

# BIOMEDICAL ENGINEERING LOUISIANA TECH UNIVERSITY

*Revised Spring 2011*

Name \_\_\_\_\_

Date \_\_\_\_\_

Student ID \_\_\_\_\_

Email \_\_\_\_\_

COURSE	PREREQUISITE	SH	SCHED	GRADE
BIEN 202 203 225 230 301  321 (or BISC 321) 325 400 401 402 403 404 425 430 435	CHEM 102, MATH 240, BISC 130**	1	F	*
	BIEN 202, BISC 130	1	W	*
	ENGR 221, MATH 244	3	F	*
	BIEN 203, MEMT 201, MEEN 215	2	F	*
	ENGR 222, BIEN 202, PHYS 202, BISC 227, BIEN 321 or BISC 321, MATH 241-245 GPA ≥ 2.0	3	W	*
	BIEN 325 (co-req)	1	W	*
	BIEN 225, PHYS 202, BISC 227, MATH 241-245 GPA ≥ 2.0	3	W	*
	BIEN 401, BIEN 425	1	F	*
	BIEN 301, MATH 245	3	Sp	*
	BIEN 400, 401, 403, 430, ENGL 303	2	W	*
	BIEN 401, 425	3	F	*
	BIEN 402, 435	2	Sp	*
	BIEN 325, MATH 245	3	Sp	*
	BIEN 230, 301, ENGR 220	3	F	*
	BIEN 401, 403, 430	1	W	*
BISC 130 131 225 227 321 (or BIEN 321)	BISC 131 (co-req)	3		*
	BISC 130 (co-req)	1		*
	BISC 225	3		*
	BISC 227	3		*
	BISC 321	1	F, Sp	*
CHEM 101 102 103 104	CHEM 100 (or by placement), ENGR 121 (co-req), MATH 241 (co-req)	2		*
	CHEM 101	2		*
	CHEM 101 (co-req)	1		*
	CHEM 103	1		*
ENGL 101 102 210, 211, or 212 303	ENGL 101	3		
	ENGL 101	3		
	ENGL 102	3		
	ENGL 102	3		
ENGR 120 121 122 220 221 222	MATH 240**, CHEM 100**	2		*
	ENGR 120, MATH 241 (co-req), CHEM 101 (co-req)	2		*
	ENGR 121, MATH 242 (co-req), PHYS 201 (co-req)	2		*
	ENGR 122, PHYS 201, MATH 242	3		*
	ENGR 122, MATH 242	3		*
	ENGR 122, MATH 242	3		*
MEMT 201 MEEN 215	ENGR 122	2		*
	MEMT 201 (co-req)	1		*
MATH 241 242 243 244 245	MATH 240 (or by placement)	3		*
	MATH 241	3		*
	MATH 242	3		*
	MATH 243	3		*
	MATH 244	3		*
PHYS 201 202	ENGR 122 (co-req), MATH 242 (co-req)	3		*
	PHYS 201, MATH 242	3		*
SPCH 377		3		
<b>ELECTIVES</b>				
ART (ART 290, MUGN 290, SPTH 290, KINE 280)		3		
HIST	See note 5	3		
Social Science	See note 1 and 5	3		
Social Science		3		
Social Science		3		
Directed Elective	See note 2	3		
Directed Elective		3		
Directed Elective		3		
Directed Elective		2		
Directed Elective				
Directed Elective				
Directed Elective				
Directed Elective				
<b>TOTAL SEMESTER HOURS</b>		<b>128</b>		

SUBSTITUTIONS	APPR	SH	GRADE
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____

ADDITIONAL COURSES	SH	GRADE
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

