Bachelor of Science
Biomedical Engineering
2006-2007

Curriculum A: Traditional BME Program

Student's Name _____ **UID**_____

First Year		Qtr	Grd		(51 credit hours)	Fa	Wi	Sp	Su
BIO	112	4.0	____	____	Principles of Biology: Cell Biology and Genetics	•	x	•	•
BME	195	2.0	____	____	Fundamentals of Biomedical Engineering	•	•	x	•
CEG	220	4.0	____	____	Introduction to "C" Programming For Engineers (EGR 101 or MTH 229)	a	x	a	a
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
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
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	•
MTH	229	5. 0	____	____	Calculus I (MTH 131 or MPL 7)	a	a	x	a
PHY	240	4.0	____	____	General Physics I (EGR 101 or MTH 229, PHY 200c)	a	•	x	a
PHY	200	1.0	____	____	General Physics I Laboratory (PHY 240c)	a	•	x	a
___	___	4.0	____	____	General Education select one from Area II History (See GE sec of UG Cat)	a	a	x	a
					Credit Hours per Quarter in the Model Program	**18**	**17**	**16**	

Second Year		Qtr	Grd		(51 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	•
EE	301	4.0	____	____	Circuit Analysis I (EGR 101, PHY 242, EE 302c)	a	a	x	•
EE	302	1.0	____	____	Circuit Analysis I Laboratory (EE 301c)	a	a	x	•
MTH	230	5.0	____	____	Calculus II (MTH 229)	x	a	a	a
MTH	231	5.0	____	____	Calculus III (MTH 230)	a	a	x	a
ME	212	4.0	____	____	Statics (EGR 101 or MTH 231, PHY 240)	x	a	a	a
ME	213	4.0	____	____	Dynamics (CEG 220, ME 212)	a	x	a	•
PHY	242	4.0	____	____	General Physics II (MTH 230, PHY 240, PHY 202c)	x	a	a	•
PHY	202	1.0	____	____	General Physics II Laboratory (PHY 242c)	x	a	a	•
PHY	244	5.0	____	____	General Physics III (MTH 230, PHY 240, PHY 204c)	a	x	a	•
PHY	204	1.0	____	____	General Physics III Laboratory (PHY 244c)	a	x	a	•
___	___	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)	a	x	a	a
					Credit Hours per Quarter in the Model Program	**18**	**18.5**	**14.5**	

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 or MTH 235, BME 428)	•	x	•	•
BME	420	3.0	Biomedical Heat and Mass Transfer ---------- (BME 419)	•	•	x	•
*BME	422	4.0	Engineering Biophysics ---------- (EE 321)	•	•	x	•
BME	428	5.0	Biomechanics and Bioenergetics---------- (ME 212, ME 213)	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	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)	x	a	a	•
MTH	235	5.0	Differential Equations with Matrix Algebra ---------- (MTH 231)	x	a	a	a
___	___	4.0	General Education select one from Area III ---------- (S See GE sec of UG Cat)	a	a	x	a
___	___	4.0	General Education select one from Area IV ---------- (Se 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	(45 credit hours)	Fa	Wi	Sp	Su
*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	470	4.0	Photon Radiation ---------- (BIO 279, PHY 242, PHY 244)	x	•	•	•
BME	471	4.0	Medical Imaging ---------- (BME 470)	•	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	•
ISE	407	4.0	Industrial Ergonomics ----------	a	•	x	•
___	___	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----------	**15**	**15**	**15**	

TOTAL PROGRAM CREDIT HOURS ---------- 194

_____ **Meets or exceeds ABET minimum requirement of 37.5% engineering credit hours (72.75 credit hours).**

Advisor Initials

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.** Either BME 422 or BME 439 (but not both) may be replaced by BME 485 Six Sigma for Engineers. BME 485 is 4.0 credit hours, taught in Winter annually, and has a pre-requisite of ISE 301.