Welcome to Engineering!

Summer orientation session

Brian Frank, Associate Dean (Teaching and Learning)
Alan Ableson, Director (First year)
Aphra Rogers, First year advisor
Micheline Johnston, First year advisor

Faculty of Engineering and Applied Science
Agenda for this Afternoon

1. Queen’s Engineering & Applied Science general structure and overview of important details
2. Academic content in first year and beyond
3. Break
4. Student Q & A Session with upper year students
Key Messages

• Things may seem complex, but first year students have few decisions to make.

• We have amazing student advisors to help you understand your program and the decisions that you need to make.

• Most information is in:
  – The Academic Calendar on our website
  – The First Year Engineering Handbook (coming soon to a mailbox near you!)
Keep checking your mailbox!

Queen’s Engineering
FIRST YEAR HANDBOOK

First year program structure
Faculty regulations
Academic information
Course descriptions
Important dates
Contact information

—Meghan

About 50-90 students a year do J-section.
Definitions

• **SOLUS:**
The Queen’s student admin system. Your schedule, course selection (upper years), fee status, contact info, etc.

• **Program (also called your Discipline or Plan):**
The type of engineering (Chem Eng, Mech Eng, etc).

• **Sub-Plan (also called an Option):**
A speciality within your program. Some programs have them (e.g. MECH – General, BioMech, Materials), while others don’t (e.g. CIVL).

• **Academic:**
Anything to do with your program and courses (e.g. academic advisor).

• **Academic Calendar:**
Lists of all courses you must complete over the 4 years of your program.

• **Academic Session:**
Both the Fall and Winter terms together

• **CEAB:**
Canadian Engineering Accreditation Board
Courses

Semesters:

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

Course weight:

- Reflects time and effort in course
- Typical term-length engineering courses are 3.0 - 4.8 units
- Full-year courses are more (e.g. APSC 100 is 11 units)

Course types:

- **Core:** these are courses you must take and pass. WE put these into the schedule. **All of the first year courses are core.**
- **Technical electives:** engineering upper year courses students can choose
- **Complementary studies:** 3 courses (9 units) of courses chosen from Humanities/Languages/Management/Linkage (upper year)
<table>
<thead>
<tr>
<th>Course Number</th>
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<th>Unit Count</th>
<th>Semester</th>
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<td>APSC112</td>
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<td>APSC131</td>
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<td>APSC132</td>
<td>Chemistry and the Environment</td>
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<td>APSC142</td>
<td>Intro to Computer Programming</td>
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<td>Earth Systems</td>
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<td>Engineering Graphics</td>
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<td>Fall*</td>
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<td>APSC174</td>
<td>Linear Algebra</td>
<td>3.5</td>
<td>Winter</td>
</tr>
<tr>
<td>APSC100</td>
<td>Engineering Practice</td>
<td>11.0</td>
<td>Fall/Winter</td>
</tr>
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</table>
Queen’s Engineering Programs

Accredited by the **Canadian Engineering Accreditation Board**

All Canadian Engineering programs are overseen and accredited by the CEAB. They set the rules and we design our curriculum for each program to meet those rules.

**Two sets of rules we must follow:**

- Each student must take a minimum unit count in math, science, design, etc.
- We must show that our graduates possess 12 attributes (ability to communicate, design, work in teams, etc.)
Minimum Unit Count

162 units required to graduate
50 term-length courses over 4 years
6 courses per term

Required Course Units:

<table>
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<tr>
<th>Unit Type</th>
<th>Minimum # Units Required</th>
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<tr>
<td>Basic Science</td>
<td>16</td>
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<tr>
<td>Math</td>
<td>16</td>
</tr>
<tr>
<td>Complementary Studies</td>
<td>19 (core + CS electives)</td>
</tr>
<tr>
<td>Engineering Science</td>
<td>19</td>
</tr>
<tr>
<td>Engineering Design</td>
<td>19</td>
</tr>
<tr>
<td>Eng Sci + Eng Design</td>
<td>75</td>
</tr>
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</table>
We must be able to show that our students learn the following from our curriculum:

1. Knowledge base for engineering
2. Problem analysis (complex problems)
3. Design
4. Investigation
5. Engineering tools
6. Individual and team work
7. Communications
8. Professionalism
9. Impact on society and environment
10. Ethics and equity
11. Economics and project management
12. Lifelong learning

Most students THINK this is mainly what real engineers need to know – math, physics, chemistry, thermo, hydraulics, fluid dynamics...

