



Bachelor of Science Biomedical Engineering 2004-2005

Curriculum A: Traditional BME Program

Student's Name _____ SSN _____

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 190	4.0	___	___	Fundamentals of Engineering and Computer Science (for freshmen only, others must take ISE 210)	x	a	a	•
EGR 101	5.0	___	___	Introductory Mathematics for Engineering Applications (MPL 5 + HS Trig or MTH 131)	x	a	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 section of UG Catalog)	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 section of UG Catalog)	x	a	a	a
___	4.0	___	___	General Education select one from Area III (See GE section of UG Catalog)	a	x	a	a
Credit Hours per Quarter in the Model Program				18	18.5	14.5		

NOTES:

- 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.
- 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.
- Course numbers in parentheses denote a prerequisite course except when followed by "c" indicating a co-requisite course.

Program Guide 2004-2005 Biomedical Engineering (Curriculum A - continued)

Third Year	Qtr	Grd	(46 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 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	x	a	•
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 III ----- (See GE section of UG Catalog)	a	a	x	a
___	___	4.0	___	General Education select one from Area IV ----- (See GE section of UG Catalog)	x	a	a	a
Credit Hours per Quarter in the Model Program-----				15	16	15		

Fourth Year	Qtr	Grd	(48 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 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 section of UG Catalog)	a	a	x	a
___	___	4.0	___	General Education select additional course from Areas II, III and IV (See GE section of UG Catalog)	a	a	x	a
Credit Hours per Quarter in the Model Program-----				15	15	18		

TOTAL PROGRAM CREDIT HOURS----- 196

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.