · Lincoln Electric · Ontario Power Generation · Sanofi Pasteur · Siemens Canada · Suncor · Tesla · Toronto Hydro + many more

> For information on co-operative internships, turn to page 26.

"My professors took great interest in my studies. They went above and beyond, mentoring me and ensuring I enjoyed what I was learning."

> **Edwin Alegre,**
Electrical Engineering

Electrical



Industrial

Mastermind solutions for processes, productivity and people.

As an industrial engineer, you'll focus on the human element in the design and operation of systems. While you may choose to work in "industrial" settings, you can apply your skills just about anywhere—from health care management to business. No matter where you end up, you'll make things faster, safer and more efficient.

In first and second year, you'll be introduced to the engineering science basics. In third year, you'll gain more specialized knowledge, including management science, operations research, and facilities design. In fourth year, you'll work on a team-based project that focuses on industrial engineering's impact on society and the environment.

Some career possibilities

ergonomics · finance · health care · government · human resources · logistics · manufacturing · operations research · plant management · product development · production planning and supervising · productivity consulting · systems design · transportation + anything that combines people, machines, materials and technology

Some employers

Bombardier · Canada Post · Canadian Tire · Celestica · CIBC · FedEx · Hershey · Home Depot · Loblaw Companies · Maple Leaf Consumer Foods · NASA · Pearson International Airport · RBC Royal Bank · Sanofi Pasteur · SCI Group Inc. · The Walt Disney Company · Toronto East General Hospital · UPS + many more

➤ For information on co-operative internships, turn to page 26.

"Ryerson takes a hands-on project approach, which allows you to immerse yourself in real-world applications."

➤ **Mike Dovich, Supply Chain Analyst at Sofina Foods | Industrial Engineering '17**

Transform society through machines.

If it moves or makes a sound, a mechanical engineer was likely involved. Pursue this dynamic discipline and become an expert in the research, design, operations and maintenance of all kinds of machinery and technology. The multidisciplinary knowledge and problem-solving skills you gain will make you a standout professional.

During years one and two, you'll focus on the foundations of engineering science, plus you'll learn about the mechanics of materials and the fundamentals of manufacturing. Starting in third year, you'll have the option of specializing in mechatronics – the integration of electronics with mechanical systems. Or you'll choose from a variety of technical electives like manufacturing and fabrication, thermal and fluid processes, or machine design. In fourth year, you'll work collaboratively on a design project addressing function, form, manufacturability, cost, environmental impact, safety, reliability and integrity.

Some career possibilities

acoustics · automotive · biomechanical implants · health care · manufacturing · pharmaceuticals · robotics · sustainable energy · technical sales · textiles + designing space vehicles, jet engines, power plants, heating and air conditioning systems and more

Some employers

Apple · Boeing · Bombardier · Celestica · EllisDon · GE Aviation · General Motors · Google · Husky · Hydro One · Lincoln Electric · Maple Leaf Consumer Foods · Ontario Power Generation · Sanofi Pasteur · Siemens · SpaceX · Suncor · Toyota Canada · Walt Disney Imagineering · Virgin Hyperloop One + many more

➤ For information on co-operative internships, turn to page 26.

Mechanical

Undeclared

(entry option only)

Be greater
than book-smart

Still deciding which type of engineer you want to be? No problem.

Our Undeclared entry option is a good choice if you're unsure about which engineering discipline is right for you. There is no drawback whatsoever. All of our programs share a common first semester, so you won't be out of sync with your classmates, and you won't have to re-apply to Engineering once you make your decision. The deadline for choosing your discipline is **December 1, 2019**. (For help navigating your options, turn to the infographic on page 4.)

As an enrolled student, we have many resources to help you choose your discipline.

Introduction to Engineering (CEN100)

You'll learn about the various disciplines through this compulsory first semester course. Think of it as trying each program on for size.

Academic advisors

Professional engineers with years of experience, our advisors will help guide you. Book your appointment online at ryerson.ca/fyeo.

