

Plan of Study for the Biomedical Sciences & Engineering Track
of the Engineering Sciences AB Concentration
Effective for Students Declaring the Concentration after August 1, 2026

NAME: _____

CLASS: _____

EMAIL: _____

DATE: _____

This Plan of Study Form is for a (*Circle One*): DECLARATION REVISION

Please list your selected concentration courses in the schedule below:

Fall 1	Spring 1	Fall 2	Spring 2	Fall 3	Spring 3	Fall 4	Spring 4

REQUIRED COURSES	Selected Courses
Mathematics (2-4 courses) <i>Begin according to placement:</i> Math 1a – Introduction to Calculus I (or Math Ma & Mb) Math 1b – Calculus, Series, and Differential Equations Math 21a – Multivariable Calculus (or Math 22b or 23a) Math 21b – Linear Algebra and Differential Equations (or Math 22a or 23b)	
Physics (2 courses) PS 12a - Mechanics and Statistical Physics (or AP 50a or Physics 15a or 16) PS 12b - Electromagnetism and Quantum Physics (or AP50b or Physics 15b)	
Chemistry/Life Sciences (1 course) Life Sciences 1a – An Integrated Introduction to the Life Sciences (or LPS A – Foundational Chemistry and Biology)	
Computer Science (1 course) CS 50 – Introduction to Computer Science I (or CS 32 – Computational Thinking and Problem Solving or CS 61 – Systems Programming & Machine Organization or AM 10 - Computing w/ Python for Scientists and Engineers or CS 51 – Introduction to Computer Science II)	

REQUIRED COURSES	Selected Courses
Bioengineering Core: Physiology & Modeling (2 courses) ES 53 – Quantitative Physiology as a Basis for Bioengineering BE 110 – Physiological Systems Analysis	
Subtrack-specific Courses (4 courses) <i>Select one Subtrack:</i> • <i>Mechanical Subtrack</i> ○ ES 120 – Intro to the Mechanics of Solids ○ ES 123 – Intro to Fluid Mechanics ○ ES 181 – Engineering Thermodynamics ○ ECE 50 – Intro to Electrical Engineering • <i>Electrical Subtrack</i> ○ ECE 150 – Intro to Probability with Engineering Applications (or AM 101) ○ ECE 50 – Intro to Electrical Engineering (or both ES 152 & CS 141)) ○ To reach 4 courses: 1-2 of BE 128- Biomedical Imaging Systems, BE 129 – Bioelectronics, BE 130 – Neural Control of Movement, BE 131 – Neuroengineering, or ECE 157 – Biological Signal Processing • <i>Chemical & Materials Subtrack</i> ○ ES 123 – Intro to Fluid Mechanics ○ ES 181 – Engineering Thermodynamics ○ BE 191 – Intro to Biomaterials (<i>preferred</i>) (or ES 190 – Intro to Materials Science & Eng.) ○ PS 1 – Chemical Bonding, Energy, & Reactivity (or Chem 10 or PS 11)	
Approved Electives (2 courses from the list below) Engineering Sciences 51, 91r (one term only), 120, 123, 128, 181, 190, 221, 227, or ECE 157 Biomedical Engineering 121, 124, 125, 128, 129, 130, 131, 191 Either Applied Mathematics 101 or ECE 150 One from ECE 50, or 152 Physics 136, 140, 143a, 151, 153 One from Physical Sciences 1, 10, 11, Chemistry 10, 17 or 20 Applied Mathematics 104 or 105	

Required Signatures:

Student

Date

Co-Director of Undergraduate Studies (BME)

Date

Prerequisite Planning Table for the ES AB - Biomedical Sciences & Engineering Track

	Typically Offered	Math	Biology / Chemistry	Physics	Other
<i>Required Courses</i>					
ES 53	Fall			Co: A or B	
BE 110	Fall	<i>21a,b</i>		<i>B</i>	<i>ES 53</i>
<i>Selected Electives</i>					
BE 121	Fall	21b	LS 1a,1b	A,B	ES 53, Co:BE 110
BE 124	Spring	<i>21b</i>		A	CS 50 or equiv.
BE 125	Spring		<i>LS1a, Chem 17</i>		
BE 128	Spring	1b		B	
BE 129	Spring	1b	<i>LS 1a, Chem 17</i>	B	<i>ECE 50 / 152</i>
BE 130	Spring				
BE 131	Fall	1b	<i>LS1a/ES53</i>	B	<i>ES 50</i>
BE 191	Fall	1b	LS1a or LPSa		
CS 1410	Spring				<i>CS50</i>
ECE 50	Spring				
ES 112	Spring	21a	<i>LS1a or LPSa</i>	A	
ES 120	Spring	21a, Co: 21b		A	
ES 123	Spring	21a,b		A	
ECE 150	Spring	21a, Co:21b			
ECE 152	Fall	1a,b		Co: B	
ECE 155	Fall	<i>21a, 21b</i>			
ECE 157	Fall	21a,b			<i>ES 150 or 156</i>
ES 181	Fall			A	
ES 190	Fall	21a,b		A,B	
ES 221	Fall		<i>LS1a, Chem 17</i>	A	
ES 227	Spring				<i>ES 51 or ES 50</i>

¹Courses listed as Recommended Preparation, and not an enforced prerequisite, are shown in italics

²Courses marked with "Co:" may be taken as a co-requisite

³Equivalent courses are accepted for prerequisites (e.g., Phys 15a, PS 12a, or AP50a all count for Physics A)