TRADITIONAL LAND ACKNOWLEDGEMENT

We wish to acknowledge this land on which the University of Toronto operates. For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.
We are Canada’s top-ranked engineering school. U of T Engineering placed two spots higher than the next Canadian school in the 2022 QS World University Rankings for Engineering and Technology.

150 YEARS
2023 marks U of T Engineering’s 150th anniversary

30%
International students in first-year engineering studies

100+
Countries our students call home

90+
Engineering student clubs and teams to explore

360+
Companies employ 700+ engineering co-op students each year

22
Engineering minors and certificates to customize your degree

$15.7B
Injected into the Canadian economy per year as a result of U of T’s research

40%
For the past five years, U of T Engineering’s first-year class has been near or above 40% women, the highest proportion in Canada.

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Engineering for the World

Learn more: uofteng.ca/e4tw

The world is always changing — challenging how we live and interact with our environment and each other. Where most see uncertainty, engineers see immense opportunity to shape the future.

Whether you aspire to improve access to clean water, leverage AI to support health care, or create more sustainable ways to move people through urban environments, your success depends on being able to think and act with a global perspective.

U of T Engineering provides an education that builds on technical and design skills with a deep understanding of the social, economic, ethical and cultural contexts that impact engineering solutions. Through practical experience, you’ll learn to collaborate with diverse team members, and develop the resilience to be at home anywhere in the world.

Our community of innovators represents more than 100 countries and a rich spectrum of backgrounds and experiences. Your courses are led by world-renowned professors who will challenge you to explore how technology, innovation and society intersect. Throughout your academic journey, you will apply your skills and knowledge in the real world by working with industry, NGOs and academic partners — both locally and abroad.

We are immensely proud of all the ways our students and alumni inspire change in their communities and around the world. We look forward to helping you harness your potential as an engineer for the world.
In April 2022, the University of Toronto Supermileage Team travelled to Indianapolis with their custom-built car for the three-day Shell Eco-marathon Competition on the famed Indy 500 track. More than 50 teams from across North America participated in the competition to design, build and operate the most energy-efficient vehicle possible. Read more about our vibrant student clubs and teams on page 6.

In 2019, industrial engineering student Natalie Enriquez-Birch was among 22 young leaders selected to attend the Arctic Youth Ambassador Caucus in Iqaluit. In 2020, Natalie served as co-president of U of T’s Engineers Without Borders chapter, and last year she held the role of Equity & Inclusivity Director within the Engineering Society.

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In 2022, industrial engineering student Kyra Nankivell went on a six-month entrepreneurial exchange to Singapore. She sharpened her programming skills by working on augmented reality projects at Hiverlab — an emerging tech and immersive media company — and honed her business skills with a course from the National University of Singapore.

Recent civil engineering graduate Salim Hourieh joined U of T Engineering from Syria with an interest in sustainable urban growth. As a student, he served as vice-president of the World University Services of Canada, an organization that sponsors students from refugee camps to study in Canada. Through their efforts, Salim’s team was able to directly sponsor two students to study at U of T.

Engineering Science student Erin Richardson and her team designed and built a unique experiment to examine the impact of spaceflight on astronauts’ genes. Their experimental apparatus was tested aboard the National Research Council Canada’s (NRC) Falcon-20 jet and the team travelled to Dubai to present their work at the 2021 International Aeronautical Congress.

Jennifer (Chen Yu) Wang and three of her classmates worked virtually with students in Nigeria on a joint project to build a low-cost biogas generator for remote communities in Africa’s most populous country. The project was part of the Multidisciplinary Capstone Design Course as well as the Global Classrooms project, which enables students from U of T Engineering to collaborate with peers from institutions worldwide.

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Innovation Starts with an Idea

The U of T Engineering aUToronto team has placed first in the Autodrive Challenge for the past five straight years, with their most recent win in June 2022. The annual North American intercollegiate competition challenges student teams to build a fully autonomous passenger vehicle that can navigate an urban driving course successfully. The aUToronto team consists of faculty supervisors working alongside current graduate and undergraduate U of T Engineering students.

Curious about innovation at U of T Engineering?
Tune in to our podcast “Tell me more: Coffee with Chris Yip” as our Dean sits down with a member of our dynamic global community to talk about what they’re working on.

uofteng.ca/TellMeMore

For an idea to grow into something more, it needs a collaborative network of diverse peers, experienced mentors and an environment that invests in, and nurtures, entrepreneurial thinking.

U of T Engineering fosters the perfect ecosystem to see your ideas come to life, whether you’re thinking about new ways to approach research, start a business or create a student team.

Innovation and entrepreneurship extend beyond the borders of our campus. We take full advantage of our prime location in the heart of Toronto, collaborating with our neighbours in the MaRS Discovery District, world-class hospitals, firms in Canada’s financial district and major multinational organizations headquartered here.
With more than 140 cultures represented across 158 neighbourhoods, Toronto is a welcoming place where the world comes together. As North America’s fourth-largest city and its safest, Toronto is a cosmopolitan hub for arts, culture, food, sports, technology and business.

