

BIOMEDICAL ENGINEERING CURRICULUM

Pre-Medical Emphasis (Effective 8/17/2015)

Name: _____
 MSUID#: _____
 Net ID: _____
 Advisor: _____

SEMESTER	1	2	3	4	5	6	7	8	
SEMESTER	F	S	F	S	F	S	F	S	
	CH 1213 Chemistry I	CH 1211 Chem I Lab	**Soc/Beh Sci Elective (3hr)	BIO 1134 Biology I	MA 1713 Calculus I	EN 1103 En Comp I	ABE 1911 Engr in Life Sci		18
	CH 1223 Chemistry II	CH 1221 Chem II Lab	PH 2213 Physics I	*Bio Sci Elective (3h)	MA 1723 Calculus II	EN 1113 En Comp II	ABE 1921 Intro to Engr Des		17
	CH 4513 Org Chem 1	4CH 4511 Org Chem 1 Lab	PH 2223 Physics II	EM 2413 Engr Mech I	MA 2733 Calculus III	MA 3123 Intro to Stat Infer			16
	CH 4523 Org Chem 2	CH 4521 Org Chem 2 Lab	PH 2233 Physics III	EM 2433 Engr Mech II	MA 2743 Calculus IV	ABE 4803 Biosys Simulation	MCAT		16
	BIO 3304 Gen Micro Bio	ABE 3413 Bio Instrum I	BCH 4013 Prin Biochem	EM 3213 Mech of Materials	MA 3253 Diff Equations	ABE 4911 Engr Seminar	MCAT		17
	GE 3513 Tech Writing	ABE 4423 Bio Instrum II	ABE 3303 Trans in Biol Env	EM 3313 Fluid Dynamics	*Engr Elective (3hr)	ABE 3813 Bio Phys Prop of Mat	MCAT		18
	**Humanities Elective (3h)	ABE Elective (3 hrs)	ABE 4323 Phys Sys in BME		*Engineering Elective (3h)	ABE 4813 Princ Engr Design			15
	**Humanities Elective (3hr)	*Engr / Math Elective (3h)	**Fine Arts Elective (3h)	**Soc/Beh Sci Elective (3h)		ABE 4833 Pract Engr Design			15

L - Lab Included
 F - Fall
 S - Spring

* Restricted elective course options are listed on the back
 ** Must be on University core curriculum

Updated: October 23, 2017

TOTAL **132**

Biological Science Electives:

BIO 2103 - Cell Biology
BIO 3504 - Comparative Anatomy (with Lab)
BIO 4114 - Cellular Physiology
BIO 4405 - Pathogenic Microbiology
BIO 4413 - Immunology
BIO 4433 - Principles of Virology
BIO 4473 - Medical Virology
BIO 4503 - Vertebrate Embryology
BIO 4504 - Comparative Vertebrate Embryology
BIO 4514 - Animal Physiology
ADS 4613 - Physiology of Reproduction
BCH 4113 - Essentials of Molecular Genetics

Engineering / Math /Physics Electives:

MA 3113 - Intro to Linear Algebra
MA 3353 Differential Equations II
MA 4373 - Intro to Partial Differential Equations
MA 4313 - Numerical Analysis I
MA 4143 Graph Theory
MA 4373 - Intro to Partial Differential Equations
PH 2233 Physics III

Engineering Electives:

ABE 4523 - Biomedical Materials
ABE 4613 - Biomechanics
ABE 4723 - Tissue Engineering
ABE 4624 - Experimental Methods in Material Research
EM 4123 - An Intro to Finite Element Method
EM 4133 - Mechanics of Composite Materials
EM 4213 - Advanced Mechanics of Materials
ME 3113 - Engineering Analysis
ME 3533 - Thermodynamics
ME 4123 - Failure of Engineering Materials
ME 4743 - LabCIEW
ME 4833 - Intermediate Fluid Mechanics

Engineering Electives:

EG 1143 - Graphic Communication
CSE 4613 - Bio-Computing
CSE 4623 - Computational Biology
IE 4113 - Human Factor Engineering
IE 4173 - Occupational Safety Engineering
IE 4553 - Engineering Law and Ethics
IE 4733 - Linear Programming
IE 4743 - Engineering Design Optimization
ECE 3714 - Digital Devices and Logic Design