Computer Engineering – Class of 2025 (133 credits)

**Freshman 1**
- CAS MA 123 Calculus I (QR2; CRT)
- CAS CH 131 General Chemistry (SI1; QR1)
- ENG EK 100 Freshman Seminar
- ENG EK 125 Program for Engs (QR1; CRI)
- CAS WR 120 Writing Seminar (FYW)

**Freshman 2**
- CAS MA 124 Calculus II (QR2; SI2; CRT)
- CAS PY 211 Physics I (SI1; QR1; CRT; TWC)
- ENG EK 131 Intro to Eng
- ENG EK 103 Comp Lin Alg
- CAS WR 15x Writing & Res (WRI; RIL)

**Sophomore 1**
- CAS MA 225 Multivar Calculus (QR2; CRT)
- CAS PY 212 Physics II (SI2; QR2; CRT; TWC)
- ENG EK 307 Electric Circuits
- ENG EC 327 Intro Softw Eng
- CAS MA 193 Intro Discr Math (CRT)

**Sophomore 2**
- CAS MA 226 Diff Eq (CRT)
- ENG EC 311 Intro Logic Des
- ENG EK 301 Eng Mechanics (CRT; CRI)
- ENG EK 210 Intro Eng Des (TWC)
- ENG EC 330 Appl Alg for Eng

**Junior 1**
- ENG EK 381 Prob, Stats & DS (QR2; CRT)
- ENG EC 413 Comp Organiz
- CE Core Elective
- Hub Elective

**Junior 2**
- EE Breadth Elective
- Computer Eng Elective
- CE Core Elective
- Hub Elective

**Senior 1**
- Computer Eng Elective
- Technical Elective
- ENG EC 463 Senior Design I (WIN; DME; RIL)
- Hub Elective

**Senior 2**
- Technical Elective
- Technical Elective
- ENG EC 464 Senior Design II (WIN; OSC)
- Hub Elective

**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

4/20/2022
Requirements

Computer Engineering (CE) majors are required to complete a minimum of 133 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 CE 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). Search for courses that fulfill specific combinations of Hub units at: https://www.bu.edu/phpbin/course-search/

Core Elective

CE majors complete two Core Electives (8 credits) from the following list:

- ENG EC 401 Signals and Systems
- ENG EC 410 Introduction to Electronics
- ENG EC 410 Introduction to Operating Systems
- ENG EC 441 Introduction to Computer Networking

Computer Engineering Elective

CE majors complete two Computer Engineering Electives (8 credits) from the following list:

- ENG EC 440 Introduction to Operating Systems
- ENG EC 441 Intro to Computer Networking
- ENG EC 444 Smart & Connected Systems
- ENG EC 447 Software Design
- ENG EC 454 Advanced Data Structures
- ENG EC 512 Enterp-Client-Server Softwr Sys Des
- ENG EC 513 Computer Architecture
- ENG EC 521 CyberSecurity
- ENG EC 526 Parallel Prog for High Perf & Big Data
- ENG EC 527 High Perf Prog w/ Multicore & GPUs
- ENG EC 528 Cloud Computing
- ENG EC 530 Software Engineering Principles

EE Breadth Elective

CE majors complete one EE Breadth Elective course (4 credits) from the following list:

- ENG EC 401 Signals and Systems
- ENG EC 410 Control Systems
- ENG EC 410 Intro to Electronics
- ENG EC 412 Analog Electronics
- ENG EC 413 Machine Learning
- ENG EC 415 Software Radios
- ENG EC 417 Electric Energy Systems
- ENG EC 418 Intro to Reinforcement Learning
- ENG EC 455 Electromagnetic Systems I
- ENG EC 464 Electromagnetic Systems II
- ENG EC 471 Physics of Semiconductors Devices
- ENG EC 501 Dynamic System Theory
- ENG EC 503 Introduction to Learning from Data
- ENG EC 505 Stochastic Processes
- ENG EC 508 Wireless Communication

Technical Electives

(see Notes below) CE majors complete three Technical Elective courses (12 credits) from the following:

Any course listed as Computer Engineering Elective

ENG BE 209 and any ENG EC, BE, or ME course at the 300-level or 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 412 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 313/314 Waves and Modern Physics
- 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
- WIN = Writing-Intensive Course
- OSC = Oral and/or Signed Communication
- DME = Digital/Multimedia Expression
- WRI = Writing, Research & Inquiry
- CRT = Critical Thinking
- RRL = Research and Information Literacy
- TWC = Teamwork/Collaboration
- CRI = Creativity/Innovation

Notes:

a) Any requirement satisfied via AP/IB can earn a maximum of one Hub unit and may require students to replace the Hub units missed.
b) Any requirement satisfied via transfer earns zero Hub units and may require students to replace the Hub units missed.
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 EC 103, CAS MA 142, CAS MA 242
5. ENG BE 403, ENG EC 401
6. ENG EC 381, CAS MA 381, CAS MA 581