Fans celebrated as the Canadian men’s national soccer team qualified for the 2022 FIFA World Cup for the first time in 36 years.

Toronto hosts the world at several annual festivals and celebrations, including the Toronto International Film Festival, the Indigenous Arts Festival, Pride Toronto and Caribbean Carnival.

Little Italy, Greektown and Chinatown are a few of the many cultural hubs close to campus. With more than 7,500 restaurants across Toronto, you can eat your way around the world.

Hospital Row is a stretch of world-class hospitals and research centres located next to U of T — many of which partner with our researchers and employ our students for co-op and summer work.

Companies like Netflix, Twitter, Shopify, DoorDash and NVIDIA all have a strong presence in Toronto — it’s no wonder the city ranks among the top five in the world for tech talent and opportunity. This makes Toronto an excellent place to find work opportunities and build your future career.

Union Station is Canada’s largest transportation hub with connections to trains, subways, streetcars and buses. The station also connects to the largest underground pathway in the world, and both airports that serve Toronto: Pearson International (YYZ) and Billy Bishop (YTZ).

Life in Toronto
Vibrant Student Life

From the earliest days of our Faculty’s history, students have referred to U of T Engineering and its community spirit as Skule™ (pronounced “school”).

Community pride, passion and camaraderie runs strong among engineering students inside and outside of the classroom.

Whatever your interests or hobbies — from designing a solar powered vehicle to playing in a music ensemble — there is a student group or co-curricular activity for you. There are more than 90 teams in U of T Engineering and another 800 across U of T. And if you can’t find a club that suits your interests, you’ll have the support to start your own.

Participation in co-curricular activities at The Entrepreneurship Hatchery and Troost Institute for Leadership Education in Engineering will further complement your engineering education, improving your communication, teamwork and professional skills.
ICYMI: This past Saturday, #UofTEngineering students came together to celebrate their achievements and look to the future in an in-person #IronRing ceremony. Congrats from @uoftengineering!

@itsyourgirlshelina
I dreamt of this day 5 years ago... now it’s HISTORY.
I’m so proud to be the first female Engineer in my family and generation!

@skuledragonboat
Great boat practice today! It feels great to be back on the water and Iron Dragons is super excited for the season and what’s to come!

Residence

Living in residence is an excellent way to immerse yourself in university life. Residence is guaranteed for all new full-time students entering their first year of undergraduate study for the first time. See page 20 for details on how to apply for residence.

“Living in Chestnut Residence is a lot of fun. In addition to having meals with friends in the buffet-style dining hall and playing pool in The Urban, it’s great getting to know my neighbour Professor Variawa. He is part of the faculty-in-residence program.”

— Ernie Lee, Year 3 Civil Engineering
A Co-op Designed for Future Engineering Professionals

You can graduate with up to 20 months of meaningful work experience while earning a competitive salary, creating an extensive network and gaining professional skills you’ll leverage for years to come.

We deliver our flagship work experience program through the Professional Experience Year Co-op Program (PEY Co-op), which boasts a 40-year track record. The program has been designed in collaboration with industry partners and engineering leadership experts to help you build your professional profile and prepare for long-term career success.

PEY CO-OP IN THREE STAGES

1. LAY YOUR FOUNDATION

   Foundational programming begins in your first year at U of T Engineering and continues into the second year. Engage with programming designed to orient you to different industries and help you set professional goals. You’ll also practice the skills you’ll need to secure employment during the co-op recruitment cycle, including: developing your job search strategy; writing industry-ready resumes and cover letters; making a positive impression; and navigating complex work situations.

2. APPLY YOUR KNOWLEDGE

   Apply to and interview for co-op positions that align with your goals. Through our robust network of employers, you’ll have access to 1,900+ jobs around the world and across every industry sector. Students seek employment during two main recruitment cycles: in second year in preparation for an optional summer work term, and in third year in preparation for a 12-to-16-month work term.

3. SHOWCASE YOUR TALENT

   While on the job, you’ll immerse yourself as a full-time employee. You will be introduced to a professional environment in your summer co-op work term and gain workplace experience. Working for 12 to 16 consecutive months after your third year will give you ample opportunity to make meaningful professional contributions and build a valuable network. If you participate in both work terms, you will have accrued up to 20 months of paid professional work experience before you graduate.
“Since my co-op position was over a year long, I was able to take on more responsibility such as designing the architectural framework for all system models and contributing to current bids. I truly felt like a part of the team and that my inputs and opinions were valued. My experience really helped me grow professionally and as an individual. It allowed me to gain deep insight into what working in the aerospace industry is like.”

— Kimberly Lai, recent Engineering Science graduate

Kimberly Lai completed her 16-month co-op work term at Safran Landing Systems, a global company that designs and manufactures aircraft landing gear. As a Systems Architecture Intern, Kimberly helped to develop a model-based-systems engineering platform for the development of landing gear systems. While her office was located in Ajax, Ontario, she collaborated with engineers all over the world, and had the opportunity to travel to France to work with industry experts.
Your Success is Our Success

Learn more: uofteng.ca/success

Our tight-knit community thrives because success is a shared goal. You’ll find support among your fellow classmates, in your professors and teaching assistants, and in the staff members who facilitate a range of specialized services that address the needs of engineering students. In addition to the engineering-specific services listed below, every student has access to robust university services including the Health & Wellness Centre, Academic Success Centre, Accessibility Services and the Centre for International Experience.

