

# BIOMEDICAL ENGINEERING

Louisiana Tech University

Curriculum as of 2021

Name \_\_\_\_\_

Date 7/29/2021

CWID \_\_\_\_\_

Email \_\_\_\_\_@latech.edu

COURSE	PREREQUISITE	SCH	QTR	GRADE
BIEN 202	MATH 241	1	Sp	R*
203	MATH 241	1	F	R
225	BIEN 203, ENGR 221, MATH 244	3	F	R*
235	MEMT 201	3	W	R*
301	BIEN 202, ENGR 222, GPA $\geq$ 2.0 MATH 241-245	3	W	R*
321	BIEN 325○	1	W	R
325	BISC 227, BIEN 225, PHYS 202, GPA $\geq$ 2.0 MATH 241-245	3	W	R*
401	BIEN 301, MATH 245	3	Sp	R*
403	BIEN 401, 425	3	F	R*
425	BIEN 325, MATH 245, STAT 405	3	Sp	R*
430	BIEN 235, 301, ENGR 220	3	F	R*
435	BIEN 403, 430, ENGL 303	1	W	R*
490	ENGR 220, 221, 222 BIEN 401,425,STAT 405	2	F	R*
491	BIEN 403, 430, 490, ENGL 303	2	W	R*
492	BIEN 491	2	Sp	R*
BISC 225		3		*
227	BISC 225	3		*
315	BISC 227, BIEN 225□	3	W, Sp	
CHEM 101	CHEM 100 (or by placement)	2		*
102	CHEM 101	2		*
103	CHEM 100, 101○	1		*
104	CHEM 103	1		
COMM 101		3		
ENGL 101		3		
102	ENGL 101	3		
303	ENGL 102	3		
ENGR 120	MATH 240○, CHEM 100○	2		*
121	ENGR 120, MATH 241○, CHEM 101○	2		*
122	ENGR 121, MATH 242○	2		*
220	ENGR 122, MATH 242, PHYS 201	3		*
221	ENGR 122, MATH 242, PHYS 201	3		*
222	ENGR 122, MATH 242	3		*
MATH 241	MATH 240	3		*
242	MATH 241	3		*
243	MATH 242	3		*
244	MATH 243	3		*
245	MATH 244	3		*
MEEN 215	MEMT 201○	1		
MEMT 201	ENGR 122	2		*
PHYS 201	MATH 241	3		*
202	MATH 242, PHYS 201	3		*
STAT 405	MATH 242	3		*
<b>ELECTIVES</b>				
Art (ART 290, KINE 280, MUGN 290, or THTR 290)		3		
Directed Elective		3		
Directed Elective		3		
Directed Elective		3		
Directed Elective		1		
Humanity		3		
Humanity		3		
Social Science	POLS 201	3		
Social Science	PSYC 102	3		
<b>TOTAL SEMESTER HOURS</b>		<b>128</b>		

SUBSTITUTIONS		
COURSE	SCH	GRADE
1		
2		
3		
4		
5		

ADDITIONAL COURSES		
COURSE	SCH	GRADE
1		
2		
3		
4		
5		

GPA	
Rubric GPA	_____
MATH 241-244 GPA	_____

NOTES	
* requires grade of "C" or higher	
○ credit or registration in	
R course in rubric	
□ Normal Pre-reqs are BISC 132/133. BIEN students may bypass these, but must have completed BISC- 227 and BIEN 225.	
1 Directed electives must be selected in consultation with advisor.	
2 Petitions must be filed for substitutions.	
3 A student must have a minimum 2.0 GPA on all hours pursued in courses designated: BIEN.	

ADDITIONAL COMMENTS	

# BIOMEDICAL ENGINEERING

Louisiana Tech University

FRESHMAN YEAR								
Fall Quarter		Hr	Winter Quarter		Hr	Spring Quarter		Hr
ENGR 120	* Engineering Problem Solving I	2	ENGR 121	* Engineering Problem Solving II	2	<b>BIEN 202</b>	* Biomed Principles I	1
MATH 240	* Precalculus	3	MATH 241	* Calculus I	3	ENGR 122	* Engineering Problem Solving III	2
CHEM 100	* General Chemistry	2	CHEM 101	* General Chemistry	2	MATH 242	* Calculus II	3
COMM 101	Principles of Comm Studies	3	CHEM 103	* General Chemistry Lab	1	CHEM 102	* General Chemistry	2
FYE 100	First Year Experience	1	ENGL 101	Freshman Composition I	3	CHEM 104	General Chemistry Lab	1
						PHYS 201	* Physics for Engr & Sci I	3
		11			11			12

SOPHOMORE YEAR								
Fall Quarter		Hr	Winter Quarter		Hr	Spring Quarter		Hr
<b>BIEN 203</b>	Biomed Principles II	1	ENGR 220†	* Statics & Mechanics of Materials	3	BIEN 235	* Applied Biomaterials	3
ENGR 221‡	* Electrical Engineering & Circuits	3	MATH 244	* Calculus IV	3	ENGR 222‡	* Thermodynamics	3
MATH 243	* Calculus III	3	MEMT 201	* Engineering Materials	2	MATH 245	* Differential Equations	3
BISC 225	* Human Anatomy & Physiology I	3	MEEN 215	Engineering Materials Lab	1	ENGL 102	Freshman Composition II	3
			BISC 227	* Human Anatomy & Physiology	3			
		10			12			12

JUNIOR YEAR								
Fall Quarter		Hr	Winter Quarter		Hr	Spring Quarter		Hr
<b>BIEN 225</b>	* Biomedical Signals and Systems	3	<b>BIEN 301</b>	* Fluid Mechanics & Energy Trans	3	<b>BIEN 401</b>	* Biomed Mass Transport	3
PHYS 202	* Physics for Engr & Sci II	3	<b>BIEN 325</b>	* Bioinstrumentation	3	<b>BIEN 425</b>	* Adv Biomed Instrument Systems	3
ENGL 303	Technical Writing	3	BIEN 321	Biomedical Engr Animal Phys La	1	Directed Elective◊		3
STAT 405	* Statistical Methods	3	<b>BISC 315</b>	Cell Biology	3	Humanity†		3
		12			10			12

SENIOR YEAR								
Fall Quarter		Hr	Winter Quarter		Hr	Spring Quarter		Hr
<b>BIEN 490</b>	Medical Device Design I	2	<b>BIEN 491</b>	* Medical Device Design II	2	<b>BIEN 492</b>	Medical Device Design III	2
<b>BIEN 403</b>	* Physiological Control Systems	3	<b>BIEN 435</b>	Senior Biomed Engineering Lab	1	Fine Arts Appreciation		3
<b>BIEN 430</b>	* Biomechanics	3	Directed Elective◊		3	Social Science**		3
Social Science**		3	Directed Elective◊		3	Directed Elective◊		1
			Humanity†		3			
		11			12			9

Neither MATH 240 nor CHEM 100 count towards the biomedical engineering degree.

\* requires grade of "C" or higher.

Courses in **bold** are typically offered only once per year.

‡ ENGR 220, 221, and 222 can be taken in any sequence. Students must complete ENGR 221 before they can take BIEN 225, and must complete ENGR 222 before they can take BIEN 301.

\*\*Social Science electives can be selected from Anthropology, Criminal Justice, Economics, Geography, International Studies, Political Science, Psychology, and Sociology.

†Humanities electives can be selected from Classical Studies, Communications, Foreign Languages, History, Literature, Philosophy, Religious Studies, Interdisciplinary

◊Directed electives chosen in consultation with academic advisor.