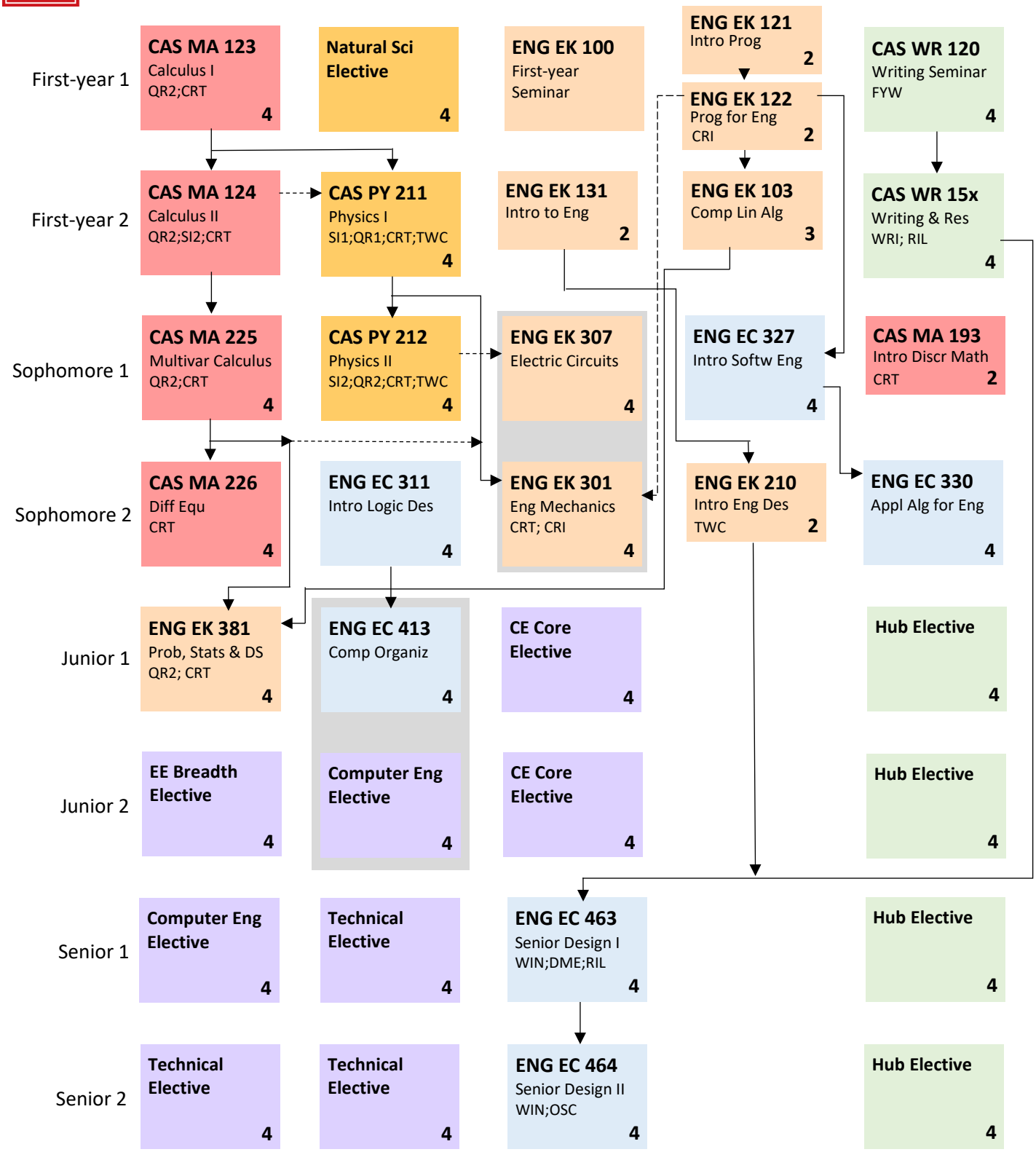
College of Engineering — Computer Engineering – Class of 2028 (133 credits)



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 requirements below to fulfill degree requirements:

- ☐ 1. Philosophical Inquiry & Life's Meanings (PLM)
- ☐ 2. Aesthetic Exploration (AEX)
- ☐ 3. Historical Consciousness (HCO)
- ☐ 4. Social Inquiry (SO1 or SO2)
- ☐ 5. Individual & Community (IIC)
- ☐ 6. First Global Citizenship & Intercultural Literacy (GCI)
- ☐ 7. Second Global Citizenship & Intercultural Literacy (GCI)
- ☐ 8. Ethical Reasoning (ETR)

☐ Total of at least 16 credits

5/31/2024

BU College of Engineering

Computer Engineering (CE)

Class of 2025 – 2028 (133 credits)

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 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

CE majors complete one Natural Science Elective (4 credits) from the following list:

- CAS AS 202: Principles of Astronomy 1
- CAS BI 107: Biology 1
- CAS BI 108: Biology 2
- CAS CH 101: General Chemistry 1
- CAS CH 131: Gen Chem for the Eng Sci
- CAS PY 313 Waves and Modern Physics
- CAS PY 451: Quantum Physics 1

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 440 Introduction to Operating Systems
- ENG EC 441 Introduction to Computer Networking
- ENG EC 444 Smart and Connected Systems

COMPUTER ENGINEERING ELECTIVE

CE majors complete two Computer Engineering Elective courses (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 504 Advanced Data Structures
- ENG EC 512 Enterp Client-Server Softwr Sys Des
- ENG EC 513 Computer Architecture
- ENG EC 518 Robot Learning
- 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
- ENG EC 535 Introduction to Embedded Systems
- ENG EC 541 Computer Communications Networks
- ENG EC 544 Network Physical World
- ENG EC 545 Cyber Physical Systems
- ENG EC 551 Adv Digital Design w/ Verilog & FPGA
- ENG EC 552 Computational Synthetic Biology
- ENG EC 571 Digital VLSI Circuit Design
- CAS CS 320 Concepts of Programming Languages
- CAS CS 350 Fundamentals of Computing Systems
- CAS CS 410 Advanced Software Systems
- CAS CS 411 Software Engineering
- CAS CS 505 Natural language processing
- CAS CS 511 Formal Methods
- CAS CS 525 Compiler Design
- CAS CS 530 Advanced Algorithms
- CAS CS 535 Complexity Theory
- CAS CS 538 Fundamentals of Cryptography
- CAS CS 548 Cryptography
- CAS CS 552 Operating Systems
- CAS CS 558 Computer Network Security
- CAS CS 562 Database Applications
- CAS CS 565 Data Mining

EE BREADTH ELECTIVE

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

EC 401, EC 410, EC 455 as well as any course that appears on the EE planning sheet as an EE Core Elective except for EC 541 and EC 571.

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, EK** or **ME** course at the 300-level or 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 313/314 Waves and Modern Physics
- CAS PY 451 Quantum Physics 1
- CAS PY 452 Quantum Physics 2

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

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:

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