

DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

NOTICE RE: PROJECTED GRADUATE ASSISTANT (GA) POSITIONS FOR SUMMER TERM 2026

In accordance with Article 13:01 of the [CUPE 4580 Collective Agreement](#), the Department of Electrical & Computer Engineering invites applications for the following projected GA positions for the Summer 2026 term.

Projected positions and hours are subject to change and contingent on sufficient enrolment and final budgetary approval.

List of courses that may utilize Graduate Assistants for the Summer 2026 term which will run from May 4th, 2026 – August 31st, 2026:

<u>Course # and course name</u>	<u>Course Description</u>	<u>E = Essential Qualifications</u> <u>P = Preferred Qualifications</u>	<u>Projected # of GAs</u>
GENG 1202: Introductory Electrical and Computer Engineering	This course introduces the fundamentals of electrical and computer engineering, including introductory selected topics on circuit elements and analysis, semiconductor devices, optical devices, sensors, electric motors, operational amplifiers, and logic gates. (Open only to students in Engineering)	E - must be familiar with all circuit lab equipment and tools and all electrical components. This includes but not limited to Oscilloscopes, DC power supplies, function generators, Multimeters, Resistors, Capacitors, OpAmps and instrumentational amplifiers, DC motors, Sensors, RF systems, Solar cells, etc. E - Must be physically available for the entire duration of the term from May to Aug. E - Must not have any scheduling conflict (i.e. classes, labs, research meetings, conference travels, etc) with any of the timeslots associated with this course. P - Previously taken or GA'd the course	1 for 140hrs
GENG 8010: Engineering Mathematics	The course will cover topics in advanced modern engineering mathematics not addressed in earlier courses and considered to be crucial for more advanced engineering courses at the graduate level. These topics include matrix and numerical analysis, advanced topics in calculus and their application to engineering design problems, and optimization. In particular, tools for computer-based system modelling, analysis and engineering design will be addressed. (Open to Masters of Engineering students, excluding students in the MEng Auto Program. Open to engineering MaSc/PhD students on permission of the department/faculty as a qualifying course only. Will not count for credit towards MASc/PhD degree.)	P – Previously taken or GA'd the course P – Familiar with Brightspace	1 for 140hrs

<p>GENG 8030: Computational Methods and Modeling for Engineering Applications</p>	<p>This course covers the basics of computational analysis for real-world engineering applications. Students will learn the fundamentals of programming and modeling with MATLAB. Topics include: Computational Methods, Model Building, for Engineering Projects, Hardware for Real-time Testing, Data Acquisition from Sensors. Students will complete a real-world project in the areas of their interests.</p>	<p>P – Previously taken or GA'd the course</p>	<p>1 for 140hrs</p>
<p>ELEC 3030: Physical Electronics</p>	<p>This course covers crystal structures. properties of semiconductor materials. Schrodinger wave equation. energy band theory. intrinsic and extrinsic semiconductors. charge carriers in semiconductors. thermal equilibrium carrier concentrations. carrier transport mechanisms. nonequilibrium excess carriers in semiconductors, Metal-Oxide-Semiconductor Field-Effect Transistors (MOSFET), and Bipolar Junction Transistors (BJT). (Prerequisites: MATH-2780 and MATH-2790) (3 lecture, 2 laboratory/tutorial hours or equivalent a week.)</p>	<p>P – Previously taken or GA'd the course</p>	<p>3 for 140hrs each</p>
<p>ELEC 3240: Control Systems I</p>	<p>Transfer function and state-space model for linear time-invariant systems; linearization of nonlinear systems; controllability and observability; transient performance; stability; tracking performance; Proportional-Integral-Derivative (PID) control design; frequency response and root locus (Prerequisites: MATH-2780, MATH-2790, ELEC-3130.) (3 lecture, 1.5 laboratory hours and 1.5 tutorial hours a week.)</p>	<p>E – Previously taken or GA'd the course P - Knowledge of Quanser Inverted Pendulum equipment and control design.</p>	<p>4 for 140hrs each</p>
<p>ELEC 3270: Microprocessors</p>	<p>Microprocessor systems (8 and 16 bit) and architecture; data representations, arithmetic units; memory structures; complex instruction set; accumulator, index, and memory reference instructions; addressing modes; stacks, subroutines, and other instructions; interrupts and timing; interfacing I/O devices and data converters; software development systems and assemblers; code implementation on microcontrollers. (Prerequisites: MATH-2780, MATH-2790, ELEC-2170, ELEC-3160 and ELEC-3300.) (3 lecture, 3 laboratory/tutorial hours or equivalent a week.)</p>	<p>P – Previously taken or GA'd the course</p>	<p>4 for 140hrs each</p>
<p>ELEC 3290: Analog Communications</p>	<p>Analog communication systems; information measure; signals and noise; Fourier transform and spectra; bandwidth of signals; analog modulation and demodulation systems; AM, FM, TV transmitters and receivers, detector circuits. (Prerequisites: MATH-2780, MATH-2790 and ELEC-3160.) (3 lecture, 1.5 laboratory hours and 1.5 tutorial hours a week.)</p>	<p>P - Experience with similar course and MATLAB P – Previously taken or GA'd the course</p>	<p>3 for 140hrs each</p>
<p>ELEC 4000B: Capstone Design Project</p>	<p>Team based design project satisfying the "CAPSTONE DESIGN PROJECT REQUIREMENTS", available from the Department of Electrical and Computer Engineering. Gives the student significant design experience and builds on the knowledge and skills acquired in earlier course work. Provides an exposure to teamwork to emulate a typical professional design environment. Computers are to be used both in the execution of the design methodology and the management of the design project. (Prerequisites: completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (2 lecture/4 laboratory hours per week; that must be completed over two consecutive winter and summer terms.) 2 semester</p>	<p>P – Previously taken or GA'd the course</p>	<p>1 for 140hrs</p>

