Information Session

Class of 2027

2024-2025 Academic Year

June 2024

SMITH ENGINEERING
Queen's University

ECE Advisors

- ECE UG Assistants (WLH-416)

    - Irina Pavich (irina.pavich@queensu.ca), Last Names **A – L**;

    - Jazmine Battle (j.battle@queensu.ca), Last Names **M – Z;**

- EE Undergraduate Chair:

    - Prof. Il-Min Kim (eeugradchair@queensu.ca)

- CE Undergraduate Chair:

    - Prof. Jianbing Ni (ceugradchair@queensu.ca)

- UG Program Advisors https://www.ece.queensu.ca/undergraduate/contacts.html

- Exchange Program/Transfer Advisor: Prof. Brian Frank frankb@queensu.ca

Online Resources

- **Academic Calendar 2024-2025**, Academic Plans and course information; FEAS Policies and Regulations;

- **Registrar & Financial Aid Services**:

  Tuition, Graduation, Sessional Dates etc.

  - Solus Tutorials;

- **FEAS**

  - FORMS: Substitution request, Incomplete Grade Request, Late Course Add/Drop requests, Waivers etc.;

  - FEAS Student Services resources: academic considerations, accommodations, embedded counsellors, dual degree, supplemental exam, awards etc.

- **ECE**

  - ECE Degree Planning Spreadsheets, Pre-requisite Charts, Course Information

  - ECE Faculty

  - Booking an appointment with the advisor

Our programs are subject to Canadian Engineering Accreditation Board requirements set at the federal level.

CEAB Prescribes some of the curriculum content, mandates number of accreditation units (AUs) and credits, and number of technical and complementary courses students need to take

For example, a course may be worth 4 credits and have 48 AUs

Accreditation Rules - Example

ELEC 278 Fundamentals of Information Structures F | 4

Lecture: 3

Lab: 0.5

Tutorial: 0.5

Fundamentals of Data Structures and Algorithms: arrays, linked lists, stacks, queues, deques, asymptotic notation, hash and scatter tables, recursion, trees and search trees, heaps and priority queues, sorting, and graphs. Advanced programming in the C language. Introduction to object oriented programming concepts in the context of data structures.

Academic Units:

Mathematics 12

Natural Sciences 0

Complementary Studies 0

Engineering Science 24

Engineering Design 12

PREREQUISITE(S): APSC 143 or APSC 142 or MNTC 313

EXCLUSION(S): CISC 235, MREN 178

Electrical Engineering Graduation Requirements

- Satisfy the minimum Accreditation Units (AU) set by ECE in each CEAB category

- Have at least **5 courses** from Electives **List A**

- Have at least **5 four-hundred** level **elective** courses

- Counting required core courses and elective courses in all four years, result in a total of no fewer than **157.5** (**160.5** for **ECEi**) credits for the complete program

Computer Engineering Graduation Requirements

- Satisfy the minimum Accreditation Units (AU) set by ECE in each CEAB category

- Have at least **5 four-hundred level** elective courses

- Have at least **3 courses** from Electives Lists A and B that satisfy the Department criteria for **qualified accreditation units** in the categories of engineering science and engineering design

- Have at least **3 courses** from Elective **List B**

- Counting required core courses and elective courses in all four years, result in a total of no fewer than **157.5** (**160.5** for **ECEi**) credits for the complete program.

Electrical Engineering 2nd Year Core Courses

Fall 2024	Winter 2025
ELEC 290 ECE Design and Practice	ELEC 224 Cont.-Time Signals and Systems*
ELEC 221 Electric Circuits	ELEC 252 Electronics I
ELEC 271 Digital Systems	ELEC 274 Computer Architecture
ELEC 278 Fundamentals of Info Structures	ELEC 280 Fundamentals of Electromagnetics
MTHE 235 Differential Equations for Eng. Science	ELEC 292 Introduction to Data Science
COMM 201 Intro. to Business for Entrepreneurs* OR Complementary Studies List A (Regular ECE Stream)	MTHE 228 Complex Analysis*
*Innovation Stream Only	*Courses specific to the Electrical Engineering Academic Plan

Computer Engineering 2nd Year Core Courses

Fall 2024	Winter 2025
ELEC 290 ECE Design and Practice	ELEC 252 Electronics I
ELEC 221 Electric Circuits	ELEC 270 Discrete Mathematics with CE App*
ELEC 271 Digital Systems	ELEC 274 Computer Architecture
ELEC 278 Fundamentals of Info Structures	ELEC 279 Intro. to Project-Oriented Programming*
MTHE 235 Differential Equations for Eng. Science	ELEC 280 Fundamentals of Electromagnetics
COMM 201 Intro. to Business for Entrepreneurs* OR Complementary Studies List A (Regular ECE Stream)	ELEC 292 Introduction to Data Science
*Innovation Stream Only	*Courses specific to the Computer Engineering Academic Plan

Complementary Studies

EE and CE (Regular Stream):

- Must complete 9 credits (typically 3 courses) of complementary studies courses throughout your program

    *At least one out of three courses must be from Complementary Studies List A.