We have developed a sequence of courses over 4 years to develop these skills in our students:

**Engineering Design and Practice Sequence (EDPS)**

- APSC100
- APSC200
- APSC293
- APSC221 etc....
Our programs have been meticulously constructed so that students meet all of the engineering accreditation criteria!
Late January:
We have an **evening orientation session** for each program, including program structure, careers, tours, guest speaker, etc.

Early March:
Students choose a program. All programs are open to you provided you pass all of your first year courses.

**Current Second Year Discipline Numbers:**

<table>
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<tr>
<th>Discipline</th>
<th>Number</th>
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<tr>
<td>Chemical Eng</td>
<td>106</td>
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<tr>
<td>Civil Eng</td>
<td>92</td>
</tr>
<tr>
<td>Computer Eng</td>
<td>89</td>
</tr>
<tr>
<td>Electrical Eng</td>
<td>87</td>
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<tr>
<td>Eng. Chemistry</td>
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<td>Eng Physics</td>
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<tr>
<td>Geological Eng</td>
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<tr>
<td>Mathematics and Eng</td>
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<tr>
<td>Mechanical Eng</td>
<td>185</td>
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<tr>
<td>Mining Eng</td>
<td>24</td>
</tr>
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</table>
Program Design
(for details please see course calendars for different programs)

• **Year 1:** All first year common core courses.
  Basic technical courses plus APSC 100 (EDPS I).

  Year 2: You move into your chosen program.

• **Year 2:** Core courses for your program (includes EDPS II).

• **Year 3:** Program core (includes EDPS III) + technical electives + comp studies

• **Year 4:** Core (which is mainly EDPS IV) + mostly technical electives + comp studies
First Year Sectioning and Timetables

~ 770 students in your first year class!

Sectioning: students are grouped into 19 sections
• 00-08: 9 Sections of 60 students.
• 10-18: 9 Sections of 20 students.
• ECEi: 1 Section of 46 students

Many activities are combination of multiple sections:
e.g. Section 00 with 10, Section 01 with 11, etc.
Coming End of Summer:
First Year Timetables on the Website

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 12, 2016.

Schedules for 2016-2017 will be posted soon.

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.

Fall 2015 (links do not work)

<table>
<thead>
<tr>
<th>Section 00</th>
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<th>Section 02</th>
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<td>Section 06</td>
<td>Section 07</td>
<td>Section 08</td>
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<tr>
<td>Section 09 (ECE direct Entry)</td>
<td>Section 10</td>
<td>Section 11</td>
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<td>Section 12</td>
<td>Section 13</td>
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<td>Section 16</td>
<td>Section 17</td>
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<td>Section 18</td>
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### Typical Schedule

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<td>APSC 100A - 207</td>
<td>APSC 100A - 207</td>
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<td>Etherington Hall AUD</td>
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<td>APSC 131 - 102</td>
<td>APSC 111 - 102</td>
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<td>APSC 131 - 102</td>
<td>APSC 161 - 102</td>
<td>APSC 111 - 102</td>
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Other Important Info - GPA System

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<th>GPA</th>
<th>% Equiv.</th>
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<tr>
<td>A</td>
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<tr>
<td>A-</td>
<td>3.7</td>
<td>80-84</td>
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<tr>
<td>B+</td>
<td>3.3</td>
<td>77-79</td>
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<tr>
<td>B</td>
<td>3.0</td>
<td>73-76</td>
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<tr>
<td>B-</td>
<td>2.7</td>
<td>70-72</td>
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<td>C+</td>
<td>2.3</td>
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GPA Calculation Example:

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<td>8.05</td>
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<td>A-</td>
<td>12.95</td>
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<tr>
<td>APSC 161</td>
<td>3.5</td>
<td>B+</td>
<td>11.55</td>
</tr>
</tbody>
</table>

GPA = 65.55/25 = 2.62
(C+ to B- average)
The GPA System: Important Aspects

• **Sessional GPA:**
  Includes just fall and winter courses for previous session (you are evaluated in May for F/W session).

