

DEPARTMENT OF BIOSYSTEMS ENGINEERING

5 YEAR MODEL PROGRAM

For students starting second year Fall 2020

Students are expected to follow either the 4 year or the 5 year model program.

This will ensure prerequisite and timetable requirements are met.

PRELIMINARY ENGINEERING PROGRAM: The following 12 courses must be completed by all engineering students.

2019	cr hr	Pre- (p) or Co- (c) Requisites	cr hr	Pre- (p) or Co- (c) Requisites
Complementary Studies Elective	3		ENG 1430 Engineering Design	3
CHEM 1300 Chemistry	3		ENG 1440 Engineering Statics	3
COMP 1012 Comp Prog Eng	3		ENG 1450 Intro Elec & Comp Eng	3
ENG 1460 Thermal Sciences	3		ENGL 1400 Lit Topics	3
MATH 1510 Applied Calculus 1	3		MATH 1210 C/L Algebra	3
PHYS 1050 Physics	3	MATH 1500/1510 (p or c)	MATH 1710 Applied Calculus 2	3
				MATH 1500/1510 (p), PHYS 1050 (p or c)

ADMISSION TO BIOSYSTEMS ENGINEERING PROGRAM: Any Preliminary Engineering courses not yet completed should be taken in Second Year if p

FALL TERM (September)			WINTER TERM (January)			
SECOND YEAR 2020		Pre- (p) or Co- (c) Requisites			Pre- (p) or Co- (c) Requisites	
BIOE 2590	Biology for Engineers	3	CHEM 1300 (p)	BIOE 2480	Impact of Eng on Enviro	3
BIOE 2900	Design 1	4	ENG 1430 (p)	ENG 2022	Eng CAD Technology	3
CHEM 1310	Intro Physical Chemistry	3	CHEM 1300 (p)	MATH 2132	Math Analysis 2	3
MBIO 1220	Essentials of Microbiolo	3		STAT 2220	Statistics for Engineers	3
						MATH 1210 (p), MATH 1710/1700 (p)
						MATH 1710/1700 (p)

THIRD YEAR 2021

BIOE 2110	Transport Phenomenon	3	ENG 1460 (p)	BIOE 2800	Solid Mechanics	4	ENG 1440 (p), MATH 1710/1700 (p)
BIOE 2790	Fluid Mechanics	4	ENG 1440 (p), MATH 1710/1700 (p)	MECH 2150	Numerical Methods	4	COMP 1012 (p), MATH 2132 (c)
MATH 2130	Math Analysis 1	3	MATH 1210 (p), MATH 1710 (p)	Elective slot (see Note 1 below)		3/4	
Elective slot (see Note 1 below)		3/4		Elective slot (see Note 1 below)		3/4	

FOURTH YEAR 2022

BIOE 3400	Des of Struc Comp Mac	4	BIOE 2800/MECH 2222 (p)	BIOE 3270	Instrumentation for Bios	4	MATH 2132 (p), ENG 1450 (p)
BIOE 3590	Mechanics of Biomater	4	BIOE 2800 (p)	BIOE 3320	Eng Prop of Biolog Mate	4	MATH 2130 (p), BIOE 2800/MECH 2222 (p)
BIOE 3900	Design 2	4	BIOE 2900 (p), BIOE 2022	MECH 3482	Kinematics & Dynamics	4	PHYS 1050 (p), ENG 1440 (p), COMP 1012 (p), MATH 1710 (p)
Elective slot (see Note 1 below)		3/4		ANTH 2430 or ENG 3020		3	
BIOE Design Elective slot (see Note 2)				BIOE Design Elective slot (see Note		4	

FIFTH YEAR 2023

BIOE 4900	Design 3	4	BIOE 3900 (p)	BIOE 4950	Design 4	4	BIOE 4900 (p)
				ENG 3000	Engineering Economics	3	STAT 2220 (p)
BIOE 4240*	Graduation Project	3	BIOE 3270 (p)	BIOE 4240*	Graduation Project	3	BIOE 3270 (p)
BIOE Design Elective slot (see Note 2)		4		BIOE Design Elective slot (see Note		4	
Elective slot (see Note 1 below)		3/4		Elective slot (see Note 1 below)		3/4	

* Students may register for BIOE 4240 Graduation Project in either term.

Note 1: Must choose two science electives (BIOE 2600 & SOIL 4060 or BIOL 1410 & BIOL 1412), two complementary studies electives, and two free electives. (Science electives should be completed by end of Third Year.) Choose from specified lists if a Specialization is desired.

Note 2: Three BIOE design electives are required (out of the four slots shown). Choose from specified lists if a Specialization is desired.

Biomedical Specialization:

Students in the Biomedical Specialization should take BIOL 1410 (Fall) and BIOL 1412 (Winter) in the elective slots of Third Year.

Bioresource Specialization:

Students in the Bioresource Specialization should take BIOE 2600 (Winter) & SOIL 4060 (Winter) in the elective slots of Third Year.

Environmental Specialization:

Students in the Environmental Specialization should take BIOE 2600 (Winter) & SOIL 4060 (Winter) in the elective slots of Third Year.