

**BIOLOGICAL SYSTEMS ENGINEERING CURRICULUM
FOOD ENGINEERING OPTION**

A total of 128 credits required for graduation
(2013-2014 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
<i>opts</i>	3 cr.	ENGL 309 (FS)	Report and Proposal Writing
or	3 cr.	ENGL 314 (FSSS)	Technical Communication
or	3 cr.	MKT 343 (FS)	Personal Sales
or	3 cr.	SP CM 212 (FSSS)	Fundamentals of Public Speaking
or	3 cr.	AGEDS 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 (FSSS)	Principles of Biology II
3 cr.	MICRO 302 (FSSS)	Biology of Microorganisms
1 cr.	MICRO 302L (FSSS)	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 (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)**
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| 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. Food Engineering Option (20 credits)**
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| 3 cr. | Chem 231 (FSSS) | Elementary Organic Chemistry |
| 1 cr. | Chem 231L (FSSS) | Elementary Organic Chemistry Laboratory |
| 3 cr. | FSHN 311 (F) | Food Chemistry |
| 1 cr. | FSHN 311L (F) | Food Chemistry Laboratory |
| 3 cr. | AE 451 (F) | Food and Bioprocess Engineering |
| 3 cr. | BSE 469 (S) | Grain Processing and Handling |
| 3 cr. | FSHN 420 (F) | Food Microbiology |
| 3 cr. | FSHN 471 (F) | Food Processing I |

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