



FOOD SCIENCE – General Science Option

(4-Year Schedule of Studies Sample)

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>.

| <u>FRESHMAN YEAR</u> | | | |
|---|-----------------|---|-----------------|
| <u>Fall Semester</u> | <u>Credits</u> | <u>Spring Semester</u> Arts | <u>Credits</u> |
| Chem 105 [PSCI] Prin. of Chemistry I ⁺ (UCORE) | 4 | [ARTS] (UCORE) | 3 |
| FS 110 Intro to Food Science | 3 | BIOLOGY 107 [BSCI] Intro Biol:Cell Biol/Genetics ⁺ (UCORE) | 4 |
| History 105/305 [ROOT] (UCORE) | 3 | CHEM 106 [PSCI] Principles of Chem II ⁺ (UCORE) | 4 |
| MATH 140 [QUAN] Calculus for Life Scientists OR MATH 171 Calculus I ⁺ [QUAN] (UCORE) | <u>4</u> | ENGLISH 101 [WRTG] Introductory Writing OR ENGLISH 105 [WRTG] Composition for ESL ⁺ (UCORE) | <u>3</u> |
| | 14 | | 14 |
| <u>SOPHOMORE YEAR</u> | | | |
| <u>Fall Semester</u> | <u>Credits</u> | <u>Spring Semester</u> | <u>Credits</u> |
| CHEM 345 Organic Chemistry I ⁺ | 4 | BIOLOGY 140 [BSCI] Intro to Nutri Science OR BIOLOGY 333 [BSCI] Human Nutrition and Health (UCORE) | 3 |
| COM 102 [COMM] Public Speaking OR H D 205 [COMM] Comm For Human Rel (UCORE) | 3 or 4 | CHEM 370 Chemical Biology ⁺ OR M BIOS 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 | M BIOS 101 Introductory Microbiology Or M BIOS 305 Gen Micro ⁺ and M BIOS 304 Lab ⁺ | <u>4 or 6</u> |
| Emphasis Electives ¹ | <u>3</u> | | |
| | 17 or 18 | (*Complete writing portfolio*) | 13 or 16 |
| <u>JUNIOR YEAR</u> | | | |
| <u>Fall Semester</u> | <u>Credits</u> | <u>Spring 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 ¹ | <u>4</u> |
| | 16 | (*Apply for graduation*) | 17 |
| <u>SENIOR YEAR</u> | | | |
| <u>Fall Semester</u> | <u>Credits</u> | <u>Spring 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 ¹ | 3 | Emphasis Electives ¹ | 4 |
| Food Science Electives ² | <u>8</u> | Food Science Electives ² | <u>4</u> |
| | 15 | | 14 |
| Total Credits (must take 120cr for degree) | | | 120-124 |

Footnotes

- ¹ **Emphasis Electives** (12 credits required): Approved courses include ACCTG 230; AFS 101, 201, 401[M]; CROP SCI/HORT 102; ECONS 101[SSCI], 102[SSCI], 351; ENGLISH 402 [WRTG][M] or 403 [WRTG][M]; ENTOM 101[BSCI], 150; HBM 258; HORT 435; MGMT 301; MKTG 360; SOIL SCI 101; or VIT ENOL 113; or as approved by advisor.
- ² **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 Emphasis 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: Agriculture 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 |