MENTAL HEALTH & ACADEMIC SUPPORT FOR ENGINEERING STUDENTS

The First Year Office team supports your transition to life as a U of T Engineering student. This includes a dedicated team of academic advisors who provide personalized guidance as you navigate your first year. After first year and for the remainder of your degree, your departmental advisor will support you through your academic journey.

The Registrar’s Office oversees all administrative aspects of your education, including financial aid and course scheduling. The Registrar’s Office facilitates access to a learning strategist, an advisor for international students, a wellness counsellor and an accessibility advisor.

The Mental Health Programs Officer supports students in navigating mental health resources and leads initiatives within U of T Engineering to support student well-being. This role works closely with the Skule™ Mental Wellness Director, who creates student programming and opportunities centred around enhancing mental health and wellness within the community.

A Student Life Programs Coordinator supports engineering students living at Chestnut Residence by overseeing programming and working collaboratively with the First Year Office and Faculty in Residence.

U of T Engineering’s Office of Diversity, Inclusion & Professionalism joins several other groups and positions within the Faculty that are dedicated to creating an environment and culture free of harassment, discrimination and intolerance.

To succeed in your studies and beyond, you’ll need a strong foundation in leadership, communication and math. We created the Troost Institute for Leadership Education in Engineering, Engineering Communication Program and the Math Aid Office to support your development in these areas.

The Engineering Career Centre facilitates the PEY Co-op experience at U of T Engineering and offers a range of programming to help prepare you for your future career.

As a U of T Engineering student, you will be eligible to join U of T Engineering CONNECT, an online network of more than 12K alumni, students, faculty, staff and industry leaders. It’s a great way to access alumni mentors, potential job leads and more.

Your professors are more than teachers and renowned researchers. They are mentors, collaborators and advocates for your success.

MEET PROFESSOR JASON BAZYLAK

Professor Bazylak teaches Engineering Strategies & Practice, a first-year design course in the Core 8 programs. He guides teams of students as they work with real clients on design challenges. His passion for the community extends far beyond the walls of the classroom. He is an active member of the Engineering Positive Space committee and serves as the Dean’s Advisor on Indigenous Initiatives.
ADDITIONAL WAYS U of T SUPPORTS AND PROMOTES EQUITY AND INCLUSION:

Student-run associations such as the National Society of Black Engineers, Women in Science and Engineering, Queer Sphere, Muslim Students’ Association and the Indigenous Students Association host a range of special events and outreach activities year-round. The Engineering Society also has a dedicated Equity & Inclusivity Director.

All U of T students can access on-campus medical and mental health support and services through doctors, counsellors and psychologists. Students also have access to 24-7 counselling support offered in numerous languages.

Students with disabilities can connect with Accessibility Services to discuss adaptive technology, accommodations and success strategies.

Indigenous students can tap into a network of centres and resources across campus, such as First Nations House.

The Sexual & Gender Diversity Office provides programming, resources and advocacy on sexual and gender diversity. The St. George campus also has several gender-neutral bathroom facilities.

The Multi-Faith Centre supports spiritual well-being and encourages interfaith dialogue. There are dedicated spaces for prayer and meditation across UofT.

The Anti-Racism & Cultural Diversity Office provides a safe space for students, faculty and staff to hold conversation and improve inclusion across the University community.
# Customize Your Education

Through discipline-specific specializations, multidisciplinary minors and certificates, and unique professional opportunities, you can customize your UofT Engineering degree to meet your own developing interests at every stage of your academic journey.

## Optional curricular and co-curricular opportunities

Here are just a few of the many ways you can add to your academic journey through optional curricular and co-curricular opportunities:

### Academic flexibility combined with a wide range of optional curricular and co-curricular opportunities means that you graduate equipped with the engineering competencies, professional confidence and global perspective to address complex challenges.

### THE TWO PATHWAYS

<table>
<thead>
<tr>
<th>CORE PROGRAMS</th>
<th>FIRST YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORE 8, DECLARED ENGINEERING</strong></td>
<td>First year is about establishing fundamental knowledge in math, applied and basic sciences, and design. For this reason, the first-year curricula for the Core 8 programs and TrackOne are very similar. Topics covered in the first year of all Core Programs include:</td>
</tr>
<tr>
<td>If you know what you want to study during your degree, you can apply directly to a Core 8 program: Chemical; Civil; Computer; Electrical; Industrial; Materials; Mechanical; or Mineral. (See pages 15 to 18 for details)</td>
<td>» Math (linear algebra, calculus)</td>
</tr>
<tr>
<td><strong>TRACKONE, UNDECLARED ENGINEERING</strong></td>
<td>» Physics</td>
</tr>
<tr>
<td>If you’re unsure of how you’d like to focus your first year, the TrackOne program allows you to explore several areas across engineering. At the end of first year, you will declare which of the Core 8 programs you will join in second year for the remaining three years of your undergraduate degree. (See page 14 for details)</td>
<td>» Chemistry (physical chemistry and/or materials science)</td>
</tr>
<tr>
<td><strong>ENGINEERING SCIENCE</strong></td>
<td>» Programming (Python or C)</td>
</tr>
<tr>
<td>Engineering Science (EngSci) is a direct-entry program designed for those seeking a unique academic challenge. The first two years of the program — called the Foundation Years — are common to all EngSci students. In the latter half of your program, you will specialize in one of eight exciting majors. (See page 18 for details)</td>
<td>» Engineering Design, Communication and Practice</td>
</tr>
</tbody>
</table>

