WELCOME
Electrical, Computer and Software Engineers
Agenda

- Professor Warren Gross, Chair of Electrical & Computer Engineering
- Professor François Bouffard, Associate Chair (Undergraduate Affairs)
- Mr. Yuseph Katiya, Student Affairs Advisor, McGill Engineering Student Centre (MESC)
- Ms. Lorraine Donald, Internship Advisors, Engineering Career Center
- Ms. Tara Mawhinney, Liaison Librarian, Schulich Library
- ECSESS executives
  - Dafne Culha - VP Internal
  - Catherine Carbon - U2 Computer Rep
  - Gabrielle Doucette-Poirier - VP Academic
Our Commitment

McGill Engineering is committed to:

- Producing self-reliant engineers who will become the leaders of tomorrow
- Defining the path of future discovery in engineering and technological research
- Making innovative, socially responsible contributions to the engineering community and society at large
McGill ECE at a glance:

- 46 Professors
- 18 Support Staff
- 1200 Undergraduate Students
- 360 Graduate Students

Research areas
- Computational electromagnetics
- Intelligent systems
- Integrated circuits and systems
- Nano-electronic devices and materials
- Photonic systems
- Power engineering
- Software engineering
- Systems and control
- Telecommunications
How is Engineering different from Science?

Math

Science

Design and Professional Practice

Computer Science
Our students

code.jam()  
Artificial Intelligence
Structure of the Programs

<table>
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<th>Pre-Engineering (U0)</th>
<th>Non-technical Courses</th>
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<td>Natural Science Complementary Courses</td>
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<td><strong>Technical Complementary Courses</strong></td>
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Time

McGill
Non-technical Courses

- Intro. to Engineering Profession
- Engineering Professional Practice
- Responsibilities of the Professional Engineer
- Communication in Engineering
- Engineering Economy
- “Impact of technology” (Group A) course
- “Humanities & social sciences” (Group B) course

www.mcgill.ca/ece/undergrad/information/complementarystudies
Natural Science Complementary Courses

- Required in some of our programs.
- Chosen from a given list of courses offered by science departments, e.g.
  - Musical acoustics
  - Environmental geology
  - Intro. to ecology and evolution
Required Math & Computer Science

- Calculus, differential equations, linear algebra,...
- Introduction to computing, algorithms, databases,...
Required Engineering

The main blocks are:

• Circuits and electronics
• Signal processing
• Electromagnetics
• Computer hardware
• Computer software

There is also a capstone design project
Technical Complementary Courses

You choose courses that most interest you, from a given list. The list is different for each program.
Accreditation

- All our programs have been accredited by the Canadian Engineering Accreditation Board (CEAB).
- This will make it straightforward for you to become registered as a Professional Engineer after graduation.
- The CEAB rules impose constraints. We can allow departures from the published programs only in exceptional circumstances.
Credits

- 1 credit = 3 hours work per week for 1 semester
- e.g. 4-credit course (3-4-5):
  - 3 lecture hours per week
  - 4 lab/tutorial hours per week
  - 5 homework/self-study hours per week
  - 12 hours per week total (4 x 3)
Workload

- Most courses are 3 credits, but they range from 1 credit to 4 credits.
- Normally take 14 to 18 credits per term (42 to 54 hours per week, for average student).
- Below 12 credits, you are considered part-time.
- We generally do not allow students to take more than 18 credits. To go over requires mitigating circumstances, e.g., upcoming graduation.
Honours Electrical Engineering

- Targets students who are interested in having a more research-focused program.
- Entry is at start of 3rd semester (5th if you are doing U0).
- Entry is competitive, based on cumulative GPA up to that point.
  - To be considered, you must have completed a minimum of 14 credits in each semester.
- Only about 25 students a year accepted.
Honours Electrical (continued)

- Different from regular Electrical as follows:
  - Honours Research Lab Rotation (4)
  - Electrical Engineering Honours Thesis instead of Capstone Design Project
  - Technical Complementaries chosen from a different list that includes graduate-level courses
  - Numerical methods course is at the graduate level

- Pick up the leaflet “Honours Program in Electrical Engineering” from TR 2060 or find it here
  
  www.mcgill.ca/ece/undergrad/information/honours
D and F Grades

- D grade are considered as a failure in core course, i.e., all courses, except in
  - Impact of Technology (Group A)
  - Humanities & Social Sciences (HSS, Group B)
  - Natural Science complementaries

