

# Biomedical Engineering

126 credits, 2019/2020

## First Year

### Fall Semester

4	MAC 2281 or MAC 2311 Calculus I
3	CHM 2045 General Chemistry I
1	CHM 2045L General Chemistry I Lab
R	EGN 3000 Foundations of Engineering
3	EGN 3000L Foundations of Engineering Lab (TGEI)
3	ENC 1101 Composition I
14	<i>Total Credits</i>

### Spring Semester

4	MAC 2282 or MAC 2312 Calculus II
3	CHM 2046 General Chemistry II
1	CHM 2046L General Chemistry II Lab
3	PHY 2048 General Physics I
1	PHY 2048L General Physics I Lab
3	ENC 1102 Composition II
15	<i>Total Credits</i>

## Second Year

### Fall Semester

4	MAC 2283 or MAC 2313 Calculus III
3	PHY 2049 General Physics II
1	PHY 2049L General Physics II Lab
3	EGN 3311 Statics
3	BME 4100 Biomedical Engineering
3	EGN 3443 Probability & Statistics for Engineers (TGEI)
17	<i>Total Credits</i>

### Spring Semester

3	EGN 3433 Modeling & Analysis Eng Syst or MAP 2302 Differential Equations
3	EGN 3343 Thermodynamics
3	BME 3053 Computer Prog. BME
3	BSC 2010 Cellular Processes
1	BSC 2010L Cellular Processes Lab
3	* General Education Core Social Science
16	<i>Total Credits</i>

### Summer

3	CHM 2210 Org Chem I
2	CHM 2210 Org Chem I Lab
3	ENC 3246 Comm. for Engineers
1	Professional Elective
9	<i>Total Credits</i>

## Third Year

### Fall Semester

3	BME 4508 Biomedical Signals and Systems Analysis
3	BME 4503 Biomedical Instrumentation
3	EGN 3373 Introduction to Electrical Systems I
3	EGN 3365 or EMA 4003 Materials
3	General Education Core Humanities
15	<i>Total Credits</i>

### Spring Semester

2	BME 4056C Biomedical Eng. Lab I
3	BME 3312 Molecular and Cellular Eng.
3	BME 4409 Engineering Physiology
3	BME 3082 Ethics for BME (ERCE)
3	EGN 3321 Dynamics
14	<i>Total Credits</i>

### Internship/Co-op

List  
Company/employer  
name and position

## Fourth Year

### Fall Semester

3	BME 3032 Biomedical Transport Process
2	BME 4057C Biomedical Engineering Lab II
3	BME 4882 Biomedical Engineering Design I
3	BME Upper-Level Elective
3	STEM Upper-Level Elective
1	Apply for Graduation
14	<i>Total Credits</i>

### Spring Semester

3	BME 4883 Biomedical Engineering Design II (HIP)
3	BME Upper-Level Elective
3	STEM Upper-Level Elective
3	General Ed. Human & Cultural Diversity
12	<i>Total Credits</i>

**Note:** Limited Access Admission noted on overleaf. Refer to catalog for continuation requirements.

\* Students must meet the Civic Literacy requirement with credit for AMH 2020, POS 2041 or passing the Civic Literacy test.

TGE = Tampa General Education; C = Creative Thinking, I = Information & Data Literacy

ERCE = Ethical Reasoning & Civic Engagement, HIP = High Impact Practice Capstone

# Limited Access Entrance Requirements for B.S. in Biomedical Engineering

## First-Year Students:

Incoming first-year students may be directly invited into the Biomedical Engineering Major program if they are first admitted to the University of South Florida and meet the following criteria:

- Minimum SAT Math 710 or ACT Math 30
- Minimum High School Weighted GPA of 4.0 (as determined by USF Undergraduate Admissions)

First-year students who do not meet the above criteria may elect Pre-Biomedical Engineering (Pre-BME) as their major and work towards admission to the upper-division major, following the requirements listed below.

## Sophomores:

Current USF students may elect Pre-Biomedical Engineering (Pre-BME) as their major and then must meet the following minimum requirements to be considered for admission to the upper-division program.

- Minimum cumulative 3.5 GPA for the prerequisite courses, as listed below (best attempt);\*
- Minimum grade of C in each prerequisite course listed below;
- No more than two attempts allowed for the prerequisite courses listed below (withdrawals included);
- Completion of the first three semesters of the BME plan of study by the end of the third semester after matriculation to the University;
- Completed BME departmental online application.

\*Only the best attempt in each prerequisite course as listed below, is considered for admission into the BME program.

During the fall semester of the sophomore year, pre-BME majors apply for admission to the upper-division BME major, which begins in the spring semester of the sophomore year.

## Transfers:

Transfer students must meet the following minimum requirements to be considered for admission into the BME program.

- Minimum 2.0 cumulative (overall) GPA;
- Minimum cumulative 3.5 GPA in the prerequisite courses listed below;
- Minimum grade of C in each prerequisite course listed below;
- No more than two attempts allowed for the prerequisite courses listed below (withdrawals included);
- Completed BME departmental online application.

Applicants who do not meet the minimum admission requirements as stated above will not be eligible for admission into the BME program. Transfer applications are referred to the department only after the USF Office of Admissions (including official transcripts) considers them complete. Applications are reviewed periodically and not on a rolling basis. The date of review may vary depending on the number of applications received. Transfer applicants coming from out-of-state or private Florida institutions will be considered on a space available basis only.

## **Prerequisite Courses for Admission to the Upper-Division Major**

- \_\_\_ **Calculus I or Engineering Calculus I (MAC 2311 or MAC 2281)**
- \_\_\_ **Calculus II or Engineering Calculus II (MAC 2312 or MAC 2282)**
- \_\_\_ **Calculus III or Engineering Calculus III (MAC 2313 or MAC 2283)**
- \_\_\_ **Differential Equations (MAP 2302 or EGN 3433)**
- \_\_\_ **Physics I with lab (PHY 2048 or PHY 2060, PHY 2048L)**
- \_\_\_ **Physics II with lab (PHY 2049 or PHY 2061, PHY 2049L)**
- \_\_\_ **General Chemistry I with lab (CHM 2045 & 2045L)**
- \_\_\_ **General Chemistry II with lab (CHM 2046 & 2046L)**
- \_\_\_ **Organic Chemistry I with lab (CHM 2210 & 2210L)**