

FOOD SCIENCE AND TECHNOLOGY UNDERGRADUATE MAJOR (BS, HBS)

This major offers the following option(s):

- Enology and Viticulture (<http://catalog.oregonstate.edu/college-departments/agricultural-sciences/food-science-technology/food-science-technology-bs-hbs/enology-viticulture-option/>)
- Fermentation Science (<http://catalog.oregonstate.edu/college-departments/agricultural-sciences/food-science-technology/food-science-technology-bs-hbs/fermentation-science-option/>)
- Food Science (<http://catalog.oregonstate.edu/college-departments/agricultural-sciences/food-science-technology/food-science-technology-bs-hbs/food-science-option/>)

A bachelor's degree in Food Science and Technology provides the necessary foundation to pursue any of the many possible food and beverage related career paths. The program integrates principles and concepts in the physical, biological and engineering sciences (including courses in general chemistry, organic chemistry, biology, physics, math and statistics, biochemistry, microbiology, and food engineering) and applies them to the scientific and technical aspects of food and beverage processing. Students who achieve at least a 2.00 GPA in the required foundation courses in chemistry additionally earn a Chemistry minor.

In addition to completing the Food Science and Technology Core, students must select from among three options (areas of concentration):

1. Enology and Viticulture
2. Fermentation Science
3. Food Science

All curricula are approved by the Higher Education Committee of the Institute of Food Technologists, making students eligible for national and Oregon IFT scholarships, as well as providing universal degree recognition within the food industry. Beyond choosing an option, students are able to further customize their studies through a menu of elective credits, facilitating the development of additional expertise in food related areas such as microbiology, toxicology, nutrition, horticulture, and animal sciences, and crediting formalized career and professional development experiences. Among minors that complement the Food Science and Technology major are Business and Entrepreneurship, Microbiology, and Nutrition.

Major Code: 135

- Identify and explain essential foundational principles in Food Science: Food Chemistry and Analysis, Food Safety and Microbiology, Food Processing and Engineering, Sensory Science.
- Demonstrate the ability to integrate and apply scientific principles to describe complex food systems and solve problems in Food Science.
- Effectively express themselves orally, graphically, and in writing.
- Engage in activities that enhance their professional development.

Grade Requirements

All courses required for completion of the Food Science and Technology major must be passed, graded on the A–F scale. Included are both 'core' and 'option' courses in FST, as well as supporting courses in math, sciences, and written and oral communication.

1. A C– grade, or better, must be earned in the specified prerequisites for the following courses. (These courses have additional prerequisites, but the C– minimum applies to the prerequisites listed below).

Code	Title	Credits
BEE 472	INTRODUCTION TO FOOD ENGINEERING PRINCIPLES	5
Prerequisites		
MTH 112	*ELEMENTARY FUNCTIONS	
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	
or MTH 251	*DIFFERENTIAL CALCULUS	
PH 201	*GENERAL PHYSICS	
FST 420	SENSORY EVALUATION OF FOOD	4
Prerequisites		
ST 351	INTRODUCTION TO STATISTICAL METHODS	
FST 422	FOOD CHEMISTRY FUNDAMENTALS	4
Prerequisites		
CH 331	ORGANIC CHEMISTRY	
CH 332	ORGANIC CHEMISTRY	
FST 460	CHEMISTRY AND BIOCHEMISTRY OF BEER	3
Prerequisites		
BI 222	*PRINCIPLES OF BIOLOGY: ORGANISMS	4
or BI 212	*PRINCIPLES OF BIOLOGY	
CH 331	ORGANIC CHEMISTRY	
CH 332	ORGANIC CHEMISTRY	
FST 466	WINE PRODUCTION PRINCIPLES	3
Prerequisites		
BI 222	*PRINCIPLES OF BIOLOGY: ORGANISMS	
or BI 212	*PRINCIPLES OF BIOLOGY	
CH 331	ORGANIC CHEMISTRY	
CH 332	ORGANIC CHEMISTRY	
FST 479	FERMENTATION MICROBIOLOGY	3
Prerequisites		
BI 222	*PRINCIPLES OF BIOLOGY: ORGANISMS	4
or BI 212	*PRINCIPLES OF BIOLOGY	
CH 331	ORGANIC CHEMISTRY	
CH 332	ORGANIC CHEMISTRY	

2. Students must earn at least a 2.00 'major' GPA. The major GPA is a cumulative GPA calculated on a list of courses particular to each option. Selected core and option courses are included, as specified in the list accompanying requirements of each option.

