Bioengineering B.S. Sample Curriculum

		Units	Qtr
Freshman Year			
1st Quarter			
BE 10	Introduction to Bioengineering	2	
English 3	English Composition, Rhetoric, and Language	5	
Chem. 20A	Chemical Structure	4	
Math. 31A	Differential Calculus	4	**15**
2nd Quarter			
Chem. 20B	Chemical Energetics and Change	4	
Math. 31B	Integration and Infinite Series	4	
Physics 1A	**Physics for Scientists and Engineers: Mechanics	5	**13**
3rd Quarter			
	*HSSEAS GE Elective	5	
Chem. 20L	General Chemistry Laboratory	3	
Math. 32A	Calculus of Several Variables	4	
Physics 1B	Physics for Scientists and Engineers: Oscillations, Waves, Electric and Magnetic Fields	5	**17**
Sophomore Year			
1st Quarter			
Chem. 30A	Chemical Dynamics and Reactivity: Introduction to Organic Chemistry	4	
Math. 32B	Calculus of Several Variables	4	
Physics 1C	Physics for Scientists and Engineers: Electrodynamics, Optics, and Special Relativity	5	
Physics 4AL	Physics Laboratory for Scientists and Engineers: Mechanics	2	**15**
2nd Quarter			
BE 100	**Bioengineering Fundamentals**	**4**	
LS 2	Cells, Tissues, and Organs	5	
Math. 33A	Linear Algebra and Applications	4	
Physics 4BL	Physics Laboratory for Scientists and Engineers: Electricity and Magnetism	2	**15**
3rd Quarter			
BE 182A	**Bioengineering Capstone Design I**	**4**	
Chem 30B	Organic Chemistry: Reactivity and Synthesis, Part I	4	
Chem 30AL	General Chemistry Laboratory II	4	
Math. 33B	Infinite Series	4	**16**
Junior Year			
1st Quarter			
Chem 30BL	Organic Chemistry Laboratory I	3	
Chem. 153A	Biochemistry: Introduction to Structure, Enzymes, and Metabolism	4	
EE 100	Electrical and Electronic Circuits	4	
	***Major Field Elective	4	**15**
2nd Quarter			
BE 120	**Biomedical Transducers**	**4**	
BE 165	****Bioethics and Regulatory Policies in Bioengineering**	**4**	
LS 3	Introduction to Molecular Biology	5	
	*HSSEAS GE Elective	5	**18**
3rd Quarter			
BE 110	**Biotransport and Bioreaction Processes**	**4**	
BE 176	**Principles of Biocompatibility**	**4**	
CS 31	Introduction to Computer Science I	4	
LS 4	Genetics	5	**17**
Senior Year			
1st Quarter			
BE M106	**Topics in Biophysics, Channels, and Membranes**	**4**	
BE 182B	**Bioengineering Capstone Design II**	**4**	
	*Technical Breadth Requirement	4	**12**
2nd Quarter			
BE 180	**System Integration in Biology, Engineering, and Medicine I (SIBEM I)**	**4**	
BE 182C	**Bioengineering Capstone Design III**	**4**	
	*Technical Breadth Requirement	4	
	***Major Field Elective	4	**16**
3rd Quarter			
	*HSSEAS GE Elective	5	
	*HSSEAS GE Elective	5	
	***Major Field Elective	4	
	*Technical Breadth Requirement	4	**18**
		Total:	**187**

Courses listed in BLUE are only offered once a year

*Students should contact the Office of Academic & Student Affairs (6426 Boelter Hall) for approved lists in the categories of technical breadth and HSSEAS GE

**Satisfies the HSSEAS ethics requirement

***Electives include Bioengr M104, M105, M131, 180L, 181, 181L, 199 (8 units maximum). Biomed C101, CM102, CM103 CM140, CM145, CM150, CM150L, C170, C171, CM180, C181, CM183, C185, CM186B, CM186C, C187.