B.S. Degree in Biomedical Engineering (Standard)

Recommended Curriculum Sequence
(For Students Matriculating Fall 2017)

1st Year - Fall Semester
BEN 111 Introduction to Biomedical Engineering I* 2
CHY 121 Introduction to Chemistry 3
CHY 123 Introduction to Chemistry Lab 1
PHY 121 Physics for Engineers and Physical Scientists I 4
MAT 126 Calculus I 4
ENG 101 College Composition 3

1st Year - Spring Semester
BEN 112 Introduction to Biomedical Engineering II* 2
CHY 122 Molecular Basis of Chemical Change 3
CHY 124 Molecular Basis of Chemical Change Laboratory 1
PHY 122 Physics for Engineers and Physical Scientists II 4
MAT 127 Calculus II 4
BMB 280 Introduction to Molecular and Cell Biology 3

2nd Year – Fall Semester
BEN 201 Fundamentals of Biomedical Engineering* 4
CHY 251 Organic Chemistry I 3
CHY 253 Organic Chemistry Lab 2
MAT 228 Calculus III 4
ECE 209 Fundamentals of Electric Circuits* 3

2nd Year- Spring Semester
BEN 202 Transport in Biomedical Systems* 4
CHY 252 Organic Chemistry II 3
MAT 258 Introduction to Differential Eqns with Lin. 4
BIO 208 Anatomy and Physiology 4
STS 332 Stats for Engineers* 3

3rd Year – Fall Semester
MEE 252 Statics & Strength of Materials* 3
BEN 401 Applications of Bioengineering* 3
BEN 403 Biomedical Engineering Instrumentation* 3
BEN 361 Biomedical Engineering Laboratory I* 3
Human Values & Social Context Elective 1 15

3rd Year – Spring Semester
BEN 402 Biomedical Engineering Design I* 3
BEN 363 Biomedical Engineering Laboratory II* 3
BMB 322 Biochemistry 3
BMB 323 Biochemistry Laboratory 2
Approved Technical Elective 2 3
Human Values & Social Context Elective 1 3

4th Year - Fall Semester
BEN 477 Elements of Biomedical Engineering Design* 3
BEN 478 Biomedical Engineering Design I* 2
BEN 493 Biomedical Engineering Seminar* 0
Approved Technical Elective 2 3
Human Values & Social Context Elective 1 3
Human Values & Social Context Elective 1 3

4th Year – Spring Semester
BEN 479 Biomedical Engineering Design II* 3
BEN 493 Biomedical Engineering Seminar II* 1
Approved Technical Elective 2 3
Human Values & Social Context Elective 1 3
Human Values & Social Context Elective 1 3

Total Credits Required for Graduation = 130

A minimum of 48 credits of engineering topics is required for graduation. Courses that meet this criteria are indicated with an asterisk (*). Judicious use of Technical Electives should be employed to meet the minimum number of engineering topic credits.

(1) The Human Values & Social Context Electives (18 credits) must be selected to meet the University of Maine General Education requirements. These should be selected from a list of approved courses to satisfy each of the five sub-categories: western cultural tradition, social context and institutions, cultural diversity and international perspectives, population and the environment, and artistic and creative expression. Some courses cover more than one sub-category. It is recommended that students consider completing their elective requirements during extra sessions such as summer, winter or May terms. Doing so provides scheduling flexibility for the addition of minors or COOP activities.

(2) The Technical Electives (12 credits) should be upper level (300 level or higher) engineering, mathematics or science courses. A list of approved courses is available at the Department Office or at http://www.umche.maine.edu/chb.

Ethics
The course sequence BEN 111, BEN 477, BEN 479 and BEN 493 satisfies the University of Maine General Education requirements for ethics. Transfer students who do not complete the sequence of courses should make sure that they satisfy the ethics requirement through their choice of Human Values and Social Context electives.

Reviewed: February 2018