

# FOOD SCIENCE (FDSC)

## FDSC 1133 Fundamentals of Food Science

**Description:** Food industry from producer to consumer and the current U.S. and world food situations. Previously offered as ANSI 1133.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

## FDSC 2102 Regional Diversity in Food Production, Selection and Consumption (D)

**Description:** Examines the diversity of people associated with food production, selection, and consumption in the United States. Evaluate the cultural diversity in food production workplace and economic and social factors that influence this diversity. Examine various food selection and consumption criteria of varying contemporary cultures based on economic, social, and religious considerations. Previously offered as FDSC 2103.

**Credit hours:** 2

**Contact hours:** Lecture: 2 Contact: 2

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**General Education and other Course Attributes:** Diversity

## FDSC 2143 Introduction to Food Industry Operations

**Description:** Introduction to Food Industry basics: business planning, food safety regulations, labeling, UPCs, packaging, materials, patents, trademarks, processing, co-packing, and introduction to various food processing techniques.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

## FDSC 2231 The Science of BBQ

**Description:** Survey, demonstration and participation in preparation techniques of barbecue and the science of selection and preparation of meat for barbecue. Comparison of regional and international methods.

**Credit hours:** 1

**Contact hours:** Lab: 2 Contact: 2

**Levels:** Undergraduate

**Schedule types:** Lab

**Department/School:** Animal & Food Sciences

## FDSC 2233 The Meat We Eat

**Description:** Overview of all animal, poultry, and fish protein sources used for human consumption, but focusing on red meat. Examination of each phase of production, inspection, safety, grading, processing, preparation, and current issues of the industries. Development of an understanding of the importance of meat in the diet and part of global agriculture. Same course as ANSI 2233.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

## FDSC 2253 Meat Animal and Carcass Evaluation

**Description:** Evaluation of carcasses and wholesale cuts of beef, pork, and lamb. Factors influencing grades, yields, and values in cattle, swine, and sheep. Same course as ANSI 2253.

**Credit hours:** 3

**Contact hours:** Lecture: 2 Lab: 2 Contact: 4

**Levels:** Undergraduate

**Schedule types:** Lab, Lecture, Combined lecture and lab

**Department/School:** Animal & Food Sciences

## FDSC 3033 Meat Technology

**Description:** The basic characteristics of meat and meat products as they relate to quality. Product identification, economy, nutritive value, preservation, and utilization. No credit for students with credit in ANSI 2253 or ANSI 3333. Previously offered as ANSI 3033.

**Credit hours:** 3

**Contact hours:** Lecture: 2 Lab: 3 Contact: 5

**Levels:** Undergraduate

**Schedule types:** Lab, Lecture, Combined lecture and lab

**Department/School:** Animal & Food Sciences

## FDSC 3113 Quality Control

**Prerequisites:** Introductory microbiology and organic chemistry.

**Description:** Application of the principles of quality control in food processing operations to maintain the desired level of quality. Previously offered as ANSI 3113.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

## FDSC 3123 HACCP in the Food Industry

**Description:** Fundamentals of HACCP (Hazard Analysis and Critical Control Points), function of a HACCP system and implementation of HACCP in the food industry. Offered for fixed credit, 2 credit hours, maximum of 6 credit hours.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

## FDSC 3133 Plant Sanitation for Food Processing Operations

**Description:** Sanitation and safety of food produced in food establishments, including government recommendations and regulations and illustration of voluntary and mandatory guidelines.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

## FDSC 3154 Food Microbiology

**Description:** Relationship of microorganisms to food manufacture and preservation, to food spoilage and microbial food poisoning and to various aspects of primary food production. Same course as MICR 3154. Previously offered as ANSI 3154.

**Credit hours:** 4

**Contact hours:** Lecture: 3 Lab: 2 Contact: 5

**Levels:** Undergraduate

**Schedule types:** Lab, Lecture, Combined lecture and lab

**Department/School:** Animal & Food Sciences

**FDSC 3232 Advanced Meat Evaluation**

**Description:** Advanced evaluation of carcasses and wholesale cuts of beef, pork and lamb. Same course as ANSI 3232. Previously offered as FDSC 3182.

**Credit hours:** 2

**Contact hours:** Lab: 4 Contact: 4

**Levels:** Undergraduate

**Schedule types:** Lab

**Department/School:** Animal & Food Sciences

**FDSC 3310 Advanced Competitive Evaluation**

**Prerequisites:** Honors Program participation, junior standing.

**Description:** Advanced instruction in animal and/or product evaluation. For students competing on collegiate judging teams. Same course as ANSI 3310. Previously offered as FDSC 3210. Offered for fixed credit, 2 credit hours, maximum of 6 credit hours.

