B.S. Biomedical Engineering Degree

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.

First Year

Fall

Course	Prerequisites	Credit
MA 1160 – Calculus with Technology I	ALEKS Maath Placement >=86	4
ENG 1101 – Engineering Analysis & Problem Solving	MA 1160 (C)	3
BE 2100 – BME Seminar	X	1
CH 1150 – University Chemistry I	CH 1151 (C)	3
CH 1151 – University Chemistry I Lab	CH 1150 (C)	1
PH 1100 – Physics I Lab	MA 1160 (C)	1
UN 1015 – Composition	X	3
Total		**16**

Spring

Course	Prerequisite	Credit
MA 2160 – Calculus with Technology II	MA 1160	4
ENG 1102 - Engineering Modeling and Design	MA 1160 (C), ENG 1101	3
CH 1160 – University Chemistry II	CH 1150 and CH 1151; CH 1161 (C)	3
CH 1161 – University Chemistry II Lab	CH 1150 and CH 1151; CH 1161 (C)	1
PH 2100 – Physics	MA 1160, PH 1100 (C)	3
Essential Ed – Foundations of the Human World		3
Total		**17**

Second Year

Fall

Course	Prerequisite	Credit
MA 3160 – Calculus III	MA 2160	4
BE 2400 – Cellular and Molecular Biology	CH 1150 and MA 1160 or MA 1161 or MA 1121	3
BE 2700 – Signals and Systems	CH 1150 and PH 2100 and MA 2160 and ENG 1102	3
BL 2010 – Anatomy & Physio I		3
BL 2011 – Anatomy & Physio I Lab	BL 20010 (C)	1
Essential Ed – Communication Intensive		3
Total		**17**

Spring

Course	Prerequisite	Credit
MA 2321 – Accelerated Linear Algebra	MA 2160, MA 3521 (C)	2
MA 3521 – Accelerated Differential Equations	MA 2160, MA 2321 (C)	2
BE 2110 – Statistical Methods for BME	MA 1135 or MA 1160 or MA 1161 or MA 1121	3
BE 2800 Biomaterials I	BE 2400	3
BL 2020 Anatomy & Physiology II	BL 2010	3
BL 2021 Anatomy & Physiology II Lab	BL 2011 and BL 2020 (C)	1
Essential Ed – Intercultural Competency		3
Total		**17**

Third Year

Fall

Course	Prerequisite	Credit
BE 3300 - Biomechanics I	BE 2400 and (MA 2321 or MA 2320 or MA 2330) and (MA 3521 or MA 3520 or MA 3530) and BL 2010 (C)	3
BE 3400 - Lab Techniques	BE 2800	2
BE 3800 - Biomaterials II	BE 2700 (C) and BE 2800	3
EE 3010 - Circuits & Instru.	MA 1121 or MA 1160 or MA 1161	3
PH 1200 - Physics Lab	PH 1100 (or PH 1111 or Ph 1141 or Ph 1161	1
PH 2220 – Physics II	(PH 1200(C) or PH 2261(C) or PH 1161)	3
Act. for Wellbeing & Success		1
Total		**16**

Spring

Course	Prerequisite	Credit
BE 4900 BME Design Fundamentals	Must be enrolled in one of the following class(es): Junior, Senior	2
BE 3350 – Human Biomechanics	BE 3300	3
BE 3550 – Fluid Mechanics	MA 3160 and (MA 3520 or MA 3521) and BE 3300	4
BE 3700 – Bio Instru.	EE 3010 and PH 2200 (C) and BL 2020 (C) and BE 2700	3
BE 3701 – Bio Instru. Lab	BE 3700 (C)	1
SHAPE: Essen Ed Exper. 3000+		**3**
Total		**16**

Fourth Year

Fall

Course	Prerequisite	Credit
BE 4901 - BME Senior Design I	BE 3350 and BE 3700 and BE 3701 and BE 3800 and BE 4900	2
Technical Elective I	Varies	3
Technical Elective II	Varies	3
Science Elective	Varies	3
SHAPE: Arts & Culture		3
Act. For Wellbeing & Success		1
Total		**15**

Spring

Course	Prerequisite	Credit
BE 4910 – BME Senior Design II	BE 4900 and BE 4901	2
Technical Elective I	Varies	3
Technical Elective II	Varies	3
Free Elective		1
SHAPE: Elective		3
Act. For Wellbeing & Success		1
Total		**13**

Grand Total = 127 Credits

For 2025 – 2026

Revised 06/30/2025

General Notes

- Prerequisite courses are noted by a plain arrow. The prerequisite course must be successfully completed PRIOR to taking the subsequent course. Concurrent Prerequisites ~ (C) ~ may be taken at the same time, although it is not necessary if the prerequisite course is completed first. Required Corequisite courses that MUST be taken together in the same semester.
- Free Electives: Any credits that are 1000-level or above, not on the Activities for Well-being and Success list, and not non-repeatable duplicated or equivalent courses, are acceptable towards free elective credits.

University Requirements

- Essential Education Requirements: 24 total credits. Required courses are UN1015-Composition (3 credits), a Foundations in the Human World course (3 credits), a Communication Intensive course (3 credits), an Arts & Culture course (3 credits), an Intercultural Competency (3000+) course (3 credits), a SHAPE course (3 credits), an Essential Education Experience (3000+) course (3 credits), and 3 credits of Activities for Wellbeing and Success.
- Activities for Well-being and Success: Mainly physical education courses with some additions. Three credits are required for graduation. These credits will be included as earned hours and may be used to determine full-time enrollment status.

Biomedical Requirements

- The Biomedical Degree Plan is very prescriptive. If you think you need to deviate from the plan, please visit your Academic Advisor.
- A grade of 'C' or better in CH 1150, MA2160 & PH 2100 is required as a prerequisite for BE 2700 and BE 3800.

Math Requirements

- Students are initially placed into a math course based on their ACT/SAT math scores, results from the online ALEKS assessment, or credit earned through a math placement exam (such as AP, IB, or CLEP). To fulfill the Calculus I requirement, students may take either MA1160 (4 credits) or MA1161 (5 credits).
- MA2321 – Accelerated Linear Algebra is taught during the first half of the semester, and MA3521– Accelerated Differential Equations during the second half. Students must register for both MA2321 and MA3521 under the same section number within the same semester. If a student does not feel comfortable taking the accelerated versions, they may take MA 2320 & MA 3520, which are the full semester versions.

Science Elective

- Must be a 2000+ level course in Chemistry (CH), Computer Science (CS), Physics (PH), Biology (BL) and Kinesiology & Integrative Physiology (KIP).

Technical Elective

- Must be a 3000+ level course in any engineering field.