### FOUNDATION YEAR 1

- Calculus, Algebra
- Mathematical Computation
- Computer Programming (Python and C), Algorithms
- Electric Circuits
- Physics, Material Science
- Engineering Design, Communication and Practice

### Optimize your career trajectory while earning a competitive salary through the immersive PROFESSIONAL EXPERIENCE YEAR CO-OP PROGRAM (page 8)

### Advance the frontiers of engineering through a SUMMER RESEARCH POSITION either on campus or at a partner university internationally
During the application process, you’ll decide you can choose from:

- APPLY THE TWO PATHWAYS FIRST YEAR (See page 18 for details)

If you know what you want to study during your degree, you can apply directly to a Core 8 program: Chemical; Civil; Computer; Engineering Design, Communication and Practice; Math (linear algebra, calculus). If you’re unsure of how you’d like to focus your first year, the TRACKONE program allows you to explore several areas across similar. Topics covered in the first year of all Core 8 programs and TrackOne are very similar. The Foundation Years establish breadth and depth in mathematics, science, and design. For this reason, the first-year curricula for the Core 8 programs and TrackOne are very similar. Some students enrolled in the PEY Co-op Program pursue a summer work term after their second year.

**FOUNDATION YEAR 1**
- Engineering Design, Communication and Practice
- Physics, Material Science
- Electric Circuits
- Computer Programming (Python and C), Algorithms
- Mathematical Computation
- Calculus, Algebra

**SECOND YEAR**
Expand your knowledge with more courses in your discipline. Gain a greater depth of understanding through enhanced lab experiences and design opportunities. With the Foundation Years complete, you will now focus your studies on one of eight EngSci majors. Consider taking electives that allow you to complete a multidisciplinary minor or certificate (see page 19).

**THIRD YEAR**
Deepen your knowledge further by choosing an area of focus within your Core 8 program (see pages 15 to 18 for discipline-specific areas). Consider taking electives that allow you to complete a multidisciplinary minor or certificate (see page 19).

**FOURTH YEAR**
Apply the skills and knowledge you’ve developed with the opportunity to complete a team-based design project. Within your EngSci major, you’ll have the opportunity to apply your knowledge, skills and talents through a team-based design project and an individual research thesis.

**SECOND YEAR**
- Core 8 programs you will join in second year for the remaining three years of your undergraduate degree. (See page 14 for details)

**FACULTY OF ENGINEERING**
- Engineering Science (EngSci)
- Engineering Science (EngSci) is a direct-entry program designed for those seeking a unique academic challenge. The first two years of the program — called the Foundation Years — are common to all EngSci students. In the latter half of your program, you will specialize in one of eight exciting majors.

**TRACKONE, UNDECLARED ENGINEERING**
(See pages 15 to 18 for details)

**CORE 8, DECLARED ENGINEERING**
(See pages 15 to 18 for discipline-specific areas).

**CORE PROGRAMS**
- Electrical Engineering
- Mechanical Engineering
- Computer Engineering
- Civil Engineering
- Chemical Engineering
- Materials Engineering
- Environmental Engineering
- Mechanical Engineering

**GRADUATION**
Whether you plan to work in industry, start your own business or pursue further studies, you will graduate equipped with strong technical fundamentals, practical engineering knowledge and perspectives to address any challenge. Students in the Core Programs graduate with a Bachelor of Applied Science (BASc) degree, and Engineering Science students graduate with a Bachelor of Applied Science in Engineering Science (BASc in EngSci).

- Solve a real-world challenge faced by a company through a collaborative industry-sponsored project at the UofT INSTITUTE FOR MULTIDISCIPLINARY DESIGN & INNOVATION
- Go global by STUDYING ABROAD at 160+ partner universities worldwide
- Join the ALUMNI MENTORSHIP PROGRAM and benefit from the insight and experience of our UofT Engineering alumni
- Strengthen your leadership competencies through the TROOST INSTITUTE FOR LEADERSHIP EDUCATION IN ENGINEERING
- Turn your idea into a startup through THE ENTREPRENEURSHIP HATCHERY
- Gain complementary perspective on your studies through an ENGINEERING MINOR OR CERTIFICATE or through an ARTS & SCIENCE MINOR (page 19)
TrackOne, Undeclared Engineering

TrackOne is a first year designed for students interested in exploring all fields of engineering before joining one of the Core 8 programs in second year. As a TrackOne student, you’ll spend your first year taking a wide range of courses. This approach helps you discover your interests within U of T Engineering while developing a strong foundation in key engineering principles. After successfully completing TrackOne, you are guaranteed* a spot in the Core 8 program of your choice — Chemical, Civil, Computer, Electrical, Industrial, Materials, Mechanical or Mineral — for the remaining three years of your BASc degree.

