

BIOMEDICAL ENGINEERING CURRICULUM
BACHELOR OF SCIENCE IN BME - BIOMECHANICS CONCENTRATION - FALL 2023 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		BME 101- Freshman Seminar S		0	
ENGL 101	None	3		ENGL 102	ENGL 101	3	
MATH 111 Calc I	None	4		MATH 112 Calc II	MATH 111 with a C or better.	4	
PHYS 111 Physics I	coreq PHYS 111A, MATH 111	3		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	
PHYS 111A Physics I Lab	coreq PHYS 111	1		PHYS 121A Physics II Lab	PHYS 111/PHYS 111A and MATH 111 with grade of C or better. Coreq: PHYS 122	1	
FED 101	ENGL 101 and (ENGR 101 and MATH 110) or MATH 111	2					
		17				14	
2nd Year (Fall)			Semester	2nd Year (Spring)			
MATH 211(13) Calc IIIA	MATH 112 with a C or higher.	3		MATH 222 Diff Equations	MATH 112 with a C or higher.	4	
MATH 279 (333) Engr Prob & Stat	MATH 112 with a C or higher.	2		BME 303 - Biological Fundamentals	CHEM 126 or CHEM 121 with a C or higher.	3	
BME 302 - Mech Fund U	MATH 112, PHYS 121 with a C or higher.	3		BME 301 - Electrical Fund U	MATH 112, PHYS 121 with a C or higher. Pre/Coreq: FED 101	3	
BME 210 Computing for BMEs	MATH 112 with a C or higher.	3		BME 304 - Material Fundamentals	(CHEM 126 or CHEM 122) and PHYS 111 with a C or higher.	3	
BME 111 - Intro to Anatomy	Prereq/Coreq FED 101 with a C or higher.	3		*Liberal Arts Literacy 3XX	VARIOUS	3	
*Liberal Arts Literacy 2XX	Various	3					
		17				16	
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		BME 384 Biomech Lab - S	BME 302, MECH 236, BME 321, (MATH 279 or MATH 333), and BME 210	3	
*Sci or Eng Elective (1)	Please see Catalog & confirm w/ advisor.	3		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	
		14				16	
4th Year (Fall)				4th Year (Spring)			
*Engineering Elective	Please see Catalog & confirm w/ advisor.	3		BME 496 Capstone Design II	BME 495	3	
*Sci or Eng Elective (2)	Please see Catalog & confirm w/ advisor	3		Capstone HSS 4XX	Senior Standing	3	
BME 383 Meas Lab Phys Sys	BME 302, (BME 210 or BME 310), (MATH 279 or MATH 333)	3		*Engineering Elective	Please see Catalog & confirm w/ advisor.	3	
BME 451 Biomechanics I - F	MECH 236 and BME321	3		BME 452 Mech. B&P of Biomat. - S	BME 302, BME 304, MATH 222, (MATH 279 or MATH 333), and BME 321.	3	
BME 495 Capstone Design I	BME 372 or MTEN 201 or (MECH 236 and BME 321)or BME 386. Restrictions: Senior Standing.	2					
		14				12	
					TOTAL DEGREE CREDITS	120	
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 better 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>

Liberal Arts Literacy: The BME department recommended electives are COM 313, COM 319, PHIL351, STS221 or STS352 and STS359.