



Engineering
University of Windsor

2024



Undergraduate Programs

Engineer Your Future.

Engineering

Bachelor of Applied Science in Engineering

The demands on professional engineers around the world are increasing in terms of what they must address: technical, societal and environmental issues.

As an engineer, you can contribute to society by helping plan communities, provide clean drinking water, build bridges, or design the next-generation automobile.

The Faculty of Engineering offers programs designed to develop your professional competence and prepare you to solve the technical problems of society and the global environment. UWindsor's unique climate of co-operation between academic, business and industry sectors gives you access to outstanding career opportunities.

Our Degree Programs

- **Civil engineering**
- **Environmental engineering**
- **Electrical engineering**
- **Industrial engineering (general degree, or with a minor in business administration)**
- **Mechanical engineering (general degree, or with options in aerospace, automotive, environmental, and materials)**

Find Your Focus

If you are not certain of which engineering disciplines you would like to pursue during your undergraduate degree, you are welcome to apply to our General Engineering program (with or without co-op). All engineering programs begin with a general first year that provides students flexibility in program choice. This allows you to learn more about each of our undergraduate programs prior to selecting your major.

Please note, the General Engineering program is not a degree program from which you graduate; you must choose one of our five undergraduate programs before second year (civil, electrical, environmental, industrial, or mechanical engineering).

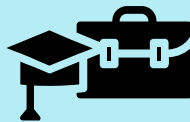




**Conduct one-on-one
research with an
engineering
professor**



**Engineer your future by
enrolling in programs
that are relevant to the
challenges we face
locally and globally**



**You can complete
three co-op
terms within
four years**

**You'll find your
place here.**

**Learn more about Engineering:
uwin.life/engineering**








World-class Programs

Find one suited to you.



Connect with us

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-  @UWindsorEngineering
-  UWindsor Engineering
-  UWindsor Engineering
-  @UWindsor_Eng

First Year

All engineering programs begin with a general first year that provides students flexibility in program choice. In your first year, you will learn and explore subjects important to engineering, including:

- Forces, motions and movement
- Electricity and magnetism
- Mathematics and its applications
- Design and graphical communications
- Chemical and material interactions
- Technical communications
- Professional issues in the engineering disciplines
- Introductory electrical and computing

Admission Requirements

All engineering streams require a minimum 74% average from the top six high school courses, as well as an average of 74% between MHF4U, SCH4U, and SPH4U. MCV4U is strongly recommended.

Experiential Learning

The Faculty of Engineering's co-op option in many of its programs gives you a well-rounded education founded both in academic theory and real-world application.

By combining your studies with full-time, paid employment in career-related positions, you can apply what you learn in the classroom, gain related, hands-on experience, network with employers, explore career options and learn how to compete confidently in the job market.

We offer placement opportunities with a wide range of corporate partners and government agencies.

WINONE Office

The Faculty of Engineering WINONE Office provides additional counselling, explains the educational requirements of your degree and gives you extra support to help you succeed. The office can also connect you with other services on campus to help you make the most of your university experience.

A First-Class Facility

Our \$112-million Ed Lumley Centre for Engineering Innovation (CEI), built in 2012, rivals the technical sophistication of any postsecondary institution in Canada. The CEI meets the highest environmental standards and provides learning opportunities throughout the facility.

Career Paths

- State-of-the-art manufacturing and production
- Aerospace industry
- Renewable energies
- Systems design/operation/building/maintenance
- Water resources
- Transportation
- Pollution control and prevention
- Advanced computing and communications
- Medicine and medical technology
- Bio-based engineering
- Structural design
- Failure analysis
- Construction and infrastructure renewal
- Scheduling and optimization
- Automotive product development
- Environmental protection
- Project, process and systems management
- Robotics and advanced electronics
- Power generation and distribution

Contact us

Faculty of Engineering
519-253-3000, Ext. 2565
engadmin@uwindsor.ca

WINONE
Office for First Year Engineering
519-253-3000, Ext. 2560
winone@uwindsor.ca
uwindsor.ca/winone



Civil Engineering

Co-op Option

As a civil engineer, you will play a critical role in designing, upgrading, and maintaining infrastructure. Civil engineering is one of the broadest areas of engineering practice, and includes multiple fields of practice, such as structural analysis and design, roadways and smart transportation innovations, bridges and superstructures, municipal works, geotechnical applications, hydraulics and waterways, and much more.