- Typically take 1 CS course in each of 2nd, 3rd, 4th year, but whenever it can fit into schedule is fine (e.g., PSYC 100 is 6 credits and goes fall and winter).

List of Complementary Studies Courses can be found in the Academic Calendar:

https://www.queensu.ca/academic-calendar/engineering-applied-sciences/complementary-studies/

Complementary Studies

EEi and CEi (Innovation Stream):

- Required Innovation Stream Courses: COMM 201, COMM 301, COMM 302, and COMM 405

- In addition to above, <u>Must</u> complete one course (3 credits) from complementary studies List **A** during your program

List of Complementary Studies Courses can be found in the Academic Calendar:

https://www.queensu.ca/academic-calendar/engineering-applied-sciences/complementary-studies/

Streams of Specialization

- In 3rd and 4th year of your program, you will be choosing **Technical Elective Courses**. These are technical engineering courses for your program that you get to chose from a list of engineering electives.

- EE, EEi, CE, and CEi programs offer **Streams of Specialization**

  - Streams of Specialization are unofficial lists of which Technical Elective courses you can chose to take in order to specialize in a particular area (e.g. mechatronics, biomedical, etc.)

Examples of Streams in Electrical
Visit ECE website for courses
- Biomedical Engineering
- Communications & Signal Processing
- Communications Systems & Networks
- Electronics & Photonics
- Mechatronics
- Power Electronics & Systems
- Robotics and Control

Examples of Streams in Computer
Visit ECE website for courses
- Computer hardware
- Computer systems
- Software Engineering
- Mechatronics
- Artificial Intelligence

Design and Research Project Courses

ELEC 290 ECE Design and Practice

ELEC 390 Principles of Design and Development

- topics in applied design principles, testing, team work, communication; the course is based on data science topics.

ELEC 490/498 ECE Engineering Project (capstone design project)

- prerequisites: 3rd year core courses incl. ELEC 390

- instructors and project supervisors

- group of 3 to design/build/document

ELEC 497 Research project (available to 4th year students)

- For those with an interest in exploring in depth some technical area in a more independently-driven research study

NSERC USRA

Degree Planning

How to stay on top of your degree requirements

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Degree Planning Spreadsheet

Download and use the Degree Planning Spreadsheet for your program and year to verify if you're on track to meet your degree requirements.

EE, EEi: https://smithengineering.queensu.ca/ece/undergraduate/electrical-engineering/degree-planning.html

CE, CEi: https://smithengineering.queensu.ca/ece/undergraduate/computer-engineering/degree-planning.html

Add/Drop Deadlines

September 16 - Last day to add F and FW courses

September 16 – Last day to drop F courses with full tuition credit

October 28- Last day to drop F and FW courses without Faculty/School Permission

See **Key Dates** on the Registrar Website: [Key Dates | Registrar & Financial Aid Services (queensu.ca)](http://queensu.ca)

Respect add/drop deadlines!

Late Drop requests:

- Need a valid reason and documentation (e.g., medical)

- Need to be further approved by the Academic Progress Committee at the Faculty level

Student Responsibilities

- Keep on top of course material

- If you have any questions or difficulties, approach your instructor, TA, classmates, class representatives

- Adhere to relevant deadlines (course and university deadlines)

- You should be trying out homework problems *first* before contacting the instructor

- Respect your peers, your teaching assistants, your professors

- Proper behavior in class (no text/email during lecture)

- Proper email etiquette

  - ✓ Identify yourself: name, student ID, program, year, course

  - ✓ Address your professor/TA correctly

- You cannot distribute other people's work (e.g., Chegg, GitHub or elsewhere).

When emailing Queen's Faculty and Staff, you <u>MUST</u> use your <u>Queen's email</u> and <u>include your Student Number</u>

To protect students' privacy and records

- Inquiries from non-Queens emails will be dismissed

- Emails without student name and student number will be dismissed

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Academic Accommodations

A disability may include a **temporary** (e.g., concussion or broken arm) or **permanent** (e.g., learning disability) **condition**.

Academic Accommodations are issued by [Queen's Student Accessibility Services (QSAS)](#) to students who have an ongoing medical condition or other disabilities that affect their academics.

