

# BIOMEDICAL ENGINEERING (INSTRUMENTATION, SIGNALS AND IMAGING TRACK), CO-OP OPTION, BS

## Bachelor of Science in Biomedical Engineering, Instrumentation, Signals, and Imaging with Co-op (480005BS)

This option of the undergraduate program in Biomedical Engineering follows the instrumentation, signals and imaging track and includes a cooperative education component.

The following information has official approval of the **Department of Biomedical Engineering** and **The College of Engineering and Polymer Science**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Progress Report (DPR) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisor.

### 1st Year

Fall Semester		Hours
3150:151	Principles of Chemistry I <sup>1</sup>	3
3150:152	Principles of Chemistry I Laboratory	1
3300:111	English Composition I <sup>1,2</sup>	3
3450:221	Analytic Geometry-Calculus I <sup>1</sup>	4
4800:101	Tools for Biomedical Engineering	3
	Hours	14

### Spring Semester

3150:153	Principles of Chemistry II <sup>1</sup>	3
3450:222	Analytic Geometry-Calculus II <sup>1</sup>	4
3650:291	Elementary Classical Physics I <sup>1</sup>	4
4800:111	Introduction to Biomedical Engineering Design	3
	Second Writing Course <sup>1,3</sup>	3
	Hours	17

### 2nd Year

Fall Semester		Hours
3100:200	Human Anatomy & Physiology I	3
3100:201	Human Anatomy & Physiology Laboratory I	1
3450:223	Analytic Geometry-Calculus III <sup>1</sup>	4
3650:292	Elementary Classical Physics II <sup>1</sup>	4
4400:231	Circuits I	3
4400:230	Circuits I Laboratory	1
4800:201	Biomedical Engineering Sophomore Seminar	1
	Hours	17

### Spring Semester

3100:202	Human Anatomy & Physiology II	3
3100:203	Human Anatomy & Physiology Laboratory II	1
3450:335	Introduction to Ordinary Differential Equations	3
4400:332	Circuits II	3
4400:330	Circuits II Laboratory	1
4450:220	Digital Logic Design	4
4800:220	Biomedical Computing	3
	Hours	18

### Summer Semester

4100:300	Cooperative Education Work Period (Possible)	
	Hours	0

### 3rd Year

#### Fall Semester

3600:120	Introduction to Ethics	3
4300:201	Statics <sup>1</sup>	3
4400:340	Signals & Systems	4
4400:360	Physical Electronics	3
4800:305	Introduction to Biophysical Measurements	4
	Hours	17

#### Spring Semester

4100:301	Cooperative Education Work Period	0
	Hours	0

#### Summer Semester

3470:461	Applied Statistics	4
4600:305	Thermal Science	2
	General Education or Honors Distribution <sup>4</sup>	3
	Hours	9

### 4th Year

#### Fall Semester

4100:302	Cooperative Education Work Period	0
	Hours	0

#### Spring Semester

4600:203	Dynamics <sup>1</sup>	3
4800:310	Modeling & Simulation of Biomedical Systems	3
	Biomedical Engineering Elective <sup>5</sup>	3
	General Education or Honors Distribution <sup>4</sup>	3
	General Education or Honors Distribution <sup>4</sup>	3
	Hours	15

#### Summer Semester

4100:403	Cooperative Education Work Period	0
	Hours	0

### 5th Year

#### Fall Semester

4800:325	Design of Medical Devices	3
4800:420	Biomedical Signal & Image Processing	3
4800:491	Biomedical Engineering Design I	2
	Biomedical Engineering Elective <sup>5</sup>	3

	General Education or Honors Distribution <sup>4</sup>	3
	Hours	14
<b>Spring Semester</b>		
4800:300	Biomaterials	3
4800:430	Design of Medical Imaging Systems	3
4800:492	Biomedical Engineering Design II	2
	Biomedical Engineering Elective <sup>5</sup>	3
	General Education or Honors Distribution <sup>4</sup>	3
	General Electives	4
	Hours	18
	Total Hours	139

<sup>1</sup> Honors sections may be available; check the schedule of classes.

<sup>2</sup> The Biomedical Engineering Department recommends that English Composition I be used to satisfy writing course requirement but other choices are available. See the General Education Program for details.

<sup>3</sup> Check General Education Program or Honors Distribution to find courses that satisfy the second writing course requirement.

<sup>4</sup> Credit hours shown for General Education or Honors Distribution are general guidelines only. These courses should be chosen in accordance with the appropriate General Education curriculum guide (for non-honors students) or Honors Distribution (for honors students). Honors students must also ensure that their course selections meet additional requirements not shown on this curriculum guide.

<sup>5</sup> Biomedical Engineering Electives must include a minimum of 3 credits from Biomedical Engineering (4800). All other electives may be chosen from a list of Approved Electives.