

## DEPARTMENT OF NUTRITION AND FOOD SCIENCES

<http://www.uvm.edu/nfs/>

The Department of Nutrition and Food Sciences (NFS) prepares students to enter into the increasingly vital fields of nutrition, dietetics, food science, food safety, food systems and public health. The shared requirements for the major reflect the departmental commitment to the life sciences while fostering crucial intersections with the social sciences. All students will engage in hands-on laboratory and field experiences and participate in a senior capstone course. Thus, NFS majors are able to meet the current and future needs in a number of fields and the ability to assume innovative leadership roles in society and industry.

Departmental majors may elect to meet the undergraduate requirements needed for admission to medical schools (including naturopathic, chiropractic or osteopathic) or graduate school in nutrition, dietetics, public health, food systems and food science.

Depending on current interests and future plans, majors may select 1 of 3 concentrations:

### DIETETICS CONCENTRATION

Dietetics is a profession concerned with the science and art of human nutritional care, an essential component of human health science. This concentration retains the Dietetics program accreditation and provides the only pathway in Vermont for students to complete their didactic requirements to become a dietitian. This concentration prepares graduates to counsel people about the preventive and therapeutic role of nutrition in the maintenance of health and fitness.

The didactic program in Dietetics is accredited by the:

Accreditation Council for Education and Dietetics  
Academy of Nutrition and Dietetics  
120 South Riverside Plaza, Suite 2000  
Chicago, IL 60606-6995  
(312) 899-0040 ext. 5400

This program prepares students for careers as Registered Dietitians by providing the undergraduate requirements needed to apply to dietetic internships. Students graduating with this concentration could go on to become registered dietitians without taking additional undergraduate coursework.

To become a Registered Dietitian, students must complete the didactic program in Dietetics, complete an ACEND accredited supervised practice/internship program, and pass the National Registration Examination for Dietitians.

### FOOD SCIENCES CONCENTRATION

The vision of the food sciences concentration is to provide graduates with a solid foundation in the field in order to be key contributors to the food and beverage industry and related fields. Graduates will

obtain knowledge in nutrition, food chemistry and analysis, food microbiology and safety and food functionality. Students pursuing this concentration will be provided with hands-on learning experiences in-house through a food industry practicum.

### NUTRITION, SUSTAINABILITY AND SOCIETY CONCENTRATION

This concentration provides a deeper focus on nutrition in public health, food policy and sustainability. This concentration capitalizes on our department's expertise in the food policy, food systems, food insecurity, sustainability, and nutrition in public health topic areas. This concentration will allow students who are not interested in becoming a dietitian but are interested in other aspects of nutrition to complete a nutrition-focused major. The focus will be on the impacts of our contemporary food system on nutrition, be it at the level of individual or population health.

### MAJORS

#### NUTRITION AND FOOD SCIENCES MAJORS

Nutrition and Food Sciences B.S. (<http://catalogue.uvm.edu/undergraduate/agricultureandlifesciences/nutritionandfoodsciences/nutritionfoodbs/>)

### MINORS

#### NUTRITION AND FOOD SCIENCES MINORS

Nutrition and Food Sciences (<http://catalogue.uvm.edu/undergraduate/agricultureandlifesciences/nutritionandfoodsciences/nutritionfoodsciencesminor/>)

Food Systems (<http://catalogue.uvm.edu/undergraduate/agricultureandlifesciences/foodsystems/foodsystemsminor/>)

### GRADUATE

Dietetics M.S.D.

Nutrition and Food Sciences M.S.

Nutrition and Food Sciences AMP

Food Systems M.S.

Food Systems AMP

Food Systems Ph.D.

See the online Graduate Catalogue (<http://catalogue.uvm.edu/graduate/>) for more information

### Courses

#### NFS 033. What's Brewing in Food Science. 3 Credits.

This course will explore food science via the production of beer and other fermented beverages. Students will also identify mechanisms to modify their drinking habits.