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

• **GPA of 3.5 (~80%) and Above:**
  – Dean’s list (sessional GPA)
  – 1st class honours at graduation (cumulative GPA)
  – GPA requirement to keep entrance scholarships (sessional GPA)
  – ~ 1/3 of our students have a GPA > 3.5

• **Cumulative GPA < 1.6 (~60%):**
  Need this to graduate. If you fall below this you are on probation for the following year.

• **Sessional GPA < 0.7 (~50%):**
  Required to withdraw.
Adding and Dropping Courses

• Each summer, students are pre-loaded into their core courses for the upcoming year (as you have been now).
• When your enrollment appointment comes up you can add courses (tech electives, comp studies) or drop any course, prior to specified dates (for upper year engineering).
• 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:
  – End of Week 2 (fee refund if applicable)
  – End of Week 8 (disappears from transcript)
  – After Week 8 Late Drop (must make a case for medical or ext. circumstances and course remains on transcript with a DR)
A Focus On... Student Success

• Retention:
The % of first year students that pass their first year and move on to second year

Queen’s Engineering Class of 2019 of ~ 750 students...
- 5 were required to withdraw

Retention = 99.3%
- 15 students on probation
  (GPA < 1.6 so need to repeat courses to improve it)
- ~180 students on the Dean’s List
Why are Our Students So Successful?

• We don’t admit students that are not capable of getting through the program.

• We focus a lot of effort on supporting first year students:
  – Dedicated academic advisor (Aphra Rogers)
  – Dedicated faculty advisor (Alan Ableson)
  – Embedded mental health counsellor (Joanne Roston)
  – Time management session on day 1
  – Student surveys in weeks 4, 6, and 9
    • We identify students that believe they are struggling and support them to get extra help.

  • focussed group tutorials
  • one-on-one academic and personal counselling sessions
  • peer connection/Bounce Back
Every student’s GPA is evaluated after fall term final exams.

If a student’s fall term GPA < 1.60 or he/she failed fall term physics, math, or chemistry, we contact him/her, strongly recommending J-section.
Section 900 (J-Section)

- **Sign up** in week 1 of the winter term
- **Review** APSC 111, APSC 131, and APSC 171 during winter term weeks 2-6
- **Rewrite fall term final exams** during Reading Week
- Begin “normal” 12 week **winter term after Reading Week**
- Write J-Section midterms during the April final exam period
- Complete the final 6 weeks of winter term after the April final exam period *(summer session)*
- Write J-Section **winter term final exams in mid June** *(also used as rewrite exams for regular sections)*

Extra fees for the spring/summer session, but cheaper than repeating first year!
Statistics for Sci’ 18:

• ~ 73 students in J - Section
• At the end of year 1 (June 2015):
  – A (>80%) average: 2 students
  – B (~75%) average: 17 students
  – C (~65%) average: 44 students
  – Probation (<60%): 7
  – RTW: 3 students

first year average is ~ 72%

J-Section students are indistinguishable from their peers in upper years
Your first year…

Brian Frank

Academics in Engineering

FIRST YEAR
First Year Engineering vs. High School

Differences:

• Autonomy
• Integration
• Speed
• Requirement to Solve Problems Not Seen Before
• Closed-ended and Open-ended Problems
First Year Engineering Program  
(Common First Year)

<table>
<thead>
<tr>
<th>Engineering Science/Math</th>
<th>Professional skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
</tr>
<tr>
<td>Mechanics (APSC 111)</td>
<td>Problem Analysis (APSC 100 M1)</td>
</tr>
<tr>
<td>Chemistry I (APSC 131)</td>
<td>Experimentation (APSC 100 M2)</td>
</tr>
<tr>
<td>Calculus I (APSC 171)</td>
<td>Engineering Drawing (APSC 161)</td>
</tr>
<tr>
<td>Earth Systems (APSC 151)</td>
<td></td>
</tr>
</tbody>
</table>

| **Winter**               |                     |
| Electromagnetics (APSC 112) | Design Project (APSC 100 M3) |
| Chemistry II (APSC 132)    | Experimentation (APSC 100 M2) |
| Computer Programming (APSC 142) |                 |
| Calculus II (APSC 172)     |                     |
| Linear Algebra (APSC 174)  |                     |
First Year Engineering Program
(Direct Entry Innovation Stream)

