BIOLOGICAL SYSTEMS ENGINEERING CURRICULUM
FOOD AND BIOPROCESS ENGINEERING OPTION
A total of 128 credits required for graduation
(2024-2025 Catalog)

I. Communications (10 credits)

3 cr.	ENGL 1500 (FSSS)	Critical Thinking and Communication
3 cr.	ENGL 2500 (FSSS)	Written, Oral, Visual, and Electronic Composition
3 cr.	Comm. Elective	Select one of the courses below:
	ENGL 3090 (FS)	*Proposal and Report Writing*
	ENGL 3140 (FSSS)	*Technical Communication*
	MKT 4500 (FS)	*Advanced Professional Selling*
	SP CM 2120 (FSSS)	*Fundamentals of Public Speaking*
	SP CM 3120 (FS)	*Business and Professional Speaking*
	AG EDS 3110 (FS)	*Presentation and Sales Strategies for Ag Audiences*
1 cr.	LIB 160 (FSSS)	Introduction to College Level Research

II. Mathematical Sciences (15 credits)

4 cr.	MATH 1650 (FSSS)	Calculus I
4 cr.	MATH 1660 (FSSS)	Calculus II
4 cr.	MATH 2670 (FSSS)	Elementary Differential Equations and Laplace Transforms
3 cr.	STAT 3050 (FSSS)	Engineering Statistics

III. Biological, Chemical and Physical Science Core (25 credits)

3 cr.	BIOL 2120 (FS)	Principles of Biology II
4 cr.	CHEM 1670 (FS)	General Chemistry for Engineering Students
	or CHEM 1770 and 1780 (FS)	General Chemistry I and II
1 cr.	CHEM 1670L (FS)	Laboratory in General Chemistry for Engineers
	or CHEM 1770L (FS)	Laboratory in General Chemistry I
3 cr.	CHEM 2310 (FSSS)	Elementary Organic Chemistry
1 cr.	CHEM 2310L (FSSS)	Elementary Organic Chemistry Lab
3 cr.	FS HN 3110 (F)	Food Chemistry
1 cr.	FS HN 3110L (F)	Food Chemistry Lab
3 cr.	MICRO 3020 (FSSS)	Biology of Microorganisms
1 cr.	MICRO 3020L (FS)	Microbiology Laboratory
4 cr.	PHYS 2310 (FSSS)	Introduction to Classical Physics I
1 cr.	PHYS 2310L (FS)	Introduction to Classical Physics I Lab

IV. Social Sciences and Humanities (12 credits)

3 cr.	U. S. Cultures & Communities Course
3 cr.	International Perspective Course
6 cr.	Social Science and Humanities Electives (Select from departmental approved list).

V. Engineering Core (27 credits)

R cr.	ENGR 1010 (FS)	Engineering Orientation
1 cr.	A B E 1100 (S)	Experiencing Agricultural and Biosystems Engineering
3 cr.	A B E 1600 (S)	Engineering Problems with Computer Programming
3 cr.	A B E 1700 (FS)	Engineering Graphics and Introductory Design
3 cr.	A B E 3780 (FS)	Mechanics of Fluids
3 cr.	C E 2740 (FSSS)	Statics of Engineering
3 cr.	E M 3240 (FSSS)	Mechanics of Materials
1 cr.	Lab Elective	Select one of the courses below:
	ABE 3780L (FS) *preferred*	*Mechanics of Fluids Laboratory*
	E M 3270 (FS)	*Mechanics of Materials Laboratory*
3 cr.	I E 3050 (FSSS)	Engineering Economic Analysis
3 cr.	M E 2310 (FSSS)	Engineering Thermodynamics I
4 cr.	M E 4360 (FSSS)	Heat Transfer

VI. Biological Systems Engineering Core (27 credits)

1 cr.	A B E 2010 (FS)	Preparing for Workplace Seminar
3 cr.	A B E 2160 (F)	Fundamentals of Agricultural and Biosystems Engineering
2 cr.	A B E 2180 (S)	Project Management & Design in Agricultural and Biosystems Engr
1 cr.	A B E 2730 (FS)	CAD for Process Facilities and Land Use Planning
3 cr.	A B E 3160 (FS)	Applied Numerical Methods for Agricultural and Biosystems Engr
4 cr.	A B E 3630 (FS)	Agri-Industrial Applications of Electric Power and Electronics
3 cr.	A B E 3800 (S)	Principles of Biological Systems Engineering
3 cr.	A B E 4040 (F)	Instrumentation for Agricultural and Biosystems Engineering
2 cr.	A B E 4150 (FS)	Agricultural and Biosystems Engineering Design I
2 cr.	A B E 4160 (FS)	Agricultural and Biosystems Engineering Design II
3 cr.	A B E 4800 (F)	Engineering Analysis of Biological Systems

VII. Food and Bioprocess Engineering Option (12 credits)

3 cr.	A B E 4510 (S)	Food and Bioprocess Engineering
3 cr.	A B E 4500 (F)	Emerging Technologies in Biomanufacturing
3 cr.	A B E 4690 (S)	Eng for Grain Storage, Preservation, Handling, & Processing Systems
3 cr.	Option Electives	
	FS HN 4200 (F)	*Food Microbiology*
	A B E 3250 (F)	*Biorenewable Systems*
	SCM 3010 (FS)	*Supply Chain Management*
	FS HN 4710 (F)	*Food Processing*
	M E 3730	*Science and Practice of Brewing*

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