

# FOOD SCIENCE AND TECHNOLOGY GRADUATE MAJOR (MS, PHD)

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## Graduate Areas of Concentration

*Brewing, enology, flavor chemistry, food chemistry/biochemistry, food engineering, food microbiology/biotechnology, food and seafood processing, sensory evaluation*

The Department of Food Science and Technology offers graduate programs leading toward the Master of Science and Doctor of Philosophy degrees. A variety of research specializations is available covering the chemical, physical, microbiological, and sensory properties of foods.

Food processing and engineering research deals with basic and applied aspects of contemporary food technologies. Areas of emphasis include the measurement and modeling of thermo-physical properties of foods and the modeling of heat and mass transfer phenomena. Other studies deal with the use of high pressure as a means of food preservation and the use of edible food coatings to enhance the nutritional quality of fresh fruits and vegetables.

Wine-related studies include relationships between sensory and chemical data and the effects of processing, wine microorganisms, and vineyard practices on quality.

Dairy processing research concerns milk quality, cheese technology, and cheese economics.

With over 75 years of history breeding and studying hops at OSU, the brewing research within FST connects to this long history by examining the flavor and stability of hops and hoppy aroma in beer as well as improved economics.

Studies in food microbiology focus on food safety and the application of beneficial microorganisms in food production. Included in this topic area are studies dealing with the effect of processing conditions on microbial viability and the characterization of yeast strains involved in fermented products.

Sensory science projects focus on an understanding of the fundamental nature of sensory phenomena and characterization of the sensory attributes of selected products.

Food chemistry research concerns the occurrence, role, formation, stability and analysis of various food constituents. Studies involving flavor chemistry and sensory evaluation aim to identify the flavor-active compounds of a wide variety of foods and beverages. Other studies focus on understanding the functional properties of cereal grains and development of environmentally sustainable chemical and biological processes for converting food wastes and related renewable waste streams into useful byproducts.

Investigations on seafood processing and by-product utilization are being conducted on the campus, and at the Coastal Oregon Marine Experiment Station Seafood Laboratory in Astoria, Oregon.

The Food Innovation Center in Portland, Oregon—OSU's most unusual agricultural experiment station—provides entrepreneurs advice, testing and feedback on product development, packaging and shelf-

life evaluation, sensory and consumer testing, marketing planning and access and business development.

Students desiring to pursue graduate study must have a BS degree or equivalent. Students from related fields of study (chemistry, microbiology, biology, etc.) should have a strong background in the basic sciences and must have earned at least a B (GPA 3.0) average during their last two years of undergraduate study.

**Major Code: 1350**

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