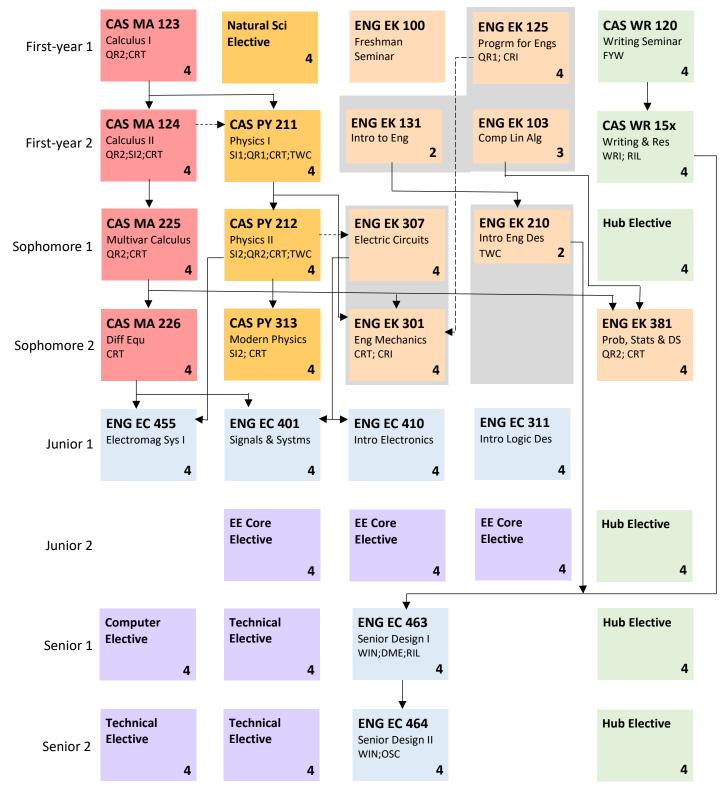
# BU College of Engineering

# Electrical Engineering – Class of 2029 (131 units)

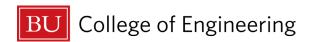


#### Notes

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

# Hub Electives: must include all Hub requirements below to fulfill degree requirements:

- ☐ 1. Philosophical Inquiry & Life's Meanings (PLM)
- ☐ 2. Aesthetic Exploration (AEX)
- ☐ 3. Historical Consciousness (HCO)
- ☐ 4. Social Inquiry (SO1 or SO2)
- ☐ 5. Individual & Community (IIC)
- ☐ 6. First Global Citizenship & Intercultural Literacy (GCI)
- ☐ 7. Second Global Citizenship & Intercultural Literacy (GCI)
- □ 8. Ethical Reasoning (ETR)
- ☐ Total of at least 16 units



# Electrical Engineering (EE)

Class of 2026 - 2029 (131 units)

### **REQUIREMENTS**

Electrical Engineering (EE) majors are required to complete a minimum of 131 units 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 requirements. Eighteen of these Hub requirements are incorporated into courses required for the EE BS degree. The remaining eight Hub requirements 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). Search for courses that fulfill specific combinations of Hub requirements at: https://www.bu.edu/phpbin/course-search/

### NATURAL SCIENCE ELECTIVE EE majors complete one Natural Science Elective (4 units) from the following list:

CAS AS 202: Principles of Astronomy 1 CAS BI 108: Biology 2 CAS CH 131: Gen Chem for the Eng Sci CAS BI 107: Biology 1 CAS CH 101: General Chemistry 1 CAS PY 451: Quantum Physics 1

**EE CORE ELECTIVES** EE majors complete three EE Core Electives (12 units) 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 System ENG EC 508 Wireless Communication ENG EC 523 Deep Learning ENG EC 414 Machine Learning ENG EC 515 Digital Communication ENG EC 524 Optimization Theory & Methods FNG FC 415 Software Radios ENG EC 516 Digital Signals Processing ENG EC 525 Optimization for Machine Learning ENG EC 418 Intro to Reinforcement Learning ENG EC 517 Intro to Information Theory **ENG EC 534 Discrete Stochastic Models** ENG EC 501 Dynamic System Theory ENG EC 519 Speech Processing by Humans & Machn **ENG EC 541 Computer Communication Networks** ENG EC 503 Intro to Learning from Data ENG EC 520 Digital Image Processing & Comm

