

Recommended Curriculum Sequence (For Students Matriculating before Fall 2016)

1st Year - Fall Semester		1st Year - Spring Semester			
BEN 111	Introduction to Bioengineering I*	2	BEN 112	Introduction to Bioengineering II*	2
CHY 121	Introduction to Chemistry	3	CHY 122	Molecular Basis of Chemical Change	3
CHY 123	Introduction to Chemistry Lab	1	CHY 124	Molecular Basis of Chemical Change Laboratory	1
PHY 121	Physics for Engineers and Physical Scientists I	4	PHY 122	Physics for Engineers and Physical Scientists II	4
MAT 126	Calculus I	4	MAT 127	Calculus II	4
ENG 101	College Composition	3	BMB 280	Introduction to Molecular and Cell Biology	3
		17			17
2nd Year - Fall Semester		2nd Year - Spring Semester			
BEN 201	Fundamentals of Bioengineering*	4	BEN 202	Transport in Biological Systems*	4
CHY 251	Organic Chemistry I	3	MAT 258	Introduction to Differential Equations with Linear Algebra	4
CHY 253	Organic Chemistry Lab	2	CHY 252	Organic Chemistry II	3
MAT 228	Calculus III	4	BIO 208	Anatomy and Physiology	4
	Human Values & Social Context Elective ¹	3		Human Values & Social Context Elective ¹	3
		16			18
3rd Year - Fall Semester		3rd Year - Spring Semester			
BEN 401	Applications of Bioengineering*	3	BEN 403	Instrumentation in Bioengineering*	4
BEN 402	Biomaterials and the Cellular Interface*	3	CHB 350	Statistical Process Control*	3
ECE 209	Fundamentals of Electric Circuits*	3	BEN 361	Bioengineering Laboratory I*	3
	Approved Technical Elective ²	3	BMB 322	Biochemistry	3
	Human Values & Social Context Elective ¹	3	BMB 323	Biochemistry Laboratory	2
		15		Human Values & Social Context Elective ¹	3
					18
4th Year - Fall Semester		4th Year - Spring Semester			
BEN 363	Bioengineering Laboratory II*	3	BEN 479	Bioengineering Senior Design Projects*	4
BEN 477	Elements of Bioengineering Design*	3	BEN 493	Bioengineering Seminar II*	1
BEN 493	Bioengineering Seminar*	0		Approved Technical Elective ²	3
MEE 252	Statics & Strength of Materials*	3		Approved Technical Elective ²	3
	Approved Technical Elective ²	3		Human Values & Social Context Elective ¹	3
	Human Values & Social Context Elective ¹	3			14
		15			

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.