

# FOOD SCIENCE, BACHELOR OF SCIENCE

## College of Agricultural & Environmental Sciences

Food Science is a discipline in which biological, physical, and sensory sciences are integrated for the study of foods to ensure their safety, quality, and healthful properties. The food science curriculum encompasses food chemistry and biochemistry, food safety and microbiology, food processing and preservation, and sensory and consumer sciences.

## The Program

Food Science is a multidisciplinary major that includes core competencies in food chemistry and analysis, food safety and microbiology, and food processing and engineering. After completing the preparatory course work, students focus on advanced subject courses in food chemistry and biochemistry, food processing, sensory evaluation, and food microbiology applied to improve the safety, stability, taste, nutrition, convenience, sustainability and value of foods.

## Career Alternatives

Opportunities for employment include positions in the food and allied industries, government agencies, and educational and research institutions. Graduate study for the food science student may lead to M.S. or Ph.D. degrees in food science, or in related fields such as agricultural chemistry, biochemistry, microbiology, nutrition and health sciences.

**Advising Center** for the major is located in 1204 RMI South Building; 530-752-8035.

## Lead Faculty Advisor

A.E. Mitchell (Food Science & Technology)

## Graduate Study

A program of study and research leading to M.S. and Ph.D. degrees in Food Science is available. For further information on graduate study, contact the graduate advisor.

The major requirements below are in addition to meeting University Degree Requirements (<https://catalog.ucdavis.edu/undergraduate-education/university-degree-requirements/>) & College Degree Requirements (<https://catalog.ucdavis.edu/undergraduate-education/college-degree-requirements/>); unless otherwise noted. The minimum number of units required for the Food Science Bachelor of Science is 123.

Code	Title	Units
<b>Preparatory Subject Matter</b>		
<i>Mathematics</i>		9
MAT 016A	Short Calculus (Discontinued)	
MAT 016B	Short Calculus (Discontinued)	
MAT 016C	Short Calculus (Discontinued)	
<i>Biological Science</i>		5
BIS 002A	Introduction to Biology: Essentials of Life on Earth	
<i>Chemistry</i>		21
CHE 002A	General Chemistry	

CHE 002B	General Chemistry	
CHE 002C	General Chemistry	
CHE 008A	Organic Chemistry: Brief Course	
CHE 008B	Organic Chemistry: Brief Course	
<b>OR</b> a more advanced series.		
<i>Physics</i>		12
PHY 007A	General Physics	
PHY 007B	General Physics	
PHY 007C	General Physics	
<i>Food Science &amp; Technology</i>		3
FST 050	Introduction to Food Preservation	
<i>Statistics</i>		4
STA 013	Elementary Statistics	
or STA 013Y	Elementary Statistics	
<i>Nutrition</i>		3
NUT 010	Discoveries & Concepts in Nutrition	
or NUT 010V	Discoveries & Concepts in Nutrition	
or NUT 010Y	Discoveries & Concepts in Nutrition	
<b>OR</b> approved substitute.		
Preparatory Subject Matter Subtotal		57
<b>Depth Subject Matter</b>		
<i>Biological Science</i>		6
BIS 102	Structure & Function of Biomolecules	
BIS 103	Bioenergetics & Metabolism	
<i>Microbiology</i>		3
MIC 102	Introductory Microbiology	
<i>Food Science &amp; Technology</i>		39
FST 100A	Food Chemistry	
FST 100C	Food Physical Chemistry	
FST 101A	Food Chemistry Laboratory	
FST 101B	Food Properties Laboratory	
FST 103	Physical & Chemical Methods for Food Analysis	
FST 104	Food Microbiology	
FST 104L	Food Microbiology Laboratory	
FST 110	Food Processing	
FST 110L	Food Processing Laboratory	
FST 117	Design & Analysis for Sensory Food Science	
FST 127	Sensory Evaluation of Foods	
FST 190	Senior Seminar	
Depth Subject Matter Subtotal		48
<b>Restricted Electives</b>		18
See Major Advisor for approved course list.		
Restricted Electives Subtotal		18
<b>Total Units</b>		<b>123</b>

## Brewing Science Option

The Brewing Science option prepares Food Science students for careers in production or quality assurance within the brewing industry or other food fermentation industries. The option also prepares students for graduate study in food science or related programs, and exposes the

students to diverse disciplines, including chemistry, biochemistry, microbiology, and processing.

<b>Code</b>	<b>Title</b>	<b>Units</b>
<b>Specific Course Requirements</b>		<b>11</b>
FST 102A	Malting & Brewing Science	
FST 102B	Practical Malting & Brewing	
FST 123	Introduction to Enzymology	
<i>Restricted Electives</i>		<i>7</i>
Choose 2-3 additional courses:		
FST 003 or FST 003V	Introduction to Brewing & Beer	
FST 109	Principles of Quality Assurance in Food Processing	
FST/VEN 114	Fermented Foods	
FST 123L	Enzymology Laboratory	
FST 159	New Food Product Ideas	
FST 160	Food Product Development	
<b>Total Units</b>		<b>18</b>