Welcome to Engineering at Brown University!

Last updated: June 19th 2013

This document is intended for anyone who is considering Engineering. We hope to explain a few aspects of the program that are particularly important during your first semester at Brown. If you have any questions, hopefully this will help to answer them.

First Meeting with your Engineering advisor

If you are interested at all in engineering, you should have been assigned an advisor who is a member of the Engineering faculty.

The first advising meeting for all students interested in Engineering is on Tuesday Sept 3rd at 9:30 AM in Barus and Holley Room 166. You will meet your academic advisor at this time and schedule a time for later during the day to discuss with him/her your class selection for the semester.

where you will meet with your advisor immediately following this meeting. If, for some reason, you have been assigned an advisor is not an Engineering professor, please contact Professor Silverman (Harvey_Silverman@brown.edu) so that he can connect you with an engineering advisor.

First meeting of ENGN 0030

The first meeting for ENGN 0030 is on Wednesday September 4th at 9am. There are five sections and each section has its own assigned classroom. You will be able to change sections during the first week or two of classes to accommodate different class schedules.

Rosh Hashanah 2013

This year the Jewish Holiday of Rosh Hashanah falls right at the start of the semester, beginning on Wednesday evening, Sept 4th. We will hold the first ENGN 0030 meeting on Wednesday morning. There will be no class on Thursday (the first day of Rosh Hashanah). The second class meeting will be on Friday Sept 6th. This is a “Grand Lecture” and there should be no problem if you miss it due to Rosh Hashanah. The class will be taped and you can watch it at some later time over a web-cast. If you have any concerns in this regard, please contact Prof Haberstroh: Karen_Haberstroh@brown.edu

Frequently Asked Questions about the Engineering curriculum:

Every student comes to Brown with different preparation, and the first thing to say is that there are many ways to engage the engineering curriculum. If you are confused – don’t worry! Contact your faculty advisor and he/she will be able to help you sort things out.

What is ENGN 0030?

This is an Introduction to Engineering, the first course in the Engineering core curriculum and is required of all engineering concentrators. The course includes topics in Statics, Optimization and Design as well as introductions to different areas of Engineering, professional ethics and social
responsibility. In addition to First-Year students considering a concentration in Engineering, ENGN 0030 is taken by students interested in the Entrepreneurship curriculum as well as students just curious about Engineering and Design. Students should be enrolled in MATH 0100 or higher.

The class is divided into five distinct sections. The five sections meet at the following times:

- **S01 Mon, Wed 9 - 9:50am and Th 9:00 - 10:20am**, Prof. Karen Haberstroh
- **S02 Mon, Wed 9 - 9:50am and Tu 2:30 – 3:50pm**, Prof. Pedro Felzenszwalb
- **S03 Mon, Wed 9 - 9:50am and Tu 9:00 - 10:20am**, Prof. Clyde Briant
- **S04 Mon, Wed 9 - 9:50am and Th 2:30 – 3:50pm**, Prof. Kenny Breuer (Advanced Section)
- **S05 Mon, Wed 9 - 9:50am and Th 4:00 – 5:20pm**, Prof. Huajian Gao

In addition all the sections meet together as a unified community in the “Grand Lecture” every Friday at 9am in Salomon 001. You should choose a section based on your course schedule. Each section covers the same material, but meets independently with a different professor who will run the class with his/her own style. However, there is a lot of overlap between sections: weekly homework assignments, the midterm and final exams, the labs, and the final design project are the same across all sections, and so students can collaborate and study with their friends from any section. Please note that due to size limitations of the classrooms, the sections have limited enrollment (roughly 50 people maximum in each section).

**Advanced Section of ENGN 0030**

One of the sections (S04, with Professor Breuer) is designated as “advanced”. This is for students with stronger physics backgrounds – it will go through the core material at a faster pace, leaving time for additional engineering topics. Eligibility for this advanced section is based on

(a) scoring 4 or 5 on any Physics AP (Mechanics) in high school, or

(b) permission from the section instructor (Professor Breuer).

Note that the advanced section has the same homework, projects and exams as the “regular” sections.

If you have questions about the Advanced Section, please contact Professor Breuer: kbreuer@brown.edu

**What MATH course should I take?**

By the time you finish your Sc.B. in Engineering, you will need to take four math classes above the level of MATH 0100 - the exact four depends on your high school background in math and your specific concentration. There is an excellent series of guidelines provided by the Math Department (http://www.math.brown.edu/~calcplacement/), which you should consult, to see what math course is appropriate in your first semester based on your level of preparation. If you have a reasonably good math background, we highly recommend taking MATH 0190 in the fall and MATH 0200 in the spring – this is the standard calculus preparation for science and engineering concentrators. If you have a 4 or 5 on the Calculus BC exam, you can place out of MATH 0190, and go straight on to MATH 0200. Students who have taken Multivariable Calculus in High school should discuss their math placement with their advisor. If your preparation from high school is not as strong, MATH 0100 might be for you. This course goes more slowly than Math 0190, but should adequately prepare you for MATH 0200 in the spring. Registration in Math 0100 is the base co-requirement for ENGN 0030. If, after consulting the Math department guidelines, you feel that you are not ready for MATH 0100 and need to take MATH 0090 in the fall, you should not register for ENGN 0030. You can still complete an Engineering concentration, but you will need to discuss carefully with your advisor regarding how to schedule your engineering classes.