**NFS 034. Servsafe Certification Course. 1 Credit.**

This course will prepare students for the ServSafe Certification Exam. The topics include food safety and proper food handling in a restaurant setting.

**NFS 043. Fundamentals of Nutrition. 3 Credits.**

The study of standard guidelines to select foods that maximize human health and the functions of the essential nutrients needed to sustain human life. Prerequisites: High school chemistry and biology.

**NFS 044. Survey of the Field. 1 Credit.**

Nutrition and Food Sciences introduction to the professional field and career opportunities in dietetics, nutrition and food science. Required of all First-Year and transfer students. Fall. Prerequisite: Nutrition and Food Science majors and Dietetics, Nutrition and Food Science majors only, or Instructor permission.

**NFS 050. Cheese and Culture. 3 Credits.**

The history of cheesemaking is used as a lens through which to view current conflicts in European and American attitudes towards foods.

**NFS 053. Basic Concepts of Foods. 0 or 3 Credits.**

Introduces the basic concepts of food central to the disciplines of nutrition, food science and food systems. Introduces these basic concepts in the same way as everyday Americans - through the process of meal preparation.

**NFS 063. D2:Obesity:What,Why,What to Do. 3 Credits.**

Introduction to the causes, consequences, and treatment of obesity. Fall.

**NFS 072. Kitchen Science. 3 Credits.**

Integrated lecture-lab course that explores the scientific concepts underlying why foods do what they do in the kitchen. Applications include topics such as ice cream, gluten, and molecular gastronomy. Labs and final project provide opportunities to design, conduct, and evaluate experiments investigating culinary phenomena.

**NFS 073. D2:SU:Farm to Table: Food Sys. 3 Credits.**

This course provides an introduction to the contemporary food system, focusing on the interdependence of all components, from farm to table.

**NFS 092. Independent Study. 1-18 Credits.**

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

**NFS 095. Special Topics. 1-18 Credits.**

Introductory level special topics courses.

**NFS 096. Internship. 1-3 Credits.**

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

**NFS 113. U.S. Food Policy and Politics. 3 Credits.**

Provides a systems perspective on U.S. food policies and politics across the food system. Focuses on understanding the U.S. food policy process, policymakers, stakeholders, issues, goals and feedbacks between food policy and politics. Prerequisites: NFS 073 or CDAE 002 or CDAE 004. Cross-listed with: FS 101.

**NFS 114. Human Health in the Food Syst. 3 Credits.**

Explores the multifaceted and evolving intersection of food systems, dietary quality, food availability and human health outcomes. Investigates how political, economic, social and cultural drivers in the food system influence human health outcomes. Prerequisites: NFS 043 or NFS 073. Cross-listed with: FS 103.

**NFS 143. Nutrition in the Life Cycle. 3 Credits.**

Nutritional needs of people throughout the life cycle. Physiological and environmental factors which affect nutritional status. Designed for Nutrition majors. Prerequisite: NFS 043. Fall.

**NFS 153. Principles of Food Technology. 3 Credits.**

Food processing technologies and underlining principles of changes in microbiological quality and safety, chemical composition and nutritional value, and interaction of functional additives and ingredients. Prerequisite: NFS 043, NFS 053; organic chemistry. Spring.

**NFS 154. Principles Food Technology Lab. 1 Credit.**

Experiential learning of principles of major modern food processing and preservation technologies, essential skills of food quality and safety assurance, and new product development. Prerequisite: NFS 153, or concurrent enrollment in NFS 153, organic chemistry; Department majors only.

**NFS 156. Deadly Food: Outbreak Investig. 3 Credits.**

Investigates how U.S. public health officials discover, investigate, and solve foodborne outbreaks. Introduces common pathogens and foods involved in outbreaks in the U.S., the laboratory and investigative methods officials use to solve the outbreaks, and the government agencies involved. The second half of the semester will focus on case studies. Pre/Co-requisites: NFS 153 or MMG 101 or ASCI 001, or Instructor permission.