NOTES
* Requires grade of "C" or better
** Credit or registration in
1 Social Science electives must include at least two disciplines, selected from Economics, Geography, Political Science, Psychology, or Sociology.
2 Directed electives must be selected in consultation with student's advisor.
3 Substitutions must be initiated by Program Chair. Put substitution number in the "grade" blank of the course being replaced.
4 A student must have a minimum 2.0 grade point average on all hours pursued in courses designated as BIEN (Biomedical Engineering).
5 All students must complete an International Education Requirement. HIST 102, GEOG 205, and GEOG 210 are acceptable for this requirement.
Comments: _____
_____
_____
_____
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_____
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_____

Advisor's Name \_\_\_\_\_

# BIOMEDICAL ENGINEERING LOUISIANA TECH UNIVERSITY

Name \_\_\_\_\_

Date \_\_\_\_\_

Student ID \_\_\_\_\_

Email \_\_\_\_\_

FRESHMAN YEAR											
Fall Quarter		Cr	Gr	Winter Quarter		Cr	Gr	Spring Quarter		Cr	Gr
ENGR 120*	Engr Problem Solving I	2		ENGR 121*	Engr Problem Solving II	2		ENGR 122*	Engr Problem Solving III	2	
MATH 240*	Math for Engr & Science	3		MATH 241*	Calculus I	3		MATH 242*	Calculus II	3	
CHEM 100*	General Chemistry	2		CHEM 101*	General Chemistry	2		CHEM 102*	General Chemistry	2	
ENGL 101	Freshmen Composition I	3		CHEM 103	General Chemistry Lab	1		CHEM 104	General Chemistry Lab	1	
UNIV 100	University Seminar	1		ENGL 102	Freshmen Composition II	3		PHYS 201*	Physics for Engr & Sci. I	3	
		11				11				11	

SOPHOMORE YEAR											
Fall Quarter		Cr	Gr	Winter Quarter		Cr	Gr	Spring Quarter		Cr	Gr
<b>BIEN 202*</b>	Biomedical Engr Principles I	1		<b>BIEN 203*</b>	Biomedical Engr Principles II	1		ENGR 222*	Thermodynamics	3	
ENGR 220*	Statics & Mechs of Materials	3		ENGR 221*	Electrical Engr and Circuits I	3		MATH 245*	Differential Equations	3	
MATH 243*	Calculus III	3		MATH 244*	Calculus IV	3		BISC 225*	Human Anat & Physiol I	3	
BISC 130*	Biological Principles	3		MEMT 201*	Engineering Materials	2		ENGL 303	Technical Writing	3	
BISC 131*	Biological Principles Lab	1		MEEN 215*	Engineering Materials Lab	1					
		11				10				12	

JUNIOR YEAR											
Fall Quarter		Cr	Gr	Winter Quarter		Cr	Gr	Spring Quarter		Cr	Gr
<b>BIEN 225*</b>	Biomedical Systems	3		<b>BIEN 301*</b>	Biomed Fluid Mechanics	3		<b>BIEN 401*</b>	Biomedical Mass Transport	3	
<b>BIEN 230*</b>	Biomaterials	2		<b>BIEN 325*</b>	Bioinstrumentation	3		<b>BIEN 425*</b>	Adv Biomed Instrumentation	3	
PHYS 202*	Physics for Engr & Science II	3		<b>BIEN 321*</b>	Animal Physiology Lab	1		SPCH 377	Professional Speaking	3	
BISC 227*	Human Anat & Physiol II	3		or BISC 321				Directed Elective**		3	
				ENGL 210, 211, or 212	Literature	3					
				Directed Elective**		2					
		11				12				12	

SENIOR YEAR											
Fall Quarter		Cr	Gr	Winter Quarter		Cr	Gr	Spring Quarter		Cr	Gr
<b>BIEN 400*</b>	Biomed Engr Seminar	1		<b>BIEN 402*</b>	Biomed Engr Design I	2		<b>BIEN 404</b>	Biomed Engr Design II	2	
<b>BIEN 403*</b>	Physiological Control System	3		<b>BIEN 435*</b>	Senior Biomed Lab	1		Social Science***		3	
<b>BIEN 430*</b>	Biomechanics	3		Social Science***		3		Directed Elective**		3	
Social Science***		3		HIST_____***		3		ART†	Fine Arts Appreciation	3	
				Directed Elective**		3					
		10				12				11	

Neither *MATH 240* nor *CHEM 100* counts toward the Biomedical Engineering degree. Placement exams are available.

