

# Electrical Engineering

*Made in Windsor.*



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Electrical Engineering  
Experience Map



University  
of Windsor

## Highlights and Skills

### PROGRAM HIGHLIGHTS


#### Electrical Engineering

Power up your career success and be on the forefront of innovation with our electrical engineering program. Learn about robots, autonomous cars, smart cities, the Internet, network design and more. You'll have lots of opportunity to do research and many of our students hold patents on new discoveries and inventions they've developed while at UWindsor.

**MIN. AVG.\* 74% ONTARIO COURSE REQUIREMENTS** ENG4U, MHF4U, SCH4U and SPH4U required. MCV4U is strongly recommended. A minimum average of 74% in all math and science courses except biology is also required.

### FUNCTIONAL KNOWLEDGE

- Upgrading, maintaining, and building electrical systems to meet specific energy delivery needs
- Understanding foundational topics in microelectronics, sensors, computer engineering, robotics, communications, and power generation and distribution
- Planning effective, large-scale projects that manage resources and balance considerations including cost, quality, and speed
- Analyzing complex problems and breaking them down into steps/component parts
- Paying keen attention to detail and producing error-free, work to precise quality standards
- Writing, preparing, and presenting detailed technical reports, presentations, and resources to engage diverse audiences and communicate work

 Co-op available \* Minimum grade point average for admission to program. A higher average may be required.

## Build your Skills and Experience

Your UWindsor experience is more than attending classes. It is a combination of academics, co-curricular activities, and extracurricular involvement. By making the most of all three elements of your university experience, you will maximize your opportunities to build your skills, broaden your personal network, and clarify your long term academic and career goals.



#### CURRICULUM

Courses of study specific to each program



#### CO-CURRICULAR

Activities and experiences that complement coursework (Outstanding Scholars, peer mentoring, VIP)



#### EXTRACURRICULAR

Activities falling outside the scope of set curriculum (Part-time job, clubs, volunteering, athletics)

## Career Planning Cycle

Intentional career planning will help you prepare for your next step after graduation and beyond. It is a fluid, dynamic, and lifelong process. You can move on or return to an earlier stage in the cycle at any time.



## Explore Opportunities Using This Chart

Explore a selection of opportunities recommended for students in your program. This chart shows some of your many options – you don't have to do everything on it or limit yourself to it. Engage in opportunities from each of the three categories to set yourself up for success.

### High-Impact Practice (HIP)

A HIP is an enriching educational experience that can be life-changing and often includes learning outside of the classroom while encouraging meaningful interaction and collaboration, such as:


- Co-op, internship or field experiences
- Research with faculty
- Culminating senior experience
- Capstone courses
- Service-learning
- Learning communities
- Study abroad

### Academics



*Your Coursework*





### First Year

- Take required courses that are common for all first-year engineering students to provide flexibility in program choice
- Review degree course requirements
- Consider applying for co-op to begin work terms in second year 
- Meet with an academic advisor such as the undergraduate coordinator or department head
- Receive academic support, mentoring and advising from the **WINONE** office in the **Centre for Engineering Innovation**

### Middle Years

- Take required courses and check in with an academic advisor to make sure you are on the right path
- Look into completing a research project with a faculty member in final year 
- Begin taking courses in accordance with Electrical Engineering major requirements
- Consider specializing in power systems, signal processing and communication, circuit design, computer engineering, or automotive electronics
- Seek out courses that offer field experience 
- Start taking courses required as pre-requisites for graduate/professional school
- Consider declaring a minor and/or specialization



### Final Year



- Meet with an academic advisor to go over degree requirements
- Complete all required courses for your degree
- Apply to graduate through **UWinside Student Portal**
- Complete your Thesis or Research Project 
- Ensure required laboratory hours are completed
- Take a capstone, field work, or comprehensive course to culminate your senior experience 




### Experience

*Ways To Get Involved*



- Investigate research opportunities as part of the **Outstanding Scholars** program 
- Gain experience by taking on a summer job
- Aid fourth-year students with their research for their final year capstone project 
- Research student exchange opportunities for middle years
- Join a club like the **Engineering Student Society**, **SAE Baja** or **Students Offering Support**
- Participate in the **Bystander Initiative** workshop to gain skills that will help you be an effective and supportive ally to prevent sexual assault on campus

- Join a professional association in your field such as the **Institute of Electrical and Electronics Engineers**
- Participate in the **UWill Discover** undergraduate research conference 
- Apply to co-op in fall of second year 
- Complete co-op work term I in the summer of second year and work term II in winter of third year 
- Apply for student exchange 
- Expand your skills by working full time in your off semesters or taking on a part-time or volunteer position during your academic terms
- Look for a leadership role in a club or society

- Complete co-op work term III in the fall semester 
- Take part in **SAE Baja** competition against students from universities all over North America
- Become a tutor for **Students Offering Support (SOS)** 
- Utilize your knowledge and skills to complete a design experience project in final-year collaborative capstone course 
- Complete all required technical and approved non-technical electives