Program Description

The Department of Civil and Environmental Engineering offers two separate degree programs: civil engineering and environmental engineering. Both programs are similar in many respects, but each offers its own unique strengths. If you choose to specialize in civil engineering, after first year, you will take courses such as structural analysis, soil mechanics, the mechanics of deformable bodies, fluid mechanics, construction management, transportation, as well as how to design structures composed from wood, concrete and steel. These will serve as a broad base to establish a career in the many different areas related to civil engineering.

Career Paths

Civil engineering graduates are employed in a wide range of fields, including:

- Construction
- Overseeing municipal operations
- Projection management
- Design/analysis for new or rehabilitated structures and systems

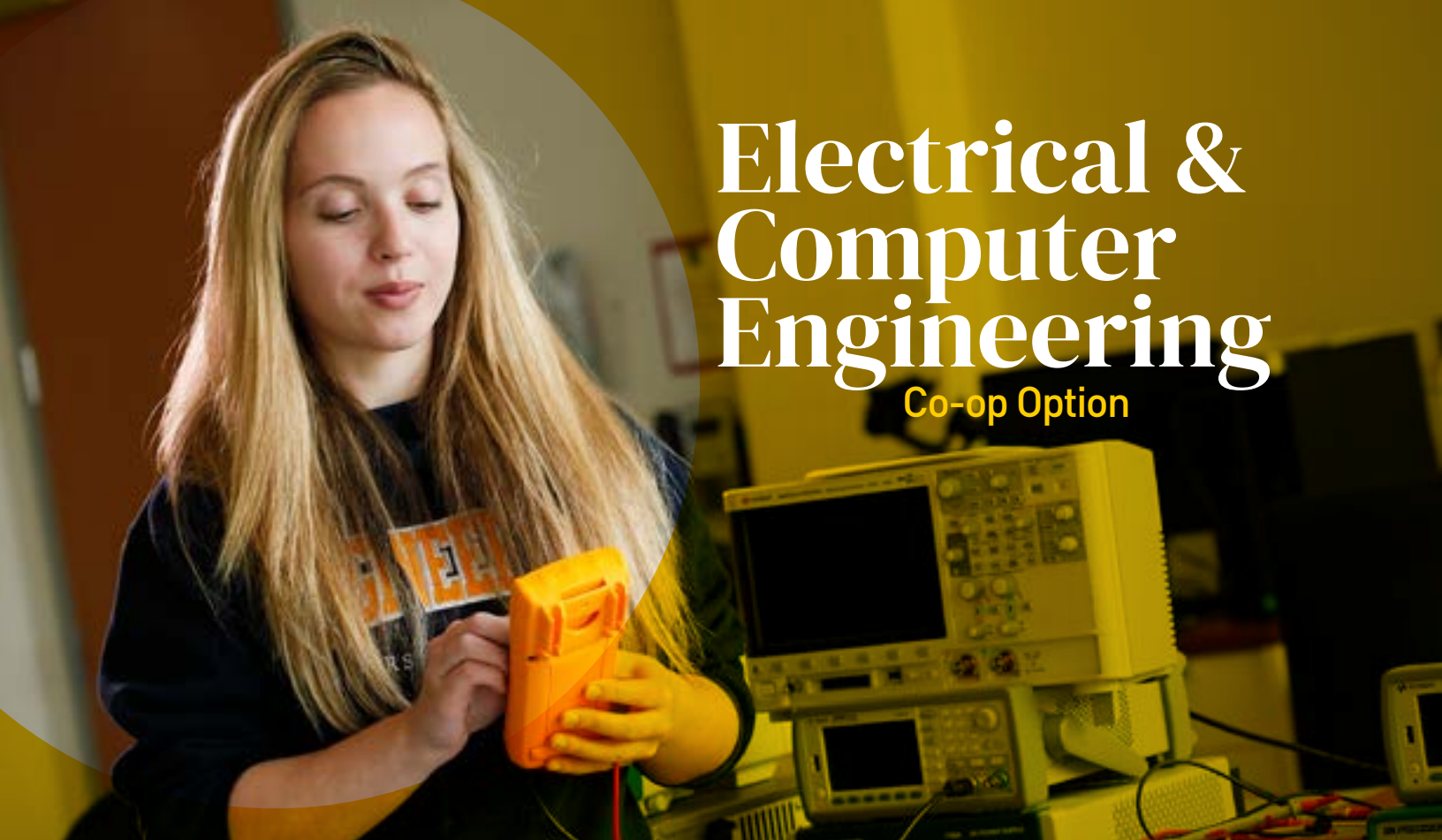
They may be employed in such businesses as design firms, consulting firms, municipalities, government operations, transportation and roadway companies, building contractors, and industrial plants.

