

NUTRITION

Department Chair: Emily Heying

Faculty: Bernadette Elhard, Mark Glen, Emily Heying, Linda Shepherd

The study of Nutrition investigates the ways in which food promotes the health and well-being of individuals, communities, and the environment. Focused academic inquiry in food and nutrition is interdisciplinary and is complemented by and integrated with disciplines such as biology, chemistry, communication, economics, environmental studies, exercise science, psychology and sociology. The Nutrition Department offers a major in Nutrition, an area of concentration in Dietetics through the Didactic Program in Dietetics (DPD), and a minor in Nutrition. The DPD is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics. All Nutrition majors complete a set of required foundation courses in biology, chemistry, mathematics, and nutrition. Additional course work is selected based on the area of student interest, area of concentration, and/or prerequisite guidelines for post-graduate education. The Nutrition major prepares students for a variety of career options or graduate study. Examples of professional areas that Nutrition majors pursue post-graduation include: Dietetics, Public Health, Food Service Management (in education, health care and private industry), Public Policy, Health Education, and Wellness. Graduate education pursued by Nutrition majors includes programs such as Medicine, Physician's Assistant, Physical Therapy, Occupational Therapy, Nursing, Dentistry, Chiropractic, Health Care Administration and Law, and graduate studies in Food Science, Food Studies, Nutrition, and Public Health.

Assessment

The Nutrition Department completes an annual assessment of student learning outcomes. Assessment measures are imbedded into coursework and focus on evidence-based knowledge of nutrition and food science, the role of food and dietary patterns in the prevention of disease and promotion of health and wellness, food systems, food policy, and the reading, interpretation and communication of food and nutrition information and research. Students complete a capstone research experience in which written and verbal communication skills are assessed. Seniors in the major are surveyed every three years to assess student perception of the department's ability to meet specific learning outcomes. The Didactic Program in Dietetics, an area of concentration within the major, includes an assessment plan focused on accreditation standards, which includes specific knowledge competencies. The DPD is accredited by the:

Accreditation Council for Education in Nutrition Dietetics (ACEND) of the Academy of Nutrition and Dietetics
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
1-800-877-1600 ext. 5400
www.eatrightpro.org/acend (<https://www.eatrightpro.org/acend/>)

Accreditation review by ACEND is completed every seven years and includes a site visit and review of curriculum and faculty credentials.

Majors

- Nutrition Major (<https://catalog.csbsju.edu/catalog/academic-departments/nutrition/nutrition-major/>)

Minors

- Nutrition Minor (<https://catalog.csbsju.edu/catalog/academic-departments/nutrition/nutrition-minor/>)

NUTR 110 Understanding Nutrition (4 Credits)

This course is intended for non-health-related majors. The course introduces the basic concepts of nutrition. Content includes: the functions of the major nutrients (carbohydrates, lipids, proteins, vitamins, and minerals) and food sources of each. The principles of diet evaluation, nutritional assessment, energy balance, weight control, nutrition, and fitness, and how food choices can enhance health, athletic performance, and reduce the risk of chronic disease are emphasized. Selected topics in current nutrition trends, protein quality, vegetarian diets, and food safety are explored. Laboratory required.

Prerequisites: None

Corequisites: NUTR 110L

Restrictions: Students cannot enroll who have a major, minor, or concentration in Biochemistry, Biology, Chemistry, Exercise and Health Science, Integrative Science, Nursing or Nutrition.

Equivalent courses: NUTR 125

Attributes: Natural World (NW), Thematic Encounter1/2-Justice

NUTR 110L Laboratory (0 Credits)

Prerequisites: None

Corequisites: NUTR 110

NUTR 125 Concepts of Nutrition Science (4 Credits)

This course introduces the basic concepts of nutrition. The content includes: the functions of the major nutrients (carbohydrates, lipids, proteins, vitamins and minerals) and food sources of each. The principles of diet evaluation, nutritional assessment, energy balance, weight control, nutrition and fitness, and how food choices can enhance health, athletic performance, and reduce the risk of chronic disease are emphasized. Selected topics in protein quality, vegetarian diets and food safety are explored. This course is a Natural World (NW) Way of Thinking and a Justice Theme Encounter in the Integrations Curriculum. This course is required for students for the following majors: Nutrition, Nursing, and Exercise & Health Science. The laboratory for the course is required in conjunction with lecture for all students enrolled.

Prerequisites: None

Corequisites: NUTR 125L

Restrictions: Enrollment is limited to students with a major in Biochemistry, Biology, Chemistry, Exercise and Health Science, Integrative Science, Nursing or Nutrition.

