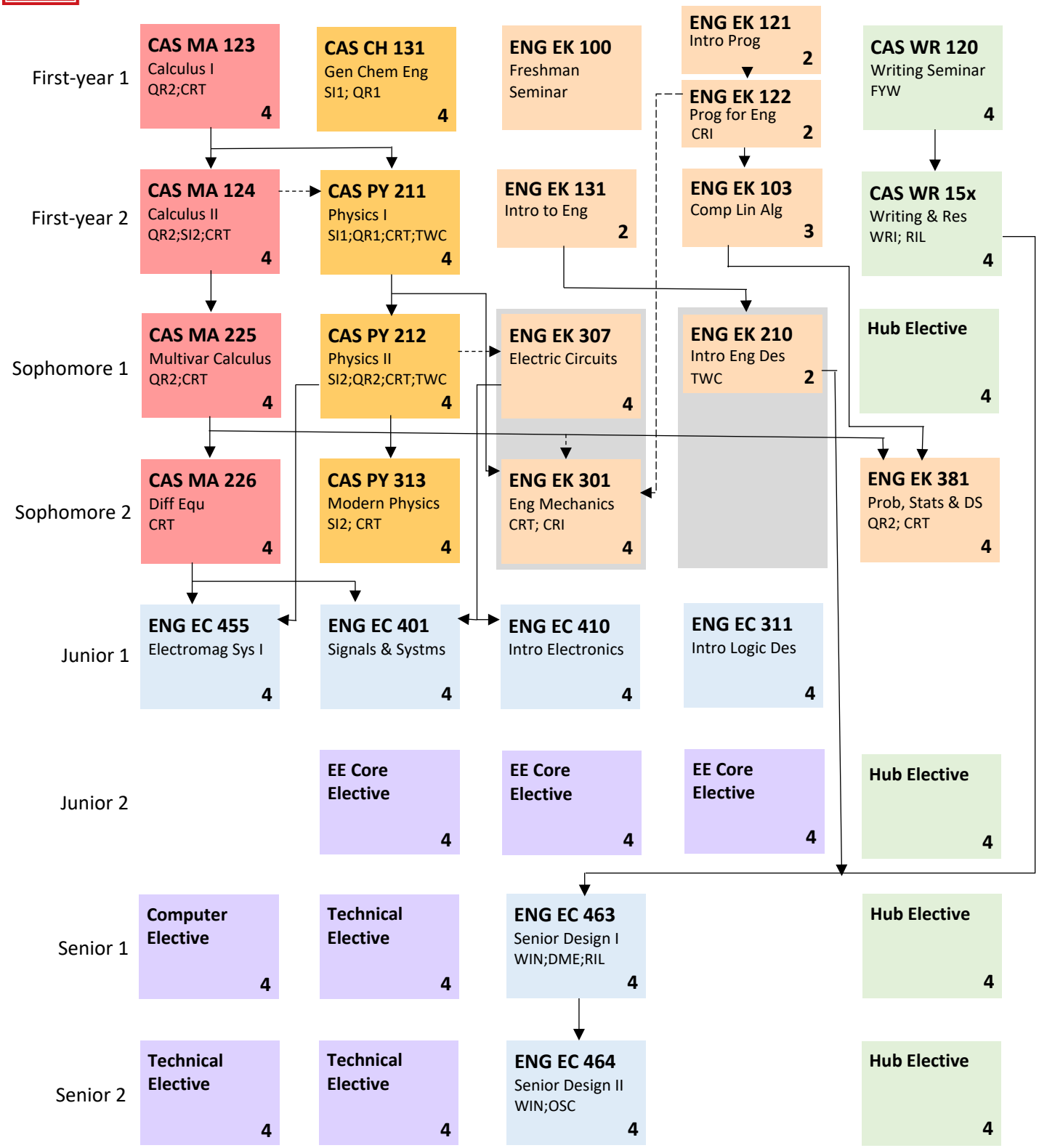
College of Engineering — Electrical Engineering – Class of 2027 (131 units)



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 Unit 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

6/12/2025

BU College of Engineering

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 107: Biology 1
- CAS BI 108: Biology 2
- CAS CH 101: General Chemistry 1
- CAS CH 131: Gen Chem for the Eng Sci
- 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 414 Machine Learning
- ENG EC 415 Software Radios
- ENG EC 418 Intro to Reinforcement Learning
- ENG EC 501 Dynamic System Theory
- ENG EC 503 Intro to Learning from Data
- ENG EC 505 Stochastic Processes
- ENG EC 508 Wireless Communication
- ENG EC 515 Digital Communication
- ENG EC 516 Digital Signals Processing
- ENG EC 517 Intro to Information Theory
- ENG EC 519 Speech Processing by Humans & Machn
- ENG EC 520 Digital Image Processing & Comm
- ENG EC 522 Computational Optical Imaging
- ENG EC 523 Deep Learning
- ENG EC 524 Optimization Theory & Methods
- ENG EC 525 Optimization for Machine Learning
- ENG EC 534 Discrete Stochastic Models
- ENG EC 541 Computer Communication Networks

ELECTRONICS

- ENG EC 412 Analog Electronics
- ENG EC 417 Electric Energy Systems
- ENG EC 571 Digital VLSI Circuit Design
- ENG EC 580 Analog VLSI Circuit Design
- ENG EC 582 RF/Analog IC Design
- ENG EC 583 Power Electronics for Energy Systems

ELECTROPHYSICS

- ENG EC 417 Electric Energy Systems
- ENG EC 456 Electromagnetic Systems II
- ENG EC 471 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
- ENG EC 562 Engineering Optics
- ENG EC 565 Electromagnetic Energy Trans
- ENG EC 568 Optical Fibers & Wave Guides
- ENG EC 570 Lasers & Applications
- ENG EC 572 Computational Methods in Mtls Sci
- ENG EC 573 Solar Energy Systems
- ENG EC 574 Physics of Semiconductor Materials
- ENG EC 575 Semiconductor Devices
- ENG EC 577 Electronic Optical & Magnetic Prop Mtls
- ENG EC 578 Fabrication Tech for Integrated Circuits
- ENG EC 579 Nano/microelectronic Device Technology
- ENG EC 583 Power Electronics for Energy Systems
- ENG EC 585 Quantum ENG & Tech
- ENG EC 591 Photonics Laboratory I
- ENG EK 481 Intro to Nanotechnology

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 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 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 1
- CAS MA 583 Introduction to Stochastic Processes
- CAS PY 451 Quantum Physics 1
- CAS PY 452 Quantum Physics 2

No more than two of the following:

- QST SI 480 The Business of Technology Innovation
- QST SI 482 Technology and its Commercialization
- HUB XC 433 D1 Art&Sci Tech Cnsltng (F24 & Sp25)
- HUB XC 438 The Art and Sci of Tech Consulting

Hub Requirements Legend:

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

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:

(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
(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