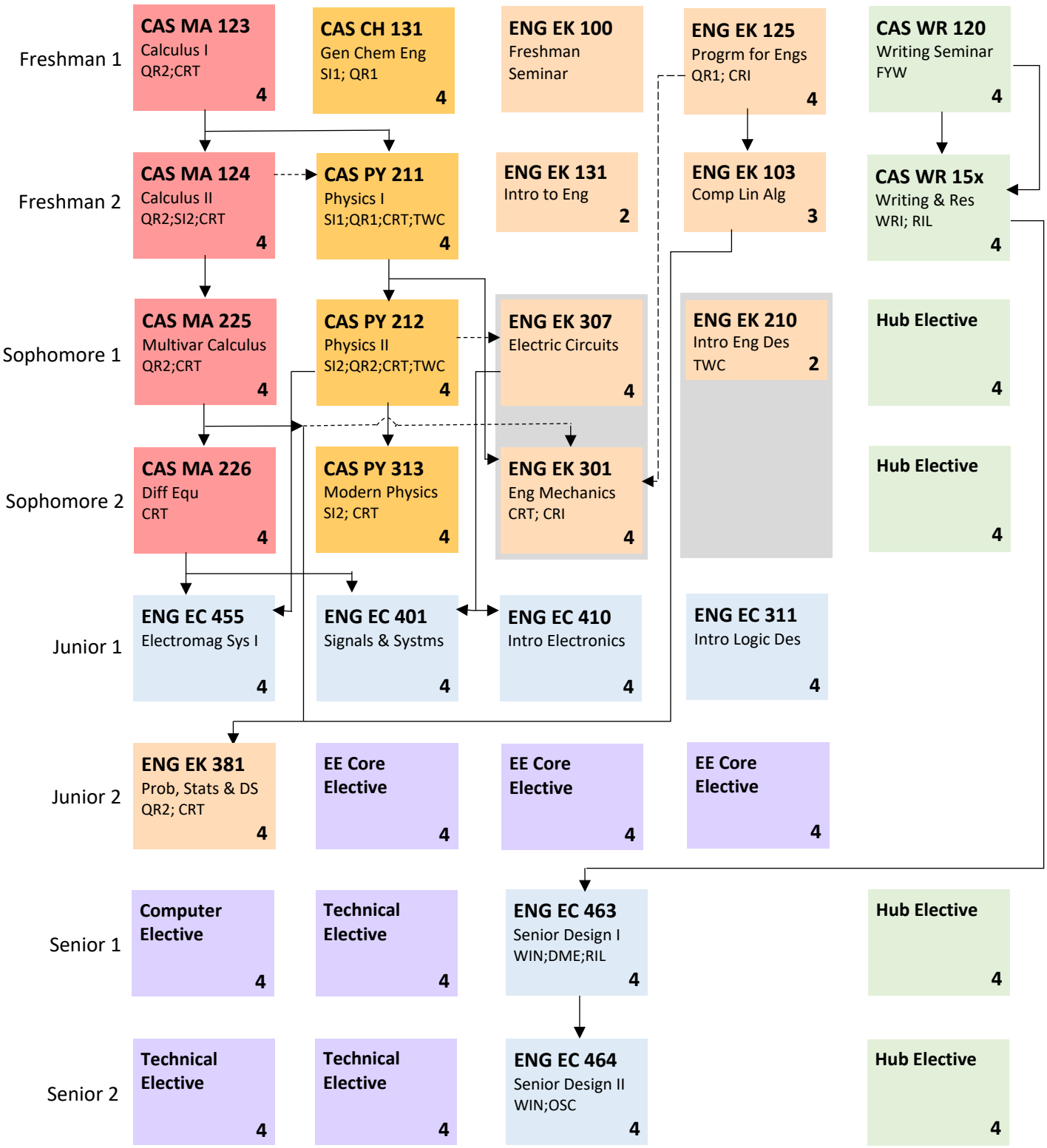
College of Engineering — Electrical Engineering – Class of 2025 (131 credits)



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

6/2/2021

BU College of Engineering

Electrical Engineering

Class of 2022 – 2025 (131 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/.

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
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 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
EMG 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

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

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 BE 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.