

BIOMATERIALS & BIOMECHANICS

Bachelor of Science in Biomedical Engineering

Semester I / Fall Total Credits: 18	Semester II / Spring Total Credits: 17	Semester III / Fall Total Credits: 17	Semester IV / Spring Total Credits: 15	Semester V / Fall Total Credits: 17	Semester VI / Spring Total Credits: 17	Semester VII / Fall Total Credits: 14	Semester VIII / Spring Total Credits: 13
MAC 2281/2311¹ Calculus I for Eng. (4)	MAC 2282/2312¹ Calculus II for Eng. (4)	MAC 2283/2313¹ Calculus III for Eng (4)	MAP 2302¹ Diff. Equations (3)	UCC Art (3)	EGN 3365 Materials in Eng. (3)	EGM 3311 Analysis of Eng. Syst. (3)	BME 4260 Eng. Hemodynamics (3)
CHM 1045¹ Gen. Chem. I (3)	PHY 2048¹ Physics I w/ Calc. (4)	PHY 2049¹ Phys. w/ Calc. II (4)	ESI 3215 Eval of Eng’g Data (3) or (STA 3033) (3)	EGM 3503 Applied Mechanics (4) or EGN 3311 (3) & 3321(3)	BME 3632 BME Transport (3)	EML 4804 Intro to Mechatronics (3)	BME 4211 Orthopedic Biomech. (3)
CHM 1045L¹ Gen. Chem. I Lab (1)	PHY 2048L¹ Phys I w/ Calc. I Lab I (1)	PHY 2049L¹ Phys. w/ Calc. II Lab (1)					
BME 1008C Intro. To BME (2)	CHM 1046¹ Gen. Chem. II (3)	CHM 2210¹ Org. Chem. I (4)	BME 2740 BME Mod. & Sim. (3)	EEL 3110C Circuits Analysis and lab (4)	BME 4503C Med. Inst. Design (4)	BME 4800C Des. Bio. Sys. & Dev. (4)	BME 4930² Undergrad Sem. (0)
CHM 1046L¹ Gen. Chem. II Lab (1)	CHM 2210L¹ Org. Chem. I Lab (1)						
BSC 2010¹ Gen. Bio I (3)							
BSC 2010L¹ Gen. Bio I Lab (1)	BME 1054L BME Computing (1)	Humanities Group One (3)	Humanities Group Two (3)	BME 3403 Eng. Ana. Bio. Sys. I (3)	BME 4011 Clinical Rotation (1)	BME 4100 Biomaterials (3)	BME 4908 Sr. Des. Project (3)
SLS 1501 First Year Exper. (1)	ENC 1102 Writing & Rhet II (3)		Social Science Group One (3)	BME 3721 BME Data Eval. Prin. (3)	BME 3404 Eng. Ana. Bio. Sys. II (3)	BME 4050L BME Lab I (1)	BME 4051L BME Lab II (1)
ENC 1101 Writing & Rhet. I (3)					Social Science Group Two (3)		BME 4230 Biomech. of Cardio Syst. (3)

¹ Minimum “C” or better in all Common Pre-requisites AND a combined GPA of a 2.5 in all Common Pre-requisites are required for graduation

² Student’s must confirm attendance to ten BME approved seminars throughout the program in order to graduate

NOTE 1: Any student found to be taking any BME course without its prerequisite or co-requisite will be dropped from the course without a refund.

NOTE 2: Transfer and Change of Major students must have a “C” or better in the following courses: MAC 2311, CHM 1045/L, BSC 2010/L, and PHY 2048/L. Students must also have at least a 2.0 overall GPA to transfer or change majors to BME.

OTHER REQUIREMENTS (MUST BE COMPLETED FOR GRADUATION):

FLENT/FLEX: _____ 9 Summer Credit Hours: _____ UCC: _____ 2.5 Prerequisite GPA: _____ Total Credits: _____ / 128

GL1: _____ GL2: _____ GRW1: _____ GRW2: _____ Civics Literacy: _____

For Reference Only

Check Catalog for complete details
Total Credits for Major: 128
Please see next page for co-reqs & pre-reqs for each course

BIOMATERIALS & BIOMECHANICS | PREREQUISITES/COREQUISTES

Bachelor of Science in Biomedical Engineering

COURSES MUST BE COMPLETED WITH COMBINED GPA OF A 2.5 ONLY "C" OR BETTER WILL BE ACCEPTED FOR THESE COURSES

- MAC 2311 Calculus I (4)
Prereqs: MAC 1147 OR MAC 1140 & MAC 1114
- MAC 2312 Calculus II (4)
Prereq: MAC 2311
- MAC 2313 Multivariable Calculus (4)
Prereq: MAC 2312
- MAP 2302 Differential Equations (3)
Prereq: MAC 2312
- BSC 2010 General Biology I (3)
- BSC 2010L General Biology I (1)
- PHY 2048 Physics with Calculus I (4)
Prereq: MAC 2311
Coreq: PHY 2048L
- PHY 2048L Physics with Calculus I Lab (1)
Coreq: PHY 2048
- PHY 2049 Physics with Calculus II (4)
Prereqs: PHY 2048 & MAC 2312
- PHY 2049L Physics with Calculus II Lab (1)
Coreq: PHY 2049
- CHM 1045 General Chemistry I (3)
Coreq: CHM 1045L
- CHM 1045L General Chemistry I Lab (1)
Coreq: CHM 1045
- CHM 1046 General Chemistry II (3)
Prereqs: CHM 1045 & CHM 1045L
Coreq: CHM 1046L
- CHM 1046L General Chemistry II Lab (1)
Coreq: CHM 1046
- CHM 2210 Organic Chemistry I (4)
Prereqs: CHM 1046 & CHM 1046L
Coreq: CHM 2210L
- CHM 2210L Organic Chemistry I Lab (1)
Coreq: CHM 2210

