

Department of Biomedical Engineering

## Biomedical Engineering Course Plan Updated Spring 2021

Freshman Year				
✓	Fall	✓	Spring	
	ENGI 1100: Intro to Engineering		ENGI 1331: Computers & Problem-Solving	
	BIOL 1361/1306: Biological Science I		BIOL 1362/1307: Biological Science II	
	BIOL 1161/1106: Biological Science I Lab		BIOL 1162/1107: Biological Science II Lab	
	CHEM 1331/1311: Chemistry I		CHEM 1332/1312: Chemistry II	
	CHEM 1111: Chemistry I Lab		CHEM 1112: Chemistry II Lab	
	ENGL 1303/1301: First Year Writing I		MATH 1432/2414: Calculus II	
	MATH 1431/2413: Calculus I		PHYS 1321/2325: University Physics I	
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Sophomore Year				
✓	Fall	✓	Spring	
	BIOE 2100: Intro to Biomedical Engineering		BIOE 2331: Biomedical Processes	
	CHEM 3331/2323: Organic Chemistry I		ECE 2201: Circuit Analysis I	
	CHEM 3221/2123: Organic Chemistry I Lab		BCHS 3304: Biochemistry I	
	ENGL 1304/1302: First Year Writing II		MATH 3321: Engineering Math	
	MATH 2433/2415: Calculus III		Core: Social & Behavioral Sciences	
	PHYS 1322/2326: University Physics II		Core: Creative Arts	
	Junior Year			
<b>√</b>	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	
	POLS 1337/GOVT 2305 – US Government		BIOE 4302: Numerical Analysis	
	POLS 1336/GOVT 2306 -US & TX Constitutions		BIOE Track Course	
			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 4350: Genomic and Proteomic Engineering	
	BIOE 4115: Intro to Bioinstrumentation Lab		BIOE 4150: Genomic and Proteomic Lab	
	BIOE Track Course		BIOE Track Course	
	BIOE Track Course		BIOE Track Course	
	HIST 1377-US History to 1877		Core: Language, Philosophy, & Culture	
Notes				
Notes:				



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Bionanoscience Track				
+Choose 3 from the following:				
BIOE 4303: Biomaterials				
BIOE 4310: Drug Design and Delivery #				
BIOE 4311: Advances in Vision Research #				
BIOE 4319: Mass Transport for Bio-systems				
BIOE 4347: Cell and Molecular Biology for BME ^#				
BIOE 4348: Tissue Engineering—Principles & Practice #				
BIOE 4349: Biomedical Microdevices #				
BIOE 4366: Biomolecular Engineering Fundamentals				
+Choose 2 Additional Advanced BIOE Courses from Technical Electives or other Tracks*				
Neural, Cognitive, & Rehabilitation Engineering Track				
+Choose 3 from the following:				
BIOE 4305: Brain-Machine Interfacing				
BIOE 4309: Neural Technology Interfaces #				
BIOE 4313: Introduction to Neurocomputing				
BIOE 4342: Biomedical Signal Processing				
BIOE 4397: Neural Engineering Methods and Applications				
ECE 3337: Signals & Systems (**ECE 2202 required as prerequisite)				
+Choose 2 Additional Advanced BIOE Courses from Technical Electives or other Tracks*				
Biomedical Imaging Track				
3 required courses:				
BIOE 4307: Introduction to Optical Imaging #				
BIOE 5317: Introduction to Imaging #				
BIOE 5320: Introduction to Electrical Imaging				
+Choose 2 Additional Advanced BIOE Courses from Technical Electives or other Tracks*				
Additional Advanced Electives				
BIOE 3351: Introduction to Diseases ^#				
BIOE 4397: Healthcare Innovations and Entrepreneurship				
BIOE 4397: Engineering the Human Body #				
BIOE 5318: Bioinformatics #				
BIOE 5319: Global Healthcare #				
ECE 3355/3155: Electronics (**ECE 2202 required as pre-requisite)				
ECE 3456: Analog Electronics (**ECE 2202 required as pre-requisite)				
Premedical Track Electives				
1 required BIOL course:				
BIOL 3301: Genetics ^				
BIOL 3332/2321: Microbiology ^				
BIOL 4315: Neuroscience ^				
BIOL 4323: Immunology ^				
+Choose 4 Additional BIOE courses marked with #				

<sup>^:</sup> Included in Science GPA calculations: Medical Schools use the BCPM GPA, which takes into account Biology, Chemistry, Physics, and Mathematics courses only. Engineering courses are *not* typically factored into the science GPA calculation.