<table>
<thead>
<tr>
<th>Engineering Science/Math</th>
<th>Professional skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
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</tr>
<tr>
<td>Mechanics (APSC 111)</td>
<td>Problem Analysis (APSC 100 M1)</td>
</tr>
<tr>
<td>Chemistry I (APSC 131)</td>
<td>Experimentation (APSC 100 M2)</td>
</tr>
<tr>
<td>Calculus I (APSC 171)</td>
<td></td>
</tr>
<tr>
<td>Earth Systems (APSC 151)</td>
<td></td>
</tr>
<tr>
<td>Computer Programming (APSC 142)</td>
<td></td>
</tr>
<tr>
<td><strong>Winter</strong></td>
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<tr>
<td>Electromagnetics (APSC 112)</td>
<td>Design Project (APSC 100 M3)</td>
</tr>
<tr>
<td>Chemistry II (APSC 132)</td>
<td>Experimentation (APSC 100 M2)</td>
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<tr>
<td>Calculus II (APSC 172)</td>
<td>Engineering Drawing (APSC 161)</td>
</tr>
<tr>
<td>Linear Algebra (APSC 174)</td>
<td></td>
</tr>
</tbody>
</table>
Three semester-long project-based modules:

**Mod 1 (Fall):**
Problem solving, modeling, mathematics software, and engineering professionalism.

**Mod 2 (Fall OR Winter):**
Experimental design, data analysis, and experimentation tools.

**Mod 3 (Winter):**
Team client-based design project.
Welcome

The Engineering Design and Practice Sequence (EDPS) is a four-year sequence of courses for students in all engineering programs. It provides an opportunity to develop skills in design, creativity, economics, communications, and professionalism in engineering contexts. The first two years of the EDPS are delivered by faculty-wide project-based courses APSC-100 (EDPS I) and APSC-200/293 (EDPS II). The third and fourth years of the sequence (EDPS III and IV) are delivered by departments, and tailored to the disciplinary design and practice approaches. EDPS IV is a culminating capstone design project supervised by an engineering faculty member.

http://edps.engineering.queensu.ca
## Engineering Design and Practice Sequence

<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
<th>Develop</th>
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</thead>
<tbody>
<tr>
<td>Year 4</td>
<td>Capstone</td>
<td>Engineering law</td>
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<tr>
<td></td>
<td></td>
<td>Equity and diversity</td>
</tr>
<tr>
<td>Year 3</td>
<td>Program-specific</td>
<td>Disciplinary design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disciplinary hardware and software tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Application of disciplinary knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advanced economics and project management</td>
</tr>
<tr>
<td>Year 2</td>
<td>APSC 200 &amp; 293 APSC 221</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sustainability</td>
</tr>
<tr>
<td>Year 1</td>
<td>APSC 100</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Design</td>
</tr>
<tr>
<td></td>
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<td>Investigation</td>
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<tr>
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<td></td>
<td>Tools</td>
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<td>Sustainability</td>
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<td>Design</td>
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<td>Investigation</td>
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<tr>
<td></td>
<td></td>
<td>Tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sustainability</td>
</tr>
</tbody>
</table>

- Independence
Physics I (APSC 111)

- Measurement and Vectors
- Velocity and Acceleration
- Angular Velocity and Acceleration
- Force and Newton’s Laws
- Work and Energy
- Linear Momentum and Collisions
- Angular Displacement, Acceleration, and Momentum
- Torque and Centre of Gravity
Chemistry I (APSC 131)

