

# FOOD SCIENCE – General Science Option

(4-year Schedule of Studies)

COLLEGE OF AGRICULTURAL, HUMAN, AND NATURAL RESOURCE SCIENCES

The Washington State University School of Food Science offers a Bachelor of Science degree in Food Science – General Science Option. This **food science major** is for students interested in the science of food processing, quality, safety, and product development. Students gain practical training in the application of chemistry and microbiology to the formulation of foods. The schedule below is only a guideline. Course selection and order taken may deviate according to student’s needs, and in consultation with advisor. Classes are offered on both WSU and the University of Idaho (UI) campuses, so travel is required to the UI campus. For the meaning of bracketed symbol letters, e.g. [PSCI], see University Common Requirements (UCOREs) for Graduation at <https://ucore.wsu.edu/students/categories-and-courses/>. Review additional information about Food Science at <http://sfs.wsu.edu>.

<b><u>FRESHMAN YEAR</u></b>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
Chem 105 [PSCI] Prin. of Chemistry I+ (UCORE)	4	Arts [ARTS] (UCORE)	3
FS 110 Intro to Food Science	3	BIOLOGY 107 [BSCI] Intro Biol:Cell Biol/Genetics+ (UCORE)	4
History 105 [ROOT] (UCORE)	3	CHEM 106 [PSCI] Principles of Chem II+ (UCORE)	4
MATH 140 [QUAN] Calculus for Life Scientists <b>OR</b> MATH 171 Calculus I+ [QUAN] (UCORE)	<u>4</u>	ENGLISH 101 [WRTG] Introductory Writing <b>OR</b> ENGLISH 105 [WRTG] Composition for ESL+ (UCORE)	<u>3</u>
	<b>14</b>		<b>14</b>
<b><u>SOPHOMORE YEAR</u></b>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
CHEM 345 Organic Chemistry I+	4	BIOLOGY 140 [BSCI] Intro to Nutri Science <b>OR</b> BIOLOGY 333 [BSCI] Human Nutrition and Health (UCORE)	3
COM 102 [COMM] Public Speaking <b>OR</b> H D 205 [COMM] Comm For Human Rel (UCORE)	3 or 4	CHEM 370 Chemical Biology+ <b>OR</b> MBIOS 303 Introductory Biochemistry+	3 or 4
PHYSICS 101 & 111 [PSCI] Gen. Physics+(UCORE)	3/1	FS 220 Food Safety & Quality	3
Social Sciences [SSCI] (rec ECONS 101)	3	MBIOS 101 Introductory Microbiology <b>Or</b> MBIOS 305 Gen Micro+ and MBIOS 304 Lab+	<u>4 or 6</u>
Emphasis Electives <sup>1</sup>	<u>3</u>		
	<b>17 or 18</b>	<i>(Complete writing portfolio)</i>	<b>13 or 16</b>
<b><u>JUNIOR YEAR</u></b>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
FS 302 [M] Food Processing Lab+	1	Diversity [DIVR] (UCORE)	3
FS 303 Food Processing+	3	FS 350 Instrumental & Sensory Analysis of Food+	5
FS 416 Food Microbiology+	3	FS 418 Oral Seminar in Food Science	1
FS 417 Food Microbiology Lab+	2	FS 432 Food Engineering+	3
Humanities [HUM] + (UCORE)	3	FS 433 Food Engineering Lab+	1
STAT 212 Intro Statistics+ (UCORE)	<u>4</u>	Emphasis Electives <sup>1</sup>	<u>4</u>
	<b>16</b>	<i>(apply for graduation)</i>	<b>17</b>
<b><u>SENIOR YEAR</u></b>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
FS 460 Food Chemistry+	3	FS 470 Adv. Food Technology+	3
FS 461 [M] Food Chemistry Lab+	1	FS 489 [CAPS] Food Product Develop+ (UCORE)	3
Emphasis Electives <sup>1</sup>	3	Emphasis Electives <sup>1</sup>	4
Food Science Electives <sup>2</sup>	<u>8</u>	Food Science Electives <sup>2</sup>	<u>4</u>
	<b>15</b>		<b>14</b>
<b>Total Credits (must take 120cr for degree)</b>			<b>120-124</b>

### Footnotes

<sup>1</sup> Emphasis Electives (12 credits required): Approved courses include ACCTG 230; AFS 101, 201, 401; CROP SCI/HORT 102; ECONS 101, 201, 351; ENGLISH 402 [M] or 403 [M]; ENTOM 101, 150; HBM 258; HORT 435; MGMT 301; MKTG 360; SOIL SCI 101; or VIT ENOL 113; or as approved by advisor.

<sup>2</sup> Food Science Electives (minimum 12 credits, but additional FS courses count towards Emphasis electives): Approved courses include FS 201, 301, 304, 329, 401, 402, 405, 406, 407, 409, 429, 430, 436, 464, 465, 466, 475, 495, 496, 499, or as approved by advisor.

