

COMPUTER ENGINEERING, B.A.SC. (CLASS OF 2027)

Elective courses in years three and four are to be chosen from Electives Lists A and B shown below (under Fourth Year), and by consulting suggested Streams and prerequisite paths. Your complete degree program must:

1. Satisfy the minimum Accreditation Units (AU) set by ECE in each CEAB category.
2. Have at least 5 four-hundred level elective courses.
3. 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.
4. Have at least 3 courses from Elective List B.
5. Counting required core courses and elective courses in all four years, result in a total of no fewer than 157.5 credits for the complete program.

Available combinations of elective courses are subject to timetabling constraints.

Second Year CORE 2024-2025

| Code | Title | Units |
|-------------------------------------|-------------------------------------------------------------------------------|--------------|
| ELEC 221 | Electric Circuits | 4.25 |
| ELEC 252 | Electronics I | 4.25 |
| ELEC 270 | Discrete Mathematics with Computer Engineering App | 3.50 |
| ELEC 271 | Digital Systems | 4.00 |
| ELEC 274 | Computer Architecture | 4.00 |
| ELEC 278 | Fundamentals Of Information Structures | 4.00 |
| ELEC 279 | Introduction to Object Oriented Programming | 4.00 |
| ELEC 280 | Fundamentals of Electromagnetics | 3.75 |
| ELEC 290 | Electrical and Computer Engineering Design and Practice | 5.00 |
| ELEC 292 | Introduction to Data Science | 3.00 |
| MTHE 225 | Ordinary Differential Equations or MTHE 235 Diff Equations For Elec & Comp | 3.50 |
| Complementary Studies List A - Fall | | 3.00 |
| Total Units | | 46.25 |

Third Year CORE 2025-2026

| Code | Title | Units |
|----------|-------------------------------------------------|-------|
| ELEC 326 | Probability & Random Processes | 3.50 |
| ELEC 371 | Microprocessor Interfacing and Embedded Systems | 4.00 |
| ELEC 373 | Computer Networks | 3.50 |
| ELEC 374 | Digital Systems Engineering | 4.25 |

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|----------------------------------------------|------------------------------------------|--------------------|
| ELEC 377 | Operating Systems | 4.00 |
| ELEC 379 | Algorithms with Engineering Applications | 4.00 |
| ELEC 390 | Principles of Design and Development | 3.50 |
| APSC 221 | Economic and Business Practice | 3.00 |
| CMPE 223 | Software Specifications | 3.00-3.50 |
| or ELEC 376 Software Development Methodology | | |
| Technical Electives (choose 1) | | 3.00 |
| Complementary Studies | | 3.00 |
| Total Units | | 38.75-39.25 |

Fourth Year CORE 2026-2027

| Code | Title | Units |
|-----------------------|-------------------------------------------|--------------------|
| ELEC 498 | Computer Engineering Project ¹ | 7.00 |
| Technical Electives | | 19.10-19.60 |
| Complementary Studies | | 3.00 |
| Total Units | | 29.10-29.60 |

¹ with Departmental and instructor support, students may request to substitute APSC 480 (<https://www.queensu.ca/academic-calendar/search/?P=APSC%20480>) Multi-disciplinary Industry for ELEC 498 (<https://www.queensu.ca/academic-calendar/search/?P=ELEC%20498>) Computer Engineering Project

Electives

Computer Engineering: Electives (<https://www.queensu.ca/academic-calendar/engineering-applied-sciences/academic-plans/computer-engineering/computer-engineering-electives/>)

Course Prerequisites

Normally, registration in a course offered by the Department is allowed provided a mark of at least D- has been achieved in each of the prerequisites for the course. Students having one course prerequisite (numbered 200 or higher) with a mark of FR may still be able to register in a course offered by the Department provided their Engineering Cumulative GPA is at least 2.0 at the end of the previous session. Prerequisites are listed under the calendar description for each course.

Complementary Studies

Refer to the Complementary Studies section of this calendar for details regarding the requirements for all Engineering plans. For the Computer Engineering Program, the Engineering Economics course is APSC 221 (<https://www.queensu.ca/academic-calendar/search/?P=APSC>)



%20221) Economic And Business Practice. Communications units are included within the design courses ELEC 290 (<https://www.queensu.ca/academic-calendar/search/?P=ELEC%20290>) Electrical and Computer Engineering Design and Practice, ELEC 390 (<https://www.queensu.ca/academic-calendar/search/?P=ELEC%20390>) Principles of Design and Development, and ELEC 498 (<https://www.queensu.ca/academic-calendar/search/?P=ELEC%20498>) Computer Engineering Project.