

# Biomedical Engineering B.S.Bm.E.

## Biomedical Engineering B.S.Bm.E. Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Biomedical Engineering degree and a suggested sequence for students who enter the College through the Freshman Engineering Program. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) in the Academic Regulations chapter for university requirements of the program.

First Year	Units	
	Fall	Spring
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
MATH 24004 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) <sup>1</sup>	4	
CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	3	
GNEG 11101 Introduction to Engineering I	1	
Select one of the following to satisfy General Education Outcome 4.2:		
HIST 20003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)	3	
or HIST 20103 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)		
or PLSC 20003 American National Government (ACTS Equivalency = PLSC 2003)		
ENGL 10303 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)		3
Freshman Science Elective with lab <sup>2</sup>		4
MATH 25004 Calculus II		4
PHYS 20304 University Physics I (ACTS Equivalency = PHYS 2034)		4
GNEG 11201 Introduction to Engineering II		1
Year Total:	14	16

Second Year	Units	
	Fall	Spring
Sophomore Science Elective with lab <sup>3</sup>	4	
BMEG 26104 Introduction to Biomedical Engineering	4	
MATH 30803 Linear Algebra	3	
Satisfies General Education Outcome 3.4:		

BIOL 10103 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 10101 Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
BMEG 28103 Biomechanical Engineering		3
BMEG 29004 Biomedical Instrumentation (with Lab)		4
MATH 25804 Elementary Differential Equations		4
BIOL 25473 Cell Biology		3
Fine Arts State Minimum Core Elective (Satisfies General Education Outcome 3.1) <sup>4</sup>		3
Year Total:	15	17

Third Year	Units	
	Fall	Spring
BMEG 36304 Biomaterials (with Lab)	4	
BMEG 31204 Biomedical Signals and Systems (with Lab)	4	
CHEG 23103 Thermodynamics of Single-Component Systems or MEEG 24003 Thermodynamics	3	
CHEM 36053 Organic Chemistry I & CHEM 36051 Organic Chemistry I Laboratory	4	
Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>5</sup>	3	
BMEG 36503 Biomedical Modeling and Numerical Methods		3
BMEG 38204 Biomolecular Engineering (with Lab)		4
BMEG 38001 Clinical Observations and Needs Finding		1
CHEG 21303 Fluid Mechanics or MEEG 35003 Mechanics of Fluids		3
BIOL 24103 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) & BIOL 24101 Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab)		4
STAT 28233 Biostatistics		3
Year Total:	18	18

Fourth Year	Units	
	Fall	Spring
BMEG 48103 Biomedical Engineering Design I	3	
BMEG 46203 Biomedical Transport Phenomena	3	
BMEG Elective	3	
Science Elective	3	
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) <sup>6</sup>	3	
BMEG 48203 Biomedical Engineering Design II (Satisfies General Education Outcome 6.1)		3
BMEG Elective		3
BMEG Elective		3
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) <sup>6</sup>		3

Humanities State Minimum Core Elective (Satisfies General Education Outcomes 3.2 and 5.1) <sup>7</sup>		3
Year Total:	15	15

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**Total Units in Sequence: 128**

<sup>1</sup> Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 24004.

<sup>2</sup> The Freshman Science Elective must be chosen from either CHEM 14203/CHEM 14201 or PHYS 20404.

<sup>3</sup> The Sophomore Science Elective must be either PHYS 20404 or CHEM 14203/CHEM 14201. (Whichever was not chosen as the Freshman Engineering Science Elective).

<sup>4</sup> The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 10003, ARHS 10003, COMM 10003, DANC 10003, LARC 10003, MUSC 10003, MUSC 100H3, MUSC 10103, MUSC 101H3, MLIT 13303, THTR 1003, THTR 10103, or THTR 101H3.

<sup>5</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 10203, COMM 10203, HDFS 14003, HDFS 24103, HIST 11193, HIST 11293, HIST 20903, HUMN 111H4, HUMN 211H4, INST 2013, INST 28103, INST 281H3, PLSC 20103, PLSC 28103, PLSC 281H3, RESM 28503, SOCI 10103, SOCI 201H3, or SOCI 20103.

<sup>6</sup> The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGECE 11003, AGECE 21003, ANTH 10203, COMM 10203, ECON 21003, ECON 22003, ECON 21403, EDST 20003, HDFS 14003, HDFS 24103, HDFS 26003, HIST 11193, HIST 111H3, HIST 11293, HIST 112H3, HIST 20003, HIST 20103, HIST 20903, HUMN 111H4, HUMN 112H4, INST 28103, INST 281H3, PLSC 20003, PLSC 20103, PLSC 21003, PLSC 28103, PLSC 281H3, PSYC 20003, RESM 28503, SOCI 10103, SOCI 101H3, or SOCI 20103. Note, courses cannot be counted twice in degree requirements.

<sup>7</sup> The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 10003, CLST 100H3, CLST 10103, HUMN 112H4, PHIL 20003, PHIL 200H3, PHIL 21003.