

DEPARTMENT OF BIOSYSTEMS ENGINEERING

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	2019	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 possible.

FALL TERM (September)

WINTER TERM (January)

SECOND YEAR 2020	Pre- (p) or Co- (c) Requisites	WINTER TERM (January)	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 BIOE 2900 (p)
CHEM 1310 Intro Physical Chemistry	3 CHEM 1300 (p)	MATH 2132 Math Analysis 2	3 MATH 1210 (p), MATH 1710/1700 (p)
MBIO 1220 Essentials of Microbiology	3	STAT 2220 Statistics for Engineers	3 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)
BIOE 4240* Graduation Project	3 BIOE 3270 (p)	ENG 3000 Engineering Economics	3 STAT 2220 (p)
BIOE Design Elective slot (see Note 2)	4	BIOE 4240* Graduation Project	3 BIOE 3270 (p)
Elective slot (see Note 1 below)	3/4	BIOE Design Elective slot (see Note	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.