Supporting documentation – QSAS requires professional documentation from a specialist to determine what accommodations will be granted.

Submission process:
Use the VENTUS portal for accommodated students:
https://ventus.queensu.ca/ventus/landing.php

Contact:
FEAS Program Advisor, Accommodations & Considerations engineering.aac@queensu.ca

Academic Considerations

Academic consideration is meant to help you manage a **short-term extenuating circumstance** that is beyond your control and could affect your academics.

Examples:

- Requests for academic consideration up to 3 days

- Requests for academic consideration between 4 days and 3 months

- Requests for academic consideration during exam periods

- Excused Absence for a Significant Event

Find out more about types of Academic Consideration and required documents:

https://www.queensu.ca/artsci/undergraduate/student-services/academic-consideration

Course Substitutions

Sometimes a student can request to substitute a course in their program with

- Courses taken during the summer at another university.

- Courses taken while on exchange at another university.

- Courses that are not on the approved TECH lists.

- A course to replace a core course*.

> (*NOTE: This form of substitution is rare and requires detailed information as to why the student is not taking the core course at their home university.)

Course Substitutions: Process

1. To submit your request, you will need the following information on the course you are planning to take:

- Course syllabus

- Total # of lecture/lab/tutorial hours

- Course grading scheme

- Reason why you would like to substitute one course with another

- Completed Substitution Request Form

2. Instructor Signature: a) CORE/TECH Courses: The instructor of the course to be substituted will also need to sign the form as an indication that the course is a good substitute b) COMP Courses: No instructor signature required.

3. Undergraduate Chair signature

4. Faculty Office final review

Prerequisites

- Prerequisites: capture material necessary to do the course

  - If the professor thought you could do the course without knowing that material, it would not have been made a prerequisite

- So prerequisites only waived in exceptional circumstances

  - Submit to Undergraduate Program Assistant the Prerequisite Waiver Form which asks Undergrad Chair to waive prerequisite:

https://engineering.queensu.ca/current-students/forms-online

Before submitting the form, the instructor of the course for which the waiver is required must approve the waiver justification in writing (sign the form or provide the approval over the email)

The Queen's Undergraduate Internship Program (QUIP)

- 12-16 month accredited paid work experience, students go after completing 2nd or 3rd year (after 3rd year is preferred)

- Your diploma will read: Bachelor of Applied Science, with Professional Internship.

- **Process:**

  - Download a faculty-specific registration form from the QUIP website and follow the instructions.

  - Complete and sign the student portion of the form and email it to your Undergraduate Assistant

  - When we return the signed form, log into MyCareer and upload your completed form ($35 registration fee).

  - You will enroll in courses APSC 301, 302, 303 and 304 - Professional Internship. APSC 303 will count towards your program as a 3.5-credit technical elective.

Registration

- Students are block enrolled into all core courses, students can self register in their complementary studies course

- No guarantee that desired combinations of electives are completely conflict-free

ECE Dept. makes requests to Registrar to help avoid conflicts, but no guarantee

- You must be flexible in 3rd-year and 4th-year

Support Resources

University is hard. Never hesitate to reach out for advice and support

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Useful Links

Queen's Student Wellness Services: Medical, mental health, accessibility and health lifestyle appointments. Also offers crisis counselling.

- https://www.queensu.ca/studentwellness/

- Call 613-533-2506 or Visit in person 1st Floor Mitchell Hall

Engwell Hub:

- https://engineering.queensu.ca/current-students/engwell/index.html

FEAS Embedded Counsellors:

- Personal Counselling – Queen's Engineering and Applied Science (queensu.ca)

Extracurricular Life

- ECE Club
  - BBQ
  - Lunch with Profs
  - ECE Banquet

- Clubs and Teams
  - [Engineering Society Design Teams](#)
  - IEEE Club
  - Queen's Solar Design team
  - MAST
  - And many more!

Faculty Regulations

FEAS Policies and Governance – rules and regulations of the Faculty of Engineering and Applied Science

See full list of Faculty Policies and regulations in the FEAS Academic Calendar

- Reg. 2(e): course substitutions

    need prior approval to verify equivalence

- Reg. 7: requirements for graduation

    English Proficiency Test (EPT), 6 years, and a cumulative GPA of 1.6
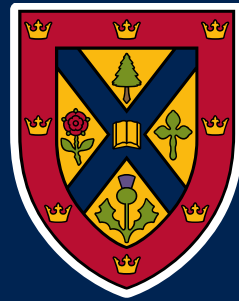
- Reg. 9: honours standing at graduation

    first class: GPA 3.5+

Academic Integrity and Conduct

Queen's University Code of Conduct

Departure from Academic Integrity