**Credit hours:** 2

**Contact hours:** Contact: 6 Other: 6

**Levels:** Undergraduate

**Schedule types:** Independent Study

**Department/School:** Animal & Food Sciences

**FDSC 3333 Meat Science**

**Description:** Anatomical and basic chemical and physical characteristics of meat animals studied. The application of scientific principles to the processing and economical utilization of meat animals, as well as in the manufacture of meat products emphasized in the laboratory. Same course as ANSI 3333.

**Credit hours:** 3

**Contact hours:** Lecture: 2 Lab: 2 Contact: 4

**Levels:** Undergraduate

**Schedule types:** Lab, Lecture, Combined lecture and lab

**Department/School:** Animal & Food Sciences

**FDSC 3373 Food Chemistry I**

**Description:** Basic composition, structure, and properties of foods and the chemical changes or interactions that occur during processing and handling. Previously offered as ANSI 3373.

**Credit hours:** 3

**Contact hours:** Lecture: 2 Lab: 2 Contact: 4

**Levels:** Undergraduate

**Schedule types:** Lab, Lecture, Combined lecture and lab

**Department/School:** Animal & Food Sciences

**FDSC 3603 Processing Dairy Foods**

**Prerequisites:** Organic chemistry.

**Description:** Theory and practice in formulation and processing: butter and margarine, cottage cheese, blue and processed cheeses, evaporated and sweetened condensed milk, ice cream, ice milk, and other frozen desserts. Previously offered as ANSI 3603.

**Credit hours:** 3

**Contact hours:** Lecture: 2 Lab: 2 Contact: 4

**Levels:** Undergraduate

**Schedule types:** Lab, Lecture, Combined lecture and lab

**Department/School:** Animal & Food Sciences

**FDSC 4053 Foodborne Toxins and Allergens**

**Description:** Food toxicology and food toxicological issues in the industry. Specific types of foodborne toxins and allergens addressed; including naturally occurring toxins, toxins of microbial origin, food additives including nutrients, heavy metals, environmental contaminants and processing-derived toxins. May not be used for degree credit with FDSC 5053.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 4113 Internal Audit and Advanced HACCP**

**Prerequisites:** FDSC 3123.

**Description:** Verification and validation of the principles of Food Processing Quality Systems to confirm that quality and food safety systems have been implemented adequately and are effective. Topics include: food allergens, internal auditing and implement food safety and food quality programs to ensure consumer protection and prevent economic loss to the industry.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 4123 Principles of Food Engineering**

**Prerequisites:** MATH 1513.

**Description:** Application of the engineering approach to solving heat and mass transfer problems in food processing. An introduction to the basic concepts of the conservation laws, fluid flow, heat transfer, refrigeration, freezing, psychrometrics, and energy conservation. Same course as MCAG 4123. May not be used for Degree Credit with FDSC 5123.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 4143 Food Safety Modernization Act**

**Description:** Good manufacturing practices, how to develop preventive controls plan and how to respond to FDA inquiries. FDA standardized curricula developed for FSMA: Animal Food and Human Food rules. May not be used for degree credit with FDSC 5143.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 4153 Advanced Food Microbiology**

