

BIOSYSTEMS ENGINEERING

Courses highlighted below are available at Lander University
Bioprocess Engineering Emphasis
Curriculum Example*

FRESHMAN YEAR

_____ 4 CH 1010 General Chemistry _____ 3 ENGL 1030 Accelerated Composition _____ 2 ENGR 1020 Engineering Discipline and Skills ¹ _____ 4 MATH 1060 Calculus of One Variable I _____ 3 Gen Ed ⁴ 16	_____ 4 CH 1020 General Chemistry _____ 3 ENGR 1410 Programming and Problem Solving ¹ _____ 2 ENGR 2100 Computer-Aided Design and Engineering Applications _____ 4 MATH 1080 Calculus of One Variable II _____ 3 PHYS 1220 Physics with Calculus I 16
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SOPHOMORE YEAR

_____ 2 BE 2120 Fundamentals of Biosystems Engr. _____ 3 CE 2010 Statics ² _____ 4 MATH 2060 Calculus of Several Variables _____ 3 PHYS 2210 Physics with Calculus II _____ 4 Biology Requirement ³ 16	_____ 2 BE 2100 Intro. to Biosystems Engineering _____ 2 CE 2080 Dynamics ² _____ 4 MATH 2080 Int. to Ordinary Differential Eqtns _____ 3 ME 3100 Thermodynamics and Heat Transfer _____ 4 MICR 3050 General Microbiology 15
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JUNIOR YEAR

_____ 3 BE 3200 Principles and Practices of Geomatics _____ 3 BE 4100 Biol. Kinetics and Reactor Modeling _____ 3 BIOL 4410 Ecology _____ 4 CE 3410 Introduction to Fluid Mechanics _____ 2 ECE 2070 Basic Electrical Engineering _____ 1 ECE 2080 Basic Electrical Engineering Lab. 16	_____ 3 BE 3220 Small Watershed Hydrology & Sedimentology _____ 3 BE 4120 Heat & Mass Transport in Biosystems Engr. _____ 3 BE 4150 Instrumentation and Process Control for Biosystems Engineering _____ 3 BE 4380 Bioprocess Engineering Design _____ 3 CH 2230 Organic Chemistry _____ 1 CH 2270 Organic Chemistry Laboratory 16
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SENIOR YEAR

_____ 3 BCHM 3050 Biochemistry _____ 3 BE 4280 Biochemical Engineering _____ 2 BE 4740 Biosystems Engr. Design/Project Mgt. _____ 2 BE 4750 Biosystems Engr. Capstone Design _____ 2 BIOL 4340 Biol. Chemical Lab. Techniques _____ 4 CE 2060 Structural Mechanics 16	_____ 9 Gen Ed ⁴ _____ 3 Engineering Requirement ⁵ _____ 3 Global Sustainability Requirement ⁶ 15
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126 Total Semester Hours

All Clemson engineering students begin in our General Engineering program and move into their specified major once the departmental standards are completed. Clemson courses ENGL 1030, MATH 1060 and 1080, PHYS 1220, CH 1010, ENGR 1020 and ENGR 1410/or CHE 1300 must all be completed with a "C" or higher before declaring and starting courses in your engineering major.

Footnotes:

- ¹ ENGR 1070, ENGR 1080 and ENGR 1090 may be substituted for ENGR 1410; ENGR 1050 and ENGR 1060 may be substituted for ENGR 1020
- ² ME 2010 may be substituted for CE 2010 and CE 2080
- ³ BIOL 1030/BIOL 1050 or BIOL 1100
- ⁴ Students should choose courses to fulfill General Education requirements including Humanities, Social Science, Cross-Cultural Awareness and Science and Technology in society components. See Undergraduate Announcements and academic advisor for details.
- ⁵ Select from BE 3140, BE 4080, BE 4140, BE 4170, BE 4220, BE 4400, BE 4640, BE 4730, BE 4840, CE 3210, CE 3520, CE 4020, CE 4060, CE 4820, EES 4010, EES 4020, EES 4100, EES 4300, EES 4800, EES 4840, EES 4850, EES 4860, GEOL 4210, IE 3840, or any 3000- or 4000-level ENGR course.
- ⁶ Select CU 2010 or any course from the Sustainability Minor course list.

*See catalog for current curriculum at catalog.clemson.edu

General Education Requirements						
LIT	Non-Lit	SS1	SS2		CCA	STS
Other						
LIFE	Palmetto Fellows	Honors	Athlete	RISE	ROTC	Med School

Comments: