

FSTE-FOOD SCIENCE & TECHNOLOGY

FSTE 1110G. Introduction to Food Science and Technology **4 Credits (3+2P)**

An introductory course in the scientific study of the nature and composition of foods and their behavior during all aspects of their conversion from raw materials to consumer food products.

FSTE 1120. ACES in the Hole Foods I **4 Credits (4)**

Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products Restricted to Las Cruces campus only.

Prerequisite(s): Students enrolled in this class must possess A Food Handler Card.

FSTE 2110G. Food Science I **4 Credits (3+2P)**

The scientific study of the principles involved in the preparation and evaluation of foods. May be repeated up to 4 credits.

FSTE 2120. ACES in the Hole Foods II **4 Credits (8P)**

Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. May be repeated up to 4 credits.

Prerequisite(s): FSTE 1120 and Have a Food Handler Card.

FSTE 2130G. Survey of Food and Agricultural Issues **3 Credits (3)**

Survey of food and agricultural issues, including: geography of food production and consumption; human-agricultural-natural resource relations; agriculture in the United States and abroad; modern agribusiness; food safety; food, agriculture, and natural resources policy; ethical questions; role and impact of technology. Crosslisted with AEEC 2130G.

FSTE 2996. Special Topics **1-4 Credits**

Specific topics and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits.

FSTE 320. Food Microbiology **4 Credits (3+2P)**

Detrimental and beneficial microbiological aspects of food products. Methods of quantification and identification of microorganisms associated with food spoilage and preservation. May be repeated up to 4 credits. Prerequisite(s): (BIOL 2610G and BIOL 2610L), or (BIOL 2110G and BIOL 2110L)

FSTE 325. Food Analysis **3 Credits (2+2P)**

Basic chemical and physical techniques used in establishing nutritional properties and overall acceptance of food products. May be repeated up to 3 credits.

Prerequisite(s): CHEM 1215G or consent of instructor.

FSTE 328. Introduction to Food Engineering **3 Credits (2+2P)**

Basic engineering principles including mass and energy balances, fluid flow, heat transfer and chemical kinetics and their application to food processing unit operations. Video and laboratory participation are used to enhance course content and relevance. May be repeated up to 3 credits.

Prerequisite(s): MATH 1430G or consent of instructor.

FSTE 331. Food Preservation **3 Credits (2+2P)**

Processes used in home and commercial food preservation, including canning, freezing, drying, and irradiation. May be repeated up to 3 credits.

Prerequisite(s): FSTE 2110G.

FSTE 375. ACES in the Hole Foods III **4 Credits (2+8P)**

Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products May be repeated up to 8 credits. Restricted to: FSTE majors.

Prerequisite(s): FSTE 2120 and Have a Food Handler Card.

FSTE 421. Food Chemistry **3 Credits (3)**

Comprehensive study of the chemical and physiochemical properties of food constituents. Chemical changes involved in the production, processing, and storage of food products and basic techniques used to evaluate chemical and physiochemical properties of foods.

Prerequisites: CHEM 1215G, CHEM 1225G, and CHEM 2115, or consent of instructor.

FSTE 423. Food Processing Technologies **4 Credits (3+2P)**

Common food processing unit operations such as raw material preparation, separation, concentration, fermentation, pasteurization, sterilization, extrusion, dehydration, baking, frying, chilling, freezing, controlled atmosphere storage, water, waste and energy management, packaging, materials handling and storage and process control. Application of principles to processing food in a laboratory setting.

Prerequisite(s): FSTE 328.

FSTE 425. Sensory Evaluation of Foods **3 Credits (2+2P)**

Principles and procedures involved in the sensory evaluation of foods. Physiological, psychological and environmental factors affecting the evaluation of sensory properties. Analysis and interpretation of sensory data.

Prerequisite(s): FSTE 2110G and A ST 311 or MATH 1350G.