Contact us

Department of Civil & Environmental Engineering

519-253-3000, Ext. 2550
civil@uwindsor.ca

uwindsor.ca/engineering/civil



Electrical & Computer Engineering

Co-op Option

Electrical and computer engineering offers you a diverse range of exciting opportunities in high-tech industries. As an electrical engineer, you might design communications systems, electrical power grids, circuits, electric motors, electronic sensors, and many more of the technologies and applications so important to society today.

Program Description

After first year, you will take courses in: numerical programming, circuit analysis, digital design, electromagnetic fields and photons, signals, and physical electronics.

Third- and fourth-year courses include: microprocessors, analog communications, intelligent computing, power electronics, computer network security, wireless communications, and digital computer architecture.

In fourth year, you can select technical electives that focus on communications, computer engineering, electronics, or a cross between various areas of interest.

Career Paths

Our graduate work in many high technology fields, including:

- Telecommunications
- Computing technology
- System integration
- Microelectronics
- Power distribution
- Industrial automation

Contact us

Department of Electrical
and Computer Engineering

519-253-3000, Ext. 2570
ece@uwindsor.ca

uwindsor.ca/engineering/electrical



Environmental Engineering

Co-op Option

Ensuring that our operations are sustainable for future generations is one of the greatest challenges facing society, and environmental engineers are part of the solution. Employing chemistry, biology, and engineering principles, they monitor and remediate pollution of air, water, and land. Environmental engineers address issues ranging from how to minimize the effects of climate change effects on infrastructure and systems to cleaning wastes before they re-enter ecosystems.

Program Description

The Department of Civil and Environmental Engineering offers degrees in two disciplines: civil engineering and environmental engineering. Similar in many respects, each program offers unique strengths.

The University of Windsor offered the first environmental engineering degree program in Canada. Students specialize in such subjects as air pollution, water pollution control, chemical reaction engineering, environmental microbiology, waste management, and assessing the sustainability of projects and systems. These serve as a broad base to further develop and apply your environmental expertise to a wide variety of challenges facing industry and communities.

Career Paths

Environmental engineers are employed in many different capacities:

- Overseeing water treatment operations
- Developing design solutions to remediate pollution
- Monitoring environmental operations of large scale operations
- Environmental specialists in consulting firms, municipalities or government agencies, or within industry sectors.

Contact us

Department of Civil &
Environmental Engineering

519-253-3000, Ext. 2550
envir@uwindsor.ca

uwindsor.ca/engineering/civil



Industrial Engineering

Minor in Business; Co-op Option

Industrial engineers help organizations operate efficiently and cost effectively. As an industrial engineer, you may use intelligent processes to streamline production systems, design flexible manufacturing approaches, and you will use a wide range of knowledge to do so, including operations research, manufacturing sciences and enterprise resources planning/integration.

