

BIOLOGICAL SYSTEMS ENGINEERING CURRICULUM
PRE-PROFESSIONAL and PRE-GRADUATE OPTION

A total of 128 credits required for graduation
(2012-2013 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.	ENGL 309 (FS)	Report and Proposal Writing	
or	3 cr.	ENGL 314 (FS)	Technical Communication
or	3 cr.	MKT 343 (FS)	Personal Sales
or	3 cr.	SP CM 212 (FSSS)	Fundamentals of Public Speaking
or	3 cr.	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 <u>and</u> 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 (FS)	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.	BSE 110 (S)	Experiencing Biological Systems Engineering
3 cr.	ENGR 160 (FS)	Engineering Problems with Computer Applications Laboratory
3 cr.	BSE 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 (FS)	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.	BSE 201 (FS)	Preparing for Workplace Seminar
3 cr.	BSE 216 (F)	Fundamentals of Agricultural and Biosystems Engineering
2 cr.	BSE 218 (S)	Project Management & Design in Agricultural and Biosystems Engineering
3 cr.	BSE 316 (F)	Applied Numerical Methods for Agricultural and Biosystems Engineering
4 cr.	A E 363 (F)	Agri-Industrial Applications of Electric Power and Electronics
3 cr.	BSE 380 (S)	Principles of Biological Systems Engineering
3 cr.	A E 404 (F)	Instrumentation for Agricultural and Biosystems Engineering
2 cr.	BSE 415 (FS)	Agricultural and Biosystems Engineering Design I
2 cr.	BSE 416 (FS)	Agricultural and Biosystems Engineering Design II
3 cr.	BSE 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.	BSE 403 (Alt. S)	Modeling and Controls for Agricultural Systems

Select 9 credits of 200 level or above in a two to three course sequence:

8 cr.	BIOL 255 + Lab, 256 + Lab	Human Physiology Sequence
9 cr.	BBMB 404,405, & 411	Biochemistry Sequence
9 cr.	COM S 207, BC BIO 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.	AE 388, AGRON 342, ME 484	Globalization Sequence