Professors

Our faculty take mentorship seriously. Contact them to arrange a meeting, or speak to them during office hours.

Upper-year students

Get to know students in second, third and fourth year, and pick their brains. If you need an intro, the First-Year Engineering Office can help. (See page 18 for more info.)

"Coming out of high school, I was uncertain of my future potential, even my likes and dislikes. The undeclared option was the perfect fit. The Introduction to Engineering course exposed me to all the different fields. It gave me the confidence to choose."

> **Ali Asad, Mechanical Engineering**



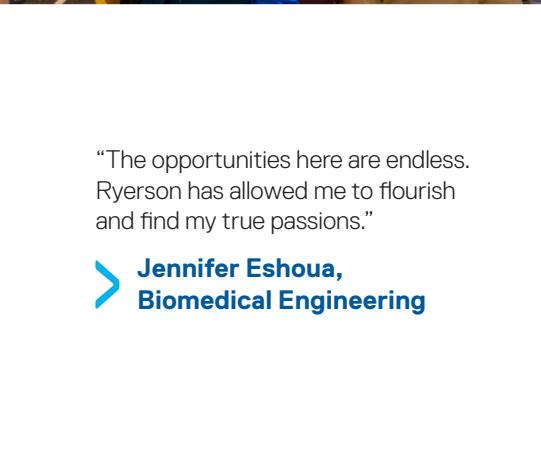
Be part of campus life

Life as a Ryerson Engineering student is wonderfully colourful. From volunteering as a mentor, to joining a varsity or intramural team, to making lifelong friends during orientation week, enrich your experience by taking part in everything our vibrant community has to offer.



"Being part of the Tri-Mentoring Program has allowed me to share my experience with incoming first-year students and broaden my understanding of resources and opportunities on campus."

> **Minakshi Suri,**
Civil Engineering



"The opportunities here are endless. Ryerson has allowed me to flourish and find my true passions."

> **Jennifer Eshoua,**
Biomedical Engineering



"Ryerson encourages people to become their best selves. The events I've participated in—both on campus and in the community—have had such a positive influence on my life."

> **Sasha Singh,**
Biomedical Engineering



Alexa Bautista

A day-in-the-life

For first-year Mechanical Engineering student Alexa Bautista, a typical Thursday includes music, circuits and her mom.

- 6:00 a.m. My iPhone alarm goes off.
- 6:10 a.m. My back-up alarm goes off. (AKA mom.)
- 7:00 a.m. Mom works downtown, so today is one of those days when we commute together. We do our own thing on the trip. For me that means listening to music. This morning it's Frank Ocean, Daniel Caesar, Ariana Grande and Bad Suns.
- 7:40 a.m. I've reached campus and my first thought is always breakfast. I treat myself to tea and an everything bagel (double-toasted) with butter.
- 8:00 a.m. First class of the day is Physics: Waves and Fields. We're deep into the chapter on circuits, which I've been fascinated by since high school. Currents. Voltage. Ohm's Law.
- 9:00 a.m. I head straight to the Student Learning Centre (SLC). The eighth floor is my go-to. It's known, unofficially, as the "engineering floor" because we tend to take it over for group work. My friends and I squeeze in a quick study session.
- 10:00 a.m. My friends take off, and I move to a cubicle. I focus on my notes for this afternoon's physics lab and make sure I'm prepared.
- 11:00 a.m. Study break! I watch YouTube videos while I eat lunch, then it's back to the books.
- 12:30 p.m. A friend and I go to the Recreation and Athletics Centre (RAC). I get in a good workout with this free exercise app I like.
- 2:00 p.m. My afternoon is busy—but I like it that way. ;) First up is my Materials Science Fundamentals lecture. We're learning about phase diagrams, and charting the temperature that glass needs to reach before it can be manipulated.
- 4:00 p.m. In my physics lab now and we start off with a pre-lab quiz. (I have to calculate voltage and electric potential.) When that's done, the lab really gets going. We learn how to use metal electrodes and Logger Pro, a graphing system that measures electric potential. My lab partner and I work together to collect the data and then split up the post-lab write-up. All the students in my program help each other out, which is great.
- 6:15 p.m. I snack on granola in my Rube Goldberg Machine Committee meeting. We're working on a sequence involving marbles that fall down a staircase, that trigger a lever, that knocks over a post, that... you get the idea.
- 7:15 p.m. Hop on the subway and head home.
- 8:00 p.m. Eat dinner, hang out with my brother for a bit, then get some studying done before bed.