**Prerequisites:** FDSC 3154 or MICR 3154.

**Description:** Detection of foodborne pathogens, how pathogens cause disease, conduct investigations into foodborne illnesses, and antimicrobials to control foodborne pathogens. May not be used for Degree Credit with FDSC 5153.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Undergraduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 4213 Advances in Meat Science****Prerequisites:** ANSI 3333 or FDSC 3333.**Description:** Development of muscle and its transformation to meat. Properties of meat and their influence on water-binding, pigment formation, texture and fiber characteristics. Same course as ANSI 4213.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Undergraduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 4233 Food Safety Audit Schemes****Description:** Develop food safety system to satisfy SQF and BRC requirements. Major topics such as how to implement food safety and quality systems and how to prepare for audit. May not be used for degree credit with FDSC 5233.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Undergraduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 4243 Researching Consumer Food Preferences****Prerequisites:** AGECE 1113 and ANSI 1124 or FDSC 1133, and STAT 2013 or STAT 2023 or STAT 4013.**Description:** Design, implementation, and interpretation of research in consumer food preferences. Includes design of consumer surveys, conducting consumer interviews, preparing food and questionnaires for taste-test experiments, targeting and recruiting scientifically valid samples, the statistical analysis of data, and communication of results. Previously offered as AGECE 4243. May not be used for Degree Credit with FDSC 5243.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Undergraduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 4253 Pre-Harvest Food Safety****Prerequisites:** FDSC 3154 or MICR 3154.**Description:** Microbial food safety at pre-harvest level. Types, sources, and concentrations of disease-causing pathogens in the food-producing animal environments and fresh produce/seafood environments; methods to control or reduce foodborne pathogens; present and future pre-harvest food safety directions. May not be used for Degree Credit with FDSC 5253.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2 Contact: 4**Levels:** Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 4333 Processed Meat****Prerequisites:** ANSI 3033 or ANSI 3333.**Description:** Meat and meat product composition. Techniques in the molding and forming of meat; sausage formulation; curing; quality control; and cost analysis. Same course as ANSI 4333. May not be used for Degree Credit with FDSC 5833.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 3 Contact: 5**Levels:** Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 4373 Food Chemistry II****Prerequisites:** FDSC 3373.**Description:** Chemical/biochemical mechanisms that affect the structure and properties of foods during processing and handling. No credit for FDSC 5373.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2 Contact: 4**Levels:** Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 4763 Analysis of Food Products****Description:** Application of quantitative chemical and physical methods of analysis to the examination of foods. Previously offered as ANSI 3763. May not be used for Degree Credit with FDSC 5763.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2 Contact: 4**Levels:** Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 4900 Special Problems****Prerequisites:** Consent of instructor.**Description:** A detailed study of an assigned problem by a student wishing additional information on a special topic. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.**Credit hours:** 1-6**Contact hours:** Contact: 1-6 Other: 1-6**Levels:** Undergraduate**Schedule types:** Independent Study**Department/School:** Animal & Food Sciences**FDSC 4910 Food Industry Internship****Prerequisites:** Consent of instructor.**Description:** Full-time internship at an approved production, processing or agribusiness unit or other agency serving the food industry. Maximum credit requires a six month internship in addition to a report and final examination. Graded on a pass-fail basis. Offered for variable credit, 1-12 credit hours, maximum of 12 credit hours.**Credit hours:** 1-12**Contact hours:** Contact: 1-12 Other: 1-12**Levels:** Undergraduate**Schedule types:** Independent Study**Department/School:** Animal & Food Sciences**FDSC 5000 Master's Research and Thesis****Prerequisites:** Consent of major adviser.**Description:** Research for Master of Science degree in Food Science planned, conducted and reported under guidance of major adviser. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.**Credit hours:** 1-6**Contact hours:** Contact: 1-6 Other: 1-6**Levels:** Graduate**Schedule types:** Independent Study**Department/School:** Animal & Food Sciences**Additional Fees:** AG Dist or Web Course fee of \$95 per credit hour applies.

**FDSC 5053 Advanced Foodborne Toxins and Allergens**

**Description:** Food toxicology and food toxicological issues in the industry. Specific types of foodborne toxins and allergens addressed; including naturally occurring toxins, toxins of microbial origin, food additives including nutrients, heavy metals, environmental contaminants and processing-derived toxins. May not be used for degree credit with FDSC 4053.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5102 Ethics and Professionalism in Animal and Food Science**

**Description:** Discussion of regulations, laws, and resources; insights on complex ethical issues, including but not limited to research misconduct, how to address, report and find resources during cases of misconduct, conflicts of interest, and authorship; communication of research accurately and objectively to different audiences. Same course as ANSI 5102.

**Credit hours:** 2

**Contact hours:** Lecture: 2 Contact: 2

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5113 Internal Audit and Advanced HACCP**

**Description:** Verification and validation of the principles of Food Processing Quality Systems to confirm that quality and food safety systems have been implemented adequately and are effective. Topics include: food allergens, internal auditing and implement food safety and food quality programs to ensure consumer protection and prevent economic loss to the industry.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5120 Special Topics in Food Science**

**Prerequisites:** Graduate standing and consent of instructor.

**Description:** Advanced topics and new developments in food science. Offered for variable credit, 1-4 credit hours, maximum of 8 credit hours.

**Credit hours:** 1-4

**Contact hours:** Contact: 1-4 Other: 1-4

**Levels:** Graduate

**Schedule types:** Independent Study

**Department/School:** Animal & Food Sciences

**FDSC 5123 Principles of Food Engineering**

**Prerequisites:** MATH 1513.

**Description:** Application of the engineering approach to solving heat and mass transfer problems in food processing. An introduction to the basic concepts of the conservation laws, fluid flow, heat transfer, refrigeration, freezing, psychrometrics, and energy conservation. May not be used for degree credit with FDSC 4123.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5143 Food Safety Modernization Act**

