Our outstanding engineering education and student supports develop the broad technical and professional skills needed to make a positive impact in society and to succeed in a range of careers.
Welcome to Queen’s Engineering!

Marianna Kontopoulou  
Associate Dean (Academic)

Aphra Rogers  
Applied Science Program Lead

Micheline Johnston  
Program Advisor (1st Year)

Mofi Badmos  
International Program Advisor

Faculty of Engineering and Applied Science
Agenda

1. Our program: Academics, expectations, resources and supports
2. Break
3. Student Q & A Session

Administrative matters

Washroom locations
Emergency exit locations
We are happy to answer questions throughout.
Current Students

http://my.engineering.queensu.ca/Current-Students

The First Year Engineering Handbook & Parent Guide coming soon on our website!
Keep checking your Queen’s Email!
Academics/Courses/Curriculum/Programming
Need to know terms and acronyms

• **SOLUS**: Provides you with the tools to manage all of your academic, financial, contact and admission details.
  ➢ Use it to pay fees, view your schedule, add and drop courses (in upper years), choose discipline

• **onQ**: The Queen’s Learning management system.
  ➢ Use it to check course content, stay on top of course materials, submit assignments, and for all course related activities

• **CEAB**: The Canadian Engineering Accreditation Board. All our Engineering programs are accredited by CEAB.
The Academic Year

Terms:

**Fall**: September – December (12 weeks) (1 fall break)

**Winter**: January – April (12 weeks, with 1 reading week break)

**Summer**: May – July (online courses are available)

The Academic Year: Fall 2019-August 2020

**DID YOU KNOW?** Many students take more than 4 years to complete their degree.

➢ 6 Years is typically the maximum allowable.
Why take one more year? (aka your degree, your way)

• Pursue a Queen’s University Internship (QUIP) – 12 to 16 months
• Do a Dual Degree
• Choose a Certificate (Business, Law, Mining/Minerals, Data Analytics, more to come)
• Explore International Exchanges
• Participate in Varsity teams/ other extracurriculars
• Accommodations or other extenuating circumstances
• Students can simply take a “year off” (i.e. deferral of studies)

Other opportunities:
• Spend a summer at the BISC (aka “The Castle”), learning about Global Project Management
• Participate in the Dunin-Deshpande Queen's Innovation Centre programs
Engineering Courses

• **Core**: these are courses that are necessary for the program
  ➢ In first year all of the first year courses are core. WE load these into the schedule.

• **Technical electives**: Chosen from various lists according to student interest
  (always check the calendar for requirements)

• **Complementary studies**: 3 courses chosen in upper years from
  Humanities/Languages/Management/Economics
Adding and Dropping Courses

• Each summer, students are pre-loaded into their core courses for the upcoming year
• For upper year students, electives can be added in SOLUS when their enrollment appointment comes up in summer
  ➢ SOLUS will not allow timetabling conflicts, nor enrolling in courses for which prerequisites are not met.

• Add Dates:
  – End of Week 2 (last date to add courses)

• Drop Dates: (In all cases seek advising to drop courses – be aware of program requirements)
  – End of Week 2 (fee refund if applicable)
  – End of Week 8 (disappears from transcript)
  – Late Drop (must make a case for extenuating circumstances and course remains on transcript)
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Name</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>APSC111</td>
<td>Physics I – Newtonian Mechanics</td>
<td>Fall</td>
</tr>
<tr>
<td>APSC112</td>
<td>Physics II - Electricity and Magnetism</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC131</td>
<td>Chemistry and Materials</td>
<td>Fall</td>
</tr>
<tr>
<td>APSC132</td>
<td>Chemistry and its Applications</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC143</td>
<td>Intro to Computer Programming</td>
<td>Fall</td>
</tr>
<tr>
<td>APSC151</td>
<td>Earth Systems Engineering</td>
<td>Fall</td>
</tr>
<tr>
<td>APSC162</td>
<td>Engineering Graphics</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC171</td>
<td>Calculus I</td>
<td>Fall</td>
</tr>
<tr>
<td>APSC172</td>
<td>Calculus II</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC174</td>
<td>Linear Algebra</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC182</td>
<td>Applied Engineering Mechanics</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC100</td>
<td>Engineering Practice</td>
<td>Fall/Winter</td>
</tr>
<tr>
<td>APSC199</td>
<td>English Proficiency for Engineers</td>
<td>Fall/Winter</td>
</tr>
</tbody>
</table>
Note on IB or AP credits

Some IB and AP courses taken in high school may be recognized as credits for first year fall term courses.