Time management is a key part of your success in first year. At Ryerson Engineering, we offer many resources to help you learn how to balance it all and make the most of your university experience.

Be a first-year all-star

"Thanks to the academic advising and resources of the FYEO, I felt more confident and prepared to tackle midterms and final exams."

> [Khan Rafsanjani, Civil Engineering](#)

The First-Year Engineering Office (FYEO)

The FYEO is here for you. This award-winning team will support you in your foundational year of engineering and help ensure you make a successful transition from high school to university. From facilitating study halls, to helping you understand university policies, to advising you academically, the FYEO is with you every step of the way.

ryerson.ca/fyee

Some first-year resources

- **Transition Program** – get more time to adapt to university curriculum
- **First-Year Ambassadors** – navigate year one with advice from upper-year students
- **Early Intervention Program** – boost your success in core courses
- **Communications Proficiency Resource Path** – learn to communicate more professionally
- **Math Mini Course** – sharpen your math skills before university starts
- **Academic Advisors** – request personalized guidance according to your interests, strengths and goals

Student Services and Support

From career-readiness skills to maintaining a healthy lifestyle, we're here to make you feel as comfortable and connected with Ryerson as possible.

ryerson.ca/studentaffairs

Some university-wide resources

- **Academic Accommodation Support (for students living with disabilities)** – participate fully in your studies
- **Career Centre** – empower yourself and your future with events, workshops and expertise
- **Centre for Student Development & Counselling** – access mental health support and resources
- **Math Support** – meet with tutors in person or online
- **Student Financial Assistance** – find all the info you need about government financial assistance, scholarships and awards
- **Student Life Programs** – get involved by taking part in campus events

First year at a glance

First Semester

- General Chemistry
- Calculus I
- Linear Algebra
- Physics: Mechanics
- Introduction to Engineering
- Liberal Studies elective course

Second Semester

- Digital Computation and Programming
- Principles of Engineering Economics
- Calculus II
- Physics: Waves and Fields

Plus, you'll take the following courses depending on your program:

Aerospace

- Engineering Design and Graphical Communication
- Materials Science Fundamentals

Biomedical

- Intro to Biomedical Engineering
- Electric Circuit Analysis

Chemical Co-op

- Chemical Engineering Fundamentals
- General Chemistry Laboratory

Civil

- Graphics
- Materials Science Fundamentals

Computer

- Electric Circuit Analysis

Electrical

- Electric Circuit Analysis

Industrial

- Engineering Graphical Communication
- Materials Science Fundamentals

Mechanical

- Engineering Graphical Communication
- Materials Science Fundamentals

Be greater than you
ever thought possible

Be a quizmaster

At Ryerson Engineering, our students go **all-in**. They not only pursue academic achievement, they also amp up skills like leadership and communication, and they get to know themselves and their peers on a deeper level. How can you best develop these skills and this awareness, and why is doing so necessary for success? Take our quiz and find out. (Circle all answers that apply.)

I can develop my leadership abilities by:

- a) Volunteering my time with a charity or not-for-profit.
- b) Running for university government.
- c) Captaining a Ryerson design team or club.
- d) Hosting study groups and tutoring sessions.

To meet the expectations of today's employers, I need to be proficient in the following modes of communication:

- a) Technical
- b) Non-technical
- c) Written
- d) Verbal
- e) Online
- f) In-person
- g) The Force

My problem-solving skills will improve if I:

- a) Participate in a co-operative internship.
- b) Lead team-based school projects when opportunities arise.
- c) Learn all I can about different problem-solving methodologies such as the Systems Approach, Plan-Do-Check-Act Cycle, etc.
- d) Take part in experiential learning opportunities through one of Ryerson's 10 Zones.

