Bachelor of Science
Biomedical Engineering
2005-2006

Curriculum B: Premedical Program

Student's Name _____ **SSN**_____

First Year	Qtr	Grd			(53 credit hours)	Fa	Wi	Sp	Su
BIO	112	4.0	____	____	Principles of Biology: Cell Biology and Genetics	•	x	a	•
BME	195	2.0	____	____	Fundamentals of Biomedical Engineering	•	•	x	•
CHM	121	5.0	____	____	Submicroscopic Chemistry (High School Chemistry or CHM 101, MTH 127)	x	a	•	a
CHM	122	5.0	____	____	Macroscopic Chemistry (CHM 121)	•	x	a	a
CHM	123	5.0	____	____	Reaction Dynamics (CHM 122)	a	•	x	a
EGR	101	5.0	____	____	Introductory Mathematics for Engineering Applications (MPL 5 + HS Trig or MTH 131)	x	a	a	a
EGR	190	4.0	____	____	Fundamentals of Engineering and Computer Science --(freshmen only, others take ISE 210)	x	a	a	•
ENG	101	4.0	____	____	Academic Writing and Reading	x	a	a	a
ENG	102	4.0	____	____	Writing in Academic Discourse (ENG 101)	a	x	a	a
PHY	240	4.0	____	____	General Physics I (EGR 101 or MTH 229, PHY 200c)	a	•	x	•
PHY	200	1.0	____	____	General Physics I Laboratory (PHY 240c)	a	•	x	•
MTH	229	5.0	____	____	Calculus I (MTH 131 or MPL 7)	a	x	a	a
MTH	230	5.0	____	____	Calculus II (MTH 229)	a	a	x	a
					Credit Hours Per Quarter in the Model Program	**18**	**18**	**17**	

Second Year	Qtr	Grd			(55 credit hours)	Fa	Wi	Sp	Su
BIO	278	4.5	____	____	Anatomy & Physiology I (BIO 112)	•	x	•	•
BIO	279	4.5	____	____	Anatomy & Physiology II (BIO 278)	•	•	x	•
CEG	220	4.0	____	____	Introduction to C Programming For Engineers (EGR 101 or MTH 229)	x	a	a	a
CHM	211	4.0	____	____	Organic Chemistry I (CHM 123, CHM 215c)	x	a	•	•
CHM	215	2.0	____	____	Organic Chemistry Lab (CHM 211c)	x	a	•	•
CHM	212	4.0	____	____	Organic Chemistry II (CHM 211, CHM 216c)	•	x	a	•
CHM	216	2.0	____	____	Organic Chemistry Lab (CHM 212c)	•	x	a	•
CHM	213	4.0	____	____	Organic Chemistry III (CHM 212, CHM 217c)	•	•	x	a
CHM	217	2.0	____	____	Organic Chemistry Lab (CHM 213c)	•	•	x	a
ME	212	4.0	____	____	Statics (EGR 101or MTH 231, PHY 240)	x	a	a	a
ME	213	4.0	____	____	Dynamics (CEG 220, ME 212)	a	a	x	a
MTH	231	5.0	____	____	Calculus III (MTH 230)	a	a	x	a
PHY	242	4.0	____	____	General Physics II (MTH 230, PHY 240, PHY 204c)	x	a	•	•
PHY	202	1.0	____	____	General Physics II Laboratory (PHY 242c)	x	a	•	•
PHY	244	5.0	____	____	General Physics III (MTH 230, PHY 240, PHY 204c)	•	x	a	•
PHY	204	1.0	____	____	General Physics III Laboratory (PHY 244c)	•	x	a	•
					Credit Hours Per Quarter in the Model Program	**19**	**16.5**	**19.5**	

NOTES:

1. **Use this guide, advisor consultations, and the Undergraduate Catalog to carefully plan a program of study**. Some courses are offered only once or twice a year. Complete mathematics and physics courses early since they are prerequisite to many engineering courses.
2. **In the right hand columns**
   (x) denotes courses in a model program with a non-conflicting schedule for a full-time student;
   (a) denotes courses likely to be available;
   (•) denotes courses normally not available. Check the Class Schedule for current information.
3. **Course numbers in parentheses** denote a prerequisite course except when followed by "c" indicating a co-requisite course.