	course. Topics on ethics for engineers will be covered in the winter term, and topics on laws for engineers will be covered in the summer term during lectures. (This is an experiential learning course.)		
ELEC 4320: EM Waves & Radiating Systems	Maxwell equations; time varying potentials; time harmonic fields; electromagnetic wave propagation; wave polarization; power and Poynting vector; transmission lines; Smith chart; rectangular waveguides; waveguide current and mode excitation; dipole antenna; small loop antennas; antenna characteristics; antenna arrays. (Prerequisites: completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (3 lecture, 2 tutorial hours a week.)	P – Previously taken or GA'd the course	1 for 140hrs
ELEC 4330: Digital Integrated Circuit Design Cross listed with ELEC 8900-42	Physics and modelling of MOSFETs; fabrication and layout of CMOS integrated circuits; the CMOS inverter: analysis and design; switching properties of MOSFETs; static logic gates; transmission gate logic circuits; dynamic logic circuit concepts; CMOS dynamic logic families; CMOS differential logic families; design methodologies and CAD tools; deep-submicron implementations. (Prerequisites: completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (3 lecture, 2 laboratory/tutorial hours or equivalent a week.)	P – Previously taken or GA'd the course	0.5 for 70hrs
ELEC 4340: Automotive Electronics Cross listed with ELEC 8900-45	Proportional-Integral-Derivative (PID) controllers and limit cycle controllers; fundamentals of digital control of Spark-Ignition (SI) engine; MPC555 Motorola Power PC/dSPACE based SI engine control system; Motronic engine management system; automotive sensors and actuators; vehicle motion control including Antilock Braking System (ABS); Controller Area Network (CAN); Time-Triggered CAN (TTCAN); FlexRay. (Prerequisites: completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (3 lecture, 2 laboratory/tutorial hours or equivalent a week.)	E – Familiar with Simulink and RaspberryPi P – Previously taken or GA'd the course	0.5 for 70hrs
ELEC 4400: Wireless Communications Cross listed with ELEC 8630-01	Introduction to wireless communications; cellular system design fundamentals; propagation path loss; fading and multi-path propagation; modulation techniques; diversity; coding and equalization; speech coding for wireless communications; multiple access networking, wireless communications protocols; satellite communication systems. (Prerequisites: completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (3 lecture, 2 laboratory/tutorial hours or equivalent a week.)	P – Previously taken or GA'd the course	0.5 for 70hrs
ELEC 4470: Computer Networks Security Cross listed with ELEC 8900-70	Introduction to computer networks security; cryptography; public-key and secret key encryption; encryption algorithms; network security mechanisms and techniques; security protocols; authentication and network security services; traditional and emerging Information Technology (IT) security; cyber-security. (Prerequisites: completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (3 lecture, 2 laboratory/tutorial hours or equivalent a week.)	P – Previously taken or GA'd the course	3 for 140hrs each
ELEC 4600: Power Systems II Cross listed with ELEC	Advanced analytical tools; analysis of abnormal operation, numerical methods, stability and control; transient stability and voltage stability; control and monitoring of power systems; dynamics and control of multi-machine systems; symmetrical	P – Previously taken or GA'd the course	3 for 140hrs each

