

EXAMPLE BIOENGINEERING UNDERGRADUATE CURRICULUM
(For students entering the program Fall 2014 through Fall 2021)

One possible four-year path through the curriculum
BOLDFACED courses are Bioengineering Core or Track Elective courses

FRESHMAN YEAR

FALL SEMESTER	Credits	SPRING SEMESTER	Credits
MATH 0220: Analytical Geometry & Calculus 1	4	MATH 0230: Analytical Geometry & Calculus 2	4
PHYS 0174: Basic Physics for Science & Engineering 1	4	PHYS 0175: Basic Physics for Science & Engineering 2	4
CHEM 0960: General Chemistry for Engineers 1	3	CHEM 0970: General Chemistry for Engineers 2	3
ENGR 0011: Introduction to Engineering Analysis	3	ENGR 0012: Introduction to Engineering Computing	3
Humanities/Social Science Elective	3	Humanities/Social Science Elective	3
ENGR 0081: Freshman Engineering Seminar 1	0	ENGR 0082: Freshman Engineering Seminar 2	0
	<u>17</u>		<u>17</u>

SOPHOMORE YEAR

FALL SEMESTER	Credits	SPRING SEMESTER	Credits
BIOENG 1070: Introductory Cell Biology 1	3	BIOENG 1071: Introductory Cell Biology 2	3
BIOSC 005x: Foundations of Biology Lab 1	1	BIOENG 1210: Biothermodynamics	3
MATH 0240: Analytical Geometry & Calculus 3	4	BIOENG 1310: Bioinstrumentation	3
MATH 0290: Differential Equations	3	BIOENG 1630: Biomechanics 1	3
ENGR 0135: Statics & Mechanics of Materials 1	3	BIOENG 1000: Statistics for Bioengineering ^(b,c)	4
Track Elective ^(a)	3	or Track Elective (CHEM 0320 only)	[3]
BIOENG 1085: Introduction to Bioengineering (Seminar)	0	BIOENG 1085: Introduction to Bioengineering (Seminar)	0
	<u>17</u>		<u>16</u>

^(a) Pre-med and CE Track students should take **CHEM 0310** (Organic Chemistry sequence) as a Track Elective

^(b) Pre-med and CE Track students should take **CHEM 0320** (Organic Chemistry sequence) as a Track Elective. BIOENG 1000 moves to Spring Semester, Junior Year

^(c) Effective Fall 2018, only BIOENG 1000 satisfies the statistics requirement regardless of year of matriculation to the program

JUNIOR YEAR

FALL SEMESTER	Credits	SPRING SEMESTER	Credits
BIOENG 1002: Intramural Internship ^(d)	3	BIOENG 1150: Bioengineering Methods & Applications	3
BIOENG 1220: Biotransport Phenomena	3	Biosignals Application Course (BIOENG 1580 or 1680) ^(e)	4 or 3
BIOENG 1320: Biological Signals & Systems	3	or Track Elective	
BIOSC 1250: Human Physiology	3	Track Elective ^(f)	3
MATH 0280: Introduction to Matrices & Linear Algebra	3	Track or Imaging Elective	3
BIOENG 1241: Bio-Ethics ^(d)	3	Humanities/Social Science Elective	3
BIOENG 1085: Introduction to Bioengineering (Seminar)	0	BIOENG 1085: Introduction to Bioengineering (Seminar)	0
	<u>18</u>		<u>16 or 15</u>

^(d) **BIOENG 1002** & **BIOENG 1241** may be taken Fall or Spring Semester, Junior or Senior Year

^(e) The Biosignals Application Course (**BIOENG 1255**) can be taken Fall of Senior Year

^(f) Students who took **CHEM 0320** Spring Semester Sophomore Year must take BIOENG 1000

SENIOR YEAR

FALL SEMESTER	Credits	SPRING SEMESTER	Credits
BIOENG 1160: Bioengineering Design 1	3	BIOENG 1161: Bioengineering Design 2	3
Track Elective or Biosignals Application Course	3 or 4	Track Elective or Biosignals Application Course	3 or 4
Track or Imaging Elective	3	Track or Imaging Elective	3
Advanced (Free) Engineering/Science Elective	3	Advanced (Free) Engineering/Science Elective	3
Humanities/Social Science Elective	3	Humanities/Social Science Elective	3
BIOENG 1085: Introduction to Bioengineering (Seminar)	0	BIOENG 1085: Introduction to Bioengineering (Seminar)	0
	<u>15 or 16</u>		<u>15 or 16</u>

NOTE: All students must have an imaging course that is on the approved list of imaging courses

NOTE: Four (4) of the 8 Advanced Engineering/Science Electives (6 Track plus 2 Advanced (Free) Engineering/Science Electives) **must be** engineering courses (any department)

NOTE: Humanities/Social Science Electives must be taken from the approved School of Engineering list

NOTE: At least one course must have a **W** (writing) designation