Equivalent courses: NUTR 110

Attributes: Natural World (NW), Thematic Encounter1/2-Justice

NUTR 125L Laboratory (0 Credits)

Prerequisites: None

Corequisites: NUTR 125

NUTR 220 Exploring Weight Issues: Obesity and Eating Disorders (2 Credits)

This course examines the diagnostic criteria and current prevalence of obesity and eating disorders (ED), including anorexia nervosa and bulimia nervosa. The course will explore the multi-factorial causes and consequences of obesity and eating disorders, and the latest clinical treatment options, including an in-depth look at the theory and evidence behind many of the popular diets. The last section of the course will discuss prevention strategies for ED and obesity, and include novel public health approaches to the prevention of obesity.

Prerequisites: NUTR 110 or NUTR 125

NUTR 223 Introduction to Food Science (4 Credits)

Introduction to Food Science is intended to provide an introduction to the principles related to the composition and chemical and physical properties of food. Chemical reactions that occur in foods due to formation, processing, and preparation procedures will be presented. This course includes a laboratory component that focuses on the functions of ingredients and preparation techniques in a variety of complex foods. The laboratory also focuses on sensory and objective characteristics of foods given certain changes in ingredients or preparation techniques. Laboratory required.

Prerequisites: None

Corequisites: NUTR 223L

Restrictions: Students cannot enroll who have a major in Dietetics.

NUTR 223L Laboratory (0 Credits)

Prerequisites: None

Corequisites: NUTR 223

NUTR 225 Experimental Food Science (4 Credits)

A laboratory-based foods course which examines the underlying principles of chemistry, biology, and physics that influence food quality. Employing the scientific method, students observe the effects of modifying ratios and types of ingredients, as well as altering food preparation methods on a variety of food products. Emphasis is placed on classic culinary techniques in the preparation of food, and sensory and objective evaluation of the results of food experiments. Issues in food safety, technology, and biotechnology are discussed throughout this course. Laboratory required.

Prerequisites: None

Corequisites: NUTR 225L

Attributes: Natural World (NW), Thematic Encounter 1/2-Movement

NUTR 225L Laboratory (0 Credits)

Prerequisites: None

Corequisites: NUTR 225

Restrictions: Enrollment is limited to students with a major in Dietetics or Nutrition.

NUTR 230 Food and Culture (4 Credits)

Food and Culture examines how food functions in society and culture beyond the mere provision of nutrients. How do people use food to establish and communicate their individual, group, and social identity? How does food security contribute to social and cultural development? How do factors, including gender and ethnicity, influence food choices, food preferences, and views on health and wellness? These questions, and more, will be critically examined through reading, personal essays, and a group project that examines the foodways of a specific culture or ethnic group.

Prerequisites: None

Attributes: CSD: Identity (CI)

NUTR 240 Food Systems: Policy and Controversies (2 Credits)

This course is focused on the interrelationships between nutrition, various food systems, and agriculture. Food security, genetic modification, sustainability, and factors that impact producers and consumers will be emphasized. Prerequisite: NUTR 125.

Prerequisites: NUTR 125

Equivalent courses: NUTR 260D

NUTR 260 Topics in Nutrition (2-4 Credits)

A tightly focused class that provides in-depth inquiry into one aspect of nutrition. Structure of the class will vary depending upon the topic but will combine lecture, discussion, and readings specific to the topic. When appropriate, the course may also incorporate experiential, laboratory-based projects or a research project. Topics vary but may include: sports nutrition, complementary and alternative medicine, historical perspectives on the development of the discipline of nutrition, culinary arts, or prevention or management of a specific disease or condition through nutrition therapy. Prerequisites: vary by topic, either NUTR 125 and/or NUTR 225. This course may count as an elective for the Nutrition major or the Nutrition minor.

Prerequisites: NUTR 125 or NUTR 225

NUTR 260E Nutrition and Human Performance (2 Credits)

This course is designed to provide an overview of nutrient use in physical activity and nutrition strategies to improve human performance across the lifespan. Within the course, students will learn basic concepts of energy metabolism, hydration, and nutrient requirements for a variety of physical activity levels for different age groups including childhood, adolescence, and older adulthood. Additional topics may include ergogenic aids, fad diets, weight gain/loss for physical performance, gastrointestinal issues, vegetarian/vegan diets for performance, and nutrient needs for physical activity in pregnancy. Prerequisite NUTR 110 or 125.