\* Grade of C or higher required before taking a course for which this one is a prerequisite.

\*\*Directed electives must be chosen from one of the four concentration areas shown on the back of this page in consultation with a faculty advisor.

\*\*\* HIST 102, GEOG 205, or GEOG 210 count as the International Education Requirement (IER).

† ART 290, SPTH 290, MUGN 290, or KINE 280 counts as the Fine Arts Requirement.

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

**BIOMEDICAL ENGINEERING**  
**LOUISIANA TECH UNIVERSITY**  
 Concentrations

Name \_\_\_\_\_

Date \_\_\_\_\_

Student ID \_\_\_\_\_

Email \_\_\_\_\_

**ELECTRICAL ENGINEERING CONCENTRATION**

Course	Name	Cr	Grd	Prerequisites
ELEN 232	Introduction to Digital Design	2		Math 242 (prereq or co-req)
ELEN 242	Introduction to Microprocessor	3		ELEN 232
ELEN 335	Electronic Circuits I	3		Permission of the Instructor
ELEN 311	Intro to Electric and Magnetic Fields	2		PHYS 202, MATH 241-244 GPA $\geq$ 2.0
ELEN Elective*	300/400 level	1		Check Catalog
<b>Total</b>		<b>11</b>		

**CHEMICAL ENGINEERING CONCENTRATION**

Course	Name	Cr	Grd	Prerequisites
CMEN 202	Chemical Engineering Calculations	3		ENGR 122 (prereq or co-req), MATH 242 (prereq or co-req)
CMEN 332	Chemical Engineering Thermodynamics II	3		ENGR 222
CMEN 402	Chemical Reaction Engineering	3		
CMEN Elective*	300 or 400 level CMEN Elective	2		Check Catalog
<b>Total</b>		<b>11</b>		

**MECHANICAL ENGINEERING CONCENTRATION**

Course	Name	Cr	Grd	Prerequisites
MEMT 203	Dynamics	3		ENGR 220, PHYS 201
MEMT 211	Intermediate Strength of Materials	2		ENGR 220
MEEN Electives*	300 or 400 level	6		Check Catalog
<b>Total</b>		<b>11</b>		

**PRE-MEDICAL CONCENTRATION\*\***

Course	Name	Cr	Grd	Prerequisites
CHEM 250	Organic Chemistry	2		CHEM 102
CHEM 251	Organic Chemistry	2		CHEM 250, CHEM 253 (co-req)
CHEM 252	Organic Chemistry	2		CHEM 251, CHEM 254 (co-req)
CHEM 253	Organic Chemistry Lab I	1		CHEM 102, CHEM 251 (Co-req)
CHEM 254	Organic Chemistry Lab II	1		CHEM 253, CHEM 252 (Co-req)
PHYS 261	General Physics Lab	1		MATH 241
PHYS 262	General Physics Lab	1		PHYS 261
ENGR or BISC Elective		1		Check Catalog
<b>Total</b>		<b>11</b>		

**COMPUTER INFORMATION CONCENTRATION**

Course	Name	Cr	Grd	Prerequisites
CSC 120	Introduction to Computer Programming	3		Permission of the Instructor
CSC 122	Intermediate Computer Programming	3		CSC 120
CSC 220	Data Structures	3		CSC 122
Electives	Taken from CSC, ELEN, or BIEN 300 or 400 level with approval of advisor ( <b>must have computer content</b> )	2		Check Catalog
<b>Total</b>		<b>11</b>		

\* Or an approved BIEN elective appropriate to this track.

\*\* Students who wish to apply for medical school should take an additional course in Biology.