**NFS 163. Sports Nutrition. 3 Credits.**

Timing and composition of meals for training and pre- and post-competition. Fall/Spring. Prerequisite: NFS 043 or Instructor permission.

**NFS 183. Introduction to Biochemistry. 3 Credits.**

Exploring biological processes at the molecular level and how they are controlled. Topics include enzymes, gene expression, and metabolism of carbohydrates and lipids. Restricted to Nutrition and Food Sciences and Dietetics, Nutrition and Food Sciences majors; others by Instructor permission. Prerequisites: CHEM 042; or CHEM 141 and CHEM 142; or other acceptable coursework in organic chemistry.

**NFS 187. Intro to Biochemistry: Lab. 1 Credit.**

Introduction to techniques used to explore fundamental biochemistry concepts including enzyme kinetics, lipids, carbohydrate chemistry, and gene expression. Includes spectrophotometry, gel electrophoresis, and mass spectrometry. Pre/Co-requisites: P BIO 185, BIOC 201, or NFS 183. Cross-listed with: ASCI 187.

**NFS 191. Teaching Assistantship. 1-3 Credits.**

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

**NFS 192. Independent Study. 1-18 Credits.**

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

**NFS 195. Intermediate Special Topics. 1-18 Credits.**

Lectures, laboratories, readings, or projects relating to contemporary areas of study. Credits negotiable. Enrollment may be more than once, maximum of 12 hours in NFS 195 and NFS 295 combined. Prerequisite: Department permission.

**NFS 196. Internship. 1-18 Credits.**

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion. Prerequisite: Department permission.

**NFS 198. Undergraduate Research. 1-18 Credits.**

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion. Prerequisite: Department permission.

**NFS 203. Food Microbiology. 3 Credits.**

Desirable and undesirable activities of bacteria in foods. Mechanisms of food-borne infection and intoxication. Laboratory methods to enumerate and identify microorganisms associated with food. Prerequisite: NFS 153 or Instructor permission. Co-requisite: NFS 213.

**NFS 205. Functional Foods:Prncpl & Tech. 3 Credits.**

Examines the constituents that make food products functional and provides laboratory techniques needed to create a functional food. Prerequisites: NFS 153, NFS 154, or Instructor permission.

**NFS 213. Food Microbiology Lab. 1 Credit.**

Introduces microbiological techniques such as Gram Stain, Streak for Isolation, dilutions, aseptic technique as well as means of identifying the microbial content of food products. Prerequisites: NFS 153, NFS 154, or Instructor permission. Co-requisite: NFS 203.

**NFS 223. Nutrition Educ & Counseling. 3 Credits.**

Use of appropriate education theory, techniques, and media in nutrition education and counseling theories and negotiation, interviewing and counseling skills in individual and group counseling. Pre/co-requisites: NFS Prerequisites: NFS 043, NFS 053, NFS 143.

**NFS 243. Advanced Nutrition. 3 Credits.**

Study of nutrients and their specific functions in metabolic process integrating cellular physiology, biochemistry, and nutrition. Prerequisites: NFS 043, ANPS 019, NFS 183 or P BIO 185; minimum Junior standing. Spring.

**NFS 244. Nutr in Hlth & Disease Prevntn. 3 Credits.**

Examination of dietary planning, nutrition assessment, genetics, drug-nutrient interactions, CAM therapies and nutrition related to health and prevention of disease. Pre/co-requisites: NFS 053, NFS 143; minimum Junior standing.

**NFS 245. Nutrition for Global Health. 3 Credits.**

Exposes students to global nutrition issues, with an emphasis on maternal and child nutrition in low- and middle-income countries. Focus on the interplay between demographic, nutritional, and epidemiologic transitions. Examines nutrition issues and investigates efforts to control and prevent malnutrition. Prerequisites: NFS 043; and NFS 113 or NFS 114 or FS 103 or ANTH 173 or HLTH 103 or Instructor permission. Co-requisites: Minimum Junior undergraduate or Graduate student standing.

