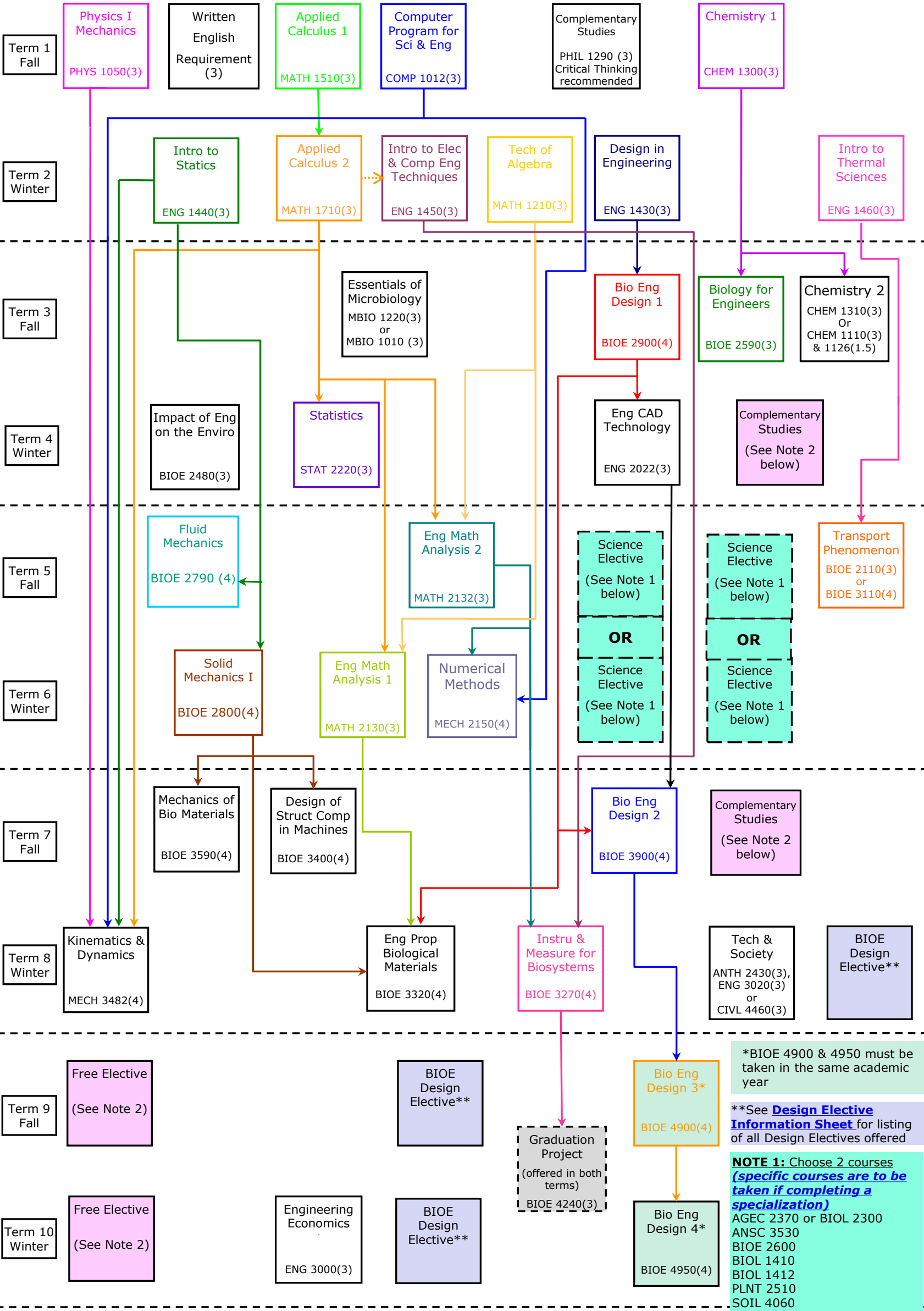


BIOSYSTEMS ENGINEERING: EXAMPLE OF A 10-TERM PROGRAM

*Pre- and co-requisites for Biosystems Engineering Science and Design Electives are dependent on course selection



DEPARTMENT OF BIOSYSTEMS ENGINEERING

5 YEAR MODEL PROGRAM

For students starting second year Fall 2017

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.

(2016)	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		Written English Requirement	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 possil

FALL TERM (September)				WINTER TERM (January)			
SECOND YEAR (2017)		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	BIOE 2900 (p)	
CHEM 1310 Chem 2 (CHEM 1110 & 1126)	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 (2018)							
BIOE 2110 Transport (or BIOE 3110)	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 (2019)							
BIOE 3400 Des of Struc Comp Mach	4	BIOE 2800/MECH 2222 (p)		BIOE 3270 Instrumentation for Biosys	4	MATH 2132 (p), ENG 1450 (p)	
BIOE 3590 Mechanics of Biomater	4	BIOE 2800 (p)		BIOE 3320 Eng Prop of Biolog Mater	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, ENG 3020 or CIVL 4460	3		
BIOE Design Elective slot (see Note 2)				BIOE Design Elective slot (see Note 2)	4		

FIFTH YEAR (2020)							
BIOE 4900** Design 3	4	BIOE 3900 (p)		BIOE 4950** Design 4	4	BIOE 4900 (p)	
				ENG 3000 Engineering Economics	3		
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 2)	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.

**BIOE 4900 & 4950 must be taken in the same academic year

Note 1: Must choose two science electives, 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 (alternatively PLNT 2510¹ in the Fall or ANSC 3530 in the Winter of third year) and SOIL 4060 in the Winter of third year.

Environmental Specialization:

Students in the Environmental Specialization should take BIOE 2600 (alternatively AGECE 2370 in the Fall or BIOL 2300 in the Winter of third year) and SOIL 4060 in the Winter of third year.

1. PLNT 2510 is only offered in the fall every two years.