Electrical Engineering – 2021 (130 credits)

Freshman 1
- **CAS MA 123** Calculus I 4

Freshman 2
- **CAS MA 124** Calculus II 4
  - **CAS PY 211** Physics I 4

Sophomore 1
- **CAS MA 225** Multivariate Calculus 4
  - **CAS PY 212** Physics II 4

Sophomore 2
- **CAS MA 226** Differential Equations 4
  - **CAS PY 313** Waves & Modern Physics 4

Junior 1
- **ENG EC 455** Electromagnetic Systems I 4
  - **ENG EC 401** Signals & Systems 4

Junior 2
- **ENG EK 381** Prob, Stats & Data Sci 4
  - **Electronics Elective** 4
  - **Systems Elective** 4
  - **Electrophysics Elective** 4

Senior 1
- **Computer Elective** 4
- **Technical Elective** 4
- **ENG EC 463** Senior Design I 4

Senior 2
- **Technical Elective** 4
  - **Technical Elective** 4
  - **ENG EC 464** Senior Design II 4

Notes
- Students planning to study abroad sophomore 2 should take EK 301 in sophomore 1.
- Grey box = either semester
- Students must complete 48 credits of upper-division program coursework (not including social science/humanities or writing).

General Education Electives Checklist
- 1. CAS WR 100
- 2. CAS WR 150
- 3. One Social Science course
- 4. One Humanities course
- 5. One Social Science or Humanities course
- 6. One General Education elective course
- 7. Total of at least 24 credits

11/15/2018
REQUIREMENTS
Electrical Engineering majors are required to complete a minimum of 130 credits as detailed on the Program Planning Sheet on the other side of this page.

GENERAL EDUCATION
For a list of specific courses that satisfy the Social Science, Humanities and General Education Elective, please go to the College of Engineering Undergraduate Requirements website at: http://www.bu.edu/eng/current-students/ugrad/requirements/.

SYSTEMS ELECTIVES
Electrical Engineering majors complete one Systems Elective from the following list:
- ENG EC 402 Control Systems
- ENG EC 414 Machine Learning
- ENG EC 415 Communication Systems
- ENG EC 416 Intro to Signal Processing
- ENG EC 516 Digital Signals Processing

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

ELECTRONICS ELECTIVES
Electrical Engineering majors complete one Electronics Elective course from the following list:
- ENG EC 412 Analog Electronics
- ENG EC 417 Electric Energy Systems
- ENG EC 450 Microprocessors
- ENG EC 471 Physics of Semiconductor Devices
- ENG EC 456 Electromagnetic Systems II
- ENG EC 460 Engineering Optics
- ENG EC 481 Intro to Nanotechnology
- ENG EC 516 Digital Signals Processing
- 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 ELECTIVES
Electrical Engineering majors complete one Electrophysics Elective course from the following list:
- ENG EC 417 Electric Energy Systems
- ENG EC 471 Physics of Semiconductor Devices
- ENG EC 456 Electromagnetic Systems II
- ENG EC 457 Physics of Semiconductor Devices
- ENG EC 471 Physics of Semiconductor Devices
- ENG EC 456 Electromagnetic Systems II
- ENG EC 460 Engineering Optics
- ENG EC 481 Intro to Nanotechnology
- ENG EC 516 Digital Signals Processing
- 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

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.

Pre-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 583 Introduction to Stochastic Processes
- CAS MA 584 Quantum Mechanics
- CAS PY 451 Quantum Physics I
- CAS PY 452 Quantum Physics II
- QST SI 480 The Business of Technology Innovation
- QST SI 482 Technology and its Commercialization

Notes:
For each of the following seven 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 BE 402, ENG EC 402
(2) ENG ME 303, ENG BE 436
(3) ENG ME 501, ENG EC 501
(4) ENG EK 102, ENG EK 103, CAS MA 142, CAS MA 242
(5) ENG BE 401, ENG BE 403, ENG EC 401
(6) ENG ME 366, ENG EC 381, ENG EK 481, ENG BE 200
(7) ENG ME 460, ENG ME 560