BIOLOGICAL SYSTEMS ENGINEERING CURRICULUM
PRE-PROFESSIONAL and PRE-GRADUATE OPTION
A total of 128 credits required for graduation
(2014-2015 Catalog)

I. Communications (10 credits)

3 cr. ENGL 150 (FSSS) Critical Thinking and Communication

3 cr. ENGL 250 (FSSS) Written, Oral, Visual, and Electronic Composition

3 cr. Comm. Elective Select one of the courses below:

ENGL 309 (FS) Report and Proposal Writing

ENGL 314 (FSSS) Technical Communication

MKT 343 (FS) Personal Sales

SP CM 212 (FSSS) Fundamentals of Public Speaking

AG EDS 311 (FS) Presentation and Sales Strategies for Ag Audiences

1 cr. LIB 160 (FSSS) Information Literacy

II. Mathematical Sciences (15 credits)

4 cr. MATH 165 (FSSS) Calculus I

4 cr. MATH 166 (FSSS) Calculus II

4 cr. MATH 267 (FSSS) Elementary Differential Equations and Laplace Transforms

3 cr. STAT 305 (FSSS) Engineering Statistics

III. Biological and Physical Science Common Core (22 credits)

4 cr. CHEM 167 (FS) General Chemistry for Engineering Students

or CHEM 177 and 178 (FS) General Chemistry I and II

1 cr. CHEM 167L (FS) Laboratory in General Chemistry for Engineers

or CHEM 177L (FS) Laboratory in General Chemistry I

5 cr. PHYS 221 (FSSS) Introduction to Classical Physics I

5 cr. PHYS 222 (FSSS) Introduction to Classical Physics II

3 cr. BIOL 212 (FSSS) Principles of Biology II

3 cr. MICRO 302 (FS) Biology of Microorganisms

1 cr. MICRO 302L (FS) Microbiology Laboratory

IV. Social Sciences and Humanities (12 credits)

3 cr. U. S. Diversity Course

3 cr. International Perspective Course

6 cr. Social Science and Humanities Electives (Select from departmental-approved list).

V. Engineering Core (23 credits)

R cr. ENGR 101 (FS) Engineering Orientation

1 cr. A B E 110 (S) Experiencing Biological Systems Engineering

3 cr. A B E 160 (FS) Engineering Problems with Computer Applications Laboratory

3 cr. A B E 170 (FS) Engineering Graphics and Introductory Design

3 cr. E M 274 (FSSS) Statics of Engineering

3 cr. E M 324 (FSSS) Mechanics of Materials

1 cr. E M 327 (FSSS) Mechanics of Materials Laboratory

3 cr. M E 231 (FSSS) Engineering Thermodynamics I

3 cr. CH E 356 (FS) Transport Phenomena I

3 cr. CH E 357 (FS) Transport Phenomena II
VI. Biological Systems Engineering Core (26 credits)
1 cr. A B E 201 (FS) Preparing for Workplace Seminar
3 cr. A B E 216 (F) Fundamentals of Agricultural and Biosystems Engineering
2 cr. A B E 218 (S) Project Management & Design in Agricultural and Biosystems Engineering
3 cr. A B E 316 (F) Applied Numerical Methods for Agricultural and Biosystems Engineering
4 cr. A B E 363 (F) Agri-Industrial Applications of Electric Power and Electronics
3 cr. A B E 380 (S) Principles of Biological Systems Engineering
3 cr. A B E 404 (F) Instrumentation for Agricultural and Biosystems Engineering
2 cr. A B E 415 (FS) Agricultural and Biosystems Engineering Design I
2 cr. A B E 416 (FS) Agricultural and Biosystems Engineering Design II
3 cr. A B E 480 (F) Engineering Analysis of Biological Systems

VII. Pre-Professional and Pre-Graduate Option (20 credits)
3 cr. CHEM 331 (FS) Organic Chemistry
1 cr. CHEM 331L (FS) Laboratory in Organic Chemistry
3 cr. CHEM 332 (FS) Organic Chemistry
1 cr. CHEM 332L (FS) Laboratory in Organic Chemistry
3 cr. Modeling/Sim. Elect. Select one of the courses below:
   A B E 403 (S, odd yrs) Modeling and Controls for Agricultural Systems
   I E 312 (F) optimization
   M E 421 (F) System Dynamics and Control

Sequence I, II & II. Select 8-9 credits of 200 level or above in a two to three course sequence:
8 cr. BIOL 255 + Lab, 256 + Lab Human Physiology Sequence
8 cr. BIOL 313+Lab, 314 + Lab Molecular Biology Sequence
9 cr. BBMB 404,405, & 411 Biochemistry Sequence
9 cr. COM S 207, BCBIO 401 & 402 Bioinformatics Sequence
9 cr. MGMT 310, 313, 414 or 419 Management Sequence
9 cr. JL MC 201, 202 & 347 Science Writing Sequence
9 cr. POL S 215, 319, & 320 Political Science Sequence
9 cr. A B E 388, AGRON 342, ME 484 Globalization Sequence
1 cr A B E 273 CAD for Process Facilities and Land Use Planning

*Please check the current catalog and Schedule of Classes for most recent offerings*