Earning the Degree

To earn a Bachelor of Science (BS) degree in Food Science and Technology (<http://oregonstate.edu/foodsci/prospective-undergraduate-students/>), students must fulfill all of the FST major core requirements, and those of any one of three options: Enology and Viticulture, Fermentation Science, or Food Science.

The Baccalaureate Core (general studies) component of an OSU bachelor's degree is considered fulfilled by the student's first degree. Additionally, the university requires that a minimum of 45 credits applied to this degree (32 if the first degree is from OSU) must be completed with Oregon State University course work completed while enrolled in this degree program.

Additional information for prospective postbaccalaureate students is available at the FST undergraduate department website (<http://oregonstate.edu/foodsci/home/>).

Code	Title	Credits
Baccalaureate Core		
Select 51 credits		
Food Science and Technology Core		
<i>Chemistry/Biochemistry Foundation Courses</i>		
BB 350	ELEMENTARY BIOCHEMISTRY	4
CH 231 & CH 261	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 231	5
CH 232 & CH 262	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 232	5
CH 233 & CH 263	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 233	5
CH 324	QUANTITATIVE ANALYSIS	4
CH 331 & CH 332	ORGANIC CHEMISTRY and ORGANIC CHEMISTRY	8
CH 337	ORGANIC CHEMISTRY LABORATORY	4
<i>Mathematics, Physics, and Statistics Foundation Courses</i>		
Select one of the following calculus pairs:		
MTH 227 & MTH 228	*CALCULUS AND PROBABILITY FOR THE LIFE SCIENCES I and CALCULUS AND PROBABILITY FOR THE LIFE SCIENCES II	8
MTH 251 & MTH 252	*DIFFERENTIAL CALCULUS and INTEGRAL CALCULUS	
PH 201	*GENERAL PHYSICS	5
ST 351	INTRODUCTION TO STATISTICAL METHODS	4
<i>Biological Science Foundation Courses</i>		
BI 221 & BI 222 & BI 223	*PRINCIPLES OF BIOLOGY: CELLS and *PRINCIPLES OF BIOLOGY: ORGANISMS and *PRINCIPLES OF BIOLOGY: POPULATIONS	12
or BI 211 & BI 212 & BI 213	*PRINCIPLES OF BIOLOGY and *PRINCIPLES OF BIOLOGY and *PRINCIPLES OF BIOLOGY	
MB 302	GENERAL MICROBIOLOGY	3
MB 303	GENERAL MICROBIOLOGY LABORATORY	2
<i>Communication Foundation Courses</i>		
COMM 111	*PUBLIC SPEAKING	3
Select one course from the following:		
WR 222	*ENGLISH COMPOSITION	
WR 327	*TECHNICAL WRITING	
WR 362	*SCIENCE WRITING	
<i>Food Science and Technology Core Courses</i>		
BEE 472	INTRODUCTION TO FOOD ENGINEERING PRINCIPLES	5
BEE 473	INTRODUCTION TO FOOD ENGINEERING PROCESS DESIGN	3
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
Total credits required for graduation		180

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

Postbaccalaureate Study in FST

Students holding a bachelor's degree from an accredited institution who are otherwise admissible to Oregon State University (<http://oregonstate.edu/admissions/main/post-baccalaureate/>) will be accepted into the Food Science and Technology major upon meeting the following additional criteria:

All of the following courses (or equivalents) must be completed with a cumulative GPA of 2.25 (4.00 maximum scale). In the case of repeated courses, the second grade earned in the course will be used in the GPA calculation.

Code	Title	Credits
BI 221 & BI 222 & BI 223	*PRINCIPLES OF BIOLOGY: CELLS and *PRINCIPLES OF BIOLOGY: ORGANISMS and *PRINCIPLES OF BIOLOGY: POPULATIONS	12
CH 231 & CH 261	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 231	5
CH 232 & CH 262	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 232	5
CH 233 & CH 263	GENERAL CHEMISTRY and *LABORATORY FOR CHEMISTRY 233	5
MTH 111	*COLLEGE ALGEBRA	4
MTH 112 & MTH 241	*ELEMENTARY FUNCTIONS and *CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	4-8
or MTH 251	*DIFFERENTIAL CALCULUS	
PH 201	*GENERAL PHYSICS	5

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