Information Session to Prepare for 3\textsuperscript{rd}-Year and 4\textsuperscript{th}-Year Studies in ECE

March 21, 2017
People in WLH

- Prof. Michael Greenspan
  Department Head
- Prof. Ahmad Afsahi
  Chair of Undergraduate Studies
- Irina Pavich
  Interim UG Program Assistant

- Prof. Evelyn Morin
  Associate Head
- Prof. Geoffrey Chan
  Chair of Graduate Studies
- Debra Fraser
  Graduate Program Assistant

- 24 Faculty Members; 9 Staff (7 admin / 2 technical)
- 495 Undergraduate Students (CE: 271, EE: 224; including 106 ECEi)
- 162 Graduate Students

Disclaimer: when discrepancies exist, the information in the official calendar is correct.
People in WLH

- **Victoria Drysdale**: ECEi Experience Coordinator
- **Debra Fraser**: Graduate Program Assistant
- **Mary Gillespie**: Departmental Assistant
- **John McKay**: Department Manager
- **Grier Owen**: Research Administrator
- **Irina Pavich**: Interim Undergraduate Program Assistant
- **Cheryl Wright**: Office Assistant

- **Steve Babcock**: Computing Engineering Technologist
- **Steve Humphrey**: Computing Engineering Technologist
• Year Advisors
  – 2\textsuperscript{nd}-year: Prof. Saeed Gazor
  – 3\textsuperscript{rd}-year: Prof. Steven Blostein
  – 4\textsuperscript{th}-year: Prof. Alireza Bakhshai

• Act as the first point of contact

• Able to provide advice on selection of technical elective courses, program requirements, streams of specialization, supplemental exams, etc.
Online Resources

- Computer Engineering Program: Innovation Stream
- Electrical Engineering Program: Innovation Stream
- **ECE Undergraduate Courses**
- **Prerequisite Charts**
  - Computer Engineering
  - Electrical Engineering
- **ECE Planning Spreadsheets**
  - Computer Engineering (class of 2019)
  - Electrical Engineering (class of 2019)
- **Student Wellness Services**
- **Student Success Services**
Undergraduate

About Queen's ECE

Welcome current ECE Students!

If you can imagine working with robots or solar-powered vehicles, or envision a career in the field of power engineering or high-tech communications - you are in the right place!

At Queen’s University, you will be taught by professors who know the industry and help to shape it. Beyond academic pursuits, there are also a variety of clubs to join within ECE which will allow you to interact with like-minded, dedicated students who want to play a role in shaping the future.

Follow the side tabs on this page for more information on everything from program streams, to PRE-REGISTRATION, to detailed course summaries, to learning more about the excellent jobs that await you in this field.
Welcome to the ECE Engineering Undergraduate Wiki.

This wiki will provide students with information that will help them manage their undergraduate program. It includes information specific to Electrical and Computer Engineering as well as general academic information.

Please use the links in the left hand sidebar to navigate the wiki.

If you have any questions or concerns regarding the content of this wiki please contact Irina Pavich, ECE Office Assistant

E-mail: irina.pavich@queensu.ca

Phone:(613) 533 6000  ext  75346

In Person: Walter Light Hall, room 425

Accessible Documents

The ECE Department is committed to building an inclusive campus community with accessible services that respect the dignity and independence of persons with disabilities.

Academic information on program requirements, course selection, regulations and registration is available in an accessible format on request. Please contact Irina Pavich.
Preregistration

• **Sessional dates:** [2017-2018](#)

  • June 20: Timetable released
  • June 22 - July 4th: Block Enrollment
  • July 4: Shopping Cart and Enrollment Appointments Issued
  • July 12: Engineering Enrollment Appointments (Year 4,5)
  • July 14: Enrollment Appointments (Year 3)
  • July 19 – 28: Open Enrollment – restrictions lifted
  • August 22: Open Enrollment
  • Sept 11: Classes begin
Add/Drop Deadlines

