

BS in FOOD SCIENCE - Fermentation 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 – Fermentation Science Option**. This option is for the students interested in yeasts, bacteria and molds, the science behind fermented beverages and foods, and industrial-scale applications of fermentation technologies. This option prepares students to work in the food, supplement, and pharmaceutical sectors, as well as ciders and wineries. The schedule below is only a guideline. Course selection and order taken may deviate according to student’s needs, and in consultation with advisor. University of Idaho (UI) campuses, so some travel is required to the UI campus. For the meaning of bracketed symbol letters, e.g. [PSCI], see University Common Requirements ([UCOREs](#)) for [Graduation](#). Review additional information for the [School of Food Science](#).

<u>FRESHMAN YEAR</u>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
Creative & Professional Arts [ARTS] (UCORE)	3	Biology 107 [BSCI] Intro Biol:Cell Biol/Genet ⁺ (UCORE)	4
Chem 105 [PSCI] Prin. of Chemistry I ⁺ (UCORE)	4	History 105 [ROOT] Roots of Contemporary Issues (UCORE)	3
Vit_Enol 113 Introduction to Vines and Wines	3	Math 140 [QUAN] Calculus for Life Scientists ⁺ Or Math 171 [QUAN] Calculus I ⁺ (UCORE)*	4
English 101 [WRTG] Introductory Writing Or English 105 [WRTG] Composition for ESL ⁺ (UCORE)	<u>3</u>	Chem 106 [PSCI] Principles of Chem II ⁺ (UCORE)	<u>4</u>
	13		15
<u>SOPHOMORE YEAR</u>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
Chem 345 Organic Chemistry I ⁺	4	FS 220 Food Safety & Quality	3
COM 102 [COMM] Public Speaking Or H D 205 [COMM] Comm For Human Rel (UCORE)	3 or 4	FS 304 Cereal Chemistry and Processing ⁺	3
PHYSICS 101 & 111 [PSCI] General Physics/Lab (UCORE)	3/1	MBIOS 101 [BSCI] Introductory Microbiology Or MBIOS 305 Gen Micro ⁺ and MBIOS 304 Lab ⁺	4 or 6
STAT 212 [QUAN] Intro to Statistical Methods	<u>4</u>	Chem 370 Chemical Biology or MBIOS 303 Introductory Biochemistry ⁺	<u>3 or 4</u>
	15-16	<i>(Complete writing portfolio)</i>	13-16
<u>JUNIOR YEAR</u>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
Social Science [SSCI] (UCORE)	3	Diversity [DIVR] (UCORE)	3
FS 302 [M] Food Processing Lab ⁺	1	FS 350 Instrumental & Sensory Analysis of Food ⁺	5
FS 303 Food Processing ⁺	3	Humanities [HUM] ⁺ (UCORE)	3
Microbiology/Genetics Elective ¹	3	Laboratory Elective ³	2
Option Elective ²	3	Option Elective ²	3
FS/PL P 301 Food Mycology	<u>3</u>	FS 418 Oral Seminar in Food Science	<u>1</u>
	16	<i>(apply for graduation)</i>	17
<u>SUMMER SESSION</u>			<u>Credits</u>
FS 495 Internship in Food Science OR FS 496 Internship in a Winery			2
<u>SENIOR YEAR</u>			
<u>First Semester</u>	<u>Credits</u>	<u>Second Semester</u>	<u>Credits</u>
FS 429 Dairy Processing ⁺	3	FS 402 Industrial Fermentations ⁺	3
FS 460 Food Chemistry ⁺⁴	3	FS 405 Ciders and other Fermented Foods ⁺	3
FS 465 Wine Microbiology and Processing ⁺	3	Capstone Course [CAPS] ⁺⁶	3
Laboratory Elective ³	2	Electives ⁵	<u>6</u>
MKTG 360 Marketing	<u>3</u>		15
	14		
Total Credits			120

The + indicates that the course has a prerequisite.

FOOTNOTES:

¹Microbiology/Genetics Elective (3 hours minimum): BIOLOGY/MBIOS 301, FS 416, MBIOS 450.

²Option Electives (6 hours minimum): BIO ENG 350, FS 329, 432 and 433, 470, HBM 350.

³ Laboratory Electives (4 hours minimum): FS 417, 430, 461[M], 466

⁴ HORT/VIT ENOL 435 can be substituted per advisor approval.

⁵ Electives may need to include [M] course to meet the University requirement of two Writing in the Major [M] courses. ENGLISH 402 [M] is recommended to fulfill this requirement. Students are encouraged to take these credits within the FS prefix for career preparation.

⁶ FS 489 [CAPS] is recommended but requires FS 416 and 460 as prerequisites.

Elective Classes recommended for students. All classes offered on WSU campus unless denoted by UI.

Course	Course Name	Credit	Semester
FS 110	Introduction to Food Science	3	Fall
FS 201	Science on Your Plate	3	Fall
FS 363	Animal Products for Human Consumption	4	Spring (UI)
FS 401	PCQI/ PSR Trainings (old names: HACCP/GAPS)	1	Fall/Spring
FS 406	Evaluation of Dairy Products	2	TBA (UI)
FS 407	Evaluation of Dairy Products Lab	1 (0-3)	TBA (UI)
FS 409	Principles of Environmental Toxicology	3	Fall (UI)
FS 430	Dairy Processing Lab	1 (0-3)	Fall
FS 436	Principles of Sustainability	3	Fall & Spring (UI)
FS 464	Food Toxicology	3	Spring (UI)
FS 466	Wine Microbiology & Processing Lab	1 (0-3)	Fall
FS 470	Advanced Food Technology	3	Spring
FS 475	Quality Management Tools for Food Products	3	TBA (UI)
Anim_Sci 314	Principles of Nutrition	3	
Anim_Sci 360	Meat Science	3 (2-3)	TBA
Anim_Sci 460	Advanced Meat Science	3	TBA
FS 363	Animal Products for Human Consumption	3	TBA (UI Only)
EconS 351	Intro to Food and Agricultural Markets	3	Fall & Spring
Engl 402	Technical and Professional Writing	3	Fall/Spring/Summer
Engl 403	Technical and Professional Writing ESL	3	Fall/Spring/Summer
HBM 258	Fundamentals of Cooking and Lab	3	Fall/Spring
Hort 435	Chemistry and Biochemistry of Fruit and Wine	3	Spring A/Y
AFS 101	Introduction to Agricultural and Food Systems	3	Fall
AFS 201	Systems Skills Development for AFS	3	Spring
AFS 401	Adv. Systems Analysis & Design in AFS	3	Spring
ENTOM 101	Insects and People: A Perspective	3	Fall/Summer
CROP_SCI 102	Introduction to Cultivated Plants	3	Fall/Spring
SOIL_SCI 101	Organic Gardening and Farming	3	Fall/Spring