As an engineer, it's essential to broaden my perspective and be open to new ideas, disciplines and people because:

- a) Diversity drives innovation.
- b) In order to create complex technologies and systems, the participation of experts from many fields is necessary.
- c) To quote Ghandi, "Our ability to reach unity in diversity will be the beauty and the test of our civilization."
- d) It makes financial sense. Companies with diverse workforces are more likely to outperform those with a lack of diversity.

To master networking I should:

- a) Be a LinkedIn all-star.
- b) Introduce myself to employers at campus events and career fairs.
- c) Pay it forward. Be generous and share my own connections with others.
- d) Talk about what I'm working on/interested in with new people I meet.
- e) Make use of all of the resources available at the campus Career Centre.

Some of the most effective strategies for dealing with stress include:

- a) Talking about it with friends and family members.
- b) Going to the gym, doing yoga, or taking a walk.
- c) List-making. Break every task down into manageable chunks with reasonable deadlines.
- d) Seeing a counsellor who can recommend coping strategies.
- e) The Force.

Answer key

All of the answers are correct. (Except The Force, although that would be the coolest.) Why? Reality #1: Employers today expect you to enter the workforce with all of these skills and aptitudes. Reality #2: These skills and aptitudes also make you a well-rounded and excellent person. Overwhelmed? Don't be. We've got you covered.

At Ryerson Engineering, our **all-in approach** can help you become the multifaceted engineer—and person—that today's world needs.

To learn how, turn the page. >

Be all-in

We asked employers, experts, alumni and current students what Ryerson can do to develop the most outstanding engineers possible. They told us loud and clear: The world doesn't just need engineers; it needs engineers who lead, think of others (and with others), and invent creative solutions for complex problems. The result of that feedback? Our six-point, **all-in approach** to education.

1. Well-being

We prioritize your physical and mental health, and offer resources such as:

- Personal counselling
- The Ryerson Medical Centre
- Time management planning assistance and tools + much more

2. Inclusion

We welcome you as a member of our community and offer:

- A caring and respectful learning environment where diversity of knowledge, worldviews and experiences are valued
- Accessibility and accommodation support
- Student- and faculty-led sessions on equity and diversity + much more

3. Experiential Learning

We encourage you to explore your options for learning in new and different ways via:

- Co-operative internships and research assistantships
- Student design teams, clubs, government and societies
- International opportunities, conferences, expos + much more

> Diversity leads to engineering excellence

Our Equity, Diversity and Inclusion (EDI) Office provides you with access to the experiences, tools and resources that will provoke you to reflect on different life experiences and understand the role you can play in representing Ryerson's EDI values in and outside of the classroom. We offer workshops, networking and mentorship opportunities, access to local and international conferences, and facetime with industry professionals and employers.

4. Academic & Career Preparation

We support you in the classroom and beyond through:

- Academic counselling by dedicated academic advisors
- Student Learning Support resources, including math, studying, writing, note-taking and reading skill development
- Career Centre workshops, resumé assistance, employment fairs + much more

5. Personal Profile Development

We're here to help you develop your leadership abilities and nurture meaningful professional connections via:

- The Tri-Mentoring and First-Year Ambassador programs
- Guidance from the Career Centre for your online profiles such as LinkedIn, Twitter and Meetup
- Networking events, information sessions, tips + much more

6. Scholarships & Awards

We think everyone deserves the chance to learn and grow, which is why we offer:

- Entrance and other scholarships for academic achievement and financial need
- Awards for innovative entrepreneurship
- Ryerson Student Experience awards for leadership in the community, culture, university life, equity and inclusion + much more

Be a boss

Add a management or entrepreneurship specialization to your degree and boost your business skills.

"The OSEIE has made me a very well-rounded engineer. It is the best investment that I have made in myself so far."