Prerequisites: NUTR 110 or NUTR 125

NUTR 271 Individual Learning Project (1-4 Credits)

Supervised reading or research at the lower-division level. Permission of department chair required. Consult department for applicability towards major requirements. Not available to first-year students.

Prerequisites: None

NUTR 300 Culinology of French Cuisine (2 Credits)

Structure of the class will combine lecture, discussion, and readings examining the food science behind the essential elements of French cuisine. Culinology®, Culinary Science, combines culinary arts and food science and technology to create safer more wholesome food. Research on food production and preservation will be combined with culinary preparation technique to create appealing food from a taste, texture and visual perspective. Students will also spend time with experiential learning in the food science laboratory applying knowledge previously discussed in the classroom.

Prerequisites: (NUTR 110 or NUTR 125) and NUTR 225

Equivalent courses: NUTR 260A

NUTR 301 Diet, Health & Disease Prevention (4 Credits)

A comprehensive overview of the evidence-based recommendations for diet and nutrition in the promotion of optimal health status and prevention of chronic disease. Dietary patterns and the role of genomics in health and disease will be examined. Diet and nutrition recommendations for the prevention of cardiovascular diseases, metabolic syndrome, Type 2 diabetes, cancer, and obesity will be emphasized.

Prerequisites: (NUTR 110 or NUTR 125) and (BIOL 101 or BIOL 101Z)

Restrictions: Enrollment is limited to students with a major in Biology, Integrative Science, Nursing or Nutrition. Students cannot enroll who have a concentration in Dietetics.

NUTR 302 Physiology of Weight Regulation (2 Credits)

This is a combined discussion and lecture-based course which provides an overview of physiological processes that contribute to the regulation of body weight in humans. Concepts covered include the role of the brain in energy balance, adipose tissue hormones, gut hormones, the role of the gut microbiome in energy balance, and the influence of other physiological and environmental factors on adiposity. Students will be expected to read and interpret technical journal articles. Prerequisite NUTR 125, BIOL 201 or 216, and CHEM 125, or permission of instructor.

Prerequisites: NUTR 125 and (BIOL 216 or BIOL 201 or BIOL 221 or BIOL 221Z) and (CHEM 125 or CHEM 125A or CHEM 125B or CHEM 125C)

Equivalent courses: NUTR 260B

NUTR 305 Leadership in Dietetics (2 Credits)

This course is focused on professional knowledge and skill development related to practice issues in dietetics, such as Standards of Practice, professional ethics, health care ethics, health care policy and reform, and legislative involvement. Students will have the opportunity to develop a professional portfolio, and establish career goals. Fall.

Prerequisites: NUTR 323 and (NUTR 330 and (NUTR 343

Restrictions: Enrollment limited to students with a class of Senior. Enrollment is limited to students with a major in Dietetics, Nutrition or Nutrition Science (Old).

NUTR 312 Nutrition Assessment (2 Credits)

Concepts and skills related to the process of obtaining, verifying, and interpreting data related to nutritional health is the focus of the course. The Nutrition Care Process, recognized by the Academy of Nutrition and Dietetics, will be used for collection and analysis of data, establishing a nutrition diagnosis, and creating focused diet and lifestyle interventions to improve nutrition status and health.

Prerequisites: NUTR 125 and NUTR 323

Equivalent courses: NUTR 331

NUTR 320 Micronutrient Metabolism and Nutritional Supplementation (2 Credits)

Micronutrient metabolism is the study of micronutrients (vitamins and minerals) and includes discussion of the food sources, process of digestion, absorption, metabolism, and biochemical functions of micronutrients. Micronutrients are essential in the diet and often play supporting biochemical roles in energy metabolism of macronutrients. Micronutrients are often supplemented in the diet and this course will discuss the risks and benefits of supplementation for various conditions and diverse/ global populations at the biochemical level. Metabolism and biochemistry are explored in this class by investigating deficiency or toxicity manifestations and resulting metabolic and physiological consequences. For example, how might someone with vitamin D deficiency be at higher risk for other metabolic conditions? Classroom time will explore micronutrient metabolism in depth and provide opportunities to apply the concepts to deepen understanding.

Prerequisites: NUTR 125 and CHEM 125

Equivalent courses: NUTR 331

NUTR 323 Public Health Nutrition: Infancy Through Aging (4 Credits)

This course studies human growth and development across the lifespan, from preconception, pregnancy and lactation, infancy through childhood, adolescence, adulthood, and older adults. A public health approach is used to examine the unique needs of each population, accounting for the impact of social determinants of health and identifying health disparities. Students will explore current nutrition and health guidelines, specific to each lifespan stage, while identifying programs or policies to improve health and reduce inequalities.