**What about CHEMISTRY?**

CHEM 0330 is required for all Sc.B. Engineering concentrations except Computer Engineering. The class is offered in both the Fall and Spring semesters, and the Chemistry department has an excellent discussion of the introductory chemistry courses.
In short, entrance to CHEM 0330 requires either:
(a) a score of 4 or 5 on the Chemistry AP exam,
(b) successful completion of CHEM 0100, or
(c) a passing score on a chemistry placement evaluation offered during orientation week.

If you need to take the placement evaluation, we strongly recommend that you do some review during orientation week. If you do not pass the CHEM 0330 placement exam, don’t worry! You have several options: (a) if you did take a reasonably strong course in Chemistry in high school, you can review that material, take the placement exam again during the January vacation and take CHEM 0330 in the Spring semester. (b) you can take CHEM 0100 in the Fall, and then take CHEM 0330 in the Spring.

What about Biology?
Many Engineering students are interested in studying both Engineering and Biology or Neuroscience. Some students are trying to decide between the two courses of study, or planning an Engineering degree that satisfies Pre-Med requirements. Both Biomedical Engineering and Chemical and Biochemical Engineering require at least one biology class. The introductory classes are usually Neuroscience 0100 (offered in the Fall) or BIOL 0200 (offered in the Spring). A high score in AP Biology usually allows you to place out of BIOL 0200. Make sure you discuss this carefully with your advisor to ensure that you prepare correctly, leave yourself maximum flexibility, and preferably are not registered for a semester filled with only heavy Math and Science courses.

What kind of programming requirement does Engineering have?

Demonstrated proficiency in programming is required of all Sc.B. engineering concentrators. Many of the computing skills are taught within the Engineering core curriculum, in which you will be taught to use scientific and engineering software such as MATLAB, Mathematica, etc. Most of the Engineering concentrations (with the exceptions of Biomedical Engineering and Chemical & Biochemical Engineering) also require a course in scientific programming, which can be satisfied by taking CSCI 0040 (offered in the Spring) CSCI 0150 (required for Computer Engineering, offered in the Fall) or AMPA 0160 (offered in the Spring).

Should I take five classes?
We say no – college is a new and often confusing experience. We strongly advise that you not give yourself too heavy of an academic workload during this very busy and exciting period of adjustment. Don’t worry; there will be time in the future to take all the classes that you want!

Can I join the Engineering curriculum after the Freshman year?
Absolutely! Even if you don’t take ENGN 0030 and/or ENGN 0040, it is possible to get an Engineering degree. You can take those classes after the Freshman year, and if you have taken some Physics courses, those can often be substituted (check with your advisor – it’s not automatic!). Be aware, however, that your choice of classes is a bit tricky, because every Engineering student must demonstrate a very specific blend of Science, Math, Engineering and Design in order to receive an ABET-Accredited Engineering degree. Our degree programs are carefully designed to meet these criteria. We will try as hard as possible to allow students to be flexible, but you should consult carefully with your faculty advisor to make sure that your choice of courses is appropriate.

Sample first-semester class selections
Below, we present a few “typical” first-semester course options. These are just templates and there are many more possible combinations depending on your interests and your background. More detailed information can be found in the Engineering Program Guide.
(http://brown.edu/academics/engineering/content/program-guide) and by speaking with your advisor. The classes highlighted in bold represent deviations from the baseline selection of courses.

<table>
<thead>
<tr>
<th>Course Combination</th>
<th>Description</th>
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<tbody>
<tr>
<td>MATH 0190 CHEM 0330 ENGN 0030 -- elective --</td>
<td>This is the “baseline” for students interested in Engineering. Students who are interested in Computer Engineering need not take CHEM0330, and can take a computer science course instead (CSCI 0150 or 1070).</td>
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<tr>
<td>MATH 0100 CHEM 0330 ENGN 0030 -- elective --</td>
<td>This is for students who have a weaker math background. Successful completion of MATH 0100 prepares the student to register for MATH 0200 in the spring semester and be fully “on-track” in math.</td>
</tr>
<tr>
<td>MATH 0190 CHEM 0100 ENGN 0030 -- elective --</td>
<td>This is for students who don’t have the chemistry background to enroll in CHEM0330. They will need to take CHEM0330 in the Spring.</td>
</tr>
<tr>
<td>MATH 0200 CHEM 0330 ENGN 0030 -- elective --</td>
<td>Students with advanced placement in Math can move directly into MATH 0200, this will give more flexibility in future semesters and is encouraged if the student has the right background</td>
</tr>
<tr>
<td>MATH 0190 CSCI 0150 ENGN 0030 -- elective --</td>
<td>Some students take this option so that they can take this version of the computing class. You can still take CHEM0330 in the spring if it’s needed for your concentration.</td>
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There are many other possible options depending on your interests and preparation – don’t be afraid to discuss them with your advisor.

**People**

There are many people who you might need to talk to, here is the contact info for just some of them:

- Dean of Engineering, **Prof. Larry Larson**
- Associate Dean for Academic Programs, **Prof. Kenny Breuer**
- Director of Undergraduate Programs, **Prof. Harvey Silverman**
- Lead instructor for ENGN 0030, **Prof. Karen Haberstroh**
- Manager for Student Affairs, **Ms. Chantee Weah**