> **Islam El-Kadi, AI and Internet of Things
Junior Consultant at IBM | Electrical Engineering '18**

Optional Specialization in Management Sciences (OSMS)

Looking for that competitive edge? Look no further than the OSMS, Ryerson's business management option designed specifically for engineering and science students. You'll become more marketable to employers by gaining a background in economics, project and operations management, investment analysis, managerial accounting and organization dynamics.

ryerson.ca/osms

Optional Specialization in Engineering Innovation and Entrepreneurship (OSEIE)

Why just bring your idea to life when you can bring it to market? With the OSEIE, not only will you bolster your entrepreneurial skills, you'll learn—in a hands-on environment—how to develop an idea, test it, and launch a startup. You'll also have access to the Centre for Engineering Innovation and Entrepreneurship (CEIE), where engineering students gather, share and collaborate with professors and industry mentors.

ryerson.ca/oseie

There's an Esch for that.

Got a big business idea? Need funds to get it going?

At Ryerson Engineering, we not only offer academic programs like OSMS and OSEIE to help you get your business off the ground, we offer funding, too. Our Norman Esch Engineering Innovation and Entrepreneurship Awards support the ideation, development and market-readiness stages of your projects with funding of \$5,000, \$8,000 and \$25,000 respectively.

ryerson.ca/esch

Meet Nick, an Esch Award success story.

Nicholas Burgwin is disrupting the industrial sensing market. A winner of all three stages of the Esch Awards, Burgwin's company, Fibos, offers a solution that replaces traditional electrical strain gauge technology with advanced and affordable optical sensors. Called the Optical Gauge Sensor and Optical Gauge Amplifier, the technology enables high-speed, high-resolution measurements to be performed with unprecedented precision. Fibos is currently developing partnerships with manufacturers, distributors and industries, and has received a \$500,000 order from the federal government. We—wait for it—sense a bright future ahead for Nick.

"Esch was incredibly instrumental in developing Fibos, as it provided \$38,000 to establish the company and build prototypes to validate both the technology and solution. Not only was this seed funding essential, but the award application process encouraged and challenged me to perform market research and apply critical thinking towards the product and its market fit."

> **Nicholas Burgwin, Fibos Co-Founder & CEO
Electrical Engineering (MAsc '16)**

Be career-ready

Every Ryerson Engineering department offers paid, full-time co-operative internships. Discover why participating could be right for you.

At Ryerson Engineering, our students can't say enough about how their co-operative internship experience transformed their education, their careers and their lives. It's no surprise. Studies have shown that the benefits of co-op are vast, including opportunities to:

- develop crucial soft skills such as communication, teamwork and leadership
- experience firsthand exactly what engineering employers expect
- broaden your professional network and make lasting industry connections
- gain an edge in today's competitive job market

The table to the right outlines the duration of each engineering program's co-operative education opportunity. No matter how long your co-operative internship is, you will develop the skills and experience you need to succeed in your chosen field.

"Co-op has enhanced my technical and soft skills, and prepared me to become the adaptive professional that employers are looking for."

Monica Kwong,
Chemical Engineering

For further information on work terms, eligibility, placement opportunities and more, please visit each program's individual web page. (Note: All co-operative internships begin after your third year of study—except for Chemical Engineering Co-op, which begins during your second year.)

"Without Ryerson and the co-op program, I would not have been able to land the job I currently have."

Jash Javeri, Associate Product Owner
at Scotiabank's Digital Factory
Aerospace Engineering '17

PROGRAM	DURATION OF PLACEMENT(S)
Aerospace	12 to 16 months
Biomedical	8 to 16 months
Chemical Co-op	5 x 4 months
Civil	12 to 16 months
Computer	8 to 16 months
Electrical	8 to 16 months
Industrial	12 to 16 months
Mechanical	12 to 16 months

Be a teamplayer

Want to put your skills to the test, travel to cool destinations and compete? Consider joining a student team or club. You can also join a Ryerson chapter of a major society or organization, your course union, or the Ryerson Engineering Student Society (RESS).