Program Description

The University of Windsor Department of Mechanical, Automotive, and Materials Engineering offers one of the few undergraduate degree program in industrial engineering in Canada. Our program will allow you to engineer how systems interact with one another.

We also offer industrial engineering with a minor in business administration, in co-operation with the UWindor Odette School of Business. This curriculum will prepare you for management and leadership careers in industry and manufacturing within four years.

Career Paths

Graduates in industrial engineering are employed by many industries to improve their services and costs, including:

- Manufacturing
- High level process planning in various industries such as health care, insurance, and finance
- Rail transportation
- Air transportation
- Supply chain and logistics

Contact us

**Department of Mechanical,
Automotive and
Materials Engineering**

519-253-3000, Ext. 2616, 2596
mech@uwindsor.ca
mats@uwindsor.ca

uwindsor.ca/engineering/mame

Mechanical Engineering

General Mechanical or Aerospace, Automotive, Environmental, or Materials Option; Co-op Option



Mechanical engineering includes two broad areas of study: thermofluids (which involves heat and power) and solid mechanics (designing mechanical parts, determining the forces on those parts during operation, and analyzing their performance as part of larger machines and systems.)

Program Description

Mechanical engineering is a multi-faceted program in which you'll tackle real-world problems, interact with local industry, and enjoy a hands-on experience.

You can choose to stay in the general mechanical stream and customize your senior level courses, or choose one of the following:

- **Aerospace Option** – learn about developing the next generation of aerospace materials, production methods and components, and improving aerospace operational challenges. Students in this program may take additional courses to complete their private pilot's license.
- **Automotive Option** – study such topics as vehicle dynamics, internal combustion engines, diesel technology, and fuel cell technologies. A highlight is the opportunity to design, build and race vehicles in events sponsored by the society of automotive engineers.
- **Environmental Option** – focus on such subjects as water/wastewater treatment, noise control and abatement, environmental assessment, and recycling and materials recovery.

- **Materials Option** – evaluate the structure and properties of metals, ceramics, polymers and composites to optimize designs.

Career Paths

Graduates can be found at all levels of engineering and management from small private companies to multinational corporations, and government ministries and services.

- Heating, ventilation, and air conditioning (HVAC) systems design
- Automotive product design and development
- Aerospace product design and development
- Automation systems design and development
- Manufacturing
- Mining

Contact us

Department of Mechanical, Automotive and Materials Engineering

519-253-3000, Ext. 2616, 2596

mech@uwindsor.ca; mats@uwindsor.ca

uwindsor.ca/engineering/mame

Bachelor of Engineering Technology

Engineering technology focuses on the applications of engineering and modern technology in areas such as product development, manufacturing, construction, and engineering operations.

Program Description

Our program will prepare you for the job market by complementing your hands-on college experience with an in-depth theoretical university education. This program is for you if you hold one of the following:

- a three-year technology diploma from a Canadian college (or an equivalent overseas institution)
- an engineering degree from an accredited Canadian university (or an equivalent overseas institution)

- a four-year university degree in a scientific or technical subject from a Canadian university (or an equivalent overseas institution)

You must take at least 15 engineering courses at different levels, approved by the faculty.

In addition to the general 15-course Bachelor of Engineering Technology (BEngTech) degree, we also offer 20-course BEngTech concentrations in civil engineering and mechanical engineering.

Your course schedule will be set and discussed by an academic advisor to ensure your successful completion of the program. The nature of BEngTech courses depends on the concentration of your college diploma or previous university degree.

Career Paths

BEngTech graduates can look to a variety of technical fields, including:

- Product design, testing and/or development
- Systems engineering
- Field engineering
- Technical operations
- Quality control

Contact us

Faculty of Engineering

519-253-3000, Ext. 2565
bengtech@uwindsor.ca

learn.uwindsor.ca/engineering-technology



Student Support

Financial Aid

For entrance and in-course award opportunities for our engineering programs, please visit our Award Search at uwindsor.ca/studentawards and select UWinAward search.

