Computer Engineering – Class of 2024 (133 credits)

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

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

6/10/2020
REQUIREMENTS

Computer Engineering 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). Lists of courses that fulfill combinations of these Hub units are at: www.bu.edu/eng/current-students/ugrad/requirements/hub-electives/

CORE ELECTIVE

Computer Engineering majors complete two Core Electives from the following list:
- ENG EC 401 Signals and Systems
- ENG EC 410 Introduction to Electronics
- ENG EC 411 Introduction to Computer Networking

COMPUTER ENGINEERING ELECTIVE

Computer Engineering majors complete two Computer Eng Elective courses (8 credits) from the following list:
- ENG EC 440 Introduction to Operating Systems
- ENG EC 450 Computer Networks
- ENG EC 457 Advanced Network Security
- ENG EC 460 Introduction to Cybersecurity
- ENG EC 461 Advanced System Security
- ENG EC 504 Advanced Data Structures
- ENG EC 505 Stochastic Processes
- ENG EC 506 Introduction to Learning from Data
- ENG EC 507 Dynamic System Theory
- ENG EC 511 Introduction to Artificial Intelligence
- ENG EC 512 Introduction to Software Engineering
- ENG EC 513 Computer Architecture
- ENG EC 521 CyberSecurity
- ENG EC 522 Computational Optical Imaging
- ENG EC 523 Deep Learning
- ENG EC 524 Optimization Theory and Methods
- ENG EC 525 Advanced Network Security
- 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 529 Applied Cryptography

EE BREADTH ELECTIVE

Computer Engineering majors complete one EE Breadth Elective course from the following list:
- ENG EC 401 Signals and Systems
- ENG EC 402 Control Systems
- ENG EC 410 Intro to Electronics
- ENG EC 412 Analog Electronics
- ENG EC 414 Machine Learning
- ENG EC 415 Software Radios
- ENG EC 417 Electric Energy Systems
- ENG EC 441 Intro to Computer Networking
- ENG EC 444 Smart & Connected Systems
- ENG EC 450 Computer Networks
- ENG EC 457 Advanced Network Security
- ENG EC 460 Introduction to Cybersecurity
- ENG EC 461 Advanced System Security
- ENG EC 462 Digital Communication
- ENG EC 463 Optical Communication
- ENG EC 464 Optimisation Theory and Methods
- ENG EC 465 Electromagnetic Systems
- ENG EC 466 Electromagnetic Systems
- ENG EC 470 Physics of Semiconductor Devices
- ENG EC 471 Physics of Semiconductor Devices
- ENG EC 501 Dynamic System Theory
- ENG EC 502 Advanced Dynamic System Theory
- ENG EC 503 Introduction to Learning from Data
- ENG EC 504 Advanced Data Structures
- ENG EC 505 Stochastic Processes
- ENG EC 506 Electromagnetic Fundamentals
- ENG EC 507 Machine Learning
- ENG EC 508 Wireless Communication
- ENG EC 509 Digital Communication
- ENG EC 510 Optics and Lasers
- ENG EC 511 Introduction to Analysis
- ENG EC 512 Enterp Client-Server Softwr Sys Des
- ENG EC 513 Computer Architecture
- ENG EC 514 Machine Learning
- ENG EC 515 Digital Communication
- ENG EC 516 Digital Signals Processing
- ENG EC 517 Introduction to Embedded Systems
- ENG EC 519 Speech Processing
- ENG EC 520 Digital Image Processing
- ENG EC 522 Computational Optical Imaging
- ENG EC 523 Deep Learning
- ENG EC 524 Optimization Theory and Methods
- ENG EC 525 Advanced Network Security
- 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 529 Applied Cryptography

TECHNICAL ELECTIVES (see Notes below)

Computer Engineering majors complete three Technical Elective courses (12 credits):
- ENG BE 209 and any ENG EC, BE, EK 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 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 MA 593 Introduction to Stochastic Processes
- CAS PY 313/314 Waves and Modern Physics
- CAS PY 451 Quantum Physics 1
- CAS PY 452 Quantum Physics 2
- CAS PY 481 Quantum Physics 3
- 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:
- ENG ME 403, ENG ME 404, ENG EC 402, ENG BE 404
- ENG ME 303, ENG BE 436
- ENG EK 102*, ENG EK 103, CAS MA 142, CAS MA 242
- ENG EC 403, ENG EC 401
- ENG ME 366, ENG EC 381*, ENG EK 381, CAS MA 381, CAS MA 581
- ENG ME 460, ENG ME 560
- ENG EK 156*, ENG ME 358
- ENG ME 357, ENG ME 359*

*indicates course no longer offered.