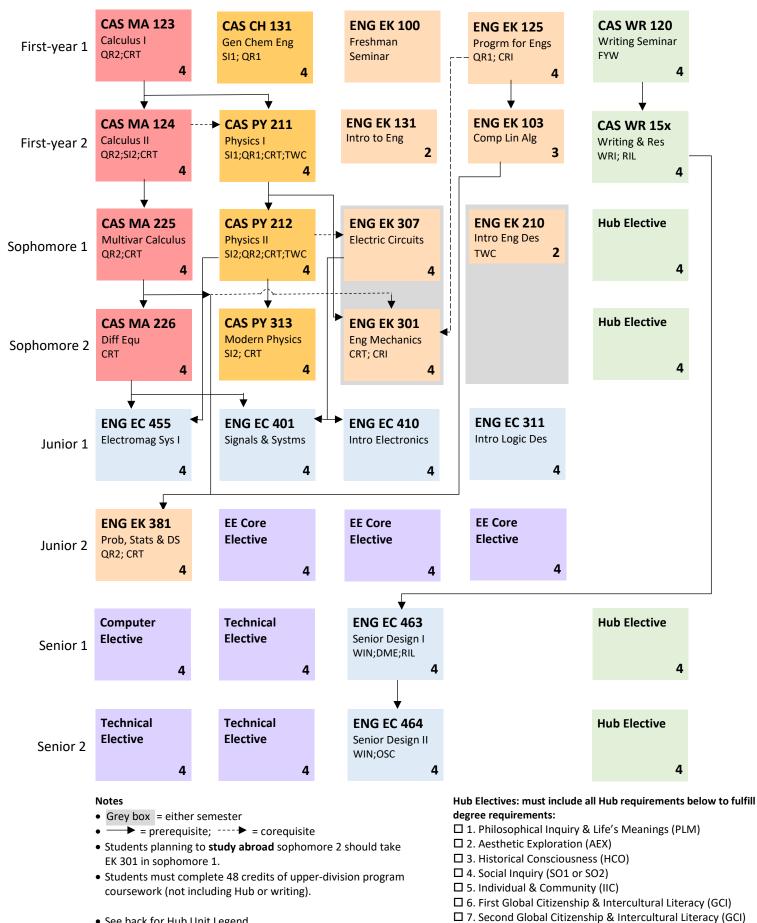
College of Engineering

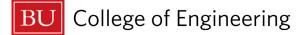
BI

Electrical Engineering – Class of 2025 (131 credits)



See back for Hub Unit Legend

□ 8. Ethical Reasoning (ETR) □ Total of at least 16 credits



Electrical Engineering (EE) Class of 2025 - 2028 (131 credits)

REQUIREMENTS

Electrical Engineering (EE) 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 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 credits) 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

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CAS B	II 107: Biology 1		CAS CH 101: General Chemistry 1	CAS PY 451: Quantum Physics 1	

ENG EC 580 Analog VLSI Circuit Design

ENG EC 582 RF/Analog IC Design

<u>EE CORE ELECTIVES</u> EE majors complete three EE Core Electives (12 credits) 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

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 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 574 Physics of Semiconductor Materials

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 583 Power Electronics for Energy Systems

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

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 591 Photonics Laboratory I ENG EK 481 Intro to Nanotechnology

COMPUTER ELECTIVES EE majors complete one Computer Elective (4 credits) 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 credits) 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 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 1 CAS MA 583 Introduction to Stochastic Processes CAS PY 451 Quantum Physics 1 CAS PY 452 Quantum Physics 2

Hub Unit 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

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 – The Art and Sci of Tech Consulting

RIL = Research and Information Literacy TWC = Teamwork/Collaboration CRI = Creativity/Innovation

Notes:

a) Any requirement satisfied via AP/IB earns a maximum of one Hub requirement and students may need to replace missing Hub requirements. b) Any requirement satisfied via transfer earns 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 142, CAS MA 242
- (5) ENG BE 403, ENG EC 401
- (6) ENG EK 381, CAS MA 381, CAS MA 581