

Biosystems Engineering 2021 - 2022 Curriculum

FRESHMAN YEAR (Gen. Engr.)

CH 1010 General Chemistry	4	CH 1020 General Chemistry	4
ENGL 1030 Composition I or AP Test	3	General Education Requirement ¹	3
ENGR 1020/1021 Engineering Disciplines a	2	ENGR 1410/1411 Programming and Problem Solv	3
MATH 1060 Calculus of One Variable I	4	MATH 1080 Calculus of One Variable II	4
General Education Requirement ¹	3	PHYS 1220 Physics w/Calculus I	3
16		17	

¹ Students should choose courses to fulfill Arts/Humanities, Social Sciences, Cross-Cultural Awareness, STS Gen Ed requirements.

BE 2100/2101 Introduction to Biosystems E	2	BE 2120/2121 Fundamentals of BE	2
BIOL 1030/1050 or BIOL 1100	4	CE 2080 Dynamics ²	2
CE 2010 Statics ²	3	ENGL 3140 Technical Writing	3
MATH 2060 Calculus of Several Variables	4	MATH 2080 Intro. Ord. Diff. Equations	4
PHYS 2210 Physics w/Calculus II	3	MICR 3050/3501 General Microbiology	4
ENGR 2100 Engineering Graphics	2	Global Sustainability Requirement ³	3
18		18	

² Statics: CE 2010; Dynamics: CE 2080; alternatively ME 2010 for both

³ Global Sustainability Requirement: Choose from Sustainability Minor http://catalog.clemson.edu/preview_program.php?catoid=28&pooid=71

JUNIOR YEAR

BE 3100 or ME 3100	3	BE 3220 Watershed Hydrology/Sedimentology	3
BE 3200/3201 Principles Geomatics	3	BE 4120 Heat and Mass Transport BE	3
BE 4100/4101 Biol. Kinetics/Reactor Model	3	BE 4380/4381 Bioprocess Engr Design	3
CE 3410/3430 Introduction to Fluid Mechani	4	BE 4240 Ecological Engineering	3
ECE 2070 Basic Electrical Engineering	2	CH 2230 Organic Chemistry	3
ECE 2080 Electrical Engineering Lab I	1	CH 2270 Organic Chemistry Laboratory	1
16		16	

SENIOR YEAR - Bioprocess Engineering Emphasis

BE 4280 Biochem Engineering	3	BCHM 3050	3
BE 4150/4151 Instr. and Process Control fo	3	Bioprocess Engineering Requirement ⁴	3
BE 4740 BE Capstone Design Project Mgm	1	Arts/Hum/SS Requirement ¹	6
BE 4750 BE Capstone Design	3		
BIOL 4410 General Ecology	3		
CE 2060/2061 Structural Mechanics	4		
17		12	

130 Total Semester Hours

⁴ Bioprocess Engineering requirement: Choose from BE, BIOE, BMOL, or MSE 3000-level or above

SENIOR YEAR - Ecological Engineering Emphasis

BE 4210/4211 Engr. Syst. Soil Water Mana	3	Ecological Requirement 5	3
BE 4150/4151 Instr. and Process Control fo	3	Ecological Engineering Requirement 6	3
BE 4740 BE Capstone Design Project Mgm	1	Arts/Hum/SS Requirement ¹	6
BE 4750 BE Capstone Design	3		
BIOL 4410 General Ecology	3		
CE 2060/2061 Structural Mechanics	4		
17		12	

130 Total Semester Hours

⁵ Ecological Requirement: Choose from BIOL, FOR, HORT, MICR, PES, WFB, 3000-level or above.

⁶ Ecological Engineering requirement: Choose from BE, CE, or EES, 3000-level or above

Notes:

A 2.0 engineering GPA required for graduation

Courses that are P/F or independent/honors research cannot count for any requirements.

We recommend FOR 4340 GIS for all Ecological Eng emphasis students. This could count as either Global Sust Option or Ecological option

2000-level courses can be taken at community colleges. Find course equivalencies at: <https://transferringcredits.app.clemson.edu/transferequivalency.php>

The community college equivalent to Dynamics (CE 2080) is EGR 262 which substitutes for Clemson course EM 2020 (Dynamics)