

Biomedical Engineering Degree Worksheet

for Students Following Catalog Year 2013-2014 or earlier

To obtain the B.S. in BME, a student must obtain 18 course credits in engineering topics. See the left-most column.

| Eng credit | √ | Course | Course Name | Prerequisites | Add'l Info |
|--|---|---|---|---|---|
| Mathematics (4 courses) | | | | | |
| 0 | | Math 220-0 | Differential Calculus of One Variable Functions | --- | |
| 0 | | Math 224-0 | Integral Calculus of One Variable Functions | Math 220-0 | |
| 0 | | Math 230-0 | Differential Calculus of Multivariable Functions | Math 224-0 | |
| 0 | | Math 234-0 | Differential Calculus of Multivariable Functions | Math 230-0 | |
| Engineering Analysis and Computer Proficiency (4 courses) | | | | | |
| .20 | | Gen Eng 205-1 | EA1: Comput. Meth. and Linear Alg. | --- | |
| .50 | | Gen Eng 205-2 | EA2: Linear Alg, and Mechanics | Gen Eng 205-1; Math 220-0 | |
| .20 | | Gen Eng 205-3 | EA3: Dynamic System Modeling | Gen Eng 205-2 | |
| .10 | | Gen Eng 205-4 | EA4: Diff. Equations | Gen Eng 205-3; Math 224-0 | |
| Basic Sciences (4 credits) | | | | | |
| 0 | | Phys 135-2 | Gen. Physics – Elect. and Magnetism | Phys 135-1 | |
| 0 | | Phys 135-3 | Gen. Physics – Intro. to Modern Physics; Wave Phenomena | | |
| 0 | | Chem 102 or 171 | (Accelerated) Gen. Inorganic Chem. | Chem 101, dept placement exam | |
| 0 | | Chem 103 or 172 | (Accelerated) Gen. Physical Chem. | 103: Chem 102 and Math 220; 172: Chem 171 and Math 220 | |
| Design and Communication (3 courses) | | | | | |
| 0.50 | | IDEA 106-1/Engl 106-1 | EDC | | |
| 0.50 | | IDEA 106-2/Engl 106-2 | EDC | IDEA 106-1/Engl 106-1 | |
| 1 | | BME 390-2 or other capstone design course | Biomedical Eng Design or other capstone design course | BME 390-2: BME 390-1, BME 307 | Petition required for out of dept capstone course |
| Basic Engineering* (5 courses) | | | | | Basic Engg Area |
| 1 0 1 | | BME 250 or Chem 342 or ME 220 | Thermodynamics | BME 250: Math 230, Chem 103 or 172. Chem 342: Chem 103 or 172, Math 230, Phys 135-1 and concurrent in Phys 135-2. ME 220: Gen Eng 205-3, concurrent in Math 234 | Thermodynamics |
| 1 | | BME 271 | Intro to Biomechanics | Gen Eng 205-2 | Fluids and Solids |
| 1 1 | | BME 270 or ME 241 | Fluid Mechanics | BME 270: Math 234-0, Gen Eng 205-4 ME 241: Gen Eng 205-4 | Fluids and Solids |
| 1 | | Mat Sci 201 | Principles of the Properties of Matls | Chem 102 | Materials Sci and Engg |
| 1 0 1 1 | | BME 220 or IEMS 201 or IEMS 303 or ME 359 | Statistics (see catalog for specific titles) | IEMS 303: IEMS 202 or equiv.; ME 359: Gen Eng 205-4 | Prob., Stats, and Quality Control |
| Social Sciences/Humanities (7 units) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Eng credit | √ | Course | Course Name | Prerequisites | Add'l Info |
|--|---|----------------|------------------------------------|-------------------------|-------------------------|
| Unrestricted Electives (5 units) | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Major Program | | | | | |
| Core (10 courses + 1 zero credit seminar) | | | | | |
| 0 | | BME 101 | Introduction to Biomedical Engg | | Zero credit seminar |
| 0 | | Chem 210-1 | Organic Chemistry | Chem 103 or Chem 172 | |
| 0 | | Biol Sci 210-2 | Biochemistry and Molecular Biology | Chem 210-1 | |
| 1 | | BME 301 | Systems Physiology I | Phys 135-2 | |
| 1 | | BME 302 | Systems Physiology II | Math 230 | |
| 1 | | BME 303 | Systems Physiology III | Biol Sci 210-2 | jr standing recommended |
| 1 | | BME 305* | Biomedical Signals Analysis | Phys 135-2 | |
| 1 | | BME 306* | Biomedical Systems Analysis | Gen Eng 205-4, BME 305 | |
| 1 | | BME 307 | Quant. Experimentation and Design | Stats, BME 305, BME 306 | |
| 1 | | BME 350 | | | |
| 1 | | BME 390-1 | Biomedical Engineering Design | BME 307 | |
| Tracks (4 courses) – Two courses from Category A and two courses from Category B | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Technical Electives (2 courses) – may include Chem 101, Biol Sci 210-1 and 3, Chem 210-2 and 3, DSGN 245-1,2, EECS 230, 300-level or higher courses in engineering, science, or mathematics (395 courses must be approved; not all are acceptable). | | | | | |
| | | | | | |
| | | | | | |