HOWEVER – we strongly recommend to take the Engineering courses

➢ The University experience is different
➢ Reviewing the material is important in preparation for the winter term courses
First Year Timetables: on SOLUS and http://my.engineering.queensu.ca

Course Timetables

First year students are not required to add any courses although the university system will send an email to prompt them to make a selection. There is no need to do anything, students are enrolled in classes by the Faculty. Classes begin on September 5, 2019.

Schedules for 2019–2020 are posted.

Yellow highlight shows lectures

Purple highlight shows tutorials, studios, labs

Note: these schedules are a supplement to SOLUS— they contain some extra information. If anything contradicts a time or location that SOLUS shows, consider the SOLUS information correct.

These versions are easier to print than SOLUS:

<table>
<thead>
<tr>
<th>Fall 2019</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 00</td>
<td>Section 01</td>
<td>Section 02</td>
</tr>
<tr>
<td>Section 03</td>
<td>Section 04</td>
<td>Section 05</td>
</tr>
<tr>
<td>Section 06</td>
<td>Section 07</td>
<td>Section 08</td>
</tr>
</tbody>
</table>
First Year Sectioning and Timetables

~ **800 students** in the first year class!

Sectioning: students are grouped into 19 sections

- 00-08: 9 Sections of 60 students.
- 10-19: 9 Sections of 20 students.
- ECEi: 1 Section of ~60 students

➢ Most lectures and tutorials combine multiple sections:
  e.g. Section 00 with 10, Section 01 with 11, etc.
Evaluation: The Grade Point Average (GPA) System

<table>
<thead>
<tr>
<th>Grade</th>
<th>GP</th>
<th>% Equiv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.3</td>
<td>90-100</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
<td>85-89</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td>80-84</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td>77-79</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>73-76</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>70-72</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td>67-69</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>63-66</td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
<td>60-62</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
<td>57-59</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td>53-56</td>
</tr>
<tr>
<td>D-</td>
<td>0.7</td>
<td>50-52</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

GPA Calculation Example:

\[
\text{GPA} = \frac{57.69}{22.2} = 2.59
\]

(C+ to B- average)
The GPA System: Important Aspects

• Term GPA
• **Cumulative GPA:** Includes all courses you have done at Queen’s.

EVERY MAY WE LOOK AT EACH STUDENT’S TERM AND CUMULATIVE GPA:
• GPA of 3.5 (~80%) and Above:
  – Dean’s list
  – 1st class honours at graduation (cumulative GPA)
  – GPA requirement to keep entrance scholarships

• Cumulative GPA of 1.6 (~60%):
  Need this to graduate. If you fall below this you are on probation for the following year.
• **Two terms with GPA < 0.7 (~50%)**:
  Required to withdraw.
Program requirements

All Canadian engineering programs are accredited by the Canadian Engineering Accreditation Board (CEAB)

Two sets of rules:
- Each student must take a minimum unit count in math, natural sciences, engineering sciences, engineering design, humanities and social sciences (complementary studies)

～ 50 courses in 4 years → ～6-7 courses per term

Programs are highly structured – courses have prerequisites

- Engineering graduates must possess 12 attributes

Knowledge base, but also ...

Communication, Design, Problem Solving, Team work, Professionalism, Ethics.....

Engineering Design and Practice Sequence (EDPS)
The Queen’s Engineering Programs
Engineering programs

Common First year (plus ECE-I direct entry program)

Free discipline choice

Provided you pass all of their first year courses and register by the deadline.

Engineering programs

Engineering Science programs
Upper year Program Selection

Late January: **Evening orientation session** for each of our 10 programs, including program structure, careers, tours, guest speaker, etc.

