Biomedical Engineering B.S.B.E.

126 credits, 2024/2025

First Year

Fall Semester		Spring Semester	
4	MAC 2281 or MAC 2311 Calculus I	4	MAC 2282 or MAC 2312 Calculus II
3	CHM 2045 General Chemistry I	3	CHM 2046 General Chemistry II
1	CHM 2045L General Chemistry I Lab	1	CHM 2046L General Chemistry II Lab
3	BME 3009 Intro to Biomedical Engineering	3	PHY 2048 General Physics I
R	EGN 3000 Foundations of Engineering	1	PHY 2048L General Physics I Lab
3	EGN 3000L Foundations of Engineering Lab (TGEC)	3	ENC 1102 Composition II
3	ENC 1101 Composition I		
17	*Total Credits*	15	*Total Credits*

Second Year

Fall Semester		Spring Semester		Summer	
4	MAC 2283 or MAC 2313 Calculus III	3	EGN 3433 Modeling & Analysis Eng Syst	3	EGN 3343 Thermodynamics
3	PHY 2049 General Physics II		**or** MAP 2302 Differential Equations	3	EGN 3443 Prob & Stats for Engineers (TGEI)
1	PHY 2049L General Physics II Lab	3	BME 3053 Computer Prog. BME	3	Human & Cultural Diversity
3	BME 3060 Biomedical Eng. Fundamentals	3	CHM 2210 Organic Chemistry I	1	Professional Elective (BME 4914 or 4943)
3	BSC 2010 Cellular Processes	2	CHM 2210 Organic Chem. I Lab		
1	BSC 2010L Cellular Processes Lab	3	EGN 3373 Electrical Systems I		
15	*Total Credits*	14	*Total Credits*	10	*Total Credits*

Third Year

Fall Semester		Spring Semester		Summer
3	BME 4508 Biomedical Signals and Systems Analysis	3	BME 3082 Ethics for BME (TGEE)	**Internship/Co-op**
3	BME 4503 Biomedical Instrumentation	3	BME 3312 Molecular and Cellular Eng.	List
3	BME 4232 Biomechanics	2	BME 4056C Biomedical Eng. Lab I	Company/employer
3	STEM Upper-Level Elective	3	BME 4104 Biomaterials Engineering	name and position
3	General Education Core Humanities	3	BME 4409 Engineering Physiology	
15	*Total Credits*	14	*Total Credits*	

Fourth Year

Fall Semester		Spring Semester	
3	BME 3632 Biomedical Transport Process	3	BME 4883C Biomedical Engineering Design II (TGEH)
2	BME 4057C Biomedical Engineering Lab II	3	BME Upper-Level Elective
3	BME 4514C Embedded Systems for BME	3	STEM Upper-Level Elective
3	BME 4882 Biomedical Engineering Design I	3	General Ed. Social Science
3	BME Upper-Level Elective		
!	***Apply for Graduation***		
14	*Total Credits*	12	*Total Credits*

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

***** Students must meet the Civic Literacy requirement with credit for AMH 2010 (fall 2024 or later), AMH 2020, or POS 2041 **and** passing the Florida Civics Literacy Exam.

TGEC = Creative Thinking, TGEI = Information & Data Literacy, TGEE = Ethical Reasoning & Civic Engagement, TGEH = High Impact Practice Capstone

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

https://catalog.usf.edu/preview_program.php?catoid=21&poid=10399

First-Year Students: Incoming first-year students who are interested in the Biomedical Engineering Major program must meet the following entrance criteria for this rigorous specialized admissions program:

- Minimum SAT Math 670 or ACT Math 29 or CLT 29
- Minimum High School Weighted GPA of 3.6 (as determined by USF Undergraduate Admissions)
- Ideally, students will have completed advanced high school courses in Chemistry, Physics, Calculus and Biology.

Sophomores: Current USF students 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 with a minimum 3.2 cumulative GPA for those semesters;
- Completed BME departmental online application.
  *Only the best attempt in each prerequisite course as listed below, is considered for admission into the BME program.

Students apply for admission to the upper-division BME major once all prerequisite courses are complete, which typically is in the spring semester of the sophomore year.

Continuation Requirement:

In addition to the requirements above, in order for students to be allowed to continue into the upper-division BME major beginning in the fall semester of the junior year, they must also earn a 3.2 or higher Engineering GPA (includes all College of Engineering courses) by the end of the fourth semester of the BME plan of study.

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

- Completed BME departmental online application:
- 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).

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)**
- ___ **Modeling Analysis Eng Systems OR Differential Equations (EGN 3433 or MAP 2302)**
- ___ **Physics I and lab (PHY 2048 or PHY 2060, PHY 2048L)**
- ___ **Physics II and lab (PHY 2049 or PHY 2061, PHY 2049L)**
- ___ **General Chemistry I and lab (CHM 2045 & 2045L)**
- ___ **General Chemistry II and lab (CHM 2046 & 2046L)**
- ___ **Organic Chemistry I and lab (CHM 2210 & 2210L)**
- ___ **Biology I (Cellular Processes) and Lab (BSC 2010 & 2010L)**