• Add courses, or drop courses without financial penalty, by Sept 22, 2017 and Jan 19, 2017
• Can drop a course without academic penalty by Nov 3, 2017 and Mar 2, 2017
• Please respect add/drop deadlines!
• Late requests:
  – Need a very valid reason (e.g., medical)
  – Need to be further approved by the Academic Progress Committee at the Faculty level
  – There is a fee of $60
• Suplemental exams: Sept 6-8; register by June 15, 2017
<table>
<thead>
<tr>
<th>Mark</th>
<th>Grade Points</th>
<th>Letter Grade</th>
</tr>
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<tbody>
<tr>
<td>90-100</td>
<td>4.3</td>
<td>A+</td>
</tr>
<tr>
<td>85-89</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>80-84</td>
<td>3.7</td>
<td>A-</td>
</tr>
<tr>
<td>77-79</td>
<td>3.3</td>
<td>B+</td>
</tr>
<tr>
<td>73-76</td>
<td>3</td>
<td>B</td>
</tr>
<tr>
<td>70-72</td>
<td>2.7</td>
<td>B-</td>
</tr>
<tr>
<td>67-69</td>
<td>2.3</td>
<td>C+</td>
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<tr>
<td>63-66</td>
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<td>C</td>
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<tr>
<td>60-62</td>
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<td>C-</td>
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<tr>
<td>57-59</td>
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<td>D+</td>
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<tr>
<td>53-56</td>
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<td>D</td>
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<td>50-52</td>
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<td>40-49</td>
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<tr>
<td>0-39</td>
<td>0</td>
<td>F</td>
</tr>
</tbody>
</table>
Faculty Regulations

- **Faculty policies and regulations**
  - 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+
    - second class: GPA 2.2+
  - Reg. 10: Academic Probation and Requirement to Withdraw
• Responsibilities of Students

• Queen’s University Code of Conduct

• Academic Integrity at Queen’s

• Departure from Academic Integrity
ECE Graduation Requirements

• Computer Engineering
  • Have at least 5 four-hundred level Tech Elective Courses
  • Have at least 4 courses from Technical Electives List B and List C, but no more than 5 courses from List C
  • A total of no less than 162.5 (168.5 for ECEi) credits counting all courses for first, second, third and fourth years
  • Exceed the minimum accreditation units set by ECE in each CEAB category
  • Transfer students may have to take more CS courses to meet their CEAB graduation requirements (101/102/202)
ECE Graduation Requirements

- **Electrical Engineering**
  - Have at least 5 four-hundred level Tech Elective Courses
  - Have at least 5 courses from Technical Elective List A
  - A total of no less than 162.5 (168.5 for ECEi) credits counting all courses for first, second, third and fourth years
  - Exceed the minimum accreditation units set by ECE in each CEAB category
- **Transfer students** may have to take more CS courses to meet their CEAB graduation requirements (APSC101/102/202 instead of APSC 100/200)
Lists & Requirements

- At least 5 electives must be ‘400’ level

- Technical Elective Lists
  - Comp. Eng. List A is mostly ELEC
  - Comp. Eng. List B & C are mostly CMPE
    - CMPE: choose minimum 4 electives from List B & C, but maximum 5 courses from List C count for degree
  - Elec. Eng. List A is mostly ELEC
  - Elec. Eng. List B covers other areas
    - ELEC: choose minimum 5 electives from List A
Selecting Electives

• You have much flexibility in EE and CE
  - but that comes with greater responsibility

• Advice for choosing technical electives:
  - use interest and passion as your guide

• Complementary Studies

  - you must have a total of 108 AUs, with minimum 72 units in H&SS ("List A" Comp Studies courses)
    – Two courses from List A, one course from List A, B, C, or D
Flexibility

• EE and CE with **streams** instead of options
  – Options are limiting
  – Streams allow you to mix and match as you wish
  – Large number of courses to choose from

• Streams provide primary and secondary course suggestions
Streams of Specialization for Elective Courses in Computer Engineering

- Computer hardware
- Computer systems
- Software Engineering
- Mechatronics
Streams of Specialization for Elective Courses in Electrical Engineering

- Biomedical Engineering
- Communications & Signal Processing
- Communications Systems & Networks
- Electronics & Photonics
- Mechatronics
- Power Electronics & Systems
- Robotics and Control
Planning for 3rd & 4th Year

• You are strongly encouraged to consult the detailed course summaries for each of the courses
  – See how the third-year courses constitute a bridge from the fundamental courses in second year to the advanced technical courses in fourth year.

