

*Recommended course plan for BSE students graduating in 2020 and interested in careers in*  
**BIOMEDICAL ENGINEERING**  
 (129 credits)

<b>Fall 1st Year 16 cr.</b>	<b>Chem 1035 (3)</b> General Chemistry <sup>5</sup>	<b>Chem 1045 (1)</b> General Chemistry Lab <sup>5</sup>	<b>MATH 1225 (4)</b> Calculus for Science <sup>5</sup>	<b>ENGE 1215 (2)</b> Foundations of Engineering	<b>ENGL 1105 (3)</b> First-Year Writing <sup>5</sup>	<b>CLE (3)</b>
<b>Spring 1st Year 17 cr.</b>	<b>CHEM 1036 (3)</b> General Chem <sup>5</sup> Pre: CHEM 1035 Spring, Summer 1 & 2	<b>ENGL 1106 (3)</b> Freshman English <sup>5</sup> Pre: ENGL 1105	<b>PHYS 2305 (4)</b> Foundations of Physics <sup>5</sup> Pre: MATH 1225 Co: MATH 1226	<b>MATH 1226 (4)</b> Calculus for Science <sup>5</sup> Pre: MATH 1225	<b>ENGE 1216 (2)</b> Exploration of Engineering Design Pre: ENGE 1215	<b>CLE (1)</b>
<b>Fall 2nd Year 17 cr.</b>	<b>CHEM 2514 (3)</b> Survey of Organic Chemistry <sup>2,4</sup> Pre: CHEM 1036 Fall, Summer 1	<b>MATH 2114 (3)</b> Intro to Linear Algebra Pre: Math 1225 (min. grade B) or MATH 1226 (min. grade P)	<b>MATH 2204 (3)</b> Multivariable Calculus Pre: Math 1226	<b>ESM 2104 (3)</b> Statics Co: MATH 2204	<b>BIOL 1105 (3)</b> Principles of Biology <sup>5</sup> Fall, Summer 1	<b>BSE 2004 (2)</b> Intro to BSE Pre: ENGE 1215 Fall, Spring
<b>Spring 2nd Year 18 cr.</b>	<b>MATH 2214 (3)</b> Differential Equations Pre: MATH 2114 & 1226	<b>ESM 2304 (3)</b> Dynamics Pre: ESM 2104, MATH 2204 Co: MATH 2214	<b>BIOL 1106 (3)</b> Principles of Biology <sup>5</sup> Spring, Summer 2	<b>BSE 3144 (2)</b> Engineering Analysis for Biological Systems Co: MATH 2214 Spring Only	<b>BMES 2104 (3)</b> Intro to Biomed Eng <sup>3</sup> Pre: PHYS 2305, ENGE 1216 Co: MATH 2214 Spring Only	<b>PHYS 2306 (4)</b> Foundations of Physics <sup>5</sup> Pre: MATH 1226, PHYS 2305
<b>Fall 3rd Year 15 cr.</b>	<b>ESM 3024 (3)</b> Intro Fluid Mechanics Pre: ESM 2304, MATH 2224 Fall, Summer 2, Winter	<b>STAT 3704 (2)</b> Statistics for Engineering Applications Pre: MATH 2204	<b>BSE 3134 (1)</b> BSE Seminar Pre: BSE 2004 Fall Only	<b>BSE 3154 (3)</b> Thermodynamics of Biol. Systems Pre: MATH 2204, ESM 2304 Co: ESM 3024 Fall Only	<b>BMES/BVMS 4064 (3)</b> Medical Physiology <sup>4</sup> Pre: Junior standing or professor permission Fall, Spring	<b>CLE (3)</b>
<b>Spring 3rd Year 17 cr.</b>	<b>BIOL 2604 (3)</b> General Microbiology Pre: BIOL 1105, 1106, CHEM 1035, 1036	<b>BSE 3504 (3)</b> Transport Processes in BSE Pre: BSE 3154, ESM 3024 Spring Only	<b>BSE 3524 (3)</b> Unit Operations <sup>1</sup> Spring Only Co: BSE 3504	<b>BIOL 2614 (2)</b> General Microbiology Lab <sup>4</sup> Fall, Spring, Summer 1	<b>BCHM 2024 (3)</b> Concepts of Biochem <sup>2,4</sup> Pre: CHEM 2514 or CHEM 2535 Fall, Spring, Summer 2	<b>BSE 3534 (3)</b> Bioprocess Engineering <sup>1</sup> Co: BSE 3504 & BIOL 2604 Pre: BSE 3154 Spring Only
<b>Fall 4th Year 14 cr.</b>	<b>ISE 2014 (2)</b> Engineering Economy Pre: ENGE 1215	<b>BSE 4125 (2)</b> Comprehensive Design Project Pre: BSE 3334 or 3524 Fall Only	<b>Engineering Topics Elective (3)</b>	<b>BSE 4544 (3)</b> Protein Separation Engineering <sup>1</sup> Pre: BSE 3504 or CHE 3144 Fall Only	<b>BMES 4994 (1)</b> BME Undergrad. Research (required for BME minor)	<b>CLE (3)</b>
<b>Spring 4th Year 15 cr.</b>	<b>BSE 4126 (3)</b> Comprehensive Design Project Pre: BSE 4125 Spring Only		<b>BSE Elective (3)</b>	<b>Engineering Topics Elective (3)</b>	<b>CLE (6)</b>	

<sup>1</sup> BSE Elective; <sup>2</sup> Chemistry Elective; <sup>3</sup> Engineering Elective; <sup>4</sup> Technical Elective; <sup>5</sup> CLE