**Description:** Good manufacturing practices, how to develop preventive controls plan and how to respond to FDA inquiries. FDA standardized curricula developed for FSMA: Animal Food and Human Food rules. May not be used for degree credit with FDSC 4143.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5153 Advanced Food Microbiology**

**Prerequisites:** FDSC 3154 or MICR 3154.

**Description:** Detection of foodborne pathogens, how pathogens cause disease, conduct investigations into foodborne illnesses, and antimicrobials to control foodborne pathogens. May not be used for degree credit with FDSC 4153.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5213 Advances in Meat Science**

**Prerequisites:** ANSI 3333 or FDSC 3333.

**Description:** Development of muscle and its transformation to meat. Properties of meat and their influence on water-binding, pigment formation, texture, and fiber characteristics. Same course as ANSI 5213.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5233 Food Safety Audit Schemes**

**Description:** Develop food safety to satisfy SQF and BRC requirements. Major topics such as how to implement food safety and quality systems and how to prepare for audit. May not be used for degree credit with FDSC 4233.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5243 Researching Consumer Food Preferences**

**Prerequisites:** AGECE 1113 and ANSI 1124 or FDSC 1133, and STAT 2013 or STAT 2023 or STAT 4013.

**Description:** Design, implementation, and interpretation of research in consumer food preferences. Includes design of consumer surveys, conducting consumer interviews, preparing food and questionnaires for taste-test experiments, targeting and recruiting scientifically valid samples, the statistical analysis of data, and communication of results. May not be used for degree credit with FDSC 4243.

**Credit hours:** 3

**Contact hours:** Lecture: 3 Contact: 3

**Levels:** Graduate

**Schedule types:** Lecture

**Department/School:** Animal & Food Sciences

**FDSC 5253 Pre-Harvest Food Safety****Prerequisites:** FDSC 3154 or MICR 3154.**Description:** Microbial food safety at pre-harvest level. Types, sources, and concentrations of disease-causing pathogens in the food-producing animal environments and fresh produce/seafood environments; methods to control or reduce foodborne pathogens; present and future pre-harvest food safety directions. May not be used for degree credit with FDSC 4253.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2 Contact: 4**Levels:** Graduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 5300 Food Science Seminar****Prerequisites:** Graduate standing.**Description:** Critical reviews or studies of the scientific research literature related to the field of food science. Oral reports or group discussions. Offered for fixed credit, 1 credit hour, maximum of 3 credit hours.**Credit hours:** 1**Contact hours:** Lecture: 1 Contact: 1**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 5333 Carcass Value Estimation Systems****Prerequisites:** Graduate classification.**Description:** Analysis of scientific literature regarding carcass composition, quality and palatability. Overview of technology used to evaluate carcass quality factors. Same course as ANSI 5333.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 5373 Advanced Food Chemistry****Prerequisites:** FDSC 3373.**Description:** Chemical/biochemical mechanisms that affect the structure and properties of foods during processing and handling.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2 Contact: 4**Levels:** Graduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 5393 Issues in Food Science****Prerequisites:** Graduate classification.**Description:** Critical analysis of issues and challenges in the U.S. food industry. Advanced forms of communication to effectively convey information to stakeholders and advocate for a position.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 5553 Interpreting Animal and Food Science Research****Prerequisites:** STAT 5013 or concurrent enrollment.**Description:** Critical evaluation and knowledgeable communication on the design, analyses, and reporting of animal science and food science research. Same course as ANSI 5553.**Credit hours:** 3**Contact hours:** Lecture: 3 Contact: 3**Levels:** Graduate**Schedule types:** Lecture**Department/School:** Animal & Food Sciences**FDSC 5763 Analysis of Food Products****Prerequisites:** Organic chemistry.**Description:** Application of quantitative chemical and physical methods of analysis to the examination of foods. May not be used for degree credit with FDSC 4763.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2 Contact: 4**Levels:** Graduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 5833 Processed Meat****Prerequisites:** ANSI 3033 or ANSI 3333.**Description:** Meat and meat product composition. Techniques in the molding and forming of meat; sausage formulation; curing; quality control; and cost analysis. May not be used for degree credit with FDSC 4333.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 3 Contact: 5**Levels:** Graduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Animal & Food Sciences**FDSC 6000 Doctoral Research and Dissertation****Prerequisites:** MS degree or consent of major adviser.**Description:** Independent research for PhD degree in Food Science planned, conducted and reported in consultation of a major professor. Offered for variable credit, 1-10 credit hours, maximum of 30 credit hours.**Credit hours:** 1-10**Contact hours:** Contact: 1-10 Other: 1-10**Levels:** Graduate**Schedule types:** Independent Study**Department/School:** Animal & Food Sciences