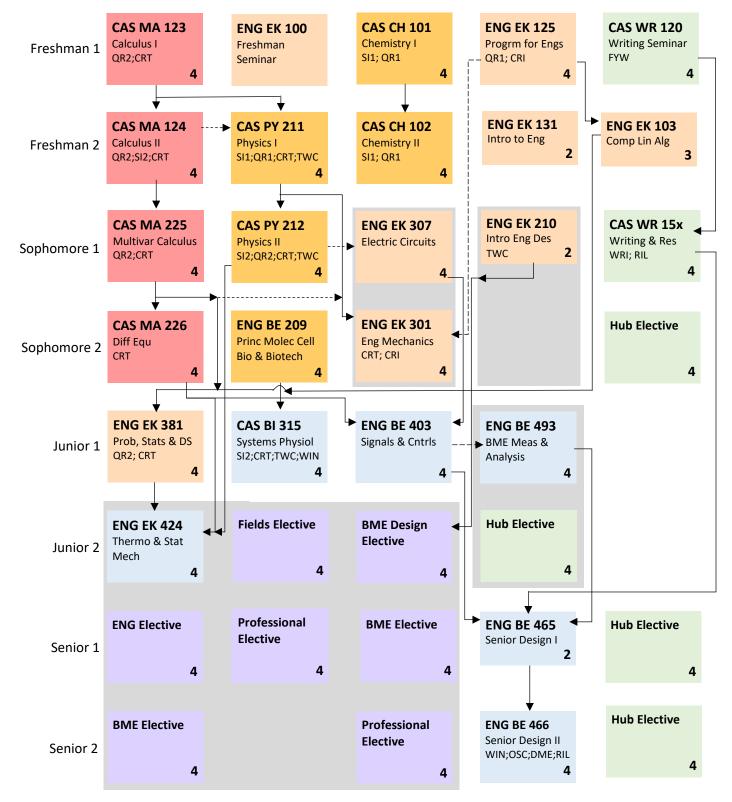


College of Engineering Biomedical Engineering – Class of 2025 (133 credits)

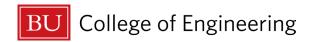


Notes

- Grey box = either semester
- Students planning to **study abroad** sophomore 2 should take EK 301 in sophomore 1.
- Premed students take CAS CH203/4 sophomore year and defer WR 150 and Hub elective.
- 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

- \square 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



Biomedical Engineering (BME)

Class of 2024 - 2027 (133 credits)

REQUIREMENTS

Biomedical Engineering (BME) majors are required to complete a minimum of 133 credits as detailed on the Program Planning Sheet on the other side of this page. Pre-Med Majors should consult with the BU Pre-Professional Advising Office and their ENG Faculty Advisors.

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 BME 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/

CONTINUA & FIELDS IN BIOMEDICAL SYSTEMS ELECTIVE BME majors complete one Continua & Fields Elective (4 credits) from the following:

ENG BE 420 Introduction to Solid Biomechanics

ENG BE 435 Transport Phenomena in Living Systems

FNG BF 436 Fundamentals of Fluid Mechanics

ENG BE 404 Advanced Controls

PROFESSIONAL ELECTIVES BME majors complete two Professional Electives (8 credits) from the following:

All ENG BE, EC, EK, and ME 300, 400, and 500 level courses are suitable as a professional elective (except ENG EK 409 and all directed study & directed research, BE 500, and courses with material that overlaps with requirements – see Notes below); directed study and BE 500 may be acceptable by petition.

CAS CH 203, CAS CH 204 and all CAS CH 300, 400 and 500 level courses (except: CAS CH 391, 392, 401, 402, 491, 492).

All CAS PY 300, 400, and 500 level courses (except PY 355, 371, 401, 402, 482, 491, 492).

All CAS MA 300, 400, and 500 level courses (except CAS MA 381, 401, 402, 581).

CAS BI 206, CAS BI 216 and all CAS BI 300, 400 and 500 level courses (except BI 315, 371, 372, 391, 392)

QST SI 480 The Business of Technology Innovation ENG ME 357 Intro to CAD (2 cr) ENG ME 358 Design & Manufacture (2 cr) QST SI 482 Technology & Its Commercialization

ENGINEERING ELECTIVES BME majors complete one Engineering Elective course (4 credits) from the following list:

ENG BE 552 Computational Synth Bio for Eng **ENG EC 505 Stochastic Processes** ENG BE 420 Intro to Solid Biomechanics ENG BE 555 Introduction to Biomedical Optics ENG EC 516 Digital Signal Processing ENG BE 425 Intro to Biomedical Materials Science ENG BE 556 Optical Spectroscopic Imaging ENG EC 522 Intro to Computational Imaging ENG BE 435 Transport Phenomena in Living Tissues ENG BE 567 Nonlinear Systems in BME ENG EC 526 Parallel Algorith for High Perf Computing **ENG BE 436 Fundamentals Fluid Mechanics** ENG BE 571 Intro to Neuroengineering ENG EK 481 Nanomaterials & Nanotechnology ENG BE 471 Quantitative Neuroscience **ENG BE 572 Neurotechnology Devices** ENG ME 302 Engineering Mechanics II ENG BE 503 Comp Methods in Biomed ENG EC 311 Intro to Logic Design ENG ME 305 Mechanics of Materials ENG ME 309 Structural Materials ENG BE 508 Quant Studies Resp & Card Sys ENG EC 327 Intro Software Engineering ENG ME 419 Heat Transfer ENG BE 511 Biomedical Instrumentation ENG EC 410 Intro to Electronics ENG BE 517 Optical Microscopy of Biological Mtrls ENG EC 414 Intro to Machine Learning **ENG ME 441 Mechanical Vibrations** ENG BE 521 Continuum Mechanics BME ENG EC 455 Electromagnetic Systems I ENG ME 503 Kinetic Processes in Materials ENG BE 533 Biorheology **ENG EC 471 Physics Semiconductor Devices** ENG ME 555 MEMS: Fabrication & Materials ENG BE 549 Struct & Function Extracell Matrix ENG EC 503 Intro to Learning from Data **ENG ME 571 Medical Robotics**

BIOMEDICAL ENGINEERING ELECTIVES BME majors complete two Biomedical Engineering Electives (8 credits) from the following:

All ENG BE 400 and 500 level courses (except BE 451, BE 452 & BE 500); BE 451, BE 500, and BE 600-level & 700-level courses may be acceptable by petition.

BIOMEDICAL ENGINEERING DESIGN ELECTIVES BME majors complete one Biomedical Engineering Design Elective (4 credits) from the following:

ENG BE 428 Device Diagnostics & Design

ENG BE 468 Clinical Applications of Biomedical Design

Hub Unit Legend:

QR1 = Quantitative Reasoning 1 WRI = Writing, Research & Inquiry RIL = Research and Information Literacy TWC = Teamwork/Collaboration QR2 = Quantitative Reasoning 2 WIN = Writing-Intensive Course SI1 = Scientific Reasoning 1 OSC = Oral and/or Signed Communication CRI = Creativity/Innovation SI2 = Scientific Reasoning 2 DME = Digital/Multimedia Expression CRT = Critical Thinking FYW = First-Year Writing Seminar

- 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 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