Third Year	Qtr	Grd			(47 credit hours)	Fa	Wi	Sp	Su
BME	419	3.0	____	____	Biofluid Mechanics---------- (ME 212, EGR 101 or MTH 233, ME 315)	•	x	•	•
BME	420	3.0	____	____	Biomedical Heat and Mass Transfer---------- (BME 419)	•	•	x	•
*BME	422	4.0	____	____	Engineering Biophysics ---------- (EE 321)	•	•	x	•
BME	460	5.0	____	____	Biomedical Electronics ---------- (EE 301, EE 302)	•	x	•	•
BME	463	2.0	____	____	Biomedical Computers ---------- (CEG 220 or EGR101, EE 301 or EE 301c)	x	•	•	•
BME	464	4.0	____	____	Microprocessors for Biomedical Engineering---------- (BME 460)	•	•	x	•
EE	301	4.0	____	____	Circuit Analysis I ---------- (EGR 101or MTH 233, EE 302c)	x	a	a	•
EE	302	1.0	____	____	Circuit Analysis I Laboratory ---------- (EE 301c)	x	a	a	•
EE	321	4.0	____	____	Linear Systems I ---------- (EE 301, EE 302)	a	x	a	a
ISE	301	4.0	____	____	Statistical Methods for Testing, Development and Manuf. I ----------(MTH 230 or EGR 101)	a	a	x	•
ME	315	4.0	____	____	Thermodynamics I ---------- (PHY 244, MTH 232c)	x	a	a	a
MTH	232	5.0	____	____	Calculus IV ---------- (MTH 231)	x	a	a	a
___	___	4.0	____	____	General Education select one from Area II History ---------- (See GE sec of UG Cat)	a	x	a	a
					Credit Hours Per Quarter in the Model Program ----------	**16**	**16**	**15**	

Fourth Year	Qtr	Grd			(52 credit hours)	Fa	Wi	Sp	Su
BME	428	3.0	____	____	Biomechanics and Biothermodynamics---------- (ME 212, ME 315)	•	•	x	•
*BME	439	4.0	____	____	Biotransport and Artificial Organs ---------- (BME 420, BME 463)	•	x	•	•
BME	440	4.0	____	____	Biomaterials ----------(ME 213, EE 321, BME 463)	x	•	•	•
BME	461	4.0	____	____	Bioinstrumentation I ---------- (BIO 279, BME 460, EE 321)	x	•	•	•
BME	462	4.0	____	____	Bioinstrumentation II ---------- (BME 461)	•	x	•	•
BME	491	3.0	____	____	Biomedical Engineering Design I ---------- (BME 420, BME 464, BME 440c, BME 461c)	x	•	•	•
BME	492	1.0	____	____	Biomedical Engineering Design II ----------(BME 491, BME 402c)	•	x	•	•
BME	402	2.0	____	____	Biomedical Engineering Design II Lab ---------- (BME 440, BME 461, BME 491,BME 492c)	•	x	•	•
BME	493	1.0	____	____	Biomedical Engineering Design III ----------(BME 492, BME 403c)	•	•	x	•
BME	403	2.0	____	____	Biomedical Engineering Design III Lab ----------(BME 492, BME 493c)	•	•	x	•
___	___	4.0	____	____	General Education select one from Area II Non-Western World ------ (See GE sec of UG Cat)	x	a	a	a
___	___	4.0	____	____	General Education select one from Area III---------- (See GE sec of UG Cat)	x	a	a	a
___	___	4.0	____	____	General Education select one from Area III---------- (See GE sec of UG Cat)	a	x	a	a
___	___	4.0	____	____	General Education select one from Area IV ---------- (See GE sec of UG Cat)	a	a	x	a
___	___	4.0	____	____	General Education select additional course from Areas II, III and IV (See GE sec of UG Cat)	a	a	x	a
___	___	4.0	____	____	General Education select additional course from Areas II, III and IV (See GE sec of UG Cat)	a	a	x	a
					Credit Hours Per Quarter in the Model Program ----------	**19**	**15**	**18**	

TOTAL PROGRAM CREDIT HOURS ---------- **207**

General Information:

Two separate curricula are available for the B.S.E. degree in Biomedical Engineering:

1. ***Curriculum A*** prepares the graduate for the engineering industry employment. Graduates are also prepared for graduate training in biomedical engineering or in a traditional engineering area.
2. ***Curriculum B*** also satisfies the admission requirements for medical, osteopathic, dental, or veterinary schools. Graduates are also well prepared to pursue graduate training in engineering or the life sciences.
3. ***Program Planning*** - the student, in cooperation with his/her advisor, should use a Program Guide and the corresponding catalog to plan his/her program. Any problem, which arises in connection with a particular Program Guide, should be referred to the student's advisor.

***4.** Students may substitute BME 470/471 for BME 422/439. If this option is selected, a 4 hr Gen Ed must be moved from Fall of the senior year to Spring of the junior year (replacing BME 422). BME 470 will then be taken in Fall of the senior year (replacing the 4 hr Gen Ed.)