

BIOMEDICAL ENGINEERING CURRICULUM
BACHELOR OF SCIENCE IN BME - BIOMECHANICS/PREHEALTH CONCENTRATION -
FALL 2022 AND LATER

NAME:		ID:	EMAIL:		CUMULATIVE GPA:		
1st Year (Fall)	Prerequisite	Cr	Semester	1st Year (Spring)	Prerequisite	Cr	Semester
CHEM 125 CHEM I	None	3		CHEM 126 CHEM II	MATH 110 or higher and CHEM 125 or CHEM 121 with a C or higher	3	
CHEM 125A Chem Laboratory	None	1		CHEM 126A CHEM II Lab **	CHEM 125A with a C or higher. Coreq: CHEM 126 or CHEM 122	1	
ENGL 101	None	3		BME 101- Freshman Seminar S		0	
MATH 111 Calc I	None	4		ENGL 102	ENGL 101	3	
PHYS 111 Physics I	coreq PHYS 111A, MATH 111	3		MATH 112 Calc II	MATH 111 with a C or better.	4	
PHYS 111A Physics I Lab	coreq PHYS 111	1		PHYS 121 Physics II	PHYS 111, PHYS 111A, MATH 111 with a C or higher / coreq PHYS 121A, MATH 112 with a C or better.	3	
FED 101	ENGL 101 and (ENGR 101 and MATH 110) or MATH 111	2		PHYS 121A Physics II Lab	PHYS 111/PHYS 111A and MATH 111 with grade of C or better. Coreq: PHYS 122	1	
		17				15	
2nd Year (Fall)			Semester	2nd Year (Spring)			
MATH 211(13) Calc IIIA	MATH 112 with a C or higher.	3		CHEM 244 Organic Chemistry II	CHEM 243 with a C or higher.	3	
MATH 279 (333) Engr Prob & Stat	MATH 112 with a C or higher.	2		CHEM 244A Orgo Lab **	CHEM 125A with a C or higher. Coreq: CHEM 245 or 243	2	
BME 304 - Material Fund	(CHEM 126 or CHEM 122) and PHYS 111 with a C or higher.	3		BME 301 - Electrical Fund U	MATH 112, PHYS 121	3	
CHEM 243 Org Chem	CHEM 126 or CHEM 122 with a C or higher.	3		BME 302 - Mech Fund U	MATH 112, PHYS 121	3	
BME 111 - Intro to Anatomy and Phys	Prereq/Coreq FED 101 with a C or higher.	3		BIOL 201/202	BIOL 200	4	
BIOL 205/206	BIOL 200	4		*Liberal Arts Literacy 2XX	VARIOUS	3	
		18				18	
3rd Year (Fall)				3rd Year (Spring)			
MATH 337 Linear Algebra	MATH 112 with a C or higher.	3		BME 351 - Intro to BioFluid Mech - S	BME 302, MECH 236 and (MECH 320 or BME 321)	3	
MECH 236 Dynamics	For BME students: BME 302 with a C or higher. Must fill out MECH 236 Permit Request.	2		BME 382 Eng Mod Phys Sys	BME 111, BME 301, BME 302 and MATH 222 with a C or Higher	3	
BME 321 Adv Mech for BME	BME 302 with a C or better.	3		CHEM 473 Biochemistry	CHEM 244 or CHEM 245 with a C or higher.	3	
MATH 222 Diff Equations	MATH 112 with a C or higher.	4		BME 478 Intro CAD for Biomech - S	BME 302 and (MECH 320 or BME 321)	4	
*Liberal Arts Literacy 3XX	VARIOUS	3		IE 492 (Management GER)	Junior or Senior Standing	3	
BME 210 Computing for BMEs	MATH 112 with a C or higher.	3					
		18				16	
4th Year (Fall)				4th Year (Spring)			
*Engineering Elective	Please see Catalog & confirm w/ advisor.	3		BME 496 Capstone Design II	BME 495	3	
BME 383 Meas Lab Phys Sys	BME 302, (BME 210 or BME 310), (MATH 279 or MATH 333)	3		Capstone HSS 4XX	Senior Standing	3	
BME 451 Biomechanics I - F	MECH 236 and BME321	3		*Engineering Elective	Please see Catalog & confirm w/ advisor.	3	
BME 495 Capstone Design I	BME 372 or MTEN 201 or (MECH 236 and BME 321) or BME 386. Restrictions: Senior Standing.	2		BME 452 Mech. B&P of Biomat. - S	BME 302, BME 304, MATH 222, (MATH 279 or MATH 333), and BME 321.	3	
				BME 384 Biomech Lab - S	BME 302, MECH 236, BME 321, (MATH 279 or MATH 333), and BME 210	3	
		14				15	
						TOTAL DEGREE CREDITS	131
Additional Coursework	Prerequisite	Cr	Semester	Additional Coursework	Prerequisite	Cr	Semester

All courses are offered Fall and Spring semester unless otherwise labeled: (**F**-Fall only; **S**-Spring only; **U**-also offered in Summer)

Students must earn a grade of "C" or higher to satisfy most course prerequisites.

* **For Liberal Arts Literacy, Engineering Electives and Sci or Engineering Electives please fill in the course number in the space provided in the Prerequisite column.**

Engineering & Science Elective: Please see the list here <https://biomedical.njit.edu/academics/undergraduate/curriculum.php>

Students who score a 5 on the AP Biology exam are recommended to take a higher-level Biology sequence: BIOL 205/206 and BIOL 201/202.

** lab component of this course not required for accredited BME curriculum