- If you fail a course:
  - You should re-take it as soon as possible
  - If you fail with an F, you cannot take follow-on courses.
  - If you fail an ECSE course with a D, you may take an ECSE course that has it as a prerequisite, provided that the failed course is retaken at the same time. This is not an automatic process. Students must meet with an advisor first.
Information and Advice

- Department website: [www.mcgill.ca/ece](http://www.mcgill.ca/ece)
- Programs calendar: [www.mcgill.ca/students/courses/calendars](http://www.mcgill.ca/students/courses/calendars)
- Undergraduate Program Office (TR 2060):
  - [undergrad.ece@mcgill.ca](mailto:undergrad.ece@mcgill.ca), 514-398-3943
  - Mr. Andy Catalano (Dept. Student Adviser)
  - Ms. Connie Rossi
  - Ms. Sarah Lessard (on leave)
  - Best to schedule an appointment – indicate why you wish to see us
- Engineering Student Centre (a.k.a. MESC, FDA 22):
  - e.g. U0 courses, Impact of Technology, HSS, MATH courses
Uniform Email Address (UEA)

- All McGill students have an email address: *firstname.lastname@mail.mcgill.ca*
- *We will use this to communicate with you*
- Make sure you check it regularly
  - You can forward mail sent here to a different email address if you like; see
    - [https://search.mcgill.ca/nrb/](https://search.mcgill.ca/nrb/)
Adding/dropping courses

- The deadline for registering for at least one course, on Minerva, was August 14, 2019.
- You can change the courses for which you are registered, without penalty, until **Tuesday, September 17, 2019** (a.k.a. Add/Drop deadline).
- Course withdrawal is possible after the Add/Drop deadline.
  - Get a “W” on your transcript & you may still be liable for course fees.
Course selection

- In general, you should follow one of our Sample Curricula.
- Be careful if you depart from the Sample Curricula:
  - pre-requisites and co-requisites
  - not all courses given in both Fall and Winter
  - possible timetable conflicts
Pre- and co-requisites

- These are enforced.
- Even if you think you can do a course without its pre/co-requisites, we will not allow it.
- Usually Minerva prevents it, sometimes not.
- Even if Minerva allows it, don’t do it.
- We check for violations after the add/drop period.
Departmental student advisers

- **Drop-in: Thursday, August 29th, 9:00-11:00**
  - Trottier Building, 4th floor, rooms 4104 and 4105
- **Throughout the term by appointment**
  - High availability during the Add/Drop periods (Fall and Winter terms)
- **Typical issues handled by advisors:**
  - Advice on class selection – *advisers cannot add classes for you*
  - Minors
  - Information on exchanges and internships
Thinking of Honours?

- Follow instructions for Electrical, Computer or Software Engineering Programs.
- *To be considered, you must complete a minimum of 14 credits in each semester.*
- Admission opens up when entering U2
Transfer students & visiting/exchange students

- Transferring from another department or from another university: see Mr. Catalano (TR 2060)

- Visiting/Exchange Students
  • Special Faculty advising session was already held. Students who missed this meeting please contact the McGill Engineering Student Centre (MESC in FDA 22).
From CEGEP

- Follow the “ENTRY FROM CEGEP” (a.k.a. 7-semester program) sample curriculum (EE, CE or SE)
- No need to see an adviser
- If you did a professional DEC (i.e., 3-year technology program), see an adviser
From outside Quebec, with no advanced credits

- Follow the “EIGHT SEMESTER PROGRAM” sample curriculum (EE, CE or SE)
- For instructions on selecting valid “Humanities and Social Sciences” and “Impact of Technology on Society” courses, see www.mcgill.ca/ece/undergrad/information/complementarystudies
- No need to see an adviser. (But come and see us if you have done no calculus).
Transfer credits

- All students who have been admitted to a program who were admitted on the basis of the following documents and whose transfer credits do not appear on their Minerva transcript must go to MESC and see Lori Hurdle
  - Advanced Placement Examinations (AP)
  - Advanced Levels (A-Levels)
  - European Baccalaureate from Schola Europaea
  - French Baccalaureate Diploma
  - International Baccalaureate Diploma
Transfer credits

- Students cannot repeat courses for which they have received transfer credits
  - e.g., PHYS 101 & 102 are equivalent to PHYS 131 & 142; therefore, a student must move forward in their program.

