Electrical Engineering – Class of 2022 (131 credits)

Freshman 1
- CAS MA 123: Calculus I (4 credits)
- CAS CH 131: Gen Chem Eng (4 credits)
- ENG EK 100: Freshman Seminar (4 credits)
- ENG EK 125: Program for Engs (4 credits)
- CAS WR 120: Writing Seminar FYW (4 credits)

Freshman 2
- CAS MA 124: Calculus II (4 credits)
- CAS PY 211: Physics I (4 credits)
- ENG EK 131: Intro to Eng (2 credits)
- ENG EK 103: Comp Lin Alg (3 credits)
- CAS WR 15x: Writing & Res WRI; RIL (4 credits)

Sophomore 1
- CAS MA 225: Multivar Calculus (4 credits)
- CAS PY 212: Physics II (4 credits)
- ENG EK 307: Electric Circuits (4 credits)
- ENG EK 210: Intro Eng Des TWC (2 credits)
- Hub Elective (4 credits)

Sophomore 2
- CAS MA 226: Diff Equ (4 credits)
- CAS PY 313: Modern Physics (4 credits)
- ENG EK 301: Eng Mechanics (4 credits)
- Hub Elective (4 credits)
- Hub Elective (4 credits)

Junior 1
- ENG EC 455: Electromag Sys I (4 credits)
- ENG EC 401: Signals & Systms (4 credits)
- ENG EC 410: Intro Electronics (4 credits)
- ENG EC 311: Intro Logic Des (4 credits)

Junior 2
- ENG EK 381: Prob, Stats & DS (4 credits)
- EE Core Elective (4 credits)
- EE Core Elective (4 credits)
- EE Core Elective (4 credits)

Senior 1
- Computer Elective (4 credits)
- Technical Elective (4 credits)
- ENG EC 463: Senior Design I WIN;DME;RIL (4 credits)
- Hub Elective (4 credits)

Senior 2
- Technical Elective (4 credits)
- Technical Elective (4 credits)
- ENG EC 464: Senior Design II WIN;OSC (4 credits)
- Hub Elective (4 credits)

Notes:
- Grey box: = either semester
- = prerequisite; = corequisite
- Students planning to study abroad sophomore 2 should take EK 301 in sophomore 1.
- Students must complete 48 credits of upper-division program coursework (not including Hub or writing).
- See back for Hub Unit Legend

Hub Electives: must include all Hub areas below to fulfill degree requirements
- 1. One unit Philosophical Inquiry & Life’s Meanings (PLM)
- 2. One unit Aesthetic Exploration (AEX)
- 3. One unit Historical Consciousness (HCO)
- 4. One unit Social Inquiry (SO1 or SO2)
- 5. One unit Individual & Community (IIC)
- 6. First unit Global Citizenship & Intercultural Literacy (GCI)
- 7. Second unit Global Citizenship & Intercultural Literacy (GCI)
- 8. One unit Ethical Reasoning (ETR)
- Total of at least 16 credits

6/10/2020
**REQUIREMENTS**

Electrical Engineering majors are required to complete a minimum of 131 credits as detailed on the Program Planning Sheet on the other side of this page.

**HUB ELECTIVES**

All students are required to complete a total of 26 Hub units. Eighteen of these Hub units are included in courses required for the EE BS degree. The remaining eight Hub units must be satisfied through four (or more) Hub Electives that incorporate the following seven Hub areas: Philosophical Inquiry; Aesthetic Exploration; Historical Consciousness; Social Inquiry; Individual in Community; Ethical Reasoning; Global Citizenship & Intercultural Literacy (2X). Lists of courses that fulfill combinations of these Hub units are at: [www.bu.edu/eng/current-students/ugrad/requirements/hub-electives/](http://www.bu.edu/eng/current-students/ugrad/requirements/hub-electives/)

**EE CORE ELECTIVES**

Electrical Engineering majors complete three EE Core Electives chosen from the courses listed in the Systems, Electronics and Electrophysics areas. Courses must be selected from at least two of the three areas, and no more than two courses can be from any single area:

### SYSTEMS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG EC 402</td>
<td>Control Systems</td>
</tr>
<tr>
<td>ENG EC 414</td>
<td>Machine Learning</td>
</tr>
<tr>
<td>ENG EC 415</td>
<td>Software Radios</td>
</tr>
<tr>
<td>ENG EC 501</td>
<td>Dynamic System Theory</td>
</tr>
<tr>
<td>ENG EC 503</td>
<td>Intro to Learning from Data</td>
</tr>
<tr>
<td>ENG EC 505</td>
<td>Stochastic Processes</td>
</tr>
</tbody>
</table>

### ELECTRONICS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG EC 412</td>
<td>Analog Electronics</td>
</tr>
<tr>
<td>ENG EC 417</td>
<td>Electric Energy Systems</td>
</tr>
<tr>
<td>ENG EC 571</td>
<td>Digital VLSI Circuit Design</td>
</tr>
</tbody>
</table>

### ELECTROPHYSICS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG EC 417</td>
<td>Electric Energy Systems</td>
</tr>
<tr>
<td>ENG EC 456</td>
<td>Electromagnetic Systems II</td>
</tr>
<tr>
<td>ENG EC 471</td>
<td>Physics of Semiconductor Devices</td>
</tr>
<tr>
<td>ENG EC 543</td>
<td>Sustainable Power Systems</td>
</tr>
<tr>
<td>ENG EC 555</td>
<td>Intro to Bio Optics</td>
</tr>
<tr>
<td>ENG EC 556</td>
<td>Optical Spectroscopic Imaging</td>
</tr>
<tr>
<td>ENG EC 560</td>
<td>Intro to Photonics</td>
</tr>
</tbody>
</table>

### COMPUTER ELECTIVES

Electrical Engineering majors complete one Computer Elective from the following list:

- ENG EC 327 Intro Software Engineering
- ENG EC 413 Computer Organization
- ENG EC 441 Introduction to Computer Networking

### TECHNICAL ELECTIVES

Electrical Engineering majors complete three Technical Elective courses (12 credits) from the following list:

Acceptable courses include all EC and ENG BE 209 courses. Additionally, all ENG BE, EK and ME courses at the 300-level and above, except for 600-level courses, are acceptable as Technical Electives; no more than 4 credits of ENG EC 451 can be used.

- CAS AS 414 Solar and Space Physics
- CAS CS 440 Intro to Artificial Intelligence
- CAS CS 480 Introduction to Computer Graphics
- CAS CS 585 Image and Video Computing
- CAS MA 511 Introduction to Analysis

**Hub Unit Legend:**

<table>
<thead>
<tr>
<th>QR1 = Quantitative Reasoning 1</th>
<th>WRI = Writing, Research &amp; Inquiry</th>
<th>RIL = Research and Information Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>QR2 = Quantitative Reasoning 2</td>
<td>WIN = Writing-Intensive Course</td>
<td>TWC = Teamwork/Collaboration</td>
</tr>
<tr>
<td>S1 = Scientific Reasoning 1</td>
<td>OSC = Oral and/or Signed Communication</td>
<td>CRI = Creativity/Innovation</td>
</tr>
<tr>
<td>S2 = Scientific Reasoning 2</td>
<td>DME = Digital/Multimedia Expression</td>
<td></td>
</tr>
<tr>
<td>FYW = First-Year Writing Seminar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

For each of the following sets of courses, only one course can be taken for credit in each set due to the overlap of material:

1. ENG ME 403, ENG ME 404, ENG EC 402, ENG BE 404
2. ENG ME 303, ENG BE 436
3. ENG KE 102, ENG KE 103, ENG CS 142, ENG CS 242
4. ENG BS 403, ENG EC 401
5. ENG ME 366, ENG EC 381, ENG CS 381, ENG CS 581
6. ENG ME 460, ENG ME 560
7. ENG KE 156, ENG ME 358
8. ENG ME 357, ENG ME 359

*indicates course no longer offered