

REQUIREMENTS FOR THE BACHELOR OF SCIENCE
GALLOGLY COLLEGE OF ENGINEERING
THE UNIVERSITY OF OKLAHOMA

Academic Year
For Students Entering the Oklahoma State System for Higher Education Summer 2022 through Spring 2023

General Requirements	
Minimum Total Credit Hours	129
Minimum Retention/Graduation Grade Point Averages:	
Overall - Combined and OU	2.00
Major - Combined and OU	2.00
Curriculum - Combined and OU	2.00

Program
Biomedical Engineering
B108
Bachelor of Science

OU encourages students to complete at least 33 hours of applicable coursework each year to have the opportunity to graduate in 4 years.

GENERAL EDUCATION AND COLLEGE REQUIREMENTS

Courses designated as Core I, II, III, IV, or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student's major. **Courses graded P/NP will not apply.**

A grade of C or better is required in each course in the curriculum, including all prerequisite courses.

UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS

Code	Title	Credit Hours
Core Area I: Symbolic and Oral Communication		
<i>English Composition</i>		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
<i>Language (0-10 hours in the same language)</i>		
This requirement can be met by two years of the same language in high school:		0-10
Beginning Course (0-5 hours)		
Beginning Course, continued (0-5 hours)		
<i>Mathematics</i>		
MATH 1914	Differential and Integral Calculus I (Core I) ^{1,2}	4
Core Area II: Natural Science (including one laboratory)		
PHYS 2514	General Physics for Engineering and Science Majors (Core II) ²	4
CHEM 1315	General Chemistry (Core II-Lab) ²	5
or CHEM 1335	General Chemistry I: Signature Course	
Core Area III: Social Science		
P SC 1113	American Federal Government	3
Choose one course ³		3
Core Area IV: Arts & Humanities		
<i>Artistic Forms</i>		
Choose one course ³		3
<i>Western Culture</i>		
HIST 1483	United States to 1865	3
or HIST 1493	United States, 1865 to the Present	
Choose one course (excluding HIST 1483 and HIST 1493) ³		3
<i>World Culture</i>		
Choose one course ³		3
Core Area V: First-Year Experience		
Choose one course ³		3
Total Credit Hours		40-50

¹MATH 1914, MATH 2924, and MATH 2934 can be substituted with MATH 1823, MATH 2423, MATH 2433, and MATH 2443.

²Major support requirements that also satisfy University General Education requirements.

³To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.

FREE ELECTIVES

Electives to bring total applicable hours to the minimum total required for the degree including a minimum of 40 upper-division hours.

THIS PROGRAM HAS CHANGES PENDING STATE REGENTS APPROVAL FOR 2022-23. THESE PENDING CHANGES ARE NOT REFLECTED HERE.

ACCREDITED BY THE ENGINEERING ACCREDITATION COMMISSION OF ABET, <https://www.abet.org>

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a **grade of C** or better is required in each course in the curriculum, including all prerequisite courses.

MAJOR REQUIREMENTS

Code	Title	Credit Hours
Required Courses		
BME 2333	Biomedical Engineering Fundamentals	3
BME 2433	Signals and Systems for Biomedical Engineering	3
BME 3143	Biomechanics	3
BME 3722	Numerical Methods in Biomedical Engineering	2
BME 3533	Biomedical Instrumentation	3
BME 3531	Bioinstrumentation Lab	1
BME Lab 1 ¹		1
BME 3123	Biotransport	3
BME 3233	Biomaterials	3
BME 4813	Quantitative Physiology	3
BME Lab 2 ¹		1
BME 4713	Biomedical Engineering Design I	3
BME 4823	Biomedical Engineering Design II	3
Total Credit Hours		32

¹Choose from the following BME Area Core Labs: BME 3111, BME 3121, BME 3131, BME 3141, BME 3151, or BME 3161.

MAJOR SUPPORT REQUIREMENTS

Code	Title	Credit Hours
Math and Science		
BIOL 1124	Intro Biol: Molecule/Cell/Phys	4
CHEM 1415	General Chemistry (Continued)	5
C S 1213	Programming for Non-Majors with Python	3
ECE 2723	Electrical Circuits I	3
ISE 3293	Applied Engineering Statistics	3
MATH 2924	Differential and Integral Calculus II	4
MATH 2934	Differential and Integral Calculus III	4
MATH 3113	Introduction to Ordinary Differential Equations	3
PHYS 2524	General Physics for Engineering and Science Majors	4
Upper-Division Biology Elective		
Course chosen per BME faculty approval ¹		3
BME Electives		
Choose 12 hours of electives from the list of approved courses maintained by the department		12
Science, Math, and Engineering Electives		
Choose 6 hours of electives from the list of approved courses maintained by the department		6
Additional College Requirements		
ENGR 1411	Freshman Engineering Experience ²	1
ENGR 2002	Professional Development	2
Total Credit Hours		57

¹Choose one of the following: CHEM 3053, CHEM 3653 BIOL 3333, BIOL 3113, BIOL 4843, or BIOL 3833.

²Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

More information in the catalog: (<http://ou-public.courseleaf.com/gallogly-engineering/stephenson-biomedical-engineering/biomedical-engineering-standard-bachelor-science/>).

Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses.

Two college-level courses in a single world language are required; this may be satisfied by successful completion of 2 years in a single world language in high school. Students who must take a language at the University will have an additional 6-10 hours of coursework.

Courses designated as Core I, II, III, IV or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.

Year	FIRST SEMESTER		Hours	SECOND SEMESTER		Hours
FRESHMAN	ENGL 1113	Principles of English Composition (Core I)	3	ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
	CHEM 1315	General Chemistry (Core II-Lab) ^{1,3}	5	CHEM 1415	General Chemistry (Continued) (Core II-Lab) ^{1,3}	5
	MATH 1914	Differential and Integral Calculus I (Core I) ³	4	MATH 2924	Differential and Integral Calculus II ³	4
	ENGR 1411	Freshman Engineering Experience ²	1	PHYS 2514	General Physics for Engineering and Science Majors (Core II) ³	4
	Approved Elective: First-Year Experience (Core V) ⁵		3			
CREDIT HOURS		16	CREDIT HOURS		16	
SOPHOMORE	MATH 2934	Differential and Integral Calculus III	4	MATH 3113	Introduction to Ordinary Differential Equations	3
	PHYS 2524	General Physics for Engineering and Science Majors	4	C S 1213	Programming for Non-Majors with Python	3
	BIOL 1124	Intro Biol: Molecule/Cell/Phys (Core II-Lab)	4	HIST 1483 or HIST 1493	United States to 1865 (Core IV) or United States, 1865 to the Present	3
	ENGR 2002	Professional Development	2	ECE 2723	Electrical Circuits I	3
	BME 2333	Biomedical Engineering Fundamentals	3	BME 2433	Signals and Systems for Biomedical Engineering	3
			ISE 3293	Applied Engineering Statistics	3	
CREDIT HOURS		17	CREDIT HOURS		18	
JUNIOR	BME 3143	Biomechanics	3	BME 3123	Biotransport	3
	BME 3722	Numerical Methods in Biomedical Engineering	2	BME 3233	Biomaterials	3
	BME 3533	Biomedical Instrumentation	3	BME 4813	Quantitative Physiology	3
	BME 3531	Bioinstrumentation Lab	1		BME Lab 2	1
		BME Lab 1	1		BME Elective	3
		BME Elective	3		BME Elective	3
				Upper-Division Biology Elective (per BME faculty approval) ⁴	3	
CREDIT HOURS		16	CREDIT HOURS		16	
SENIOR	BME 4713	Biomedical Engineering Design I	3	BME 4823	Biomedical Engineering Design II	3
		Science, Math, Engineering Elective (Per Advisor Approval)	3		BME Elective	3
		Approved Elective: Social Science (Core III) ⁵	3		Science, Math, Engineering Elective, (Per Advisor Approval)	3
		Approved Elective: Western Culture (Core IV) ⁵	3	P SC 1113	American Federal Government (Core III)	3
		Approved Elective: Artistic Forms (Core IV) ⁵	3		Approved Elective: World Culture (Core IV) ⁵	3
CREDIT HOURS		15	CREDIT HOURS		15	

¹ CHEM 1315 and CHEM 1415 can be substituted with CHEM 1335 (Fall only) and CHEM 1435 (Spring only), respectively.

² Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

³ The prerequisite courses for BME 2333 require a minimum grade of B.

⁴ Pre-medical students should contact the OU Pre-Med Office, 415 Cate Center #1, (405) 325-2457. In addition to pre-med courses in above program, students will need: CHEM 3153, PHYS 1311 and PHYS 1321, PSY and SOC, Cell or Molecular Biology, and Genetics. Recommend BIOL 3103. Students should also plan to take the MCAT in April of their junior year.

⁵ To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000).

BME AREA CORE LABS

Code	Title	Credit Hours
BME 3111	Bioimaging Lab	1
BME 3121	Biotransport Lab	1
BME 3131	Bioelectricity Lab	1
BME 3141	Biomechanics Lab	1
BME 3151	Molecular, Cellular and Tissue Engineering Lab	1
BME 3161	Biomedical Micro-/Nano-Technology Lab	1

BME ELECTIVE COURSES

Choose from the following or other courses per advisor approval:

Code	Title	Credit Hours
BME 5213	Biomechanics I	3
BME 5233	Biomaterials	3
BME 5243	Biochemical Engineering	3
BME 5293	Transport in Biological Systems	3
BME 5373	Tissue Engineering	3
ECE 5843	Medical Imaging Systems	3
BME 5970	Special Topics/Seminar	1-3
ECE 4863/5863	Bioinstrumentation	3