Late February (after Reading week): Students choose a program. Discipline selection is open only during that period.

IMPORTANT: Programs may be capped afterwards and transfers are not guaranteed!

<table>
<thead>
<tr>
<th>Engineering</th>
<th>Engineering Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Engineering</td>
<td>Engineering Chemistry</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Engineering Physics</td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>Geological Engineering</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>Mathematics and Engineering (Appl. Math)</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td></td>
</tr>
<tr>
<td>Mining Engineering</td>
<td></td>
</tr>
</tbody>
</table>
Six Engineering Programs

**Civil Engineering**
- Infrastructure
- Environmental

**Chemical Engineering**
- Chemical processing
- Biochemical
  - Environmental, Biomedical

**Mechanical Engineering**
- General
- Materials
- BioMechanical
- Mechatronics
Six Engineering Programs

Mining Engineering
• General
• Minerals Processing
• Mechanical

Computer Engineering
• Computer Hardware
• Computer Systems/Software
• Artificial Intelligence

Electrical Engineering
• Electronics and Photonics
• Power Electronics/Systems
• Communications
• Robotics

Two paths to Electrical/Computer Engineering.
• Common first year
• Direct entry to ECE Innovation stream (50-60 students only)
Four Engineering Science Programs

**Mathematics and Engineering**
- Control & Computing, Systems & Robotics, Applied Mechanics

**Engineering Physics**
- Mechanical, Electrical, Materials, Computing

**Engineering Chemistry**
- Chemical Diagnostics, Alternative Energy, Process Synthesis

**Geological Engineering**
- Exploration, Geotechnical, Environmental
Useful terms

Academic Plan (in calendar) means your Program or Discipline (i.e. Mechanical Engineering)

• Sub-plan (in calendar) means your Option

➤ The Mechanical Engineering Plan has three Options or Sub-Plans: General (M1), Materials (M2), Biomechanical (M3).

➤ Each Program offers many opportunities for electives
Our focus on Student Success
We have highly successful students

In a typical 1st year Queen’s Engineering Class of ~ 750 students...
5 required to withdraw (<1%)
20 students on probation
Some chose to switch into science or other Queen’s programs after first year

And...

200 students on the Dean’s Scholar List (GPA>3.5, 80%)
Why are Our Students So Successful?

• All students admitted to Queen’s Engineering are academically capable of graduating (or we wouldn’t have extended an offer).

• We support first year students

  Dedicated academic advisors (Mofi & Micheline)

  Dedicated Applied Science Program Lead (Aphra Rogers)

  2 embedded personal health counsellors (Lucy and Sara)

  Dedicated accommodations coordinator (Catherine)

Time management guidance

Early intervention / Student workload surveys to identify students who struggle academically and support them to get extra help.

Extended Program
10 Point **Student Success Model**

1. First Year Advisors
2. Embedded counsellors
3. Extended Program
4. Douglas Help Centre
5. Free Choice of Discipline
6. Wellness Skills Workshops
7. Study Skills Workshops
8. Peer mentors/Peer coaches
9. EngLinks – tutoring service
10. International and Upper Year Program Advisors
Academic Support Programs in Year 1

Your Successful transition to University

- Extended Program *(Section 900)*
- Douglas Help Desk in first year
- Engineering study skills workshops
- Peer Mentoring
  
  Peer Learning Skills Assistance

NEW! Early Alert Program
If a student’s fall term GPA < 1.60 OR they failed physics, math, or chemistry
We contact them and strongly recommend the Extended Program.

Extended Program: Runs during Winter and Summer Terms
- 5-week Intensive Review of APSC 111 (Physics), APSC 131 (Chemistry), and APSC 171 (Calculus)
- Rewrite fall term exams to replace fall marks in these courses
- Begin “normal” 12 week winter term in Week 7 – continues until summer
- Mid June Write J-Section winter term final exam

Extra fees (~$500 per course) for the spring/summer session, but cheaper than repeating first year!