DID YOU KNOW?
The TrackOne community organizes study groups, game nights, beach parties and an annual dinner-dance called the Eight Ball. Alumni of the program often sew a TrackOne patch onto their coveralls or jackets.

HELPING YOU DECIDE
The “Introduction to Engineering” course explores how each engineering field contributes to society, helping you choose your best fit within the Core 8 programs as you transition to second year. Support from a dedicated TrackOne advisor will also help you with your decision. The TrackOne curriculum is designed to parallel the courses taken by first-year students in the Core 8 programs, allowing students a smooth transition into second year.

*TrackOne students who achieve a minimum average of 60% in both semesters are guaranteed entry to the Core 8 program of their choice in second year.
Chemical Engineering

Chemical engineers combine chemistry, biology, math and design to solve global challenges and create innovative processes and products. As one of the top chemical engineering programs in Canada, U of T Engineering is at the forefront of research to develop renewable fuels and energy sources, use biotechnology to clean up pollution, manufacture products sustainably, create artificial organs, and fortify foods to address malnutrition. You’ll put theory into practice in innovative courses and laboratories, including the unique Unit Operations Lab, filled with large-scale industrial equipment including a two-storey distillation column.

AREAS OF FOCUS

» Biomolecular & Biomedical Engineering
» Bioprocess Engineering
» Chemical Engineering
» Environmental Science
» Informatics

» Materials Development & Process Engineering
» Pulp & Paper
» Surface & Interface Engineering
» Sustainable Energy

DID YOU KNOW?
In a fourth-year course called Chemical Plant Design, you’ll work in a team to design an industrial processing plant in just 10 weeks.

SAMPLE PEY CO-OP EMPLOYERS

Environment & Climate Change Canada
Peel Plastic Products Ltd.
Sanofi Pasteur
Thermo Fisher
Valsem Industries SAS (France)

SAMPLE CAREER TRAJECTORIES

Advanced Manufacturing of Biochemicals
Bioprocessing
Finance
Food Fortification
Management Consulting

Civil Engineering

Civil engineering focuses on the design, infrastructure and sustainability of the structures and systems that support our daily lives, from the deepest tunnels to the tallest buildings. You will learn from global experts in some of the world’s most advanced and unique facilities. Your courses in applied structural mechanics, fluid mechanics, geology and engineering ecology will prepare you to create solutions that will directly impact quality of life, from designing disaster-resistant structures to building systems that supply clean water to remote communities.

AREAS OF FOCUS

» Building Science
» Construction Management
» Environmental Engineering

» Mining & Geomechanics
» Structural Engineering
» Transportation Engineering & Planning

DID YOU KNOW?
To learn the art and science of land and water surveying, civil and mineral engineering students take part in a two-week camp at beautiful Gull Lake, located three hours north of Toronto. In 2020, U of T Camp celebrated its 100th anniversary.

SAMPLE PEY CO-OP EMPLOYERS

Aecon Construction
CMW Geosciences (Australia)
Ferrovial Agroman (U.S.)
Toronto Hydro
Toronto Transit Commission

SAMPLE CAREER TRAJECTORIES

City Planning
Energy Use and Supply
Environmental Management
Transportation and Infrastructure
Water Treatment and Sustainable Use

Learn more:
www.uofteng.ca/chemical

Learn more:
www.uofteng.ca/civil
Electrical & Computer Engineering

Electrical and computer engineers engage with many pressing challenges of our time, including the communication and control of digital information, and the generation and distribution of energy. In the first two years of both programs, you’ll study design, math, digital systems, electronics, communication systems, computer architecture and software. In your upper years, you’ll focus on two of six cutting-edge focus areas. The electrical and computer engineering (ECE) programs are housed within the same department, giving you access to a breadth of engineering theory and practice to launch your career in fields like artificial intelligence, health care, sustainability and more.

AREAS OF FOCUS

- Analog & Digital Electronics
- Communications, Signal Processing & Control
- Computer Hardware & Networks
- Electromagnetics & Energy Systems
- Photonics & Semiconductor Physics
- Software

DID YOU KNOW?

Our ECE department is ranked number one — and one of the largest — in Canada. Toronto has the highest concentration of artificial intelligence startups in the world*, and working in many of them are our students, professors and alumni.

*Source: torontoglobal.ca/ai

SAMPLE PEY CO-OP EMPLOYERS

- IBM
- Intel
- NVIDIA (U.S.)
- Scotiabank
- Tesla

SAMPLE CAREER TRAJECTORIES

- Machine Learning & Artificial Intelligence
- Big Data
- Computer Security
- Medical Device Design
- Sustainable Energy

Industrial Engineering

Industrial engineers improve the way people interact with technologies and systems. They help organizations run safely, efficiently and sustainably. You will begin the program by learning the foundations of industrial engineering: operations research, programming and human-centered design. In your upper years, you’ll take courses ranging from engineering psychology to data analytics to business process optimization. Industrial engineers see “the big picture,” and apply their expertise everywhere, from streamlining health-care systems to rethinking supply chains and the online user experience in the era of artificial intelligence.

