Biosystems Engineering — Bioprocess Engineering Option (BPEN)

Freshman

Fall	Hours	Spring	Hours
CHEM 1030 Fundamentals Chemistry I	3	ENGL 1120 English Composition II	3
CHEM 1031 Fundamental Chemistry I Laboratory	1	PHYS 1600 Engineering Physics I	4
COMP 1220 Introduction to Computing with Python ***or*** 1230 Introduction to Computing with MATLAB	2	ENGR 1110 Introduction to Engineering	2
MATH 1610 Calculus I	4	MATH 1620 Calculus II	4
HIST 1210 Technology and Civilization I ***or*** 1010 World History I	3	HIST 1220 Technology And Civilization II ***or*** 1020 World History II	3
ENGL 1100 English Composition I	3		
ENGR 1100 Engineering Orientation	0		
	16		**16**

Sophomore

Fall	Hours	Spring	Hours
BSEN 2210 Engineering Methods for Biological Systems	2	BSEN 2240 Biological and Bioenvironmental Heat and Mass Transfer	3
ENGR 2010 Thermodynamics	3	ENGR 2070 Mechanics of Materials	3
ENGR 2050 Statics	3	CHEM 1040 Fundamental Chemistry II	3
MATH 2630 Calculus III	4	CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology	3	MATH 2650 Linear Differential Equations	3
BIOL 1021 Principles of Biology Laboratory	1	Social Science Core[2]	3
	16		**16**

Junior

Fall	Hours	Spring	Hours
BSEN 3310 Hydraulic Transport in Biological Systems	4	BSEN 3240 Process Engineering in Biosystems	3
CHEM 2070 Organic Chemistry I	3	BSEN 3610 Instrumentation and Controls for Biological Systems	3
CHEM 2071 Organic Chemistry I Laboratory	1	BIOL 3200 General Microbiology	3
STAT 3010 Statistics for Engineers and Scientists ***or*** 2510 Statistics for Biological and Health Sciences	3	BIOL 3201 General Microbiology Laboratory	1
BIOL 1030 Organismal Biology	3	BSEN 5240 Bulk Biological Solids Behavior, Handling and Processing	3
BIOL 1031 Organismal Biology Laboratory	1	BCHE 3200 Principles of Biochemistry	3
	15		**16**

Senior

Fall	Hours	Spring	Hours
BSEN 5280 Life-Cycle Assessment for Biological Systems	3	BSEN 4310 Engineering Design for Biosystems	3

BSEN 5540 Biomass and Biofuels Engineering	3	BSEN 5230 Waste Management and Utilization for Biosystems	3
BSEN 4300 Professional Practice in Biosystems Engineering	2	Literature Core[1]	3
PHIL 1020 Introduction to Ethics ***or*** 1040 Business Ethics	3	Fine Arts Core	3
Bioprocess Engineering Elective 1	3	Bioprocess Engineering Elective 2	3
BSEN 5220 Geospatial Technologies in Biosystems	3	UNIV 4AA0 Achieve the Creed	0
	17		**15**

Total Hours: 127

1 The AU Bulletin lists the University Core Curriculum requirements for students in the College of Engineering. Students must complete a sequence in either Literature or History. Biosystems Engineering should complete the World History or Technology and Civilization Course sequence to ensure that all SLOs are met by students by the time of gradution.

2 ECON 2020 preferred.

Bioprocess Engineering Electives: See Advisor for Approved Course Listing.