Electrical Engineering – Class of 2023 (131 credits)

Total of at least 16 credits

Freshman 1
- CAS MA 123 Calculus I QR2 4

Freshman 2
- CAS MA 124 Calculus II QR2 4
- CAS PY 211 Physics I SI1, QR1, CRT; TWC 4

Sophomore 1
- CAS MA 225 Multivar Calculus QR2, CRT 4
- CAS PY 212 Physics II SI2, QR2, CRT; TWC 4

Sophomore 2
- CAS MA 226 Diff Equ CRT 4
- CAS PY 313 Modern Physics SI2, CRT 4

Junior 1
- ENG EC 455 Electromag Sys I 4
- ENG EC 401 Signals & Systms 4

Junior 2
- ENG EC 410 Intro Electronics 4
- ENG EC 401 Intro Electronics 4

Senior 1
- ENG EC 381 Prob, Stats & DS QR2, CRT 4
- EE Core Elective 4

Senior 2
- TECH Elective 4
- EE Core Elective 4

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
**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). Boston University’s Course Search tool can be used to search for courses by School/College, number of credits and/or specific Hub units [https://www.bu.edu/phpbin/course-search/](https://www.bu.edu/phpbin/course-search/).

**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**
- ENG EC 402 Control Systems
- ENG EC 414 Machine Learning
- ENG EC 415 Software Radios
- ENG EC 501 Dynamic System Theory
- ENG EC 503 Intro to Learning from Data
- ENG EC 505 Stochastic Processes

**ELECTRONICS**
- ENG EC 412 Analog Electronics
- ENG EC 417 Electric Energy Systems
- ENG EC 571 Digital VLSI Circuit Design

**ELECTROPHYSICS**
- ENG EC 417 Electric Energy Systems II
- ENG EC 447 Physics of Semiconductor Devices
- ENG EC 543 Sustainable Power Systems
- ENG EC 555 Intro to Bio Optics
- ENG EC 556 Optical Spectroscopic Imaging
- ENG EC 560 Intro to Photonics

**COMPUTER ELECTIVES**
- 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** courses and **ENG BE 209**.

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.

Approved Courses Outside Engineering that fulfill a Technical Elective:
- 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
- CAS MA 528 Introduction to Modern Geometry
- CAS MA 531 Computability and Logic
- CAS MA 541 Modern Algebra I
- CAS MA 543 Introduction to Stochastic Processes
- CAS PY 452 Quantum Physics 2
- CAS PY 453 Quantum Physics 1
- QST SI 480 The Business of Technology Innovation
- QST SI 482 Technology and its Commercialization

**Hub Unit Legend:**
- **QR1** = Quantitative Reasoning 1
- **QR2** = Quantitative Reasoning 2
- **S1** = Scientific Reasoning 1
- **S2** = Scientific Reasoning 2
- **WRI** = Writing, Research & Inquiry
- **WIN** = Writing-Intensive Course
- **OSC** = Oral and/or Signed Communication
- **DME** = Digital/Multimedia Expression
- **CRT** = Critical Thinking
- **FYW** = First-Year Writing Seminar
- **RIL** = Research and Information Literacy
- **TWC** = Teamwork/Collaboration
- **CRI** = Creativity/Innovation

**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 EK 103, CAS MA 142, CAS MA 242
4. ENG EC 403, ENG EC 401
5. ENG ME 366*, ENG EK 381, CAS MA 381, CAS MA 581
6. ENG ME 460, ENG ME 560

*indicates course no longer offered.