

# BS FOOD SCIENCE

## Program Learning Objectives

1. Graduates demonstrate critical thinking skills in addressing food science issues.
2. Graduates demonstrate the knowledge, ethics, and technical skills needed to succeed in food science fields and post-graduate studies.
3. Graduates demonstrate effective written and oral communication skills.
4. Graduates demonstrate the ability to work effectively as part of a problem-solving team.
5. Graduates demonstrate cultural competence with interacting diverse populations.

## Program Educational Outcomes

- Food Science program graduates can integrate and apply principles of food chemistry, analysis, microbiology, processing, and engineering to assure food quality and safety.

## Degree Requirements and Curriculum

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation (<https://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext>) section of this catalog, including:

- 60 units of upper-division courses
- Graduation Writing Requirement (GWR)
- 2.0 GPA
- U.S. Cultural Pluralism (USCP)

Note: No Major, Support or Concentration courses may be selected as credit/no credit.

### MAJOR COURSES

FSN 102	Orientation to the Food Science Major	1
FSN 125 or FSN 230	Introduction to Food Science Elements of Food Processing	4
FSN 202	Introduction to Human Nutrition	4
FSN 204	Food Processing Operations	4
FSN 250	Food and Nutrition: Culture and Customs (USCP) (E) <sup>1</sup>	4
FSN 311	Sensory Evaluation of Food	4
FSN 330	Principles of Food Engineering	4
FSN 334	Food Packaging	3
FSN 335	Food Quality Assurance	4
FSN 364	Food Chemistry	4
FSN 368	Food Analysis	4
FSN 370	Food Plant Sanitation and Prerequisite Programs	4
FSN 374	Food Laws and Regulations	4
FSN 375	Food Safety	4
FSN 407	Food Ingredient Functionality	3

FSN 408 & FSN 469	Food Product Development and Food Science Exit Exam	4
Concentration courses (see below)		23
<b>SUPPORT COURSES</b>		
BIO 111	General Biology (B2 & B3) <sup>1</sup>	4
CHEM 127	General Chemistry for Agriculture and Life Science I (B1 & B3) <sup>1</sup>	4
CHEM 128	General Chemistry for Agriculture and Life Science II	4
CHEM 312	Organic Chemistry: Fundamentals and Applications	5
CHEM 314	Biochemistry: Fundamentals and Applications (Upper-Division B) <sup>1</sup>	5
MATH 161 or MATH 141	Calculus for the Life Sciences I (B4) <sup>1</sup> Calculus I	4
MCRO 221	Microbiology	4
MCRO 421	Food Microbiology	4
PHYS 121	College Physics I	4
STAT 218	Applied Statistics for the Life Sciences (GE Electives) <sup>1</sup>	4
STAT 314	Statistical Methods for Food Science	4
<b>GENERAL EDUCATION (GE)</b>		
(See GE program requirements below.)		48
<b>FREE ELECTIVES</b>		
Free Electives		4
<b>Total units</b>		<b>180</b>

<sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.

## Concentrations

- Advanced Food Science (<https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/foodsciencenutrition/bsfoodscience/advancedfoodscienceconcentration/>)
- Culinology (<https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/foodsciencenutrition/bsfoodscience/culinologyconcentration/>)

## General Education (GE) Requirements

- 72 units required, 24 of which are specified in Major and/or Support.
- If any of the remaining 48 units is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.
- See the complete GE course listing (<https://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: A1 (Oral Communication), A2 (Written Communication), A3 (Critical Thinking), and B4 (Mathematics/Quantitative Reasoning).

Area A	English Language Communication and Critical Thinking	
A1	Oral Communication	4
A2	Written Communication	4

A3	Critical Thinking	4
<b>Area B</b>	<b>Scientific Inquiry and Quantitative Reasoning</b>	
B1	Physical Science (4 units in Support) <sup>1</sup>	0
B2	Life Science (4 units in Support) <sup>1</sup>	0
B3	One lab taken with either a B1 or B2 course	
B4	Mathematics/Quantitative Reasoning (4 units in Support) <sup>1</sup>	0
Upper-Division B (4 units in Support) <sup>1</sup>		0
<b>Area C</b>	<b>Arts and Humanities</b>	
Lower-division courses in Area C must come from three different subject prefixes.		
C1	Arts: Arts, Cinema, Dance, Music, Theater	4
C2	Humanities: Literature, Philosophy, Languages other than English	4
Lower-Division C Elective - Select a course from either C1 or C2		4
Upper-Division C		4
<b>Area D</b>	<b>Social Sciences - Select courses in Area D from at least two different prefixes</b>	
D1	American Institutions (Title 5, Section 40404 Requirement)	4
D2	Lower-Division D	4
Upper-Division D		4
<b>Area E</b>	<b>Lifelong Learning and Self-Development</b>	
Lower-Division E (4 units in Major) <sup>1</sup>		0
<b>Area F</b>	<b>Ethnic Studies</b>	
F	Ethnic Studies	4
<b>GE Electives in Areas B, C, and D</b>		
Select courses from two different areas; may be lower-division or upper-division courses.		
GE Electives (4 units in Support plus 4 units in GE) <sup>1</sup>		4
<b>Total units</b>		<b>48</b>

<sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.