**NFS 246. Weight Inclusive Nutrition. 3 Credits.**

Teaches an approach to nutrition through a weight-inclusive lens. Examines how diet culture influences our view of foods, eating choices, and our bodies. Discusses the principles of Health at Every Size and Intuitive Eating. Prerequisites: NFS 043; minimum Junior standing.

**NFS 250. Foodservice Systems. 4 Credits.**

Emphasis on the foodservice system model for understanding quality control; food procurement, production, and marketing; management and evaluation of foodservice facilities, human and financial resources. Prerequisites: BSAD 060 or CDAE 158; BSAD 120; minimum Junior standing; Dietetics or Nutrition and Food Sciences, and Dietetics, Nutrition and Food Sciences majors only.

**NFS 253. Food Regulation. 3 Credits.**

Comprehensive examination of U.S. food laws and regulations and their relationships to the safety of the U.S. food supply. Focus on how food-related laws and regulations are enacted and enforced, through detailed examination of selected food regulation topics. Prerequisite: NFS 153 or equivalent course/training with Instructor permission.

**NFS 254. Global Food Safety. 3 Credits.**

An overview of food safety issues, policies, and opportunities around the globe, with a focus on bacterial, viral, and parasite-based food safety challenges. Prerequisites: NFS 113 or NFS 114; NFS 153 or MMG 002 or MMG 101.

**NFS 260. Clinical Nutrition 1. 3 Credits.**

Focuses on understanding various disease conditions and how different food patterns relate to the prevention and management of common diseases. The Nutrition Care Process will be used throughout, and the importance of interprofessional practice as well as the dietitian's role on the healthcare team will be emphasized. Prerequisites: NFS 143, NFS 243; Senior standing.

**NFS 262. Community Nutrition. 3 Credits.**

Study of U.S. public health nutrition policies, programs and practices. Emphasis on community nutrition program planning including needs assessment, intervention development and evaluation. Prerequisite: Minimum Junior or Graduate standing. Spring.

**NFS 264. Clinical Nutrition 2. 3 Credits.**

Builds further understanding of various disease conditions and how different food patterns relate to the prevention and management of common diseases. For specific disease states students will examine how diet should be modified to prevent, treat, or manage the disease condition. Prerequisite: NFS 260.

**NFS 274. Community Practicum. 1-3 Credits.**

Professional field experience in a community nutrition organization. Credit negotiable but not to exceed three per semester. Enrollment may be more than once, maximum of six credits. Prerequisite: Instructor permission.

**NFS 283. HACCP: Theory & Application. 3 Credits.**

This course addresses the development of a HACCP plan. Requirements of both the USDA-FSIS and FDA are examined. A mock HACCP plan will be developed. Prerequisites: NFS 203 and Instructor permission.

**NFS 285. Food, Exchange and Culture. 3 Credits.**

Examines practices and principles that cannot be fully understood within market based, industrially manufactured and/or globally sourced food and drink. These practices and principles shape food systems at the level of individual behavior and social institutions, including reciprocity, subsistence, charity, mutual aid and more. Prerequisites: NFS 053 or ANTH 085; and NFS 113 or ANTH 179.

**NFS 286. NFS Senior Seminar. 1 Credit.**

Designed to help students through the process of identifying what they'd like to do with their dietetics degree after graduating from UVM, as well as prepare students to complete the required materials for future opportunities. Prerequisites: Dietetics, Nutrition and Food Sciences major; Senior standing.

**NFS 291. Teaching Assistantship. 1-3 Credits.**

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

**NFS 292. Independent Study. 1-18 Credits.**

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

**NFS 295. Advanced Special Topics. 1-18 Credits.**

Lectures, laboratories, readings, or projects relating to contemporary areas of study. Credits negotiable. Enrollment may be more than once, maximum of twelve hours in NFS 195 and NFS 295 combined. Prerequisite: Department permission.

**NFS 296. Internship. 1-18 Credits.**

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion. Prerequisite: Departmental permission.

**NFS 298. Undergraduate Research. 1-18 Credits.**

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.