### Career

*Plan Ahead For What's Next*



- Create a list of things that you enjoy, areas in which you excel, and your skills
- Meet with a career advisor in **Career Development and Experiential Learning (CDEL)** for help developing a plan for your future years
- Consider a career assessment appointment to help you identify possible career paths
- Get involved with a part-time job, volunteer opportunity, campus group, or research assistantship
- Attend **CDEL** workshops to learn how to find a summer or part-time job and write a university-level resumé
- Chat with an advisor during **CDEL's Drop-In** hours to get answers to your career and job search questions

- Research career fields and occupations with the help of a **CDEL** career advisor
- Explore opportunities and meet potential employers by participating in Job Shadow Experience, job fairs and industry networking events
- Explore further educational opportunities by attending the **Graduate and Professional Schools Fair** and researching admission requirements for programs you are interested in
- Create a **LinkedIn** profile and have it critiqued by **CDEL**
- Take part in informational interviews and join online communities like **LinkedIn** and **Ten Thousand Coffees** to connect with people in your targeted profession or industry
- Search job postings to learn what skills, knowledge, and credentials you will need for potential careers

- If you are considering applying to graduate or professional school, be aware of early application deadlines
- Meet with **CDEL** to prepare application documents like a resumé, cover letter, CV, or personal statement for jobs and education programs you are applying to
- Attend **CDEL's workshops** on interview skills and job search strategies
- Set up a mock interview with a career advisor for professional school or job applications
- Take part in recruitment events and job fairs, including the **Engineering Career Fair** and others organized by **CDEL**
- Compose a portfolio of relevant academic and work experience
- Explore professional development opportunities through **Continuing Education**

# Life After Graduation



The co-op placements through the University of Windsor helped me see my potential and improved my chances in finding full-time positions after graduation. The classes that helped me the most in achieving my goals were Electronics, Analog Circuit Design, Electromagnetic Waves, Embedded System Design, and many other courses.”

*Hanan Mekawy – BAsC in Electrical Engineering*

**77** Number of Graduates

(2019)

**94%** Employment Rate of Graduates

(OUGS Engineering, 2018)

## Career Tracks\*

There are many career options within the public and private sectors that someone can explore with an electrical engineering degree, such as:

Automation Engineer	Electrical Engineer	Robotics Engineer
Biomedical Engineer	Electronics/Microelectronics Engineer	Signal Processing Engineer
Circuit and Sensor Designer	Instrumentation Engineer	System Designer
Code Designer	Network Designer	Telecommunications Engineer
Computer Engineer (Hardware & Software)	Power Engineer (power generation/distribution, Electric Machines)	Web Developer
Controls Engineer		

\*Additional education and/or training required for some of the above careers.



## Common Industries For Graduates

- Aerospace industry
- Automotive industry
- Communications
- Defence industry
- Entertainment
- Internet industry
- Manufacturing
- Medical devices industry
- Oil and gas industry
- Pharmaceuticals industry
- Rail industry
- Utilities industry

## Career-Readiness Competencies



Critical Thinking & Problem Solving



Professionalism & Work Ethic



Teamwork & Collaboration



Communication







# Campus Resources

- Research scholarships and bursaries through the **Student Awards and Financial Aid Office**
- Visit **Leddy Library** and the **Writing Support Desk** for help with academic assignments
- Check out the **Bounce Back** program designed to improve academic performance as well as decrease feelings of stress and anxiety through both effective learning strategies and life skills acquisition
- Build leadership skills and find leadership opportunities at the **Leadership Hub**
- Get advice and support about your academic status by making an appointment with **Academic Advising**
- Seek out assistance with academic accommodation from **Student Accessibility Services**
- Discover ways to get involved on campus through the **Student Success and Leadership Centre**
- Look into the **Ignite: Work Study** program for on-campus employment opportunities
- Get assistance developing your career plan and job search skills from **Career Development and Experiential Learning**
- Consult with the **EPICentre** if you are interested in starting your own business
- Broaden your cultural awareness through the **International Student Centre** and **Student Exchange Office**
- Find support for Indigenous learners and broaden your understanding of Indigenous culture by visiting **Turtle Island**
- Tend to your health and wellness with support from **Student Health Services**, the **Wellness Outreach Office** and **Lancer Recreation**
- Receive confidential mental health counselling delivered by trained professionals at the **Student Counselling Centre**
- **Prevent.Resist.Support.** Seek personal support or learn more about sexual violence prevention and resistance education through the **Sexual Misconduct Response and Prevention Office**
- Explore professional development opportunities through **Continuing Education**



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## Student Recruitment

Phone: 519-973-7014

Toll-Free: 1-800-864-2860

Email: [info@uwindsor.ca](mailto:info@uwindsor.ca)

## WINONE Office

Phone: 519-253-3000, Ext. 2560

Email: [winone@uwindsor.ca](mailto:winone@uwindsor.ca)

## Career Development and Experiential Learning

Phone: 519-253-3000, Ext. 3895

Email: [careerservices@uwindsor.ca](mailto:careerservices@uwindsor.ca)