Prerequisites: NUTR 125 or NUTR 110

Attributes: Social World (SW), Thematic Encounter3 - Justice

NUTR 326 Global Malnutrition and Disease (4 Credits)

This upper division Nutrition course will allow students to build upon fundamental concepts of nutrition and apply them to real-world applications in the context of global health. Food security, the burden and origins of disease, social economic status, policy, education, and natural disasters all impact nutrition globally and will be emphasized.

Prerequisites: You must take INTG 100 or 205 prior to taking a Thematic Focus Course. You must take a Cultural and Social Difference: Identity (CI) course prior to or at the same time as Thematic Focus Courses.

Attributes: Social World (SW), Thematic Focus - Truth

NUTR 330 Nutritional Biochemistry and Assessment (Macronutrients) (4 Credits)

The physiological functions and biochemistry of carbohydrates, lipids, and protein will be explored comparing normal metabolism to the altered metabolism of selected disease states (alcoholism, diabetes, etc.). The laboratory will emphasize research design and techniques for determining nutritional status. Students will learn how to formulate a hypothesis, design experiments, collect data, measure and interpret nutritional assessment parameters, integrate and analyze information, answer research questions, and draw appropriate conclusions. Offered for A-F grading only. Prerequisites: NUTR 125, CHEM 250 or concurrently with CHEM 250. Fall.

Prerequisites: You must take a NUTR 125 prior to taking NUTR 330, and you must take CHEM 250 prior to or at the same semester as NUTR 330. NUTR 330 is a thematic focus - Truth course therefore you must take INTG 100 or 205 prior and you must take a Cultural and Social Difference: Identity (CI) course prior to or at the same time as NUTR 330.

Attributes: Thematic Focus - Truth

NUTR 330L Laboratory (0 Credits)

Prerequisites: None

Corequisites: NUTR 330

NUTR 333 Nutrition Therapy - Chronic Disease (4 Credits)

Intended for students enrolled in the Didactic Program in Dietetics (DPD), the course provides an overview of the role of the diet and nutrition in the management and treatment of selected diseases. Class theory will emphasize how diet contributes to the pathophysiology of disease process and why diet is altered in response to certain pathologies. Topics include the Nutrition Care Process, nutrigenomics, cardiovascular diseases, diabetes, obesity, food allergies and intolerances, and gastrointestinal disorders.

Prerequisites: NUTR 323 and (NUTR 330

NUTR 337 Nutrition Therapy - Critical Care (4 Credits)

Intended for students enrolled in the Didactic Program in Dietetics (DPD), the course presents an overview of the role of diet and nutrition in the management and treatment of selected conditions and diseases. Class theory will emphasize how diet is altered in response to certain pathologies, and will cover topics such as kidney diseases, cancer, critical care nutrition, nutrition support, and pulmonary diseases. Prerequisites: 323 & 330 (or concurrent with NUTR 330). Spring.

Prerequisites: NUTR 323 and NUTR 330 (may be taken concurrently)

Restrictions: Enrollment is limited to students with a major in Dietetics.

NUTR 341 Nutrition Education (2 Credits)

This course examines the principles and theories of effective nutrition education. Using the principles and theories, students engage in projects such as developing and delivering nutrition education presentations for adults and/or children, creating public displays, writing nutrition articles and materials, and using and evaluating media. Prerequisites: NUTR 125 and 323.

Prerequisites: NUTR 125 and NUTR 323

NUTR 341L Laboratory (0 Credits)**Prerequisites:** None**Corequisites:** NUTR 341**NUTR 342 Interviewing and Counseling Skills (2 Credits)**

The course examines the principles and theories that provide a framework for successfully influencing behavior and motivating behavior change. Basic concepts of counseling theory, methods, and interviewing strategies are addressed. Prerequisites: NUTR 125 and 323.

Prerequisites: NUTR 125 and NUTR 323**NUTR 342L Laboratory (0 Credits)****Prerequisites:** None**Corequisites:** NUTR 342**NUTR 343 Food Production and Procurement (4 Credits)**

The principles of food planning and production, menu planning, procurement, service and distribution, sanitation and safety, and facility management—including layout, design, and equipment selection—are addressed using a system approach to food service operations. Significant hands-on quantity food production laboratory experiences will take place in the large-scale kitchens of CSB/SJU and the surrounding community. A final class catering project will reflect a culmination of the theory discussed throughout the course and the experience gained in supervised practice.

