

# 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	Chem 125 or Chem 121 and MATH 110 or higher	3	
Chem 125A Chem Laboratory	None	1		BME 101- Freshman Seminar <b>S</b>		0	
ENGL 101	None	3		ENGL 102	Hum 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, 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	coreq: HUM 101, (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	C in PHYS111 & CHEM126 or CHEM122	3		BME 302 - Mech Fund <b>U</b>	C in MATH 112, PHYS 121	3	
BME 303 - Biological Fundamentals	C in CHEM 126 or CHEM 122	3		BME 301 - Electrical Fund <b>U</b>	C in 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 126 or CHEM 122	3		BME383 Meas Lab Phys Sys <b>U</b>	BME302,BME 210,& MATH 279 or MATH 333	3	
MTEN 201 Intro Principles of Materials Engineering	CHEM126, MATH 112, &PHYS 121	3		*Liberal Arts Literacy 3XX	VARIOUS	3	
BME 352 Biomedical Thermodynamics	CHEM126, MATH112, PHYS111,BME 111	3		BME420 Adv. Biomat. Science	BME302, BME304, and MTSE301 or MTEN 201	3	
BME 385 Cell & Biomat Lab	C in MATH 112, PHYS 121, BME 304 and MATH 279 or MATH 222	3		Management GER - IE492	VARIOUS	3	
*Liberal Arts Literacy 3XX	Various	3		BME 422 - Biomat. Charact.	C in MATH112, PHYS121, BME304 & MTSE301 or MTEN201	3	
		15				15	
4th Year (Fall)				4th Year (Spring)			
BME 495 Capstone Design I	BME 372 OR MTSE 301 OR BME 386 (MECH 236 & BME321) & Senior Standing	2		BME 496 Capstone Design II	BME 495	3	
BME382 Eng Mod Phys Sys	C in BME 111, BME 301, BME 302 and Math 222	3		Capstone HSS 4XX	Senior Standing	3	
BME430 Tissue Engineering	BME302, (BME303 or R120:102), BME 304, MATH 222, 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	
					<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 Summer)

\* 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 approved electives are ENG340, ENG352, PHIL351, STS221 or STS352 and STS359

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