

# 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 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) <sup>1</sup>	4	
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	3	
GNEG 1111 Introduction to Engineering I	1	
Select one of the following to satisfy General Education Outcome 4.2:		
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)	3	
or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)		
or PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)		
ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)		3
Freshman Science Elective with lab <sup>2</sup>		4
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)		4
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034)		4
GNEG 1121 Introduction to Engineering II		1
Year Total:	14	16

Second Year	Units	
	Fall	Spring
Sophomore Science Elective with lab <sup>3</sup>	4	
BMEG 2614 Introduction to Biomedical Engineering	4	
MATH 3083 Linear Algebra	3	
Satisfies General Education Outcome 3.4:		

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
BMEG 2813 Biomechanical Engineering		3
BMEG 2904 Biomedical Instrumentation (with Lab)		4
MATH 2584 Elementary Differential Equations		4
BIOL 2533 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 3634 Biomaterials (with lab)	4	
BMEG 3124 Biomedical Signals and Systems (with lab)	4	
CHEG 2313 Thermodynamics of Single-Component Systems or MEEG 2403 Thermodynamics	3	
CHEM 3603 Organic Chemistry I & CHEM 3601L 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 3653 Biomedical Modeling and Numerical Methods		3
BMEG 3824 Biomolecular Engineering (with lab)		4
BMEG 3801 Clinical Observations and Needs Finding		1
CHEG 2133 Fluid Mechanics or MEEG 3503 Mechanics of Fluids		3
BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) & BIOL 2211L Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab)		4
STAT 2823 Biostatistics		3
Year Total:	18	18

Fourth Year	Units	
	Fall	Spring
BMEG 4813 Biomedical Engineering Design I	3	
BMEG 4623 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 4823 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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<b>Total Units in Sequence:</b>	<b>128</b>
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- <sup>1</sup> Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
- <sup>2</sup> The Freshman Science Elective must be chosen from either CHEM 1123/CHEM 1121L or PHYS 2074.
- <sup>3</sup> The Sophomore Science Elective must be either PHYS 2074 or CHEM 1123/CHEM 1121L. (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 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
- <sup>5</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1123, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
- <sup>6</sup> The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGECE 1103, AGECE 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. 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 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.