Prerequisites: NUTR 225**Corequisites:** NUTR 343L**NUTR 343L Laboratory (0 Credits)****Prerequisites:** None**Corequisites:** NUTR 343**NUTR 345 Entrepreneurship and Management in Food Industry (4 Credits)**

The course will provide a forum for studying the process of management, which provides the framework for discussion of leadership in the profession. Emphasis will be placed on the foodservices system, where management and leadership decisions are made with the understanding of their effect on the whole as well as the parts. The course begins with a review of important background information: paradigms and societal transformations; systems theory; ethics; and social responsibility. The following major management functions are covered to provide the guiding structure for review of the fundamental principles and responsibilities of the modern leader in food and nutrition services: 1) planning, decision-making, and communication and marketing; 2) organizing structures; 3) leadership and organizational change; 4) human resources management; and 5) controls and financial management. Students will engage in a unique hands-on experience building on their prerequisite knowledge of Experimental Food Science (NUTR 225) and Food Production and Procurement (NUTR 343) as they develop and operate a small company. Students will develop a business plan and examine the managerial functions of planning, organizing, human resource management, leadership, and controlling the financial and quality factors within the structure of their system. In the process, students will market their company to potential clients and ultimately produce and serve foods designed to meet client expectations. The course consists of lecture, research, and development labs and outside catered events.

Prerequisites: NUTR 225 and NUTR 343**Corequisites:** NUTR 345L**Attributes:** Social World (SW)**NUTR 345L Laboratory (0 Credits)****Prerequisites:** None**Corequisites:** NUTR 345**NUTR 371 Individual Learning Project (1-4 Credits)**

Supervised reading or research at the upper-division level. Permission of department chair and completion and/or concurrent registration of 12 credits within the department are required. Consult department for applicability towards major requirements.

Prerequisites: None**NUTR 380 Nutrition Research Seminar I (2 Credits)**

This course is the first in a two semester seminar sequence intended to introduce students to the process of conducting research. In this seminar course, students will: develop a research question; conduct a literature search; learn about types of research designs and their appropriate use; write a research proposal; learn about the institutional review process (IRB) and informed consent. Students typically enroll Spring of junior year.

Prerequisites: NUTR 323**Restrictions:** Enrollment limited to students with a class of Junior, Sophomore or Senior.**NUTR 381 Nutrition Research Seminar II (2 Credits)**

This course is the second in a two-semester sequence intended to introduce students to the process of conducting research. In this second seminar course, students will: learn how to develop research budgets and seek funding; review and apply basic statistical methods to analyze data; practice data analysis and graphic presentation; write abstracts; and develop a poster presentation and a formal oral presentation. Fall. Prerequisite: MATH 124 (or another statistics course)

Prerequisites: NUTR 330 and MATH 124**NUTR 390 Independent Nutrition Research (1-4 Credits)**

Students, working with a research advisor, engage in independent research. Students are expected to meet regularly with the research advisor(s) and follow a jointly agreed upon schedule of planned meetings or stages or work. Students will be required to present the outcome of the research project to a public audience. Number of credits assigned will vary by project (1 credit = 4 hours/week of work). Permission of the chair required for registration.

Prerequisites: None**NUTR 395 Senior Nutrition Seminar (2 Credits)**

A discussion-based course that will focus on contemporary issues in food and nutrition. Students will prepare and present a major paper to participants in the course. Emphasis will be placed on analysis, interpretation, and application of evidence from major sources in the discipline. This course fulfills the Common Curriculum requirement for a capstone in the major. Prerequisites: NUTR 125, 225, 323, and 12 additional credits in nutrition, or permission of instructor.

Prerequisites: NUTR 125 and NUTR 225 and NUTR 323**NUTR 396 Nutrition Research Capstone (2 Credits)**

This capstone experience focuses on individual research. Students develop their own individual research project and progress through each step of the research process. Suitable research topics are integrative in nature, requiring students to utilize their nutrition background and aspects of other disciplines. Students will design, collect, and analyze their data, complete a paper, and present their research. This course fulfills the Common Curriculum requirement for a capstone in the major. Spring

Prerequisites: NUTR 380 and NUTR 381**NUTR 397 Internship (1-16 Credits)**

Completed Internship form is required. See XPD Web Page.

Prerequisites: None**Attributes:** Experiential Engagement (EX)