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
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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
		17

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
		16

2nd Year- Spring Semester

BEN 202	Transport in Biomedical Systems*	4
MAT 258	Introduction to Differential Eqns with Lin.	4
CHY 252	Organic Chemistry II	3
BIO 208	Anatomy and Physiology	4
STS 332	Stats for Engineers*	3
		18

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]	3
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3rd Year – Spring Semester

BEN 402	Biomaterials and the Cellular Interface*	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
		17

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
	Approved Technical Elective[2]	3
	Human Values & Social Context Elective[1]	3
	Human Values & Social Context Elective[1]	3
		17

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
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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