• Use the Calendar information and the ECE spreadsheet Planning Tool to ensure you are on track to complete all requirements by the end of the fourth year. This is one of the most important responsibilities for all ECE students.
Planning for 3\textsuperscript{rd} & 4\textsuperscript{th} Year

- Not all electives offered every year (list follows)
  \[\Rightarrow\text{ Plan both 3\textsuperscript{rd} and 4\textsuperscript{th} years together!}\]
- You are \textit{not} limited to ‘300’ level technical courses
- If you have prerequisites for a ‘400’ level elective & it fits in your timetable, you can take it
- **Some 400 level courses will not be offered the following year**, so take them now if you want them! (see list later)
- Could take Complementary Studies
- APSC 221 (not for ECEi) needed for accreditation
Timetabling

• Timetabling of all courses is done by University Registrar centrally each year

• 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, as needed
• **ELEC 279:** Introduction to Object-oriented Programming
• **ELEC 326** (Probability), **ELEC 344** (Sensors …): Change in AUs
• **ELEC 353** (Electronics II): Change in course calendar description
• **ELEC 373** (Computer Networks): Change in title
• **ELEC 436** (Electric Machines and Control): Prereq change to ELEC 333
• **ELEC 443**, **ELEC 444**, **ELEC 448**: Offered in Winter 2017
• **ELEC 451** (Digital Integrated Circuit): Fall 2017, Pre. ELEC 252 and ELEC 271
• **ELEC 461** (Digital Communications): Not offered in 2017-2018
• **ELEC 464** (Wireless Comm): Fall 2017, prerequisite ELEC 323/324/326
• **ELEC 474** (Machine Vision): Offered in Fall 2017
• **ELEC 478** (Computer Networks II): Deleted
• **SOFT 423** (Software Requirements): offered every year
CMPE Changes in 2017-2018

- CMPE 212: ELEC 279 - Introduction to Object-oriented Programming
- CMPE 322 (Software Architecture): Not offered in 2017-2018
- CMPE 327 (Software Quality Assurance): Prerequisite change
- CMPE 330 (Computer Integrated Surgery): Prerequisite change
- CMPE 333 (Intro to Data Mining): Offered in Fall 2017
- CMPE 365 (Algorithms I): 4 credits (CMPE 380 deleted)
- CMPE 422 (Formals Methods in Software Eng): Prerequisite change
- CMPE 432 (Advanced Database): Not offered in 2017-2018
- CMPE 452 (Neural Net and Genetic Alg): Change in title and description
- CMPE 471 (Computational Biology): 3 credits; offered in Fall 2017
• COMM 201: Introduction to Business for Entrepreneurs – Fall 2017

• COMM 301: Funding New Ventures – Fall 2017

• COMM 302: Launching New Ventures – Winter 2018
### 3rd-year Comp. Eng.

#### CMPE Program Core in Third Year

<table>
<thead>
<tr>
<th>FALL</th>
<th>WINTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 326 Probability &amp; Random Processes</td>
<td>ELEC 373 Computer Networks I</td>
</tr>
<tr>
<td>ELEC 371 Microprocessor Interfacing</td>
<td>ELEC 374 Digital Systems Engineering</td>
</tr>
<tr>
<td>ELEC 377 Operating Systems</td>
<td>ELEC 390 ECE Design</td>
</tr>
<tr>
<td>CMPE 365 Algorithms I</td>
<td>Elective 2</td>
</tr>
<tr>
<td>Elective 1</td>
<td>CMPE 223 Software Specification</td>
</tr>
<tr>
<td>CMPE 320 Fund. Software Develop</td>
<td>APSC 221 Economic and business practices</td>
</tr>
<tr>
<td>COMM 302 Launching New Ventures</td>
<td>COMM 301 Funding New Ventures</td>
</tr>
</tbody>
</table>