AREAS OF FOCUS

- Human Factors
- Information Engineering
- Operations Research
- Artificial Intelligence & Machine Learning

DID YOU KNOW?

Industrial engineering is closely tied to business and health care. UofT’s connections to Toronto’s financial district and hospitals give you a significant career advantage.

SAMPLE PEY CO-OP EMPLOYERS

- Environment Canada
- Ernst & Young (Trinidad and Tobago)
- Honda
- Royal Bank of Canada
- Walmart

SAMPLE CAREER TRAJECTORIES

- Big Data Analytics
- Health-care Engineering
- Financial Analysis and Planning
- Management Consulting
- Project Management
Materials Engineering

Materials engineers design and develop new materials and advance processes for producing materials sustainably. You’ll learn how to manipulate the structure and properties of materials at molecular and atomic levels from professors who have expertise with a range of applications, including renewable energy, biomaterials, automotive and aerospace. You’ll graduate with a solid foundation in how materials behave, and experience in using state-of-the-art characterization techniques and computer simulations.

AREAS OF FOCUS
» Biomaterials
» Computational Materials & AI
» Design of Materials

» Manufacturing with Materials
» Sustainable Materials Processing

DID YOU KNOW?
The Department of Materials Science & Engineering is home to the Forensic Engineering certificate — a program that is unique in Canada.

SAMPLE PEY CO-OP EMPLOYERS
Celestica
Enbridge
Flyability SA (Switzerland)
Litens
National Research Council of Canada

SAMPLE CAREER TRAJECTORIES
Advanced Electronics
Biomaterials Engineering
Clean Technologies
Forensic Engineering
Manufacturing

Mechanical Engineering

Mechanical engineers understand the world as parts in motion: from cars to medical devices, all design uses mechanical engineering principles. Our program is renowned for its applied approach, where you can put theory into practice through unique experiential opportunities both in the lab and in the field. You’ll take courses in physics, risk assessment, thermodynamics, biomechanics and sustainable energy. You will also have the opportunity to learn about the physical principles of design: how individual components come together, and how to manufacture objects to make them safe, economical and easy to use.

AREAS OF FOCUS
» Bioengineering
» Energy & Environment
» Manufacturing

» Mechatronics
» Solid Mechanics & Design

DID YOU KNOW?
Our M-Space rapid prototyping lab allows students to 3D-print mechanical parts and build entire mechatronics systems, complete with embedded controllers and custom-made printed circuit boards.

SAMPLE PEY CO-OP EMPLOYERS
BMW (U.S.)
Bombardier
General Motors Canada
Magna Group
Ontario Power Generation

SAMPLE CAREER TRAJECTORIES
Advanced Manufacturing
Artificial Intelligence
Communications Systems
Robotics
Sustainable Energy

www Learn more: uofteng.ca/materials

www Learn more: uofteng.ca/mechanical
### Engineering Science

One of the most distinguished engineering programs in the world, Engineering Science (EngSci) is for students who are excited about collaborating with diverse peers to tackle global challenges. In your first two years, you’ll be immersed in engineering, math, science, computing, design and social science. In your last two years, you’ll build on this multidisciplinary foundation in one of eight majors for accelerated, discipline-specific learning. Teamwork, resiliency and determination are keys to success in this rigorous program. You’ll thrive in a supportive and close-knit student community with instructors and staff who create an enriched and unique learning experience.

### ENGINEERING SCIENCE MAJORS

- Aerospace Engineering
- Biomedical Systems Engineering
- Electrical & Computer Engineering
- Energy Systems Engineering
- Engineering Mathematics, Statistics & Finance
- Engineering Physics
- Machine Intelligence
- Robotics Engineering

### Mineral Engineering

Everything that humans use is either caught, grown or mined. Mineral engineering is the applied science of our interaction with the planet. What sets the Lassonde Mineral Engineering program apart is our broad approach to the discipline. Here, you’ll learn mineral exploration, mine design and management, mineral processing and mining finance from researchers at the Lassonde Institute of Mining, as well as industry professionals. Your degree will give you the expertise to lead the way in making mining more sustainable, safe and productive.

### AREAS OF FOCUS

- Environmental Impact & Risk Assessment
- Mine Design
- Mineral Processing
- Mining Economics & Finance
- Surface & Underground Mining
- Water Management

### DID YOU KNOW?

U of T is one of the few institutions worldwide to offer a program that integrates enriched science fundamentals with engineering. The EngSci curriculum is nimble, with dynamic majors that evolve and anticipate emerging technologies.