Most students continue successfully to their 2nd year programs
Tips for success

1. Make informed decisions
2. Work hard, Learn how to manage your time and Attend class!
   ➢ Self-direction, initiative and independence are expected.
3. Get involved – clubs, student government, design teams ... there is something for everyone
4. Adopt and maintain healthy habits
5. Recognize when you need help and ASK FOR IT! Reach out sooner rather than later!
   ➢ We have amazing student advisors and embedded counsellors, and a very supportive group of students/mentors
Tips for success

Some Stress is normal! Learning how to manage stress is an important part of the post-secondary experience.

NEW: TAO Self-help services coming in the Fall

- CHECK OUT the website of Queen’s Wellness Services
- CHECK OUT Student Academic Success Services for study skills and time management

- If you are struggling by midterms drop by student services for support (or even to chat!)
How do I stay healthy?

- Be active at least 150 minutes a week
- Get involved in activities you like to do
- Stay connected to friends, family & important others
- Sleep 7-9 hours a night
- Be proactive in accessing help or supports
- Schedule time for fun and relaxation
- Laugh!
- Eat fruits & veggies every day
- Be kind to yourself! Excellence does not require perfection

Make self-care a priority
Accommodations

• Students who have a disability, or had accommodations or an IEP in high school should strongly consider academic accommodations

➢ Contact Queen's Student Accessibility Services (QSAS)
   Email: accessibility.services@queensu.ca
   The office is open all summer and we suggest making contact prior to September

• QSAS will confidentially review all of your supporting documentation and issue your Letter of Accommodation.

➢ Your Engineering contact: Catherine Gurnsey, Academic Accommodation Coordinator, engineering.aac@queensu.ca
Engineering Student Services in BMH 300 –
Your one stop shopping for

Advice – A friendly face
Accommodations/ Absences
Processing of forms
Appointments
Embedded counsellors

Come see us! Open 8:30-4:30 Monday to Friday (September to April)
Incoming High School Average Distribution

<table>
<thead>
<tr>
<th>High School Average</th>
<th># of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>0</td>
</tr>
<tr>
<td>50-54</td>
<td>0</td>
</tr>
<tr>
<td>55-59</td>
<td>0</td>
</tr>
<tr>
<td>60-64</td>
<td>0</td>
</tr>
<tr>
<td>65-69</td>
<td>0</td>
</tr>
<tr>
<td>70-74</td>
<td>0</td>
</tr>
<tr>
<td>75-79</td>
<td>0</td>
</tr>
<tr>
<td>80-84</td>
<td>18</td>
</tr>
<tr>
<td>85-89</td>
<td>258</td>
</tr>
<tr>
<td>90-94</td>
<td>232</td>
</tr>
<tr>
<td>95-100</td>
<td>35</td>
</tr>
</tbody>
</table>
... Compared to University
### Typical Schedule

<table>
<thead>
<tr>
<th>Section 00</th>
<th>Fall Term - Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td>Monday</td>
</tr>
<tr>
<td>8:30-9:30</td>
<td>APSC 131 LECT-ELLIS AUD</td>
</tr>
<tr>
<td>9:30-10:30</td>
<td>APSC 143 LAB IWC (2hours)</td>
</tr>
<tr>
<td>10:30-11:30</td>
<td>APSC 151 LECT-ELLIS AUD</td>
</tr>
<tr>
<td>11:30-12:30</td>
<td>APSC 111 TUT-Stirling 401 or Stirling 414</td>
</tr>
<tr>
<td>12:30-1:30</td>
<td>APSC 131 TUT-McLaughlin 315</td>
</tr>
<tr>
<td>1:30-2:30</td>
<td>APSC 171 TUT-Chernoff 213</td>
</tr>
<tr>
<td>2:30-3:30</td>
<td>APSC 171 LECT-ELLIS AUD</td>
</tr>
<tr>
<td>3:30-4:30</td>
<td>APSC 143 LECT-ELLIS AUD</td>
</tr>
<tr>
<td>4:30-5:30</td>
<td>APSC 171 LECT-ELLIS AUD</td>
</tr>
</tbody>
</table>

*Expect Evening courses too!!*
Average Working Hours in a Typical Week in Fall Term – Our expectations