- Chemical Equations
- Gas Behaviour
- Thermodynamics and Thermochemistry
- Atomic, Molecular Structure, and Quantum Theory
- Chemical Bonds
- States of Matter and their Properties
- Water and Aqueous Solutions
- Materials Science
• Textbooks for 111 (physics) and 131 (chemistry) should be purchased from the bookstore, as they come with an access code for online assignments
• Textbooks that upper year students are selling for 131 will not be the edition being used
• Access Code Card (eText, online assignments) for 131 alone is $115, but cost of text with code is $199/$140
Earth Systems (APSC 151)

- Sustainable Development
- Ecological Footprint
- Supply and Demand
- Geology and Plate Tectonics, Earth Dynamics, and Volcanoes
- Minerals, Igneous, Sedimentary, and Metamorphic Rocks
- Surface Water and Groundwater
- Mass Wasting, Slope Failure, and Landslide Engineering
- Mineral Resource Engineering and Energy Sources
• Develop the ability to visualize and communicate three-dimensional shapes.
• Hand-sketching and use computer-aided design software.
• **Topics Include:**
  – Orthographic Projection
  – Isometric Sketching
  – Auxiliary and Section Views
  – Dimensioning
  – Working Drawings
  – Assemblies
Calculus I (APSC 171)

• Functions, Vectors, and Parametric Curves
• Differentiation
• Integration
• Applications of Differential Equations
For ECE Innovation Stream: Computer Programming (APSC 142)

- Design of correct and efficient algorithms and on programming style using C/Robot C.
- Applications are made to engineering problems.
- Topics Include:
  - Variables
  - Memory
  - Conditional Statements
  - Loops
  - Functions
  - Operators
Leadership & Extra-curriculars
Grades & Workload
Incoming High School Average Distribution

<table>
<thead>
<tr>
<th>HS Average Distribution</th>
<th># of Students</th>
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<tbody>
<tr>
<td>&lt;50</td>
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</tr>
<tr>
<td>50-54</td>
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</tr>
<tr>
<td>55-59</td>
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</tr>
<tr>
<td>60-64</td>
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<td>65-69</td>
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<td>90-94</td>
<td>232</td>
</tr>
<tr>
<td>95-100</td>
<td>35</td>
</tr>
</tbody>
</table>

High School Average
By the end of the year:
~5 failed and ~15 on probation

<table>
<thead>
<tr>
<th># of Students</th>
<th>&lt;50</th>
<th>50-54</th>
<th>55-59</th>
<th>60-64</th>
<th>65-69</th>
<th>70-74</th>
<th>75-79</th>
<th>80-84</th>
<th>85-89</th>
<th>90-94</th>
<th>95-100</th>
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</thead>
<tbody>
<tr>
<td>HS Average</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>258</td>
<td>232</td>
<td>35</td>
</tr>
<tr>
<td>FirstYR</td>
<td>10</td>
<td>6</td>
<td>17</td>
<td>64</td>
<td>112</td>
<td>135</td>
<td>132</td>
<td>100</td>
<td>45</td>
<td>13</td>
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<tr>
<td>Grad</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>42</td>
<td>89</td>
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<td>151</td>
<td>113</td>
<td>58</td>
<td>16</td>
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</table>
Average Working Hours in a Typical Week in Fall Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Contact (hrs/wk)</th>
<th>Outside (hrs/wk)</th>
<th>Total (hrs/wk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APSC 100</td>
<td>7*</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>(APSC 100 M1)</td>
<td>(3)*</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>(APSC 100 M2)</td>
<td>(3)*</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>APSC-111</td>
<td>3.5</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>APSC-131</td>
<td>3.5</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>APSC-151</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>APSC-161</td>
<td>3.5</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>APSC-171</td>
<td>3.5</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>28</strong></td>
<td><strong>28</strong></td>
<td><strong>28</strong></td>
<td><strong>56</strong></td>
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</tbody>
</table>