FSTE 429. Product Development **3 Credits (1+4P)**

Application of chemical, physical, nutritional and psychological principles and experimental methods to the development and evaluation of a food product for a specified food product development competition.

Prerequisite(s): FSTE 320 and FSTE 425.

FSTE 430. Designing and Brewing Great Beers of the World **3 Credits (1+4P)**

The science and technology of brewing unit operations and the ingredients used in beer brewing. That knowledge is then applied to designing and brewing classic world beer styles. Styles investigated change every semester but typically include India Pale Ale, Pale Ale, Stout, Porter, Hefeweisen, Scottish Ale, and Black IPA. Comprehensive evaluation of the product relative to style guidelines completes the design-brew-evaluate cycle. Students must be at least 21 years of age on the first day of class. May be repeated up to 3 credits.

FSTE 450. Special Topics**1-4 Credits**

Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits towards a degree. Consent of instructor required.

FSTE 475. ACES in the Hole Foods IV**1-4 Credits (2-8P)**

Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. May be repeated up to 8 credits. Restricted to: FSTE majors.

Prerequisite(s): FSTE 375 Have a Food Handler Card.

FSTE 480. Food Safety**3 Credits (3)**

Provide students' knowledge on good manufacturing practices and prerequisite programs, conduct hazard analysis and determine preventive controls, define process, food allergen, sanitation and supply-chain preventive controls and discuss verification validation, recall and recordkeeping requirements with training and educational opportunities related to current best practices and guidance, and future regulatory requirements by establishing the Produce Safety Alliance. Students participate in a Mock Audit. Participants will receive an official FSPCA Preventive Controls Qualified Individual certificate issued by AFDO after attending this training program.

Prerequisite(s): FSTE 320 or BIOL 311, or consent of instructor.

FSTE 492. Special Problems**1-4 Credits**

Individual research study in a selected subject of Family and Consumer Sciences. Maximum of 4 credits per semester and a grand total of 8 credits towards a degree. Consent of instructor required.

FSTE 500. Data Analysis for Food Scientists**3 Credits (3)**

An introduction to data analysis of food scientists. Modern statistical techniques used to analyze typical data collected by food scientists and researchers will be covered. Consent of instructor required.

FSTE 520. Graduate Study in Food Microbiology**3 Credits (2+3P)**

Detrimental and beneficial microbiological aspects of food products. Methods of quantification and identification of microorganisms associated with food spoilage and preservation. Additional work required at the graduate level.

Prerequisites: BIOL 2610G/2610L, or BIOL 2110G/2110L, or consent of instructor.

FSTE 521. Graduate Study in Food Chemistry**3 Credits (3)**

Comprehensive study of the chemical and physiochemical properties of food constituents. Chemical changes involved in the production, processing and storage of food products and basic techniques used to evaluate chemical and physiochemical properties of foods. Additional work required at the graduate level.

Prerequisites: CHEM 1215G, CHEM 1225G, and CHEM 2115, or consent of instructor.

FSTE 523. Food Processing Technologies**4 Credits (3+2P)**

Common food processing unit operations such as raw material preparation, separation, concentration, fermentation, pasteurization, sterilization, extrusion, dehydration, baking, frying, chilling, freezing, controlled atmosphere storage, water, waste and energy management, packaging, materials handling and storage and process control. Application of principles to processing food in a laboratory setting. Additional work beyond that for FSTE 423 required at the graduate level.

Prerequisite(s): FSTE 528.

FSTE 524. Sensory Evaluation of Foods**3 Credits (2+3P)**

Principles and procedures involved in the sensory evaluation of foods. Physiological, psychological and environmental factors affecting the evaluation of sensory properties. Analysis and interpretation of sensory data.

Prerequisite(s): FSTE 2110G and A ST 311 or MATH 1350G.

FSTE 525. Graduate Study in Food Analysis**3 Credits (2+3P)**

Covers basic chemical and physical techniques used in establishing nutritional properties and overall acceptance of food products. Additional work required at the graduate level.