8900-51	faults; symmetrical components; unsymmetrical faults; power system protection and relaying; economic dispatch; optimal power flow; numerical simulation tools in power systems. (Prerequisites: 88-450 and completion of all Electrical Engineering courses from 1st year, 2nd year and 3rd year.) (3 lecture, 2 laboratory/tutorial hours or equivalent a week.)		
ELEC 8290: Discrete Transforms and Number Theoretical Methods	Introduction to orthogonal transforms, DFT, DCT, DHT; implementation methods; fast algorithms, FFT, WFT; polynomial transforms; finite rings and fields; number theoretic techniques; residue number systems; conversion and computation; finite polynomial rings; VLSI implementation consideration. Prerequisite: Graduate Student Status. (3 lecture hours a week.)	P – Previously taken or GA'd the course	0.5 for 70hrs
ELEC 8540: Automotive Sensor Systems	This course describes topics on sensors, optics & lighting, image representation, feature extraction, image analysis, image classification, 3D imaging techniques, GPS, radar, lidar 3D range imaging, intelligent and night vision, sensor integration and fusion. The students will apply their theoretical knowledge to solve a practical problem by completing a course mini project. Prerequisite: Graduate Student Status. (3 lecture hours per week.)	P – Previously taken or GA'd the course	1 for 140hrs
ELEC 8550: Computer Arithmetic	This course presents a detailed description of general class of fixed-radix number systems, floating-point representation, algorithms and architectures for sequential and fast computation of multiplication, division and square root extraction, elementary functions, logarithmic and residue number systems, finite field arithmetic operations, error control in arithmetic processors. Course assignments and mini projects on practical aspects of the course are required. Prerequisite: Graduate Student Status. (3 lecture hours per week.)	P – Previously taken or GA'd the course P - Previously taken the course with a grade of 80% or higher Has strong background in digital logic design and mathematics	0.5 for 70hrs
ELEC 8590: Physical Design Automation for VLSI and FPGAs	Introduction to backend CAD flow for VLSI and FPGAs; algorithms and CAD tools for technology mapping, floor planning, partitioning, placement and routing; exposure to timing analysis and timing-driven layout; assignments will involve use of academic and/or industrial CAD tools as well as development of simple CAD tools for specific layout tasks. Prerequisite: Graduate Student Status. (3 lecture hours per week.)	P – Previously taken or GA'd the course	0.5 for 70hrs

Refer to the timetable (www.uwindsor.ca/registrar/timetable-information) for class and exam hours and location.

Expected GA Duties

Projected duties are in accordance with article 15:03.

GA employees are expected to make themselves available to report for all assigned duties, **both in-person/on-campus and remote/online duties**. Most classes across the University are expected to be held face-to-face on campus or have a face-to-face component.

Assistants cannot commence their GA/TA duties until email confirmation of the approval of their Job Offer is received from Human Resources (email titled “Authorization to Commence GA/TA Duties”, article 13:05).

Eligibility requirements:

Successful applicants must be available to attend at the specified time of the course/lab/exams as well as to report for all assigned duties, which may include both in-person/on-campus and remote/online duties.

GA appointments will be offered to qualified applicants in accordance with the CUPE4580 Collective Agreement.

To be eligible for a Graduate Assistantship in the term of support you must be a **registered fulltime graduate student**:

- must be registered for the term of work at the time of hiring
- must maintain **fulltime** registration throughout the term and must be in good standing in the degree program
- must be legally eligible to work in Canada on campus with a valid social insurance number. International students must hold a valid study permit and meet all IRCC regulations to accept employment on campus.

GA appointments cannot exceed **140 hours total for the Summer term period (May 4th to August 31st)**. Refer to Articles 13, 14, and 15 of the CUPE 4580 Collective Agreement for eligibility details.

Note: graduate students who have received a Graduate Assistantship Offer (“An offer of employment as a Graduate Assistant with a commitment of future terms of support under Article 14:01 (a) and (b).”) must apply each term until they have received all terms of support specified under Article 14:01 (a) or 14:01 (b).

Refer to Article 14 of the CUPE 4580 Collective Agreement for details and eligibility. Failure to meet the eligibility conditions in the CUPE 4580 Collective Agreement will result in the forfeiture of the term(s) of support.

Article 14:02: “ *Financial support, as outlined in 14:01, shall continue, if the Graduate Assistant:*

- a) maintains full-time registration in good standing in the degree program; and*
- b) applies for posted positions; and*
- c) is satisfactorily performing the duties required.*

Failure to meet these eligibility conditions will result in the forfeiture of the term(s) of support.”

Required Essential Qualifications:

Successful applicants must meet all essential qualifications identified in the course table above.

How to Apply:

Application forms are available from the following webpage: [Employment | Electrical and Computer Engineering \(ECE\) \(uwindsor.ca\)](#)

Complete applications form along with a copy of your unofficial transcript must be submitted via email to Danielle Gauthier, Graduate Secretary at gradece@uwindsor.ca

For any questions please contact: Danielle Gauthier

Deadline for receiving applications: Monday, March 23rd, 2026, by 9:00am

The university is committed to equity and supports diversity in its teaching, learning, and work environments. In pursuit of the University's Employment Equity Plan, members from the designated groups (Women, Aboriginal Peoples, Visible Minorities, Persons with Disabilities, and Sexual Minorities) are encouraged to apply and to self-identify.

If you need an accommodation for any part of the application and hiring process, please notify the Recruitment & Workforce Coordinator (employment@uwindsor.ca). Should you require further information on accommodation, please visit the website of the Office of Human Rights, Conflict Resolution and Mediation (OHCRM).

Date posted: March 16th, 2026