

**FSC**

**Food Science**

**FSC 107 INTRODUCTION TO FOOD SCIENCE. (3)**

A general basic food science course that deals with world food needs and available food supplies, types of food and nutritive values and use, food processing technology and distribution methods.

**FSC 304 ANIMAL FOOD PRODUCTS. (4)**

Principles of red meat, poultry, fish and dairy processing; physical and chemical composition and nutritive value of meat, dairy and egg products; structure and identification of muscle; inspection, grading, formulation, processing and preservation methods; organoleptic properties and consumer acceptance of processed meat, dairy, and egg products. Lecture, three hours; laboratory, two hours per week. Prereq: FSC 107.

**\*FSC 306 INTRODUCTION TO FOOD PROCESSING. (4)**

Commercial processing of foods including theory and use of heat exchangers, separators, freezers, air and vacuum dryers, evaporators, membrane separation, electrodialysis, emulsion formers, extruders, and irradiators. Physico-chemical changes in osmotic pressure, vapor pressure, pH surface tension, viscosity, emulsification and colloidal dispersions in processed foods will be discussed. Processing of waste streams will also be discussed. Lecture, three hours; laboratory, two hours per week. Prereq: CHE 105, CHE 107.

**FSC 395 SPECIAL PROBLEM IN FOOD SCIENCE. (1-4)**

Independent study in food science under the supervision of a faculty member. A learning contract must be completed prior to enrolling course. May be repeated for a maximum of 8 credits. Prereq: Completion of learning contract and consent of instructor.

**FSC 399 EXPERIENTIAL LEARNING IN FOOD SCIENCE. (1-3)**

A field-based learning experience in food science under the supervision of a faculty member. May be repeated for a maximum of six credits on a pass/fail basis. Prereq: Consent of instructor and department chairman and completion of a departmental learning contract before registration.

**\*FSC 430 SENSORY EVALUATION OF FOODS. (3)**

This course deals with the sensory evaluation methods used for food products based on flavor, odor, color, and texture. This includes techniques for measuring sensory attributes, instrumental analysis of foods, statistical analyses of data, and how sensory evaluation programs are utilized in the food industry. Prereq: STA 296 and FSC 306, or FSC 304 (prerequisite or concurrent enrollment).

**FSC 434G FOOD CHEMISTRY. (4)**

Chemical and physical properties of proteins, lipids, carbohydrates, pigments and food additives as they relate to food processing and food preservation. Lecture, three hours; laboratory, two hours. Prereq: BCH 401G or consent of instructor.

**\*FSC 530 FOOD MICROBIOLOGY. (5)**

Study of procedures for the enumeration and identification of foodborne microorganisms important in the food industry. Principles for controlling contamination and growth of microorganisms during production, processing, handling and distribution of food products. Lecture, three hours; laboratory, four hours. Prereq: BIO 208 and BIO 209 or equivalent.

**FSC 535 FOOD ANALYSIS. (4)**

Techniques and instrumentation used to determine the chemical composition of foods. Emphasis is placed on the principles of chemical analysis as it relates to foods and food processing. Lecture, two hours; laboratory, four hours per week. Prereq: FSC 434G.

**\*FSC 536 ADVANCED FOOD TECHNOLOGY. (4)**

Concepts of developing/improving new food products or food processing including: consumer awareness, marketing, ingredient specifications and check testing, product formulation, stabilization of product, packaging to meet shelf life goals, shelf testing of products, thermal processing, challenge testing, establishment of HACCP system, consumers testing, market testing, and introduction to the market. A capstone course, where all concepts of food science are used to extend or create new food products for the marketplace. Lecture, three hours; laboratory, two hours. Prereq: AEN 340, FSC 306, FSC 530, and FSC 535 or consent of instructor.

**\*FSC 538 FOOD FERMENTATION. (4)**

The use of microorganisms in the preservation of raw foods and the manufacture of new foods. Manipulation and improvement of cultures to ensure production of desirable end products. Lecture, three hours; laboratory, two hours. Prereq: BIO 208 and BIO 209 or equivalent, or consent of instructor.

**FSC**

**Food Science**

- FSC 540 FOOD SANITATION. (3)**  
A study of sanitation principles and techniques for ensuring the safety and wholesomeness of our food supply. Prereq: FSC 530 or equivalent.
- FSC 603 INTEGRATED NUTRITIONAL SCIENCES III. (2)**  
This course is aimed at providing medical and health professional students with a working knowledge of dietary requirements and guidelines, nutritional assessment and nutritional requirements, food safety issues and nutritional needs throughout the lifecycle. Prereq: Health Professional Graduate Status. (Same as CNU/NS 603.)
- FSC 630 ADVANCED MEAT SCIENCE. (4)**  
Advanced meat science with special reference to the histological, chemical, physical and microbiological properties as they relate to meat quality, organoleptic acceptability and processing procedures. Lecture, three hours; laboratory, two hours. Prereq: FSC 304, FSC 306 or equivalent; one course in histology or biochemistry or consent of instructor. (Same as ASC 630.)
- FSC 632 FOODBORNE DISEASE AGENTS. (3)**  
Discussion of microorganisms, toxins and chemical involved in foodborne illnesses as well as procedures for controlling and investigating foodborne disease outbreaks. Prereq: FSC 530.
- FSC 636 FOOD PACKAGING. (2)**  
Detailed description of food packaging materials, composition and resistance to chemical and physical damage and their use in food systems as well as criteria for selection of packaging systems for specific food processing techniques will be presented. Methods of production, e.g.: blow mold, casting and extrusion; layering; lamination and co-extrusion; processing; and printing and sealing will be discussed. Prereq: FSC 536, FSC 538 or equivalent or consent of instructor.
- FSC 638 FOOD PROTEINS. (3)**  
This course deals with chemical, biochemical, and enzymatic significance of proteins in food systems; physiochemical and functional properties of animal and plant proteins, their interactions with lipids, carbohydrates, flavors, minerals and other food components during processing and storage, and resulting modifications of food quality. Prereq: FSC 434G or consent of instructor.
- FSC 640 FOOD LIPIDS. (3)**  
An advanced study of the physical, chemical, and biochemical significance of lipids in foods. Topics include the structure and function of lipids in post-harvest physiology, interaction with other food components, and the effect of lipids on the physical properties of foods during processing and storage. Prereq: One course in Food Chemistry or Biochemistry.
- FSC 642 FOOD PIGMENTS. (3)**  
Course deals with the chemistry and biochemistry of color of different food products which influence consumers' purchase decision. Lecture topics include fundamental basis of food color and pigments, manipulation of food color, influence of processing on food color, and regulatory issues related to food pigments. Prereq: FSC 434G.
- FSC 780 SPECIAL PROBLEMS IN ANIMAL DERIVED FOODS. (1-4)**  
May be repeated for a maximum of nine credits. Prereq: Consent of graduate adviser. (Same as ASC 780.)
- FSC 790 RESEARCH IN ANIMAL DERIVED FOODS. (1-6)**  
Problems involving original investigation. May be repeated for maximum of nine credits. Prereq: Consent of graduate adviser. (Same as ASC 790.)