Design Teams and Clubs

Canadian National Concrete Canoe Team
CanSat
Great Northern Concrete Toboggan Race (GNCTR) Team
Ryerson Aero Design (RAD) Team
Ryerson Baja Racing Team
Ryerson Formula Racing Team
Ryerson International Hyperloop Team
Ryerson Rams Robotics (R3)
Ryerson Rocketry Club
Ryerson SAE Supermileage Team
Ryerson Thrill Club (RTC)
Ryerson Unmanned Aerial Vehicle (RUAV) Team

Chapters

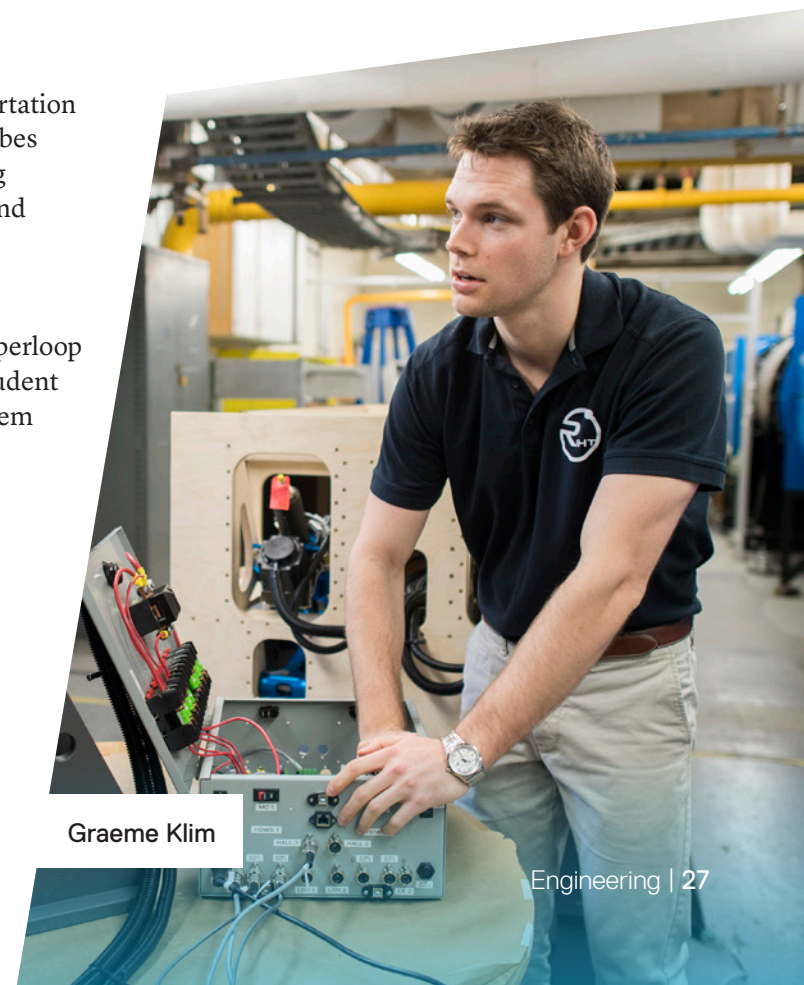
American Society of Mechanical Engineers (ASME)
Biomedical Engineering Society (BMES)
Canadian Aeronautics and Space Institute (CASI)
Canadian Society for Chemical Engineering (CSCChE)
Canadian Society of Civil Engineers (CSCE)
Canadian Society for Entrepreneurship and Innovation
Canadian Society of Mechanical Engineers (CSME)
Engineers Without Borders
EngOUT
Institute of Electrical and Electronics Engineers (IEEE)
Institute of Industrial Engineers (IIE)
National Society of Black Engineers (NSBE)
Ryerson Space Society (SEDS Chapter)
Tetra + many more

Worth the hype.