Prerequisite(s): CHEM 1215G or consent of instructor.

FSTE 531. Food Preservation**3 Credits (3)**

Processes used in home and commercial food preservation, including canning, freezing, drying, and irradiation. Same as FSTE 331 with additional work required at the graduate level.

FSTE 532. Designing and Brewing Great Beers of the World**3 Credits (2+2P)**

The science and technology of brewing unit operations and the ingredients used in beer brewing. That knowledge is then applied to designing and brewing classic world beer styles. Styles investigated change every semester but typically include India Pale Ale, Pale Ale, Stout, Porter, Hefeweizen, Scottish Ale, and Black IPA. Comprehensive evaluation of the product relative to style guidelines completes the design-brew-evaluate cycle. Students must be at least 21 years of age on the first day of class.

FSTE 560. Rumen Microbiology (so)**3 Credits (3)**

Same as ANSC 560.

FSTE 575. ACES in the Hole Foods**1-4 Credits (2-8P)**

Food production activities related to operation of ACES in the Hole Foods, a student-run food company that will give FSTE majors hands-on experience in all aspects of developing, producing and marketing food products. May be repeated up to 8 credits.

Prerequisite(s): Students must possess a food handler card.

FSTE 598. Special Research Programs**1-4 Credits**

Individual investigations either analytical or experimental. Maximum of 4 credits per semester and no more than 6 credits towards a degree. Consent of instructor required.

FSTE 600. Special Research Program**1-6 Credits (1-6)**

Special research for doctoral students. May be repeated up to 6 credits. Consent of instructor required.

Prerequisite(s): Consent of instructor.

FSTE 601. Cooperative Extension Service Field Experience**1-3 Credits (1-3)**

This course will provide students with knowledge and experience in community outreach through the cooperative extension service. This course is required for students pursuing a Ph.D. in FSHN. Students will work collaboratively with extension faculty on applied projects. May be repeated up to 3 credits. Consent of Instructor required. Restricted to: FSHN majors.

FSTE 605. Doctoral Seminar**1 Credit (1)**

Current topics and research in Food Science and Human Nutrition. Course will include experts from the field as guest speakers. Students will have the opportunity to present their doctoral proposals and/or research findings.

FSTE 620. Advanced Studies in Food Microbiology**3 Credits (3)**

Lectures, directed study, discussion and laboratory work in microflora of foods.

Prerequisite(s): FSTE 520 or consent of instructor.

FSTE 621. Advanced Studies in Food Chemistry**3 Credits (3)**

Lectures, seminars and/or laboratory work dealing with chemical and physiochemical properties of food constituents. Chemical changes involved in the production and storage of food products.

Prerequisite(s): FSTE 521 or consent of instructor.

FSTE 625. Advanced Studies in Food Analysis**3 Credits (3)**

Lectures, seminars, and/or laboratory work dealing with problem solving in food analysis. Consent of Instructor required.

Prerequisite(s): Consent of Instructor.

FSTE 626. Advanced Studies in Sensory Evaluation of Foods**3 Credits (3)**

Lectures, direct study, and discussion of such topics as sensory evaluation of foods. Analysis and interpretation of sensory data.

Prerequisite(s): FSTE 525 or consent of instructor.

FSTE 652. Functional Foods for Health**3 Credits (3)**

Integration of food science and human nutrition to analyze chemical properties and constituents that make a food product functional. Investigation of the physiological effects of functional foods and their relation to health. Overview of functional food development and production.

FSTE 698. Doctoral Research**1-6 Credits (1-6)**

Research May be repeated up to 6 credits. Consent of Instructor required.

FSTE 700. Doctoral Dissertation**1-12 Credits (1-12)**

Dissertation May be repeated up to 18 credits. Consent of Instructor required.

Prerequisite(s): Passed the qualifying exam and comprehensive exam.