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

Academic Year	General Requirements	Program
For Students Entering the Oklahoma State System for Higher Education **Summer 2024 through Spring 2025**	Minimum Total Credit Hours ..... **145** **Minimum Retention/Graduation Grade Point Averages:** Overall - Combined and OU ..... **3.25** Major - Combined and OU ..... **3.25** Curriculum - Combined and OU **3.25**	**Biomedical Engineering** **A108/F109 Q062** Bachelor of Science/Master of Science

OU encourages students to complete at least 29 hours of applicable coursework each year to have the opportunity to graduate in 5 years.

Minimum Total Credit Hours: 145

Overall GPA - Combined and OU: 3.25
Major GPA - Combined and OU: 3.25
Curriculum GPA - Combined and OU: 3.25

Program Code: A108/F109 Q062

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		
English Composition		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
Language (0-10 hours in the same language)		
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)		
Mathematics		
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		
Artistic Forms		
Choose one course [3]		3
Western Culture		
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
World Culture		
Choose one course [3]		3
Core Area V: First-Year Experience		
ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) [4]	3
Total Credit Hours		**40-50**

1. MATH 1914, MATH 2924, and MATH 2934 can be substituted with MATH 1823, MATH 2423, MATH 2433, and MATH 2443.
2. Major support requirements that also satisfy University General Education requirements.
3. To 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.
4. Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

Free Electives

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

Bachelor of Science in Biomedical Engineering accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org, under the General Criteria and the Bioengineering, Biomedical and Similarly Named Program Criteria.

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 1421	Introduction to Biomedical Engineering	1
BME 2333	Biomedical Engineering Fundamentals	3
BME 2433	Signals and Systems for Biomedical Engineering	3
BME 3143	Biomechanics	3
BME 3723	Numerical Methods in Biomedical Engineering	3
BME 3533	Biomedical Instrumentation	3
BME 3531	Bioinstrumentation Lab	1
BME 3171	Biomedical Engineering Lab 1	1
BME 3123	Biotransport	3
BME 3233	Biomaterials	3
BME 4813	Quantitative Physiology	3
BME 3181	Biomedical Engineering Lab 2	1
BME 4713	Biomedical Engineering Design I	3
BME 4823	Biomedical Engineering Design II	3
Total Credit Hours		**34**

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
BME Electives		
Choose 15 hours of electives from the list of approved courses maintained by the department		15
Science, Math, and Engineering Electives		
Choose 3 hours of electives from the list of approved courses maintained by the department		3
Additional College Requirements		
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
Total Credit Hours		**53**

Graduate Requirements

Up to 12 hours of graduate level courses that satisfy MS in biomedical engineering requirements can be shared between BS and MS degrees.

Thesis Option

Code	Title	Credit Hours
Core Courses		
Biomedical Engineering Electives		
Choose four courses in Biomedical Engineering from a list maintained by the School of Biomedical Engineering [1,2]		12
Life Sciences Electives		
Choose two courses in Life Sciences from a list maintained by the School of Biomedical Engineering [2]		6
Additional Engineering, Science, or Math Electives		
Choose two courses in engineering, science or math selected in consultation with the student's research supervisor [2]		6
Thesis		
BME 5980	Research for Master's Thesis	6
Total Credit Hours		**30**

1 For engineering background students (non-biomedical engineering students), a 3-hour physiology course is required unless completed through prior study (as determined by the Graduate Studies Committee). Students who have fulfilled the physiology requirement through prior coursework will not receive credit toward the degree for additional physiology courses taken at OU unless the SBME graduate liaison approves in advance.

2 Electives must be chosen from an approved list maintained by the School of Biomedical Engineering.

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

Suggested Semester Plan of Study

Bachelor of Science in Biomedical Engineering accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org, under the General Criteria and the Bioengineering, Biomedical and Similarly Named Program Criteria.

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]	5	CHEM 1415	General Chemistry (Continued) (Core II-Lab) [1]	5
	MATH 1914	Differential and Integral Calculus I (Core I) [2]	4	MATH 2924	Differential and Integral Calculus II [2]	4
	ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) [3]	3	PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
				BME 1421	Introduction to Biomedical Engineering	1
		CREDIT HOURS	**15**		**CREDIT HOURS**	**17**
SOPHOMORE	MATH 2934	Differential and Integral Calculus III [2]	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 Responsibilities and Skills of Engineers and Scientists	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 3533	Biomedical Instrumentation	3	BME 3233	Biomaterials	3
	BME 3531	Bioinstrumentation Lab	1	BME 4813	Quantitative Physiology	3
	BME 3171	Biomedical Engineering Lab 1	1	BME 3181	Biomedical Engineering Lab 2	1
	BME 3723	Numerical Methods in Biomedical Engineering	3		BME Elective 5	3
		BME Elective 5	3	P SC 1113	American Federal Government	3
					Approved Elective: Social Science (Core III) [4]	3
		CREDIT HOURS	**14**		**CREDIT HOURS**	**19**
SENIOR	BME 4713	Biomedical Engineering Design I	3	BME 4823	Biomedical Engineering Design II	3
		Graduate-level Biomedical Engineering Elective (per a list maintained by the department) 6	3		Graduate-level Biomedical Engineering Elective (per a list maintained by the department) 6	3
		Graduate-level Biomedical Engineering Elective (per a list maintained by the department) 6	3		Graduate-level Additional Science, Math, Eng. Elective (per advisor) [6]	3
		Approved Elective: Artistic Forms (Core IV) [4]	3		Approved Elective: World Culture (Core IV) [4]	3
					Approved Elective: Western Culture (Core IV) [4]	3
		CREDIT HOURS	**12**		**CREDIT HOURS**	**15**
FIFTH YEAR		Graduate-level Life Science Elective (per a list maintained by the department)	3		Graduate-level Life Science Elective (per a list maintained by the department)	3
		Graduate-level Biomedical Engineering Elective (per a list maintained by the department)	3		Graduate-level Elective in Engineering, Science, or Math	3
	BME 5980	Research for Master's Thesis	2	BME 5980	Research for Master's Thesis	4
		CREDIT HOURS	**8**		**CREDIT HOURS**	**10**

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

2 MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

3 Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

4 To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). One of these courses should be an English course 2000-level or above.

5 BME Electives to be chosen from approved list of courses maintained by the Stephenson School of Biomedical Engineering.

6 Courses applied to both BS and MS degrees.