### SAMPLE PEY CO-OP EMPLOYERS

- Advanced Micro-Devices (AMD)
- Intel
- Loblaw Companies Limited
- Reshenie (South Korea)
- Royal Bank of Canada

### SAMPLE CAREER TRAJECTORIES

Consulting
Mine and Business Management
Financial Institutions
Sustainable Mining Practices
Strategic Planning

Learn more: uofteng.ca/mineral

### DID YOU KNOW?

Toronto is the mining finance capital of the world and home to more than 1,600 mining company headquarters. Students can meet many professionals through participation in industry events.

### SAMPLE PEY CO-OP EMPLOYERS

- Kinross Gold Corp.
- Franco-Nevada Corp.
- Teck Resources Limited
- Teranga Gold
- Vale

### SAMPLE CAREER TRAJECTORIES

Consulting
Mine and Business Management
Financial Institutions
Sustainable Mining Practices
Strategic Planning

Learn more: uofteng.ca/engsci
Engineering Minors & Certificates

Learn more: uofteng.ca/minors

An engineering minor or certificate is a powerful way to graduate with an extra set of credentials, or explore an area of interest, while earning your degree. You can also pursue a minor through the Faculty of Arts & Science — such as Bioethics, Indigenous Studies and Urban Studies.

You can obtain a minor or certificate by focusing your elective courses on the topics below — six courses for a minor and three for a certificate. When you graduate, your minor or certificate will appear on your transcript.

**ENGINEERING CERTIFICATES**

- Artificial Intelligence Engineering
- Communication
- Engineering Business
- Engineering Leadership
- Entrepreneurship, Innovation & Small Business
- Forensic Engineering
- Global Engineering**
- Nuclear Engineering
- Renewable Resources Engineering
- Public Health and Engineering

- Music Technology
- Mineral Resources

*part of U of T’s Sustainability Scholar designation  ** part of U of T’s Global Scholars designation

> of our students graduated with a minor or certificate in 2021

Learn more: uofteng.ca/minors

*part of U of T’s Sustainability Scholar designation  ** part of U of T’s Global Scholars designation

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The U of T Engineering admissions committee carefully considers each applicant’s academic performance and activities outside the classroom. Once we have received your application through the Ontario Universities’ Application Centre (OUAC), we will send you a link to complete a mandatory Online Student Profile (OSP). Your OSP will be used along with your academic transcripts and OUAC application to make an admission decision.

**1 APPLY ONLINE**
Submit your application online through the Ontario Universities’ Application Centre (OUAC) at ouac.on.ca starting in early October. Shortly after you submit your application, we will send you an email acknowledgement with instructions on how to access your account on the Engineering Applicant Portal. The OUAC application deadline is January 12, 2023. For early consideration, 101 applicants should apply by December 1, 2022 and 105 applicants should apply by November 7, 2022.

**2 SUBMIT YOUR ONLINE STUDENT PROFILE AND DOCUMENTS**
Log in to your Engineering Applicant Portal to complete your Online Student Profile (OSP) — where you can tell us about yourself, your academic history, extra-curricular involvement and the engineering programs you are interested in. Upload your high school transcripts through the portal for your high school studies to date. Your application will be reviewed once your OSP is complete. For full deadline details, please visit uofteng.ca/deadlines.

**3 APPLY FOR RESIDENCE**
Residence is guaranteed for all new full-time students entering their first year of university in an undergraduate program for the first time.
You will need to indicate your interest in residence by completing the First Year StarRez application by March 31, 2023, and receive an offer of admission by June 1, 2023. Students must meet all deadlines and all deposit requirements to maintain their eligibility. For full details, please visit uofteng.ca/housing.

**4 TRACK THE STATUS OF YOUR APPLICATION**
Log in to your Engineering Applicant Portal account regularly to see what documents have been received in support of your application and to provide updated grades, transcripts and achievements. This is also where you can ensure that your Online Student Profile is complete and track your admission status. When a decision is made, it will be posted here first. Most admissions decisions are made between February and May.

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### Academic Requirements

**CANADA**

**ONTARIO**: English (ENG4U); Advanced Functions (MHF4U); Calculus and Vectors (MCV4U); Chemistry (SCH4U); Physics (SPH4U); and an additional U or M course

**ALBERTA/NW TERRITORIES/NUNAVUT**: Math 30-1; Math 31; Chemistry 30; Physics 30; and ELA 30-1

**BRITISH COLUMBIA/YUKON**: Pre-Calculus 12; Calculus 12 or AP Calculus; Chemistry 12; Physics 12; and English Studies 12 or English First Peoples 12

**MANITOBA**: Pre-Calculus Math 40S; AP Calculus 42S or Calculus 42U or Calculus 45S + Advanced Mathematics 45S; Chemistry 40S; Physics 40S; and ELA 40S

**NEW BRUNSWICK**: Calculus 120; Pre-Calculus A120; Pre-Calculus B120; Chemistry 121 or 122; Physics 121 or 122; and English 120, 121 or 122

**NEWFOUNDLAND/LABRADOR**: Math 3200; Math 3208; Chemistry 3202; Physics 3204; and English 3201

**NOVA SCOTIA**: Pre-Calculus 12; Calculus 12 or AP Calculus; Chemistry 12; Physics 12 and English 12

**PRINCE EDWARD ISLAND**: Mathematics 621A or 621B; Mathematics 611B; Chemistry 611 or 621; Physics 621; and English 621

**QUEBEC CEGEP**: 12 academic courses including one course in Algebra, and two courses each in Calculus, Chemistry, Physics and English.