<table>
<thead>
<tr>
<th>Course</th>
<th>Contact (hrs/wk)</th>
<th>Outside (hrs/wk)</th>
<th>Total (hrs/wk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APSC 100 M1</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>APSC 100 M2</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>APSC-111</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>APSC-131</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>APSC-151</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>APSC-143</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>APSC-171</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>27</td>
<td>24</td>
<td>51</td>
</tr>
</tbody>
</table>
Working Time in Fall term reported by students

Total Hours Outside Class, Reported in Week 8

Hours
Percent

Recommended

0 5 10 15 20 25 30 35 40 >40

5 10 15 20 25 30 35 40 >40
Workload Survey

What Do You Feel About the Pace? (Week 8)

Great!  Hectic  Struggling  Really worried

Percent

0  10  20  30  40  50  60
What needs to be done this summer?
What NOW?   Incoming Student Survey

Brief questions about:

• Proficiency with computer programming, writing, and project management
• Weaknesses in High School Preparation (e.g. due to strikes, extended absences from school, etc.)

The data from this will be helpful to us in planning for September.
Incoming expectations

Students need to be fluent in Microsoft Word and Excel:

• Microsoft Word: Using tables, references, citations, captions, styles, section headings, equations, simple drawings, etc.
• Microsoft Excel: Using equations, plots, regression, etc.

A Microsoft Word/Excel Assignment must be completed before term starts! (Don’t leave it until frosh week!)

http://my.engineering.queensu.ca/Current-Students/First-Year-Studies/excel-word-video-tutorial.html
Computers and software:
See first year studies page on Computer Information

Computer Information

Computers are essential tools for an engineering education, just as they are in the engineering workplace. They are used extensively for modeling, design, and communicating engineering work. Course resources are often distributed through websites and assignments are often submitted electronically. Internet access is needed for course registration, checking marks, and email communications with instructors and peers (all students must use their Queen's email account for communications with the university). Students frequently work collaboratively on their laptops in the ILC group rooms.

As a result, we strongly recommend that each student have a computer, and that each student sign up for high speed Internet access from their off-campus residence. Students in Queen's residences may sign up for ResNet, and high-speed access in the Kingston area is available through service providers. The Queen's WiFi network covers most of the campus. We also provide several clusters of computers on campus for those who choose to not purchase a computer.

Hardware

We recommend that students bring laptops if possible. Laptops have the advantages of portability and smaller space requirement, and are often used for collaborative work and in tutorials. If you already own a laptop, and it was a mid–range model in the past couple of years, you will probably have no problem using it in our program. If you are buying a new laptop, any mid–range model (generally about $600 or more) should suffice. Low–end netbooks are not a good idea. Some things to consider in buying a laptop:

• We suggest a PC running Windows 10 or a Mac running a recent version of MacOS. For those interested in bringing an Apple MacBook laptop, please see Windows vs. Mac below.

Key points:
• Laptops are critical – either PC or Mac
• Macs can use virtual desktop interface
Engineering Frosh Week
Frosh week – The Facts

- Engineering Frosh week is completely optional – you don’t have to sign up for it and you can drop out at any time.
- Frecs act as mentors; they undergo training in leadership, inclusivity, diversity, sensitivity
- Up to 8 Frecs are in charge of each group of ~25 Frosh.
- All events are signed off by the Dean, and overseen by the Senate Orientation Review Board (SORB) and AMS constables
- Alcohol is forbidden – Frecs sign “alcohol-free” contracts for the week

Schedule

Saturday, Aug 31: Move-in day
Sunday, Sept 1: Residence orientation
Mon-Wed: Faculty orientation
Thurs-Fri: Classes
Saturday, Sept 7: Grease pole
Frosh week – the facts

- A ‘get-to-know-one-another’ and bonding exercise
- A teamwork/teambuilding experience
- A lot of fun.

The Greasepole

- Lanolin-covered pole, in water hole about 2ft deep
- Frosh required to recover a Queen’s tam nailed at top
- Teamwork!
Questions???
engineering.first.year@queensu.ca
engineering.queensu.ca