You've likely heard of the Hyperloop, the high-speed transportation system proposed by Elon Musk. Consisting of two massive tubes and magnetic accelerators that propel pods forward, amazing engineering is happening to make the Hyperloop a reality—and amazing Ryerson engineers are part of it.

In 2016, the Ryerson International Hyperloop Team won the Subsystem Innovation award at the international SpaceX Hyperloop Pod Competition. Led by aerospace engineering graduate student Graeme Klim, the team designed a deployable wheel subsystem for the pod. They also partnered with several aerospace engineering companies who helped them with testing, assembly and development of their technology.

The win is exciting for the team and for the rest of us, too. If all goes to plan, the Hyperloop will be three times faster than the world's fastest high-speed rail system and much more eco-friendly than road vehicles. "We really want to push humanity forward," says Klim. "And I think the Hyperloop is going to change the world."



Graeme Klim

Be one with the city



Located in the centre of downtown Toronto, Ryerson University is close to everything you expect from a world-class city. From on-campus hotspots to across-town gems, we asked our engineering students where they like to study, eat, hang out, and take in the T.O. scenery. Here are 25 of their top picks.

STUDY (1) Student Learning Centre (SLC), 8th floor: "I like the natural light and the background chatter from the group-study area." **(2)** George Vari Engineering and Computing Centre, 3rd floor: "The desks by the windows are pretty quiet, and the view is great for people watching." **(3)** Ryerson University Library and Archives, 10th floor: "Super quiet spot when you want to study solo." **(4)** Page One Café: "Head to the back area with the couch. It feels very VIP."
EAT (5) Balzac's: "Because coffee + brownie = life." **(6)** Oakham House: "Their breakfast is pretty spectacular."
(7) Street food market across from the SLC: "Good variety / cute atmosphere." **(8)** H-Mart: "Their cup of noodles goes a long way." **(9)** Sweet Jesus Ice Cream: "Get the Red Rapture. So goood!" **(10)** Baldwin Village: "A treasure trove of interesting eateries." **(11)** Pablo: "The Japanese cheese tarts are fire." **(12)** Metro: "Good student deals."

HEAD OUTSIDE (13) High Park: "Cherry blossoms!!!!" **(14)** Grange Park: "It's super beautiful, but the main attraction is really the giant slide." **(15)** Polson Pier: "Offers up an amazing view of Toronto at night." **(16)** Humber Bay Arch Bridge: "Gorgeous spot to take photos by the lake." **(17)** The Kerr Hall Quad: "Best spot in the bustling city to enjoy the sun and fresh air." **SOCIALIZE (18)** Ryerson Engineering Student Society (RESS) office: "Best place to meet other engineers, get information, and have a chill time." **(19)** Recreation and Athletic Centre: "My friends and I play ping-pong here."
(20) Snakes and Lattes: "Quality board game time." **SHOP (21)** Creatron Inc: "This place has all the electronics parts I need for personal and school projects." **(22)** Eaton Centre: "Great place to go between classes." **(23)** Muji: "For all sorts of aesthetically-pleasing and high-quality stationary." **GET ARTSY (24)** The National Ballet of Canada: "I get the standing-room tickets for \$12." **(25)** Art Gallery of Ontario: "Walking around the AGO is a good de-stresser, and admission is free on Wednesday evenings!"

Be part of Ryerson Engineering

Admission requirements

You must have completed, or be currently completing, your Ontario Secondary School Diploma (OSSD) or equivalent, with a competitive average in your top six Grade 12 U/M courses and competitive grades* in the following prerequisite courses:

- English (ENG4U/EAE4U preferred)
- Advanced Functions (MHF4U)
- Calculus and Vectors (MCV4U)
- Chemistry (SCH4U)
- Physics (SPH4U)

We encourage you to apply if you have an average of 80% or higher and at least 70% - 75% in each required course.

ryerson.ca/undergraduate/admission/overview

* The number of applications we receive greatly exceeds the number of spaces available in each program. To be competitive, you should aim for averages/grades above the minimum.