- Once you have sorted out transfer credits with MESC, you need to meet with an ECE adviser

- You should have a “Required Course Sheet” with additional credits to see the ECE adviser.
From outside Quebec, with credits for MATH 140, PHYS 101, CHEM 120 and HSS-B

(French Bacc. – Non Quebec (S series))

Electrical, Computer & Software Engineering:

<table>
<thead>
<tr>
<th>Fall 2019 (17 credits)</th>
<th>Winter 2020 (14 credits)</th>
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<tbody>
<tr>
<td>MATH 133 (3 cr)</td>
<td>PHYS 142 (4 cr)</td>
</tr>
<tr>
<td>FACC 100 (1 cr)</td>
<td>CHEM 122 (1 cr)</td>
</tr>
<tr>
<td>MATH 141 (4 cr)</td>
<td>MATH 262 (3 cr)</td>
</tr>
<tr>
<td>HSS A or B (3 cr)</td>
<td>ECSE 205 (3 cr)</td>
</tr>
<tr>
<td>CCOM 206 (3 cr)</td>
<td>HSS B (3 cr)</td>
</tr>
<tr>
<td>ECSE 202 (3 cr)</td>
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From outside Quebec, with credits for all U0 courses except MATH 133 & HSS-B

• Follow the 7-semester (CEGEP entry) sample curriculum, with the following changes:
  • Add MATH 133 to the Fall 2019 semester.
  • For EE, add the extra HSS course later (not this year).
  • For CE, replace the Natural Science Complementary (fifth semester) by the HSS B course.
  • For SE, replace Natural Science Complementary 1 or 2 by the HSS B course.
General elective

- New from the 2018 entering cohort for EE and CE students
  - You have a “free” elective to choose as part of your program
  - Denoted as “XXXX xxx Elective Course” in sample curricula
  - Courses at the 200-level and above from any unit in the university, subject to approval by the Department
  - As a general rule, we will not approve courses in other units which duplicate EE/CE training already in your program or for which there is an equivalent ECSE course
    - Example: an electronics course given by the Department of Physics
Examples of pre-approved courses (as of September 2019)

- SEAD 510 Energy Analysis
- PHYS 228 Energy and the Environment
- PHYS 446 Majors Quantum Physics
- MUAR 211 The Art of Listening
- COMP 551 Machine Learning
- PSYC 212 Perception
- PSYC 213 Cognition
- PSYC 215 Social Psychology
- LING 201 Introduction to Linguistics
- LING 210 Introduction to Speech Science
- LING 260 Meaning in Language
- SOCI 210 Sociological Perspectives
- SOCI 222 Urban Sociology
- SOCI 250 Social Problems
- PHIL 237 Contemporary Moral Issues
- PHIL 240 Political Philosophy
- PHIL 242 Introduction to Feminist Theory
- PHIL 306 Philosophy of Mind
- GEOG 201 Introductory Geo-Information Science
- GEOG 210 Global Places and Peoples
- GEOG 217 Cities in the Modern World
- ANTH 201 Prehistoric Archaeology
- ANTH 204 Anthropology of Meaning
- BIOL 210 Perspectives of Science
- CHEM 203 Survey of Physical Chemistry
- ENGL 200 Survey of English Literature 1
- HIST 202 Survey: Canada to 1867
Miscellaneous

- ECSE 205 is offered in the Fall and Winter terms and also in May.
- If you have no programming experience, ECSE 202 must be completed before taking COMP 250, even though there is no prerequisite listed.
- COMP 202 is not an equivalent for ECSE 202. If you have done COMP 202, you still need to do ECSE 202.
- If COMP 250 is full in Winter 2020, register for CCOM 206 or FACC 300 instead.
FAQs

Q. MINERVA says a course is full. What do I do?
A. Contact Undergraduate Program Office (TR 2060) and let us know.

Q. MINERVA says there is a “Faculty/Major Restriction”.
A. Declare your major (i.e., electrical or computer) and try again.
Q. The lab or tutorial section I want to register for is full. What do I do?

Q. Which lab/tutorial sections should I choose?

A. Register for the lecture and a lab/tutorial section where there is space. Go along to the first class and sort it out then.
Q. Can I switch between Computer, Electrical and Software Engineering?
A. Not at this time. Criteria and process for program switching are under review.
Q. I have completed Calculus III at CEGEP. Can I receive credit for MATH 262?
A. No. You still need to take MATH 262.

Q. I have some programming experience. Can I get credit for ECSE 202 (Introduction to Software Development)?
Q. How do I register for the Honours Program?

A. This program only begins in your 3rd semester (5th if you are doing U0). There is nothing to do right now, except make sure you are registered for a minimum of 14 credits in each semester.
Q. Can I take courses outside McGill?
A. You can sometimes take an HSS or Impact course outside McGill. Apply to the Faculty (FDA 22) for permission in advance.

Find more FAQs at:
www.mcgill.ca/ece/undergrad/faq