### BIOMEDICAL (MECHANICAL) DEGREE COURSE PLAN 2019-20

#### FIRST YEAR

**FALL SEMESTER**
- **BME 101 or GE B** 4
- **WRIT 150** 4
- **MATH 125 (GE F)** 4
- **CHEM 105aL (GE E)** 4
- **ENG 102** 4

**SPRING SEMESTER**
- **BME 101 or GE B** 4
- **MATH 126 or MATH 129** 4
- **CHEM 105bL** 4
- **GE A** 4
- **OPTIONAL ELECTIVE** 4

#### SECOND YEAR

**FALL SEMESTER**
- **GE B** 4
- **BME 202** MATH 126 or MATH 129 4
- **MATH 226 or MATH 229** MATH 125 or MATH 129 4
- **PHYS 151L (GE E)** MATH 125 or MATH 129 4
- **OPTIONAL ELECTIVE** 4

**SPRING SEMESTER**
- **BISC 220L** 4
- **BME 210** MATH 125 or MATH 129 4
- **MATH 245** MATH 126 or MATH 129 4
- **PHYS 152L** PHYS 151L, MATH 226 4
- **OPTIONAL ELECTIVE** 4

#### THIRD YEAR

**FALL SEMESTER**
- **EE 202L** PHYS 152L, MATH 226 4
- **ITP 308** 3
- **BME 423** MATH 226 4
- **CHEM 322aL** CHEM 105bL or 400-LEVEL BME COURSE 4
- **AME 201** PHYS 151L 3

**SPRING SEMESTER**
- **GE C** 4
- **MASC 310** 4
- **AME 301** AME 201 or CE 205 3
- **AME 204** AME 201 or CE 205 3
- **TECHNICAL ELECTIVE** 3

#### FOURTH YEAR

**FALL SEMESTER**
- **BISC 320L** CHEM 105bL 4
- **BME 413** PHYS 152L 4
- **BME 403L** BME 220L, MATH 245, EE 202L, or 405L 4
- **BME 404** PHYS 151L, MATH 245, AME 301 3
- **WRIT 340** WRIT 150 3

**SPRING SEMESTER**
- **BME 405L** CHEM 105bL, EE 202L, BME 403L 4
- **AME 309** (MATH 245) 3
- **GE C** 4
- **BME 416** 3
- **TECHNICAL ELECTIVE** 3

**SPECIAL NOTES**
- Courses with the AP/IB symbol may be satisfied with AP, IB or A-Level exams. See page 17 for more information.
- GE: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. Additionally, your GESM course should be taken in categories A, B, or C, only. See page 21 for more information and consult your advisor for detailed assistance.
- OPTIONAL ELECTIVES: Consult with your academic advisor to explore optional elective courses. These courses are not required.
- TECHNICAL ELECTIVES: Five units of upper-division engineering coursework, including at least three units of 400-level BME coursework.

**MATHEMATICS (16 UNITS)**
- **MATH 125:** Calculus I
- **MATH 126 OR 129:** Calculus II
- **MATH 226 OR 229:** Calculus III
- **MATH 245:** Mathematics of Phys. and Engr. I

**PHYSICS (8 UNITS)**
- **PHYS 151L:** Mechanics and Thermodynamics
- **PHYS 152L:** Electricity and Magnetism

**CHEMISTRY (12 UNITS)**
- **CHEM 105AL:** General Chemistry
- **CHEM 105BL:** General Chemistry
- **CHEM 322AL:** Organic Chemistry or additional 400-level BME course

**BIOLOGY (8 UNITS)**
- **BISC 220L:** Cell Biology & Physiology
- **BISC 320L:** Molecular Biology

**GENERAL EDUCATION (32 UNITS)**
- **GE A** The Arts (1 Course)
- **GE B** Human Inquiry (2 Courses)
- **GE C** Social Analysis (2 Courses)
- **GE D** Life Sciences (1 Course)
- **GE E** Physical Sciences (1 Course)
- **GE F** Quantitative Reasoning (1 Course)

- **GE G, H Global Perspectives (2 Courses)**
- **GESM General Education Seminar (1 Course)**

**WRITING (7 UNITS)**
- **WRIT 150:** Writing and Critical Reasoning
- **WRIT 340:** Advanced Writing

**ENGINEERING (63 UNITS)**
- **AME 201:** Statics
- **AME 204:** Strength of Materials
- **AME 301:** Dynamics
- **AME 308:** Comp.-Aid. Analysis for Design OR **ITP 308:** Comp.-Aid. Design for Bio-Mechanical Systems
- **AME 309:** Dynamics of Fluids
- **BME 101:** Intro. to Biomedical Engineering
- **BME 210:** Biomed. Comp. Simulation Methods
- **BME 402:** Control & Ann. in Nerv. System
- **BME 403L:** Physiological Systems
- **BME 404:** Biomechanics
- **BME 405L:** Senior Projects: Meas. and Instrument
- **BME 413:** Bioengineering Signals & Systems
- **BME 416:** Development and Regulation of Medical Products
- **BME 423:** Statistical Methods in BME

**EE 202L:** Linear Circuits

**ENGR 102:** Engineering Freshman Academy
**MASC 310:** Materials Behavior and Processing

**OPTIONAL ELECTIVES:** Consult with your academic advisor to explore optional elective courses. These courses are not required.

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