GRADE OF "D" OR BETTER WILL BE ACCEPTED FOR BELOW COURSES

- BME 1008C Introduction to BME (2)
- BME 1054L BME Computing (1)
- BME 2740 BME Modeling and Simulation (3)
Prereqs: BSC 2010 & BME 1054L
Coreqs: MAP 2302 & BME 1008C
- ESI 3215 Evaluation of Engineering Data I (3)
Prereq: MAC 2312
- STA 3033 Probability and Statistics (3)
Prereq: MAC 2312
- BME 3721 BME Data Evaluation Principles (3)
Prereq: STA 3033 OR ESI 3215
- BME 3403 Engineering Analysis of Bio Sys I (3)
Prereqs: PHY 2049 & CHM 2210, BME 2740
- BME 3404 Engineering Analysis of Bio Sys II (3)
Prereq: BME 3403
- EGM 3503 Applied Mechanics (4)
Prereqs: MAC 2312 & PHY 2048
- EEL 3110C Circuit Analysis & Lab (4)
Prereqs: MAC 2312, PHY 2049, PHY 2049L & BME1008C
Coreqs: MAP 2302
- BME 3632 BME Transport (3)
Prereqs: BME 2740, EGM 3503, CHM 1046, MAP 2302, PHY 2049 & MAC 2313
- BME 4503C Medical Instrumentation (4)
Prereq: EEL 3110C
- BME 4011 Clinical Rotations for BME (1)
Prereq: BME 3403
- BME 4100 Biomaterials (3)
Prereq: EGM 3503
Coreq: BME 3404
- BME 4050L BME Lab I (1) (Fall Only)
Prereqs: BME 3721 & EEL 3110C
Coreq: BME 4100, BME 3632
- BME 4051L BME Lab II (1) (Spring Only)
Prereqs: BME 3721 & EEL 3110C
Coreq: BME 4100, BME 3632
- BME 4800C Design of BME Systems and Devices (3)
Prereqs: BME 3404, BME 4503C, BME 3721 & BME 4011
Coreq: BME 3632
- BME 4908 Senior Design Project (3)
Prereqs: BME 4800C
- BME 4930 Undergraduate Seminar (0)

*The course is considered PASS or FAIL

**Students must enroll for the course

ENGINEERING ELECTIVES

- BME 4562 Biomedical Optics (3) (Fall Only)
Prereqs: PHY 2049 & BME 3403
- BME 4531 Medical Imaging (3) (Spring Only)
Prereqs: PHY 2049 & BME 2740
- BME 4422 Biophysics of Neural Comp. (3) (Fall Only)
Prereqs: EEL 3110C
- EEL 3135 Signals & Systems (3) (Varies by Dept.) *Must email advisor to be enrolled
- EEE 4510 Intro to Digital Syst. (3) (Varies by Dept.)
Prereq: EEL 3135
- EEL 3657 Control Systems I (3) (Varies by Dept.)
Prereqs: EEL 3110C & EEL 3135
- BME 4211 Orthopedic Biomech. (3) (Spring Only)
Prereq: BME 4100
- BME 4260 Eng. Hemodynamics (3) (Spring Only)
Prereqs: BME 3632 & BME 3404
- EGN 3365 Materials in Eng. (3) (Varies by Dept.)
Prereqs: CHM 1045, MAC 2311 & PHY 2048
- EGM 3311 Analysis of Eng. Sys. (3) (Varies by Dept.) *Must email advisor to be enrolled
- EML 4804 Intro. to Mechatronics (3) (Varies by Dept.)
Prereq: EEL 3110C
- BME 4311 Molecular Engineering (3) (Fall Only)
Prereq: BME 3403
- BME 4332 Cell and Tissue Eng. (3) (Fall Only)
Prereqs: MAC 2313, BME 3632 & BME 4100
- BME 4230 Biomech of Cardio. Syst (3) (Spring Only)
Prereq: BME 3632, BME 3404, BME 4100

SCIENCE ELECTIVES (ALLOWED 3 MAX)

- CHM 2211 Organic Chemistry II (3) (Varies by Dept.)
Prereq: CHM 2210 | Coreq: CHM 2211L
- CHM 3120 Analytic Chemistry (3) (Varies by Dept.)
Prereqs: CHM 1046 & CHM 1046L | Coreq: CHM 3120L
- BCH 3033 General Biochemistry (3) (Varies by Dept.)
Prereqs: CHM 2211 & BSC 2010
- CHM 4304 Biological Chemistry I (3) (Varies by Dept.)
Prereqs: CHM 2211 & CHM 2211L
- CHM 4307 Biological Chem. II (3) (Varies by Dept.)
Prereq: CHM 4304
- PCB 3063 Genetics (3) (Varies by Dept.)
Prereq: BSC 2010
- PCB 4023 Cell Biology (3) (Varies by Dept.)
Prereqs: PCB 3063 & CHM 1046
- PCB 4233 Immunology (3) (Varies by Dept.)
Prereq: PCB 3063
- MCB 3020 General Microbiology (3) (Varies by Dept.)
Prereqs: CHM 2210, CHM 2211, BSC 2010 & BSC 2011
- ZOO 3753 Histology (3) (Varies by Dept.)
Prereqs: BSC 2010, CHM 2210 & CHM 2211