#### CMPE Program Possible Electives in Third Year (normally, take two electives from List A/B/C)

<table>
<thead>
<tr>
<th>FALL</th>
<th>WINTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comp. Studies, List A, B, C, D</td>
<td>Comp. Studies, List A, B, C, D</td>
</tr>
<tr>
<td>ELEC 323 Continuous-Time Signals &amp; Systems</td>
<td>SOFT 423 Software Requirements</td>
</tr>
<tr>
<td>ELEC 344 Sensors and Actuators</td>
<td>ELEC 444 Mechatronics</td>
</tr>
<tr>
<td>ELEC 451 Digital Integrated Circuits</td>
<td>CMPE 325 Human Computer Interaction</td>
</tr>
<tr>
<td>ELEC 474 Computer Vision</td>
<td>CMPE 332 Database Management Systems</td>
</tr>
<tr>
<td>CMPE 452 Neural and Genetic Computing</td>
<td>CMPE 458 Programming Language Processors</td>
</tr>
</tbody>
</table>

... Note: APSC 381/480 could substitute ELEC 390/49X (requires departmental approval)
ELEC Program Core in Third Year

**FALL**
- ELEC 323 Continuous-Time Signals & Systems
- ELEC 353 Electronics II
- ELEC 371 Microprocessor Interfacing …
- ELEC 381 Applications of Electromagnetics
- Elective 1

**WINTER**
- ELEC 324 Discrete-Time Signals & Systems
- ENPH 336 Solid State Devices
- ELEC 390 ECE Design
- Complementary Studies
- Elective 2

**COMM 302 Launching New Ventures**

**ELEC Program Possible Electives in Third Year (normally take two electives from List A/B)**

**FALL**
- ELEC 333 Electric Machines
- ELEC 344 Sensors and Actuators
- ELEC 451 Digital Integrated Circuits
- ELEC 464 Wireless Communication
- ELEC 474 Computer Vision
- ELEC 408 Biomedical Image Processing

**WINTER**
- ELEC 373 Computer Networks
- ELEC 409 Bioinformatic Analytics
- ELEC 436 ELEC Machines & Control
- ELEC 443 Control Systems
- ELEC 444 Mechatronics
- ELEC 433 Energy and Power Systems

...
For 2017-2018, some electives not offered (planned alternation or instructor unavailable):

### ECE Course Offerings for 2017-18

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 333</td>
<td>Electric Machines</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 344</td>
<td>Sensors and Actuators</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 373</td>
<td>Computer Networks</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 408</td>
<td>Biomedical Signal and Image Analysis</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 421</td>
<td>Digital Signal Processing: Filters &amp; System Design</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 431</td>
<td>Power Electronics</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 433</td>
<td>Energy and Power Systems</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 443</td>
<td>Control Systems I</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 444</td>
<td>Modeling and Computer Control of Mechatronic Systems</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 448</td>
<td>Intr. Robotics: Mechanics &amp; Control</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 451</td>
<td>Digital Integrated Circuit Engineering</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 454</td>
<td>Analog Electronics</td>
<td>W</td>
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<tr>
<td>ELEC 464</td>
<td>Wireless Communications</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 474</td>
<td>Machine Vision</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 486</td>
<td>Fibre Optic Communications</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 490</td>
<td>ECE Project</td>
<td>F/W</td>
</tr>
<tr>
<td>SOFT 423</td>
<td>S/W Requirements</td>
<td>W</td>
</tr>
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## Technical Electives

2017-2018 (to the best of our knowledge)