In addition to entrance awards, the Outstanding Scholars program attracts top high school students entering any first-year honours undergraduate program at the University of Windsor. Approximately 100 high-achieving, first-year students will be offered status as an Outstanding Scholars Candidate in Year 1 of their studies. The goal of this program is to challenge and stimulate students by providing them with the unique opportunity of holding an undergraduate academic appointment in their second year of studies and beyond where students will work closely with faculty on academic research projects.

Visit [uwindsor.ca/outstanding scholars](http://uwindsor.ca/outstanding-scholars) for more information.

Elevate Scholarships support a more diverse student population in our programs with an entrance award and a paid internship following first year. There are three scholarships and you must apply to receive the award: Women and Non-Binary Students in Engineering, Black Students in Engineering, and Indigenous Students in Engineering.

Learn more at uwindsor.ca/engineering/elevate

Stay Healthy and Safe

Our many supports and services will help you thrive:

- Bystander Initiative
- Campus Community Police
- Chiropractic and massage therapy
- Doctor's office, dental office
- Lancer Recreation Services
- Sexual Misconduct Response & Prevention Office
- Student Counselling Centre
- Student Health Services
- Student Medical Response Service
- TLC Fitness Centre and The Forge
- Walksafe

Academic
Support

We're
here to
help!



Campus Tours

Why not come for a visit? Book a tour at uwindsor.ca/visituwindsor

Want to get a feel for campus before you visit?
Take a virtual campus tour at uwindsor.ca/virtualtour

Applying to UWindsor Engineering

What is WINONE?

Applying to First Year Engineering is exciting, but you can feel lost at times or want some advice. The UWindsor Faculty of Engineering has created the WINONE Office to assist you as you apply to First Year Engineering. The WINONE Office will also continue to help you when you're in First Year Engineering. Feel free to make an appointment to see us. We'd like to hear from you!

How do I apply to Engineering at UWindsor?

Generally, when you apply to Engineering at UWindsor, you apply online through the Ontario Universities' Application Centre, or OUAC. Their website is www.ouac.on.ca. Once you're there, select the Undergraduate Applications option.

1. Ensure that you fulfil all the admission requirements for the programs you are interested in.
2. For current Ontario high school students, apply online through OUAC (Ontario Universities' Application Centre) by January 15, 2024 for registration in the fall term. Not an Ontario student? No worries! Access more information on how to apply here: uwin.life/outside-ontario
3. Stay tuned for a UWindsor application acknowledgement email to activate your UWinsite Student Account.
4. Your grades will automatically be forwarded to us from your school via OUAC.
5. Keep an eye on your application status and wait to hear from us.

For more information, the Office of the Registrar at uwindsor.ca/registrar

I'm an International Student. Can I get help?

Absolutely! UWindsor has students from many countries around the world, and many of our own Canadian students come from different ethnic, cultural and religious backgrounds. We think you will find yourself right at home here. Our International Student Centre can help you with many of your concerns, such as questions about student visas and course equivalencies. Check out the centre at uwindsor.ca/isc

What do I need to apply to UWindsor Engineering?

This is one of the most important questions you need to ask! You need to have the following courses or their equivalents to be accepted into Engineering:

- Grade 12 university track Chemistry (Ontario secondary school SCH4U)*
- Grade 12 university track Physics (Ontario secondary school SPH4U)*
- Grade 12 university track Advanced Functions (Ontario secondary school MHF4U)*
- While grade 12 Calculus and Vectors is not yet mandatory, it is strongly recommended (MCV4U)*
- Grade 12 university track English (Ontario ENG4U)

*Your "engineering" average of your math and science courses must be 74% or higher. All Engineering streams require a minimum 74% average from your top six high school courses. These are only minimums; the average grade of our incoming first year students is approximately 85%.

Important Note: Check back about specific averages you need when you apply. There is no supplemental application for admission to our undergraduate programs.

I'm missing one or more of the required courses!

