

BIOMEDICAL ENGINEERING CURRICULUM

BACHELOR OF SCIENCE IN BME - **BIOMATERIALS TRACK** - 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	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	4	
Phys 111 Physics I	coreq Phys 111A, Math 111	3		Phys 121 Physics II	PHYS 111, PHYS 111A, MATH 111 / coreq PHYS 121A, MATH 112	3	
Phys 111A Phys I Lab	coreq Phys 111A	1		Phys 121A Phys. II Lab	PHYS 111A	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	3		Math 222 Diff Equations	MATH 112	4	
Engr Prob & Stat: Math 279 (333)	MATH 112	2		BME 210 Computing for BMEs	Sophomore standing	3	
BME 304 - Material Fundamentals	(CHEM 126 or CHEM 122) and PHYS 111	3		BME 302 - Mech Fund U	MATH 112, PHYS 121	3	
BME 303 - Biological Fundamentals	CHEM 126 or CHEM 121	3		BME 301 - Electrical Fund U	MATH 112, PHYS 121	3	
BME 111 - Intro to Anatomy and Phys	None	3		*Liberal Arts Literacy 2XX	VARIOUS	3	
		14				16	
3rd Year (Fall)				3rd Year (Spring)			
CHEM 243 Org Chem	CHEM 122 or CHEM 126	3		BME383 Meas Lab Phys Sys U	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. Corequisites: MATH 211 OR MATH 213.	3		BME 420 Adv. Biomat. Science	BME 302, BME 304, and (MTSE 301 or MTEN 201)	3	
BME 385 Cell & Biomat Lab	MATH 112, PHYS 121, BME 304 and (MATH 279 or MATH 333)	3		Management GER - IE492	VARIOUS	3	
*Liberal Arts Literacy 3XX	Various	3		BME 422 - Biomat. Charact.	MATH 112, PHYS 121, BME 304 and (MTSE 301 or MTEN 201)	3	
		15				15	
4th Year (Fall)				4th Year (Spring)			
BME 495 Capstone Design I	BME 372 or MTSE 301 or MTEN 201 or (MECH 236 and MECH 320) or (MECH 236 and BME 321) or BME 386. Restrictions: Senior Standing.	2		BME 496 Capstone Design II	BME 495	3	
BME382 Eng Mod Phys Sys	BME 111, BME 301, BME 302 and Math 222			Capstone HSS 4XX	Senior Standing	3	
BME430 Tissue Engineering	BME 302, (BME 303 or R120 102 or BIOL 201), BME 304, MATH 222 and (MTSE 301 or MTEN 201).	3		BME427 Biotransport	MATH 222 and (BME 303 or R120 102 or BIOL 201).	3	
*Sci or Eng Elective (1)				*Engineering Elective (1)		3	
*Sci or Eng Elective (2)				*Engineering Elective (1)		3	
		14				15	
					TOTAL 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 Elective: Please see the list here <https://biomedical.njit.edu/academics/undergraduate/curriculum.php>

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

Liberal Arts Literacy: The BME department recommended electives are ENG340, ENG352, PHIL351, STS221 or STS352 and STS359.