*estimates – full year course
<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30-8:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8:30-9:30</td>
<td>APSC 161 Lecture</td>
<td></td>
<td>APSC 171 Tutorial</td>
<td>APSC 151 Lab</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9:30-10:30</td>
<td></td>
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<td></td>
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<td></td>
<td>APSC 131 Tutorial</td>
<td>gym</td>
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<td>10:30-11:30</td>
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<td></td>
<td></td>
<td></td>
<td>Lunch</td>
<td>APSC 100 Lab</td>
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<tr>
<td>11:30-12:30</td>
<td>APSC 151 Lecture</td>
<td></td>
<td>APSC 171 Lecture</td>
<td>APSC 100 Lab</td>
<td>APSC 161 Lab</td>
<td>gym</td>
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</tr>
<tr>
<td>12:30-1:30</td>
<td>APSC 171 Lecture</td>
<td>Lunch</td>
<td>APSC 151 Lecture</td>
<td>APSC 100 Lab</td>
<td>APSC 161 Lab</td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:30-2:30</td>
<td>lunch</td>
<td>APSC 111 Lecture</td>
<td>APSC 100 Lecture</td>
<td>APSC 171 Lecture</td>
<td>APSC 161 Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:30-3:30</td>
<td>APSC 111 Lecture</td>
<td>APSC 131 Lecture</td>
<td>APSC 161 Lecture</td>
<td>APSC 151 Lecture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:30-4:30</td>
<td>APSC 131 Lecture</td>
<td>APSC 100 Tutorial</td>
<td>APSC 111 Tutorial</td>
<td>APSC 111 Lecture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:30-5:30</td>
<td>APSC 100 Tutorial</td>
<td></td>
<td>APSC 131 Lecture</td>
<td></td>
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<td>5:30-6:30</td>
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<tr>
<td>6:30-7:30</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7:30-8:30</td>
<td>APSC 111 Lecture</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8:30-9:30</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9:30-10:30</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10:30-11:30</td>
<td>REVIEW</td>
<td></td>
<td></td>
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<tr>
<td>11:30-12:30</td>
<td>REVIEW 10 MINS EACH OF TODAYS SUBJECTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Highly Effective Learning Techniques

Practice testing: repeatedly solving problems and testing yourself is one of the most effective learning strategies.

Distributed practice: distributing the studying and practice problems over time is much more effective than cramming.

Interleaved practice: better to interleave studying of different subjects than to exclusively focus on one at a time.

Overall Hours Worked Outside Class

- 60 or greater: 0 responses
- 50 to 59: 50 responses
- 40 to 49: 100 responses
- 30 to 39: 150 responses
- 20 to 29: 200 responses
- 10 to 19: 250 responses
- 0 to 9: 300 responses
Working Time

I'm struggling to keep up with everything. I'm feeling comfortable – this is not much different from last year. More hectic than last year, but I'm keeping up ok so far.

I'm very worried and wondering if I'll be able to make it through the semester.
Computers and Calculators

1. Have a laptop.
2. Don’t have a laptop, but have a desktop computer.
3. Have a tablet, NOT desktop or laptop.
4. Don’t have a computer.

We strongly recommend having a laptop. See the website for specific recommendations.

Need: Casio 991 Calculator. Smartphones will be piloted too!
First Year Software

- MATLAB
- Solid Edge
- Microsoft Office
- C Programming environment

Solid Edge is not available on Macs, but it can be used with Boot Camp.

Student’s Primary Operating System (2011)

- 67% Windows
- 32% Mac
- 1% Linux
- 0% Other

http://engineering.queensu.ca/Current-Students/First-Year-Studies/ComputinginEngineering.html
Incoming Expectations

Students need to be able to use Microsoft Word and Excel:

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

A Microsoft Word/Excel Assignment Will Be Sent Out!

http://engineering.queensu.ca/Current-Students/First-Year-Studies/excel-word-video-tutorial.html
Incoming Student Survey

Two topics:
• Weaknesses in High School Preparation (e.g. strikes, long term illness, etc.)
• Programming Proficiency

The data from this will be helpful to us in planning for September. Currently about 1/3 of students have responded.
Challenge Exams

• Those with advanced knowledge and skills are welcome to write our challenge exams, allowing exemption from most first year courses.

• Challenge exams held during Orientation Week.
Welcome to ENGINEERING!

engineering.first.year@queensu.ca
engineering.queensu.ca