Biomedical Engineering – 2020 (134 credits)

**General Education Electives Checklist**

- 1. CAS WR 100
- 2. CAS WR 150
- 3. One Social Science course
- 4. One Humanities course
- 5. One Social Science or Humanities course
- 6. One General Education elective course
- 7. Total of at least 24 credits

**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 social science/humanities or writing).
REQUIREMENTS

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

General Education courses: For a list of specific courses that satisfy the Social Science, Humanities, and the General Education Elective, please go to the College of Engineering Undergraduate Requirements website at: http://www.bu.edu/eng/current-students/ugrad/requirements/ .

CONTINUUM 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

[Exceptions due to overlap of material *: BE 500, EC 381, EC 402, EK 500, ME 308, ME 403, ME 404, ME 501]
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 371, 401, 402, 482, 491, 492).
All CAS MA 300, 400, and 500 level courses (except CAS MA 381, 401, 402).
CAS BI 206, CAS BI 216 and all CAS BI 300, 400 and 500 level courses (except BI 315, 371, 372, 391, 392)
ENG BF 527  Applications in Bioinformatics
ENG EK 156  Design & Manufacture
ENG EK 408  Introduction to Microfluidics
ENG EK 471  Physics of Nanomaterials
ENG EK 582  Advanced Materials Science
ENG EK 588  Computational Materials Science
ENG ME 302  Engineering Mechanics II
ENG ME 305  Mechanics of Materials
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 Biomechanics
ENG EK 481 Nanomaterials & Nanotechnology
ENG EK 545 Electromagnetic Systems I
ENG EC 410 Intro to Electronics
ENG EC 416 Intro Digital Signal Processing
ENG EC 471 Physics Semiconductor Devices
ENG EC 505 Stochastic Processes
ENG EC 582 Engineering Materials
ENG ME 302 Engineering Mechanics II
ENG ME 305 Mechanics of Materials
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

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  (5)  ENG EK 102, CAS MA 142, CAS MA 242
(2)  ENG ME 303, ENG BE 436  (6)  ENG BE 401, ENG EC 401
(3)  ENG ME 441, ENG ME 515  (7)  ENG ME 366, ENG EC 381, ENG EK 381, ENG BE 200
(4)  ENG ME 501, ENG EC 501  (8)  ENG ME 460, ENG ME 560

4/17/18