College of Engineering  
Biomedical Engineering – 2022 (133 credits)

**Freshman 1**
- CAS MA 123 Calculus I 4
- ENG EK 100 Freshman Seminar 4
- CAS CH 101 Chemistry I 4
- ENG EK 125 Programming for Engineers 4
- CAS WR 120 Writing Seminar 4

**Freshman 2**
- CAS MA 124 Calculus II 4
- CAS PY 211 Physics I 4
- CAS CH 102 Chemistry II 4
- ENG EK 131 Intro to ENG 2
- ENG EK 103 Comp Lin Alg 3

**Sophomore 1**
- CAS MA 225 Multivariate Calculus 4
- CAS PY 212 Physics II 4
- ENG EK 307 Electric Circuits 4
- ENG EK 210 Intro Eng Des 2

**Sophomore 2**
- CAS MA 226 Differential Equations 4
- ENG BE 209 Princ Molec Cell Bio & Biotech 4
- ENG EK 301 Eng Mechanics 4
- Hub Elective 4

**Junior 1**
- ENG EK 381 Prob, Stats & Data Sci 4
- CAS BI 315 Systems Physiol 4
- ENG BE 403 Signals, Systems & Controls 4
- ENG BE 491 BME Meas I 2

**Junior 2**
- ENG EK 424 Thermo & Stat Mech 4
- BME Elective 4
- Fields Elective 4
- ENG BE 492 BME Meas II 2

**Senior 1**
- ENG Elective 4
- BME Design Elective 4
- ENG BE 465 Senior Design I 2

**Senior 2**
- BME Elective 4
- Professional Elective 4
- Professional Elective 4
- ENG BE 466 Senior Design II 4

**Notes**
- 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.
- Grey box = either semester
- Students must complete 48 credits of upper-division program coursework (not including Hub or writing).

**Hub Electives: must include all Hub areas below to fulfill degree requirements**
- 1. One unit Philosophical Interpretation
- 2. One unit Aesthetic Exploration
- 3. One unit Historical Consciousness
- 4. One unit Social Inquiry
- 5. One unit Individual & Community
- 6. First unit Global Citizenship
- 7. Second unit Global Citizenship
- 8. One unit Ethical Reasoning
- Total of at least 16 credits
REQUIREMENTS

Pre-Med Majors: Students should consult with the BU Pre-Professional Advising Office and their ENG Faculty Advisors

CONTINUA AND FIELDS IN BIOMEDICAL SYSTEMS ELECTIVE (4 credits required)

- ENG BE 419 Principles of Continuum Mechanics and Transport
- ENG BE 420 Introduction to Solid Biomechanics
- ENG BE 435 Transport Phenomena in Living Systems
- ENG BE 436 Fundamentals of Fluid Mechanics

PROFESSIONAL ELECTIVES (8 credits required)

- All ENG BE, EC, EK, and ME 300, 400, and 500 level courses are suitable as a professional elective
- ENG BF 527 Applications in Bioinformatics
- ENG EK 156 Design & Manufacture
- ENG BE 302 Engineering Mechanics II
- ENG ME 303 Mechanics of Materials
- ENG BE 401 Engineering Mechanics
- ENG ME 306 Materials Science
- ENG ME 309 Structural Materials
- ENG ME 419 Heat Transfer
- ENG ME 441 Mechanical Vibrations
- ENG ME 555 MEMS: Fabrication & Materials

ENGINEERING ELECTIVES (4 credits required)

- ENG BE 404 Advanced Controls
- ENG BE 419 Principles of Continuum Mechanics
- ENG BE 420 Intro to Solid Biomechanics
- ENG BE 435 Transport Phenomena in Living Tiss
- ENG BE 436 Fundamentals Fluid Mechanics
- ENG BE 503 Comp Methods in Biomed ENG
- ENG BE 508 Quant Studies Resp & Card Sys
- ENG BE 511 Biomedical Instrumentation
- ENG BE 521 Continuum Mechanics BME
- ENG BE 533 Biorheology
- ENG EC 311 Intro to Logic Design
- ENG EC 327 Intro Software Engineering
- ENG EC 410 Intro to Electronics
- ENG EC 416 Intro Digital Signal Processing
- ENG EC 455 Electromagnetic Systems I
- ENG EC 471 Physics Semiconductor Devices
- ENG EC 505 Stochastic Processes
- ENG EC 481 Nanomaterials & Nanotechnology
- ENG EC 501 Stochastic Processes
- ENG EC 555 MEMS: Fabrication & Materials

BIOMEDICAL ENGINEERING ELECTIVES (12 credits required)

- All ENG BE 400 and 500 level courses (except BE 500); BE 700 level courses may be petitioned.
- ENG BF 527 Application in Bioinformatics

BIOMEDICAL ENGINEERING DESIGN ELECTIVES (4 credits required)

- ENG BE 428 Device Diagnostics & Design
- ENG BE 468 Clinical Applications of Biomedical Design

Notes: For the following sets of courses, only 1 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 441, ENG ME 515
4. ENG ME 501, ENG EC 501
5. ENG EC 102, CAS MA 142, CAS MA 242
6. ENG BE 401, ENG EC 401
7. ENG ME 366, ENG EC 381, ENG EK 381, ENG BE 20
8. ENG ME 460, ENG ME 560

4/17/18