

**BIOMEDICAL ENGINEERING CURRICULUM**  
*BACHELOR OF SCIENCE IN BME - BIOMATERIALS CONCENTRATION - FALL 2023 AND LATER*

Name:		ID:	Email:	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 Lab	None	1		BME 101- Freshman Seminar <b>S</b>		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 higher.	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	3	
PHYS 111A Physics I Lab	coreq PHYS 111	1		PHYS 121A Physics II Lab	PHYS111A and MATH 111 with grade of C or higher. Coreq: PHYS121	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 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 302 - Mech Fund <b>U</b>	MATH 112, PHYS 121 with a C or higher.	3	
BME 303 - Biological Fundamentals	CHEM 126 or CHEM 121 with a C or higher.	3		BME 301 - Electrical Fund <b>U</b>	MATH 112, PHYS 121 with a C or higher. Pre/Coreq: FED 101	3	
BME 111 - Intro to Anatomy and Phys	Prereq/Coreq FED 101 with a C or higher.	3		*Liberal Arts Literacy 2XX	VARIOUS	3	
		14				16	
3rd Year (Fall)			Semester	3rd Year (Spring)			
CHEM 243 Org Chem	CHEM 122 or CHEM 126 with a C or higher.	3		BME383 Meas Lab Phys Sys <b>U</b>	BME 302, (BME 210 or BME 310), (MATH 279 or MATH 333)	3	
MTEN 201 Intro Principles of Materials Engineering	CHEM 126, (PHYS 121 or PHYS 122), MATH 112.	3		*Liberal Arts Literacy 3XX	VARIOUS	3	
BME 352 Biomedical Thermodynamics	MATH 112, PHYS 111, CHEM 126, BME 111. Coreq: MATH 211 or MATH 213.	3		BME 420 Adv. Biomat. Science	BME 302, BME 304, and MTEN 201	3	
BME 385 Cell & Biomat Lab	MATH 112, PHYS 121, BME 304 and (MATH 279 or MATH 333) with a C or higher.	3		IE 492 (Management GER)	Junior or Senior Standing	3	
*Liberal Arts Literacy 3XX	Various	3		BME 422 - Biomat. Charact.	MATH 112, PHYS 121, BME 304 and MTEN 201	3	
		15				15	
4th Year (Fall)			Semester	4th Year (Spring)			
BME 495 Capstone Design I	BME 372 or MTEN 201 or (MECH 236 and BME 321) or BME 386. Restrictions: Senior Standing.	2		BME 496 Capstone Design II	BME 495	3	
BME 382 Eng Mod Phys Sys	BME 111, BME 301, BME 302 and MATH 222 with a C or higher.	3		Capstone HSS 4XX	Senior Standing	3	
BME430 Tissue Engineering	BME 302 and MATH 222 and (BME 303 or R120 201 and R120 202 or BIOL 201 and BIOL 202), and MTEN 201	3		BME 427 Biotransport	BME 303 or (R120 201 and R120 202) or (BIOL 201 and BIOL 202) and MATH 222 and BME 352	3	
*Sci or Eng Elective (1)	Please see Catalog & confirm w/ advisor	3		*Engineering Elective (1)	Please see Catalog & confirm w/ advisor	3	
*Sci or Eng Elective (2)	Please see Catalog & confirm w/ advisor	3		*Engineering Elective (2)	Please see Catalog & confirm w/ advisor	3	
		14				15	
					<b>TOTAL CREDITS</b>	<b>120</b>	
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 Electives: Please see the list here <https://biomedical.njit.edu/academics/undergraduate/curriculum.php>