+ The "+" indicates that the course has a prerequisite.

**EMPHASIS AREAS:** To fulfill 12 credits of Electives, select an area below or choose from any WSU minor, but you'll need additional credits. It is the student's responsibility to fulfill minor requirements and turn in all required minor paperwork.

**PROCESSING:** FS electives equip students with skills for numerous careers upon graduation, including production, product development, quality assurance, and others. Select 12 credits from the following list:

**BUSINESS:** Students can gain an emphasis in business by taking selected courses in accounting, finance, management, economics, writing, and others. Follow College of Business procedures, if getting a minor.

**SCIENCE:** Students wishing to pursue a graduate degree in food science may want to take 12 elective credits as upper-division courses in chemistry, microbiology, biochemistry, agriculture, statistics, nutrition, or science/technical writing.

- OTHER:**
- Students with an Enology interest consider the following: FS 465, 466, 496; Hort 435, Vit\_Enol 113.
  - Directed Undergraduate School of Food Science Research in FS 499. Pre-arrange with faculty and fill out agreement form from Food Science main office.
  - Internship in Food Science (FS 495) or Internship in a Winery (FS 496) for 2 credits. Three to six-month internships can be arranged with food industries, processors and /or wineries to provide students with work experience in their areas of interest. Pre-arrange with faculty, industrial supervisor and fill out agreement form from School of Food Science advisor.
  - Possible minors to pick from: Agric and Food Systems (AFS), Biology, Business, Chemistry, Economics, Hospitality and Business Management, Integrated Plant Sciences (IPS), Microbiology, or any language minor, like Spanish.
  - Study Abroad – <https://ip.wsu.edu/study-abroad/>
  - Honors College - <http://honors.wsu.edu/>

Course	Course Name	Credit	Semester	Emphasis
FS 201	Science on Your Plate	3	Fall	
FS/PL P 301	Food Mycology/Lab	3 (2-3)	Fall (UI odd years)	Processing
FS 304	Cereal Chemistry and Processing	3	Spring (UI)	Processing
FS 401	FISMA PCQI / GAP's Weekend Workshops	1	Fall/Spring	Processing/Business
FS 402	Industrial Fermentations	3	Spring (UI even years)	Fermentation
FS 405	Ciders and Other Fermented Foods/Lab	3	Spring	Fermentation
FS 406	Evaluation of Dairy Products	2	Spring (UI TBA)	Processing
FS 407	Evaluation of Dairy Products Lab	1 (0-3)	Spring (UI TBA)	Processing
FS 409	Principles of Environmental Toxicology	3	Spring (UI WEB)	Processing
FS 429 & 430L	Dairy Processing and Lab	3/1 (0-3)	Fall	Processing
FS 436	Principles of Sustainability	3	Fall/Spring (UI WEB)	Processing
FS 464	Food Toxicology	3	Fall (UI Web)	Processing
FS 465	Wine Microbiology & Processing	3	Fall	Processing/Enology
FS 466	Wine Microbiology & Processing Lab	1 (0-3)	Fall	Processing/Enology
FS 495	Internship in Food Science	2	Fall/Spring/Summer	Processing
FS 496	Internship in a Winery	2	Fall/Summer/Summer	Processing/Enology
FS 499	Special Topics - TBA	Varies	Fall/Spring/summer	
FS/AVS 363	Animal Products for Human Consumption/ Lab	3	Spring (UI)	Processing
AFS 102	Professional Dev in the Agric & Natural Res Sci	1	Fall/Spring	Processing
AFS 201	Systems Skills Development for AFS	3	Fall/Spring	Processing
AFS 302	Intro to Agroecology	3	Spring	Processing
AFS 336	Agriculture, Environment and Community	3	Fall	Processing
ANIM_SCI 360	Meat Science	3 (2-3)	TBA	Processing
Crop_Sci/Hort 102	Introduction to Cultivated Plants	3	Fall/Spring	Processing
ECONS 351	Intro to Food and Agricultural Markets	3	Fall/Spring	Processing/Business
ENGLISH 402	Technical and Professional Writing	3	Fall/Spring/Summer	All
ENGLISH 403	Technical and Professional Writing ESL	3	Fall/Spring	All
ENTOM 101	Insects and People: A Perspective	3	Fall/Summer	Processing/Enology
HBM 258	Fundamentals of Cooking and Lab	3	Fall/Spring	All
HORT 435	Chemistry and Biochemistry of Fruit and Wine	3	Fall	Enology
MGMT 301	Principles of Management and Organization	3	Fall/Spring	All/Business
MKTG 360	Marketing	3	Fall/Spring/Summer	All/Business
SOIL_SCI 101	Organic Gardening and Farming	3	Fall/Spring	Processing /Enology
Vit_Enol 113	Introduction to Wines and Vines	3	Fall/Spring	Processing/Enology