**ENG EC 522 Computational Optical Imaging** 

**ELECTRONICS** 

**ENG EC 505 Stochastic Processes** 

ENG EC 412 Analog Electronics
ENG EC 580 Analog VLSI Circuit Design
ENG EC 417 Electric Energy Systems
ENG EC 571 Digital VLSI Circuit Design
ENG EC 582 Power Electronics for Energy Systems

#### **ELECTROPHYSICS**

ENG EC 578 Fabrication Tech for Integrated Circuits ENG EC 417 Electric Energy Systems ENG EC 565 Electromagnetic Energy Trans ENG EC 456 Electromagnetic Systems II ENG EC 568 Optical Fibers & Wave Guides ENG EC 579 Nano/microelectronic Device Technology ENG EC 583 Power Electronics for Energy Systems ENG EC 471 Physics of Semiconductor Devices ENG EC 570 Lasers & Applications ENG EC 543 Sustainable Power Systems ENG EC 572 Computational Methods in Mtls Sci ENG EC 585 Quantum ENG & Tech ENG EC 555 Intro to Bio Optics ENG EC 573 Solar Energy Systems ENG EC 591 Photonics Laboratory I **ENG EC 556 Optical Spectroscopic Imaging** ENG EC 574 Physics of Semiconductor Materials ENG EK 481 Intro to Nanotechnology ENG EC 560 Intro to Photonics **ENG EC 575 Semiconductor Devices** 

ENG EC 577 Electronic Optical & Magnetic Prop Mtls

# **COMPUTER ELECTIVES** EE majors complete one Computer Elective (4 units) from the following list:

ENG EC 327 Intro Software Engineering

ENG EC 413 Computer Organization

ENG EC 562 Engineering Optics

ENG EC 441 Introduction to Computer Networking

## TECHNICAL ELECTIVES EE majors complete three Technical Elective courses (12 units) from the following:

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 and EK 409, are acceptable as Technical Electives (no more than 4 units of ENG EC 451 can be used).

# Approved Courses Outside Engineering that fulfill a Technical Elective:

CAS MA 531 Computability and Logic CAS AS 414 Solar and Space Physics No more than two of the following: CAS CS 440 Intro to Artificial Intelligence CAS MA 541 Modern Algebra 1 QST SI 480 The Business of Technology Innovation CAS CS 480 Introduction to Computer Graphics CAS MA 583 Introduction to Stochastic Processes QST SI 482 Technology and its Commercialization CAS CS 585 Image and Video Computing CAS PY 451 Quantum Physics 1 HUB XC 433 D1 Art&Sci Tech Cnsltng (F24 & Sp25) CAS MA 511 Introduction to Analysis CAS PY 452 Quantum Physics 2 HUB CC 433 The Art and Sci of Tech Consulting CAS MA 528 Introduction to Modern Geometry

## **Hub Requirements Legend:**

QR1 = Quantitative Reasoning 1 WRI = Writing, Research & Inquiry RIL = Research and Information Literacy
QR2 = Quantitative Reasoning 2 WIN = Writing-Intensive Course TWC = Teamwork/Collaboration
SI1 = Scientific Reasoning 1 OSC = Oral and/or Signed Communication CRI = Creativity/Innovation
SI2 = Scientific Reasoning 2 DME = Digital/Multimedia Expression

#### Notes

- a) Any requirement satisfied via AP/IB fulfills a maximum of one Hub requirement and students may need to replace missing Hub requirements.
- b) Any requirement satisfied via transfer fulfills zero Hub requirements and students may need to replace missing Hub requirements.
- c) 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:

CRT = Critical Thinking

- (1) ENG ME 403, ENG ME 404, ENG EC 402, ENG BE 404
- (2) ENG ME 303, ENG BE 436
- (3) ENG ME 306, ENG BE 425

FYW = First-Year Writing Seminar

(4) ENG EK 103, CAS MA 242

- (5) ENG BE 403, ENG EC 401
- (6) ENG EK 381. CAS MA 381
- (7) ENG BE 428, ENG BE 478
- (8) CAS PY 313, CAS PY 314, CAS PY321 & 322