### CMPE Courses Offered

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Offered</th>
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</thead>
<tbody>
<tr>
<td>CMPE 204</td>
<td>Logic for Computing Science</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 223</td>
<td>Software Specifications</td>
<td>W</td>
</tr>
<tr>
<td>CMPE 320</td>
<td>Fundamentals of Software Development</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 325</td>
<td>Human Computer Interaction (Also designated as CISC 325)</td>
<td>W</td>
</tr>
<tr>
<td>CMPE 326</td>
<td>Game Architecture</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 327</td>
<td>Software Quality Assurance (Also designated as CISC 327)</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 332</td>
<td>Database Management Systems</td>
<td>W</td>
</tr>
<tr>
<td>CMPE 333</td>
<td>Introduction to Data Mining</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 422</td>
<td>Formal Methods in Software Engineering</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 452</td>
<td>Neural and Genetic Computing</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 454</td>
<td>Computer Graphics</td>
<td>W</td>
</tr>
<tr>
<td>CMPE 457</td>
<td>Image Processing and Computer Vision</td>
<td>F</td>
</tr>
<tr>
<td>CMPE 458</td>
<td>Programming Language Processors</td>
<td>W</td>
</tr>
</tbody>
</table>
Technical Electives

Some other EE electives: CHEE, ENPH, MECH, MTHE
2017-2018 (to the best of our knowledge)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term</th>
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<tbody>
<tr>
<td>CHEE 340</td>
<td>Biomedical Engineering</td>
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<tr>
<td>CHEE 400</td>
<td>Technology, Engineering and Management (TEAM)</td>
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<tr>
<td>CHEE 436</td>
<td>System Identification</td>
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<tr>
<td>ENPH 460</td>
<td>Laser Optics</td>
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<tr>
<td>MECH 228</td>
<td>Kinematics and Dynamics</td>
<td>W</td>
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<tr>
<td>MECH 328</td>
<td>Dynamics and Vibration</td>
<td>F</td>
</tr>
<tr>
<td>MECH 393</td>
<td>Biomechanical Product Development</td>
<td>F</td>
</tr>
<tr>
<td>MECH 423</td>
<td>Introduction to Microsystems</td>
<td>F</td>
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<tr>
<td>MECH 455</td>
<td>Computer Integrated Manufacturing</td>
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<tr>
<td>MECH 465</td>
<td>Computer-Aided Design</td>
<td>F</td>
</tr>
<tr>
<td>MECH 478</td>
<td>Biomaterials</td>
<td>W</td>
</tr>
<tr>
<td>MECH 494</td>
<td>Kinematics of Human Motion</td>
<td>F</td>
</tr>
<tr>
<td>MTHE 337</td>
<td>Introduction to Operations Research Models</td>
<td>W</td>
</tr>
<tr>
<td>MTHE 367</td>
<td>Engineering Data Analysis</td>
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<tr>
<td>MTHE 430</td>
<td>Modern Control Theory</td>
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<tr>
<td>MTHE 455</td>
<td>Stochastic Processes and Applications</td>
<td></td>
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<tr>
<td>MTHE 472</td>
<td>Control of Stochastic Processes</td>
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<tr>
<td>MTHE 474</td>
<td>Information Theory</td>
<td></td>
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<tr>
<td>MTHE 477</td>
<td>Data Compression and Source Coding</td>
<td></td>
</tr>
<tr>
<td>MTHE 478</td>
<td>Topics in Communication Theory</td>
<td></td>
</tr>
</tbody>
</table>

You may always submit a course substitution request for other technical electives not listed in the Calendar if you are interested, and have instructor approval, for departmental consideration.
For **2018-2019**, some electives *not* offered (planned alternation or instructor unavailable):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 333</td>
<td>Electric Machines</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 344</td>
<td>Sensors and Actuators</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 373</td>
<td>Computer Networks</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 409</td>
<td>Bioinformatic Analytics</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 422</td>
<td>Digital Signal Processing: Random Models and App.</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 431</td>
<td>Power Electronics</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 436</td>
<td>Elec. Machines &amp; Control</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 443</td>
<td>Control Systems I</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 448</td>
<td>Intr. Robotics: Mechanics &amp; Control</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 457</td>
<td>Circuits and Systems Applications</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 461</td>
<td>Digital Communications</td>
<td>F</td>
</tr>
<tr>
<td>ELEC 470</td>
<td>Computer System Architecture</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 483</td>
<td>Microwave &amp; RF Circuits &amp; Sys.</td>
<td>W</td>
</tr>
<tr>
<td>ELEC 490</td>
<td>ECE Project</td>
<td>F/W</td>
</tr>
<tr>
<td>SOFT 423</td>
<td>S/W Requirements</td>
<td>W</td>
</tr>
<tr>
<td>SOFT 437</td>
<td>Performance Analysis</td>
<td>W</td>
</tr>
</tbody>
</table>
ELEC 390/490/498 design project courses