How to apply

1. Apply online by **February 1** through the Ontario Universities' Application Centre (OUAC) at ouac.on.ca.
2. Watch for an acknowledgement email with your next steps and Ryerson ID number.
3. Track your application status via your Choose > Ryerson Applicant Portal.
4. Wait to hear from us. We make all of our admission decisions by the end of May.
5. Accept your Offer of Admission through OUAC.

English-language requirements

If English is not your first language, or if you've lived in Canada for four years or less (i.e., your date of entry to Canada was on or after January 1, 2015, for fall 2019), you are required to present proof of English language proficiency at a satisfactory level. ryerson.ca/elr

Connect with a current student

Our First-Year Ambassadors are happy to answer your questions about Ryerson Engineering and life on campus. ryerson.ca/feas/fyeo/fya

Want to talk to us in person?

Our undergraduate admissions team would be happy to meet with you. Contact them at askeng@ryerson.ca or [416-542-5870](tel:416-542-5870) to arrange an in-person appointment.

Or just drop by their office at 245 Church Street, Third Floor, Room ENG-349 or ENG-350.

Drop-in hours are Monday to Thursday 10 a.m. - 12 p.m. and 2 p.m. - 4 p.m.

Infinite Perspectives

Our students, graduates and researchers are helping to solve the world's most urgent problems. Find out how at infiniteperspectives.ryerson.ca, a multimedia-rich site that features stories of invention and collaboration from across Ryerson Engineering.

Accelerated Master of Applied Science (MAsc) Program

Yes, we have one! For exceptional students who show interest and aptitude in research, this prestigious program can fast-track your studies by up to one year.

Speaking of graduate school, did you know that engineers with graduate degrees (MEng, MAsc, PhD) are not only eligible for more jobs, but they also have better job security?

Learn about all of the ways you can achieve grad school greatness at ryerson.ca/feasgrad.

Entrance Scholarships

Ryerson recognizes the academic achievements of incoming first-year students with more than \$4 million designated for scholarship support. You'll be automatically considered for many of our scholarships based on your admission average, and you can also apply for additional scholarships. We've listed a few for you below, but for the full list (including deadlines) check out ryerson.ca/admissions/scholarships-awards.

George and Helen Vari Foundation Entrance Scholarships

\$10,000

These scholarships are open to students who have a record of academic excellence, as demonstrated by a final admission average of 85% or higher. Applicants must be Ontario residents, be enrolling in a post-secondary institution for the first time, and demonstrate financial need. Application required.

Pierre Lassonde Entrance Awards in Engineering

\$6,000

These awards are open to students entering an engineering program with a minimum 85% overall average in the final year of high school and who exhibit characteristics of leadership through their extracurricular activities. Applicants must be Ontario residents and demonstrate financial need. Application required.

Charles A. Root Scholarship

Up to \$2,000

This award is open to first-year, full-time students. Applicants must have attained a minimum 85% average in the final year of high school, be Ontario residents and demonstrate financial need. Application required.

FIRST Engineering Scholarship

\$2,000

This award is open to students entering an engineering program with a minimum 85% overall average in the final year of high school and who have demonstrated a rich involvement in a FIRST robotics high school team. Application required.

Ontario Professional Engineers Foundation for Education Entrance Awards

Up to \$1,500

These awards are given to students who are well-rounded and exhibit characteristics of leadership through their involvement in professional affairs and/or extracurricular activities related to the engineering profession. The dean selects two engineering students from the incoming class based on the above criteria. No application required.





**How will you
be greater than?**

Visit Us

Undergraduate Engineering Admissions
George Vari Engineering & Computing Centre
245 Church Street, Third Floor
Room ENG-349 or ENG-350

ryerson.ca/feas
416-542-5870 | askeng@ryerson.ca



@RyersonFEAS

Ryerson Open House

Saturday, November 10, 2018

Saturday, March 30, 2019

Meet with an Admissions Officer

Monday to Thursday

10 a.m. – 12 p.m. | 2 p.m. – 4 p.m.

Just drop by. No appointment is necessary.