If you're missing one of the required math or science courses, or your marks are too low, then you need to get them or upgrade your marks before we can accept you into Engineering. You can upgrade them through summer school or continuing (adult) education or perhaps through your own high school. However, you can still start at university in a non-Engineering program, upgrade or take some of the courses here, and then transfer into engineering after you meet the requirements. Contact us for more details.

Is First Year Engineering a “common” program?

Yes! First year engineering courses at UWindsor common to all programs. But what this means is that if you change your mind before your second year of engineering, we can generally accommodate your transfer into another engineering program here at UWindsor. You can also come in as general engineering student, and choose later. Ask us for more info!

Can I start in January?

Yes, you can! We currently offer a winter start: we repeat term 1 in the winter term (January to April), and term 2 in the summer term (May to August). If you need to upgrade your high school marks or if you need to take courses to get into engineering, you may be able to do so in the fall and then start engineering in January, and then stay on track for 2nd year.

What is the quality of education like?

Well frankly, it's great! Engineering is a licensed profession in Canada (like medical doctors) and we answer to the Canadian Engineering Accreditation Board (CEAB). We participate in accreditation activities normally every 3 to 6 years. All of our engineering programs are accredited and this means you will be assured of receiving a quality education. As a result, your engineering degree from UWindsor makes you eligible for professional licensure in Canada later on.

I've got a whole bunch of questions!

Q. Do you have a co-op program for work opportunities?

A. Yes! A co-op work stream is available to each of the engineering disciplines.

Q. Is engineering really that tough?

A. Well, it can be tough - but it's very rewarding. Keep in mind... it's not so much that any one university course is so hard it's impossible, it's that you have to manage your time effectively to handle multiple courses - and still eat, play, and sleep.

Q. Are there scholarships and bursaries?

A. Absolutely! There may be multiple scholarships or other financial aid that you are eligible for. For example, there is our Outstanding Scholars

program, which provides you with a mix of funding and work: you might be assisting a professor and doing research that's really important to your chosen field! But these awards are competitive, so it's very important to do your best in high school. Check out our website for your financial answers at uwindsor.ca/awards

Q. My friend said I need or don't need (blah, blah, blah) to get into Engineering.

A. We actually run into this problem a lot. You may not get the right information or only part of the whole explanation. If you're ever confused about what you've been told, contact us! After all, we'll be the ones granting your degree!

Engineering Student Support Services Centre

The Engineering Student Support Services Centre, located in the Ed Lumley Centre for Engineering Innovation, is your one-stop shop for academic and wellness support. The following offices provide services here:

- WINONE First Year Office
- Technical Communication Support
- Counselling Centre
- Co-operative Education
- Engineering Outreach

To learn more, visit uwindsor.ca/engineering/studentsupport

WINONE Tutorials

WINONE tutorials offer free one-on-one help with course content from senior engineering students. Peer tutors provide support with first and second-year engineering course material as well as mentoring advice. See the website for information about times and location.

To learn more, visit uwindsor.ca/engineering/tutorials

Contact us

WINONE Office

519-253-3000, Ext. 2560

winone@uwindsor.ca

uwindsor.ca/winone

**Apply
Today!**



Engineering

University of Windsor



Your Engineering Experience

Student Recruitment Office

519-973-7014

Toll-Free (Canada/US):

1-800-864-2860

info@uwindsor.ca

uwindsor.ca/engineering


WINONE Office


519-253-3000, Ext. 2560

winone@uwindsor.ca

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Faculty of Engineering

uwindsor.ca/engineering

Acceptance Process

uwindsor.ca/nextsteps

Orientation Information

uwindsor.ca/headstart

Course Information

uwindsor.ca/calendar

Admissions Information

uwindsor.ca/registrar

Residence Information

uwindsor.ca/residence

Scholarship & Bursary Information

uwindsor.ca/awards

Virtual Tour

uwindsor.ca/virtualtour

Campus Map

uwindsor.ca/map

Learn more:



Engineer Your Future.