



BIOLOGICAL ENGINEERING CURRICULUM

(Effective 8/17/2015)

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

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|---------------------------|--------------------------------|-----------------------------------|----------------------------------|---------------------------------|-------------------------------|-----------------------------------|----------------------------------|-----------|
| SEMESTER 1 F | CH 1213 Chemistry I | CH 1211 Invst in Chem I | **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 |
| SEMESTER 2 S | CH 1223 Chemistry II | CH 1221 Invst in Chem II | PH 2213 Physics I | *Humanities Elective (3hr) | MA 1723 Calculus II | EN 1113 En Comp II | ABE 1921 Intro to Engr Des | 17 |
| SEMESTER 3 F | CH 2503 Elem Organic | CH 2501 Elem Organic Lab | PH 2223 Physics II | EM 2413 Engr Mech I | MA 2733 Calculus III | MA 3123 Intro to Stat Infer | | 16 |
| SEMESTER 4 S | | *Bio Sci Elective (3hr) | *Engineering Elective (3hr) | EM 2433 Engr Mech II | MA 2743 Calculus IV | ABE 4803 Biosys Simulation | | 15 |
| SEMESTER 5 F | BCH 4013 Prin Bio Chem | ABE 4911 Engr Seminar | **Soc/Beh Elective (3hr) | EM 3213 Mech of Materials | MA 3253 Diff Equations | ABE 3413 Bio Instrum I | | 16 |
| SEMESTER 6 S | BIO 3304 Gen Micro Bio | ABE 3813 Biophy Prop of Mat | ABE 3303 Trans in Biol Env | *ABE Elective (3hr) | | ABE 4423 Bio Instrum II | | 16 |
| SEMESTER 7 F | | *ABE Elective (3 hrs) | ABE 4323 Phys Sys in BME | GE 3513 Tech Writing | *Engineering Elective (3h) | ABE 4813 Princ Engr Design | | 15 |
| SEMESTER 8 S | **Humanities Elective (3hr) | *Engr / Math Elective (3h) | **Fine Arts Elective (3h) | EM 3313 Fluid Dynamics | | 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 20, 2017

TOTAL **128**

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 4143 Graph Theory
MA 4373 - Intro to Partial Differential Equations
MA 4313 - Numerical Analysis I
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
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