- Instructors and project supervisors
- Groups of 3 to design/build/document
- Course information on ECE Website

- Capstone Projects

ELEC 497: research project course

- Learn research methods
- Get a feel for graduate studies
- Must get faculty advisor first, then department approval
NSERC Undergraduate Summer Research Assistantship (USRA)

- USRA awards are meant to nurture your interest and fully develop your potential for a research career in the engineering and applied science. If you are considering a research career in the ECE we invite you to apply for an NSERC USRA through the ECE Department at Queen's University in January 2018.

- ECE quota in 2016-17: 6 awards

- The NSERC USRA is valued at 4,500 dollars and will be supplemented with an additional 1,884-2,700 dollars (includes vacation pay) from the research supervisor. Students are required to work 16 consecutive weeks, on a full-time basis, between May and August.

For Your Future

• The Career Services office is always available to help (Career fair, Engineering & technology fair, summer job fair)

• Queen’s University Internship Program (QUIP): 12-16 months

• Exchange Opportunities
• **Why Graduate Studies and Research?**
  • Enjoy the challenge of learning advanced material
  • Acquire skills sought by industry – knowledge is power
  • Contribute to global knowledge base (write paper, file patents, technology transfer to industry)
  • Start at a higher level of responsibility in a company
  • Higher starting salary: ~25% more for an M.A.Sc. Than a B.Sc.
  • Statistics Canada survey: higher income people tend to have an advanced degree
4+1 ECE Graduate Program

4+1 Program

• You get your Bachelor’s Degree AND your MASC in 5 years.
• You get PAID $22,000 to cover the cost of graduate studies in your 5th year. 5th year tuition is ~$7,500.
• You take 2 graduate courses during your 4th year, and 2 graduate courses during Fall semester of your 5th year.
• You do research and a thesis in an area that is of interest to you.
• You work on research collaboratively with a professor in an area that is of interest to you.
• You can defer your OSAP payments until you are finished.
• You can still do an internship after third year.

More information will be provided in November 2017

Minimum GPA to apply for 4+1 program: ~3.5
NSERC and OGS

• Funded program of study

• In the fall of 4\textsuperscript{th} year, make sure you apply for NSERC if you think there is 1\% chance that you may pursue graduate studies!
  – Avoid disappointment!

• Also apply for OGS in spring of the 4\textsuperscript{th} year

• Approach a faculty member for this
How to succeed in your program:

- Attend your classes
- Do not procrastinate
- Have a good time management plan in place
- Balance your extracurricular activities with school work
- With any questions or difficulties, approach your instructor, TA, classmates, and (upper-year) friends
- Contact the department; ask for a tutor
- Use Queen’s Student Academic Success Services
- Use Queen’s Wellness Services
General Advice

• Follow calendar & all preregistration instructions
• Respect deadlines to avoid difficulties
• Use on-line resources to get informed, to plan, and to verify completion of all degree requirements
• Balance Fall/Winter course selections
• You must write all final exams on the dates/times set by the Registrar’s Office;

Travel preferences cannot be considered

• Take responsibility for progress and successful completion of your degree
General Advice

• Use your planning spreadsheet to verify that all program requirements will be met

• Graduation Guide
  – You must “apply to graduate” in SOLUS Application to Graduate service; watch for email reminders

• Make the most of your final year!

• Enjoy the end of this journey!
Extracurricular Activities

• ECE Club
  – BBQ
  – Lunch with Profs
  – Banquet
Extracurricular Activities

• Clubs
  – Engineering Society Design Teams
  – IEEE Club
  – Queen’s Solar Design team
  – MAST