

FERMENTATION SCIENCE OPTION

This option is offered within the following major(s):

- Food Science and Technology - College of Agricultural Sciences (<http://catalog.oregonstate.edu/college-departments/agricultural-sciences/food-science-technology/food-science-technology-bs-hbs/>)

The Fermentation Science option, one of just a handful of such programs in the nation, is a hands-on applied science addressing the biological, chemical and physical processes of fermented foods, including those used in the production of wine, beer, and spirits, as well as a variety of other fermented foods such as cheese, yogurt, soy sauce, pickles, breads, and fermented vegetables. Graduates enjoy a wide variety of employment opportunities—including some of the nation's largest wineries and breweries, artisan cheese plants, coffee, soy, and pickle companies, among others. Graduates of the Fermentation Science option can readily cross over from the beverage industry to the food industry with good preparedness.

Option Code: 141

| Code | Title | Credits |
|---|---|---------|
| Foundation Science Courses | | |
| ST 352 | INTRODUCTION TO STATISTICAL METHODS | 4 |
| NUTR 225 | GENERAL HUMAN NUTRITION | 3 |
| or NUTR 240 | HUMAN NUTRITION | |
| Food Science and Technology Courses | | |
| FST 420 | SENSORY EVALUATION OF FOOD | 4 |
| FST 479/MB 479 | FERMENTATION MICROBIOLOGY | 3 |
| FST 490 | FOOD PROCESSING CALCULATIONS | 2 |
| FST 491 | FOOD PROCESSING CALCULATIONS LABORATORY | 1 |
| FST 495 | FOOD PACKAGING | 3 |
| Select one course from the following: ¹ | | 2-3 |
| FST 251 | INTRODUCTION TO WINES, BEERS, AND SPIRITS | |
| FST 280 | FOOD AND BEVERAGE FERMENTATION | |
| Select two courses from the following: ¹ | | 6 |
| FST 437 | CHEMISTRY AND BIOCHEMISTRY OF DISTILLED SPIRITS | |
| FST 460 | CHEMISTRY AND BIOCHEMISTRY OF BEER | |
| FST 466 | WINE PRODUCTION PRINCIPLES | |
| Select two courses from the following: ¹ | | 6-9 |
| FST 423 | FOOD ANALYSIS | |
| FST 438 | PRODUCTION AND ANALYSIS OF DISTILLED SPIRITS | |
| FST 461 | PRODUCTION AND ANALYSIS OF BEER | |
| FST 467 | PRODUCTION AND ANALYSIS OF WINE | |
| Fermentation Science Option Electives | | |
| Select 3-7 credits of the following to bring the total to 41: | | 7-3 |
| AEC 221 | AGRICULTURAL AND FOOD MARKETING | |
| ANS 251 | PRINCIPLES OF ANIMAL FOODS TECHNOLOGY | |
| CROP 330 | *WORLD FOOD CROPS | |
| ENT 331 | *POLLINATORS IN PERIL | |
| FST 101 | FOOD SCIENCE ORIENTATION | |
| FST 212 | DAIRY PROCESSING | |
| FST 213 | DAIRY PROCESSING LABORATORY | |
| FST 260 | *FOOD SCIENCE AND TECHNOLOGY IN WESTERN CULTURE | |
| FST 273 | *WINE IN THE WESTERN WORLD | |
| FST 401 | RESEARCH ² | |
| FST 410 | INTERNSHIP ^{2,3} | |
| FST 430 | FOOD PRODUCT DEVELOPMENT | |

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| FST 480 | TOPICS IN FERMENTATION (up to 2 credits of FST 480 may be applied) |
| LEAD 407 | SEMINAR ² |
| MB 440 | FOOD MICROBIOLOGY |
| MB 441 | FOOD MICROBIOLOGY LABORATORY |
| NUTR 216 | *FOOD IN NON-WESTERN CULTURE |
| TOX 429 | TOXIC SUBSTANCES IN FOOD |
| Total Credits | 41 |

* Baccalaureate Core Course (BCC)

^ Writing Intensive Course (WIC)

1 If more than one course are selected, credits from the additional course(s) are applied to unmet Option Electives requirements

2 Competitive selection and/or departmental approval required

3 Students may not earn internship credit in all states. Consult with the internship coordinator for a list of eligible states

Students may complete more than one option. Courses must be selected so that at least 12 credits in each option are counted uniquely toward requirements of that option.

