

Biomedical Engineering Course Plan (Academic Year: 2018-2019)

CULLEN COLLEGE of ENGINEERING
Department of Biomedical Engineering

Freshman Year			
✓	Fall	✓	Spring
	ENGI 1100: Intro to Engineering		ENGI 1331: Computers & Problem-Solving
	BIOL 1361: Biological Science I		BIOL 1362: Biological Science II
	BIOL 1161: Biological Science I Lab		BIOL 1162: Biological Science II Lab
	CHEM 1331: Chemistry I		CHEM 1332: Chemistry II
	CHEM 1111: Chemistry I Lab		CHEM 1112: Chemistry II Lab
	ENGL 1303/1309: First Year Writing I		MATH 1432: Calculus II
	MATH 1431: Calculus I		PHYS 1321: University Physics I
Sophomore Year			
✓	Fall	✓	Spring
	BIOE 2100: Intro to Biomedical Engineering		BIOE 2331: Biomedical Processes
	CHEM 3331: Organic Chemistry I		ECE 2201: Circuit Analysis I
	CHEM 3221: Organic Chemistry I Lab		BCHS 3304: Biochemistry I
	ENGL 1304/1310: First Year Writing II		MATH 3321: Engineering Math
	MATH 2433: Calculus III		Core: Social & Behavioral Sciences
	PHYS 1322: University Physics II		Core: Creative Arts
Junior Year			
✓	Fall	✓	Spring
	MECE 3400: Intro to Mechanics		BIOE 3340: Quantitative Physiology
	ENGI 2304: Technical Communication		BIOE 3140: Quantitative Physiology Lab
	INDE 2333: Engineering Statistics		BIOE 3341: Biothermodynamics
	Core: HIST 1377-US History to 1877		BIOE Track Course [<i>recommend BIOE 4302</i>]
	Core: POLS 1336-US & TX Constitutions		BIOE Track Course
			Core: HIST 1378-US History Since 1877
Senior Year			
✓	Fall	✓	Spring
	BIOE 4335: Capstone Design I		BIOE 4336: Capstone Design II
	BIOE 4315: Intro to Bioinstrumentation		BIOE Track Course [<i>recommend BIOE 4350/4150</i>]
	BIOE 4115: Intro to Bioinstrumentation Lab		BIOE Track Course
	BIOE Track Course		BIOE Track Course
	BIOE Track Course		Core: Language, Philosophy, & Culture
	Core: POLS 1337 - US Government		

Notes:

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Bionanoscience Track
2 required courses:
BIOE 4350 & 4150: Genomic & Proteomic Engineering
BIOE 4302: Numerical Analysis
+Choose 3 from the following:
BIOE 5341: Advanced Biofluid Dynamics
BIOE 4349: Biomedical Microdevices
BIOE 5316: Transport Phenomena in Biosystems
BIOE 5323: Regenerative Medicine & Stem Cell Engineering
BIOE 4303: Biomaterials
Advances in Vision Research
Mass Transport for Bio-systems
Drug Design and Delivery
Cell and Molecular Biology for BME
Tissue Engineering: Principles & Practice
+Choose 2 Additional Advanced BIOE Courses from Technical Electives or other Tracks*
Neural, Cognitive, & Rehabilitation Engineering Track
2 required courses:
BIOE 4350 & 4150: Genomic & Proteomic Engineering
BIOE 4302: Numerical Analysis
+Choose 3 from the following:
BIOE 4342: Biomedical Signal Processing
BIOE 4305: Brain-Machine Interfacing
ECE 3337: Signals & Systems (**ECE 2202 required as prerequisite, but does not count towards degree)
Introduction to Neuro-Computing
Neural Interfaces
+Choose 2 Additional Advanced BIOE Courses from Technical Electives or other Tracks*
Biomedical Imaging Track
5 required courses:
BIOE 4350 & 4150: Genomic & Proteomic Engineering
BIOE 4302: Numerical Analysis
BIOE 5320: Introduction to Electrical Imaging
BIOE 5317: Introduction to Imaging
BIOE 4307: Introduction to Optical Imaging
+Choose 2 Additional Advanced BIOE Courses from Technical Electives or other Tracks*
Additional Advanced Electives
BIOE 3351: Introduction to Diseases
BIOE 5318: Bioinformatics
ECE 3355/3155: Electronics (**ECE 2202/2100 required as pre-requisite)
ECE 3456: Analog Electronics (**ECE 2202/2100 required as pre-requisite)