

# B.S. in Biomedical Engineering

## Program Guide for **New First-Year Students** (Effective Fall 2018 for Students Entering Prior to Fall 2020)

Department of Biomedical Engineering (bme@rowan.edu)

*Students who entered Rowan University prior to Fall 2018 or on or after Fall 2020 should follow the guide for their program and start year in consultation with their advisor*

### Rowan University Graduation Requirements

- Students must complete at least 120 s.h. (semester hours) of coursework that applies to their Rowan University degree
- Students must have an overall/cum. G.P.A. of at least 2.0. (Only Rowan University courses count toward the G.P.A.)
- A minimum of 30 s.h. of coursework must be completed at/through Rowan University
- Only grades of “D-“ or above may apply to graduation requirements (some programs may set higher minimums)
- Students must apply for graduation and should do so for the term in which they will complete all program requirements.

### Program-Specific Graduation Requirements

#### Rowan Core Courses (General Education)

*Students must satisfy the requirements for all six Rowan Core Literacies*

Rowan Core Literacy	Course #	Course Name	Sem/Yr	Grade	Credits
Communicative (COML)	COMP 01111	College Composition I			3 s.h.
	ENGR 01201	Sophomore Engineering Clinic I			4 s.h.
	ENGR 01202	Sophomore Engineering Clinic II			4 s.h.
Artistic (ARTL)					3 s.h.
Global (GLBL)					3 s.h.
Humanistic (HUML)		Should be LIT as well			3 s.h.
Quantitative (QNTL)	MATH 01130	Calculus I			4 s.h.
Scientific (SCIL)	CHEM 06100	Chemistry I (with Lab)			4 s.h.
					<b>Subtotal: 28 s.h.</b>

#### Rowan Experience (RE) Courses

*Courses that satisfy Rowan Experience requirements should be included in the Non-Program, Major or Rowan Core sections, and their credits are counted there. A course may satisfy more than one RE requirement.*

(LIT) Broad-Based Literature course

(RS) Rowan Seminar course  
ENGR 01101 Freshman Engineering Clinic I  
is the RS for BME Students

(WI) Writing Intensive course  
ENGR 01403 Senior Engineering  
Clinic is WI for BME Students

#### Non-Program Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
CHEM 06101	Chemistry II (with Lab)				4 s.h.
CS 01104 or CS 04103	Introduction to Sci. Programming or Computer Science and Programming				3 s.h. or 4 s.h.
PHYS 00220	Introductory Mechanics (with Lab)	SCIL, Pre-req. for PHYS 02222, BME 11201, BME 11303, >= C- required			4 s.h.
PHIL 09341	Biomedical Ethics	HHL			3 s.h.
STAT 02284	Statistics for Biomedical Sciences				3 s.h.
ENT 06240	Entrepreneurship and Innovation	SBS			3 s.h.
					<b>Subtotal: 20 s.h.</b>

## Major Courses ( s.h.)

### Foundational Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
ENGR 01101	Freshman Engineering Clinic I	RS			2 s.h.
ENGR 01102	Freshman Engineering Clinic II				2 s.h.
MATH 01131	Calculus II	>= C- required			4 s.h.
BME 11100	Biomedical Engineering Seminar				0 s.h.
<b>Subtotal:</b>					<b>8 s.h.</b>

### Mid-Level Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
MATH 01230	Calculus III	>= C- required			4 s.h.
MCB 01101	Foundations in Bio for Biomed Sci I (with Lab)				4 s.h.
MCB 01102	Foundations in Bio for Biomed Sci II (with Lab)	>= C- required			4 s.h.
MATH 01235	Math for Engineering Analysis	>= C- required			4 s.h.
PHYS 02222	Introduction to Electricity and Magnetism (with Lab)	>= C- required			4 s.h.
BME 11201	Chemical Foundations in BME	>= C- required			4 s.h.
<b>Subtotal:</b>					<b>24 s.h.</b>

### Upper-Level Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
BME 11301	Physiological Foundations in BME				4 s.h.
BME 11302	Electrical Foundations in BME				4 s.h.
BME 11303	Mechanical Foundations in BME				4 s.h.
ENGR 01303	Junior Engineering Clinic	Must take twice			2 s.h.
ENGR 01303	Junior Engineering Clinic				2 s.h.
ECE 09404	Principles of Biomedical Systems and Devices				3 s.h.
BME 11411	Sim, Model, and Control in Biomed Systems				2 s.h.
ENGR 01403	Senior Engineering Clinic	Must take twice, WI			2 s.h.
ENGR 01403	Senior Engineering Clinic	WI			2 s.h.
<b>Subtotal:</b>					<b>25 s.h.</b>

### Advanced Science Elective

*Choose one courses from the following bank of upper-level Science courses*

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<input type="radio"/> CHEM 07200	Organic Chemistry I				4 s.h.
<input type="radio"/> BIOL 10210	Human Anatomy and Physiology I				4 s.h.
<input type="radio"/> BIOL 10212	Human Anatomy and Physiology II				4 s.h.
<b>Subtotal:</b>					<b>4 s.h.</b>

### Science/Technical Elective

*Choose one course taught in the College of Science and Math or College of Engineering (not BME) that is not a pre-requisite for any required courses.*

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<b>Subtotal:</b>					<b>3 s.h.</b>

## Biomedical Engineering Core Competency Focus Electives

*Choose 6 CCF courses. 4 must be in-discipline (BME 11.4xx, excluding BME 11.411), up to 2 may be from list of approved out-of-discipline CCF courses*

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<b>Subtotal:</b>					<b>18 s.h.</b>

**Total Program Credits: 130 s.h.**