Undergraduate Engineering Stats
(as of Spring 2023)

<table>
<thead>
<tr>
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<th>BE/BME</th>
<th>EE</th>
<th>ESE</th>
<th>ME</th>
</tr>
</thead>
<tbody>
<tr>
<td># Concentrators</td>
<td>104</td>
<td>43</td>
<td>35</td>
<td>109</td>
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<tr>
<td>% SB (vs. AB)</td>
<td>43%</td>
<td>79%</td>
<td>54%</td>
<td>88%</td>
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Where have our recent graduates gone?

A few examples of where recent alumni are currently:

- Graduate School: 22%
- Work Full Time: 61%
- Service / Travel / Other: 17%

Bioengineering
At the intersection of life and physical sciences, biomedical engineers apply principles of engineering to understand and model living systems and design novel therapies to improve human health.

Electrical Engineering
Covers a range of research areas from devices to systems, offering ample research opportunities, both theoretical and experimental, at the forefront of the field and its interdisciplinary applications.

Environmental Science and Engineering
To understand, predict, and respond to natural and human-induced environmental change, environmental scientists and engineers provide technical solutions and advance innovations in environmental measurements, modeling, and control.

Mechanical Engineering
Mechanical engineering uses the principles of physics and materials science for the analysis and design of mechanical and thermal systems.

You’re invited to learn more!

Talk to our engineering advisors:

- Bioengineering/Biomedical Engineering:
  - Linsey Moyer
  - lmoyer@seas.harvard.edu

- Electrical Engineering:
  - Chris Lombardo
  - lombardo@seas.harvard.edu

- Environmental Science & Engineering:
  - Bryan Yoon
  - byoon@seas.harvard.edu

- Mechanical Engineering:
  - Seymur Hasanov
  - shasanov@seas.harvard.edu

Learn more on the web: www.seas.harvard.edu
Frequently asked questions

- What’s the difference between Bachelor of Arts (A.B.) and Bachelor of Science (S.B.)?
  - AB: 14-16 courses, more flexible requirements, can do research thesis, can do joint concentration
  - SB: 20 courses, engineering design courses, including individual capstone design project in ES100 (this is a required thesis), ABET-accredited (for professional licensure)

- How can I get involved in research?
  - Term-time: SEAS labs welcome undergraduates to work on research projects during the term
  - Can do research by credit by taking ES 91r
  - Can find a SEAS lab by attending the SEAS Research Labs event in Nov. and/or March.
  - During summer: Students regularly join SEAS labs with funding through PRISE, HCRP, HUCE
  - Many students participate in research at other universities through NSF REU programs

- What kinds of internships can I do?
  - Research internships are available through SEAS and national labs. See above.
  - Industry internships are available and can be found by attending SEAS career fairs or talking to the SEAS Experiential Learning Director, Keith Karasek (kkarasek@seas.harvard.edu)

- Where do I start?
  - Start taking math (according to placement) and science in your first year
  - Talk to a concentration advisor (ADUS) in any of our fields to chat about your options
  - Take one of our introductory courses (see below)
  - Join a SEAS club (HCES, EWB, HURC, etc…)

- Tips for all students:
  - First year: At least two courses toward the concentration should be taken each term
  - Sophomore year: Generally, three courses toward the concentration should be taken each term
  - Foundational math, physics, science, and gateway courses generally count toward any of the engineering concentrations
  - Students have the flexibility to switch between programs through sophomore year
  - Foundational Math: Students should start math fall of their first year according to their placement (i.e., start at Math Ma, 1a, 1b, or 21a) and continue each semester until completion of the 21a/b series, which is required of all students. SB students starting in Math 1b and beyond will need to take additional advanced math courses beyond foundational math.
  - Physics: Students should complete the physics series by spring of sophomore year. Typical sequences are:
    - Spring first year (PS 11a or Physics 15a) then fall sophomore year (PS 12b or Physics 15b)
    - Fall sophomore year (Physics 15a or AP 50a) then spring sophomore year (Physics 15b or AP 50b)
  - Life Science/Chemistry/Other Science: Students should take the appropriate course relevant to their discipline (see chart below).

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### Gateway Courses

- Designed for first-years and sophomores

- **Electrical**
  - ES 50 (Spr)

- **Mechanical**
  - ES 51 (Fall,Spr)

- **Environmental**
  - ESE 6 (Spr)

- **Bio/biomedical**
  - ES 53 (Fall)

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### Course sequences and FAQs

- Investigating Mechanisms of Chemotherapy Resistance in Quiescent (G0) Cancer Cells
- Optimizing the Automatic Release of Water for Lawn Irrigation with Household Rainwater Harvesting
- Engineering a Biomimetic Adventitia to Model Fibrosis in a Tissue-Engineered Blood Vessel