

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

NAME:

EMAIL:

ID:

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 Lab	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 <b>S</b>	None	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 higher.	4	
PHYS 111A Physics I Lab	coreq PHYS 111	1		PHYS 121 Physics II	PHYS 111, PHYS 111A, MATH 111/ coreq PHYS 121A,	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 higher. Coreq: PHYS 122	1	
		<b>17</b>				<b>15</b>	
2nd Year (Fall)	Prerequisite	Cr	Semester	2nd Year (Spring)	Prerequisite	Cr	Semester
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 111 - Intro to Anatomy and Phys	Prereq/Coreq FED 101 with a C or higher.	3		BME 301 - Electrical Fund <b>U</b>	MATH 112, PHYS 121	3	
BME 304 - Material Fund	(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	3	
CHEM 243 Org Chem	CHEM 126 or CHEM 122 with a C or higher.	3		BIOL 201/202	BIOL 200	4	
BIOL 205/206	BIOL200	4		*Liberal Arts Literacy 2XX	VARIOUS	3	
		<b>18</b>				<b>18</b>	
3rd Year (Fall)	Prerequisite	Cr	Semester	3rd Year (Spring)	Prerequisite	Cr	Semester
BME385 Cell & Biomat Lab	MATH 112, PHYS 121, BME 304 and (MATH 279 or MATH 333) with a C or higher.	3		Liberal Arts Literacy 3XX	VARIOUS	3	
MTEN 201 Intro to Princ Mat Eng	CHEM 126, (PHYS 121 or PHYS 122), MATH 112.	3		BME 352 Biol Thermodynamics	MATH 112, PHYS 111, CHEM 126, BME 111. Coreq: MATH 211 or MATH 213.	3	
CHEM 473 Biochemistry	CHEM 244 or CHEM 245 with a C or higher.	3		BME 210 Biomed Computing <b>U</b>	MATH 112 with a C or higher.	3	
*Liberal Arts Literacy 3XX	VARIOUS	3		BME 382 Eng Mod Phys Sys	BME 111, BME 301, BME 302 and MATH 222 with a C or higher.	3	
MATH 222 Diff Equations	MATH 112 with a C or higher.	4		BME 420 Adv. Biomat. Science	BME 302, BME 304, and MTEN 201	3	
		<b>16</b>				<b>15</b>	
4th Year (Fall)	Prerequisite	Cr	Semester	4th Year (Spring)	Prerequisite	Cr	Semester
BME427 Biotransport	BME 303 or (R120 201 and R120 202) or (BIOL 201 and BIOL 202) and MATH 222 and BME 352	3		BME422 - Biomat. Charact. S	MATH 112, PHYS 121, BME 304 and MTEN 201	3	
BME383 Meas Lab Phys Sys <b>U</b>	BME 302, (BME 210 or BME 310), (MATH 279 or MATH 333)	3		*Engineering Track 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 496 Capstone Design II	BME 495	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		Capstone HSS 4XX	Senior Standing	3	
IE 492 (Management GER)	Junior or Senior Standing	3		*Engineering Track Elective	Please see Catalog & confirm w/ advisor	3	
		<b>14</b>				<b>15</b>	
<b>TOTAL CREDITS</b>						<b>128</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>

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