**QUEBEC HIGH SCHOOL**: Present requirements according to the provincial curriculum that your school is following. Please refer to the appropriate province for our requirements.

**SASKATCHEWAN**: Pre-Calculus 30; Calculus 30; Chemistry 30; Physics 30; and ELA A30 + B30

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Note: Please email engineering@utoronto.ca if your school does not offer Calculus.
The cost of a university education includes tuition, incidental fees, books, supplies and living expenses. To help you plan ahead, use the University’s financial planning calculator and explore scholarship opportunities and financial aid programs you may be eligible for.

**SCHOLARSHIPS & AWARDS**

All high school applicants to U of T Engineering are automatically considered for most admission scholarships on the basis of their academic achievement and extracurricular involvement (as detailed in the Online Student Profile). Some scholarships and awards require a separate application. Engineering applicants are also eligible for several University-wide scholarships. Major U of T scholarships requiring nomination include the National Scholarship for Canadian high school students and the Lester B. Pearson International Scholarship for international students.

**FINANCIAL AID**

**UNIVERSITY OF TORONTO ADVANCE PLANNING FOR STUDENTS**

We are committed to ensuring that no admitted domestic student is unable to enrol in or complete their studies due to lack of financial means. This commitment led to the creation of a unique financial aid program called University of Toronto Advance Planning for Students (UTAPS). Through a non-repayable grant, UTAPS covers unmet financial need after a student has received a maximum amount of support through government assistance (e.g., OSAP for Ontario students).

**U.S. STUDENT AID**

U.S. citizens can apply for financial assistance from the U.S. William D. Ford Federal Direct Loan Program. U of T is a recognized post-secondary institution for Federal Direct Loans (PLUS/Subsidized/Unsubsidized). Education Savings Plans and U.S. Federal Education Tax credits are also applicable. For details, please visit uofteng.ca/usloans.

**SPONSORED STUDENTS**

As a top-ranked world institution, the University of Toronto is an approved destination for most countries’ national mobility scholarship programs.

**INTERNATIONAL**

**AMERICAN SYSTEM:** Grade 12 at an accredited high school with a high GPA. Competitive candidates should have two years of Chemistry and Physics, as well as senior Calculus (AP, Honors or equivalent). Those unable to take more than one year of Chemistry or Physics, or who are not taking an AP course in that subject, should contact Engineering Admissions prior to applying. For 2023 admission, U of T is test-optional; however, we encourage students to submit any completed SAT, ACT or AP exams.

**BRITISH PATTERNEED SYSTEM:** Three A-Levels including Mathematics and Physics. Chemistry is strongly recommended as the third A-Level. Applicants are required to present at least AS-Level Chemistry.

**INDIAN SYSTEM:** Mathematics, Chemistry and Physics at the Grade 12 level. Completion of the All India Senior School Certificate awarded by CBSE, or the Indian School Certificate awarded by CISCE, or Year 12 State Board Exams with excellent results.

**INTERNATIONAL BACCAULAUREATE (IB) DIPLOMA:** Mathematics Analysis and Approaches HL (recommended) or SL or Mathematics Applications and Interpretations HL; Physics, Chemistry and English at either level.

Note. U of T Engineering does not grant advanced standing for A-Levels, AP or IB courses.

**ENGLISH LANGUAGE REQUIREMENTS**

If your first language is not English, you must present proof of English facility prior to admission consideration, unless you have completed four years of full-time study in an English language school in a country where the predominant language is English. For applicants who are required to present proof of English facility and are taking Grade 12 English (e.g., ENG4U), you must achieve at least 70% in this course. For details on required scores and acceptable tests, please visit uofteng.ca/eft.

**COSTS**

2022-2023 tuition and incidental fees for full-time studies are presented below in Canadian dollars; 2023-2024 fees are subject to change. For a list of housing options and costs, visit uofteng.ca/housing.

<table>
<thead>
<tr>
<th></th>
<th>DOMESTIC</th>
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<tbody>
<tr>
<td>Tuition</td>
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<td>(Ontario residents)</td>
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</tr>
<tr>
<td>Incidental Fees</td>
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<td>Residence &amp; Meal Plan</td>
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<tr>
<td>Books &amp; Supplies</td>
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<td>$2,000+</td>
<td>$2,000+</td>
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**PEY Co-op**

You can opt into PEY Co-op during the U of T Engineering application process as outlined on page 20. The total PEY Co-op program fee is $3,640, payable in six installments over three years starting in your second year. There is no cost to participate in PEY Co-op programming in your first year.

1. International students are not eligible for need-based financial aid.
2. International students are required to purchase health insurance through UHIP ($756 for 2022-2023).

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IT’S EASY TO STAY ON TOP OF WHAT’S HAPPENING AT U of T ENGINEERING

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discover.engineering.utoronto.ca

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