FST Major 2.00 GPA Requirement (Fermentation Science Option)

The following courses are included in calculation of the FST Major GPA for students in the Fermentation Science option:

| Code | Title | Credits |
|---|---|---------|
| BB 350 | ELEMENTARY BIOCHEMISTRY | 4 |
| BEE 472 | INTRODUCTION TO FOOD ENGINEERING PRINCIPLES | 5 |
| BEE 473 | INTRODUCTION TO FOOD ENGINEERING PROCESS DESIGN | 3 |
| CH 324 | QUANTITATIVE ANALYSIS | 4 |
| FST 360 | FOOD SAFETY AND SANITATION | 3 |
| FST 370 | INDUSTRY PREPARATION/HACCP | 3 |
| FST 385 | ^COMMUNICATING FOOD AND FERMENTATION SCIENCE | 3 |
| FST 407 | SENIOR SEMINAR | 1 |
| FST 421 | *FOOD LAW | 3 |
| FST 422 | FOOD CHEMISTRY FUNDAMENTALS | 4 |
| FST 425 | FOOD SYSTEMS CHEMISTRY | 4 |
| FST 460 | CHEMISTRY AND BIOCHEMISTRY OF BEER | 3 |
| FST 466 | WINE PRODUCTION PRINCIPLES | 3 |
| FST 479/MB 479 | FERMENTATION MICROBIOLOGY | 3 |
| FST 490 | FOOD PROCESSING CALCULATIONS | 2 |
| FST 491 | FOOD PROCESSING CALCULATIONS LABORATORY | 1 |
| FST 495 | FOOD PACKAGING | 3 |
| MB 302 | GENERAL MICROBIOLOGY | 3 |
| MB 303 | GENERAL MICROBIOLOGY LABORATORY | 2 |
| Plus any of the following utilized in fulfillment of option requirements: | | |
| AEC 221 | AGRICULTURAL AND FOOD MARKETING | 3 |
| ANS 251 | PRINCIPLES OF ANIMAL FOODS TECHNOLOGY | 3 |
| CROP 330 | *WORLD FOOD CROPS | 3 |
| ENT 331 | *POLLINATORS IN PERIL | 3 |
| FST 101 | FOOD SCIENCE ORIENTATION | 1 |
| FST 210 | FRUIT AND VEGETABLE PROCESSING | 3 |
| FST 212 | DAIRY PROCESSING | 2 |

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| FST 213 | DAIRY PROCESSING LABORATORY | 1 |
| FST 251 | INTRODUCTION TO WINES, BEERS, AND SPIRITS | 3 |
| FST 260 | *FOOD SCIENCE AND TECHNOLOGY IN WESTERN CULTURE | 3 |
| FST 273 | *WINE IN THE WESTERN WORLD | 3 |
| FST 280 | FOOD AND BEVERAGE FERMENTATION | 2 |
| FST 401 | RESEARCH | 1-16 |
| FST 410 | INTERNSHIP | 1-16 |
| FST 420 | SENSORY EVALUATION OF FOOD | 4 |
| FST 423 | FOOD ANALYSIS | 4 |
| FST 430 | FOOD PRODUCT DEVELOPMENT | 4 |
| FST 437 | CHEMISTRY AND BIOCHEMISTRY OF DISTILLED SPIRITS | 3 |
| FST 438 | PRODUCTION AND ANALYSIS OF DISTILLED SPIRITS | 3 |
| FST 460 | CHEMISTRY AND BIOCHEMISTRY OF BEER | 3 |
| FST 461 | PRODUCTION AND ANALYSIS OF BEER | 3 |
| FST 466 | WINE PRODUCTION PRINCIPLES | 3 |
| FST 467 | PRODUCTION AND ANALYSIS OF WINE | 5 |
| FST 480 | TOPICS IN FERMENTATION | 2 |
| LEAD 407 | SEMINAR | 1-16 |
| MB 440 | FOOD MICROBIOLOGY | 3 |
| MB 441 | FOOD MICROBIOLOGY LABORATORY | 2 |
| NUTR 216 | *FOOD IN NON-WESTERN CULTURE | 3 |
| TOX 429 | TOXIC SUBSTANCES IN FOOD | 3 |

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

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