

## **SUBJECT: Nutrition**

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### **NUTR 110 Understanding Nutrition (4)**

This course is intended for non-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.

### **NUTR 125 Concepts of Nutrition Science (4)**

Basic concepts of nutrition are introduced emphasizing the role of nutrition in health. Topics include: Dietary Guidelines, proteins, carbohydrates, fats, vitamins, and minerals; energy balance and weight control, sports nutrition and fitness; and food safety. Students are provided the opportunity to assess their own nutritional status through computerized diet analysis, blood cholesterol and glucose screening, and to learn principles of diet planning and food selection to promote health through a variety of hands-on experiences in the lab setting. Laboratory required.

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

This course will examine 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. Prerequisite: NUTR 125.

### **NUTR 223 Introduction to Food Science (4)**

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.

### **NUTR 225 Experimental Food Science (4)**

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.

### **NUTR 230 Food and Culture (2)**

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? What are the primary factors influencing food choices and food preferences? These questions will be critically examined through reading, personal essays, and a group project that examines the foodways of a specific culture or ethnic group.

### **NUTR 240 Food Systems: Policy and Controversies (2)**

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.

### **NUTR 260 Topics in Nutrition (2-4)**

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, prevention or management of a specific disease or condition through nutrition therapy. Prerequisites: vary by topic, either NUTR 125 or 225. This course may count as an elective for the Nutrition major or the Nutrition minor.

### **NUTR 260E Nutrition and Human Performance (2)**

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.

### **NUTR 271 Individual Learning Project (1-4)**

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.

### **NUTR 277 Topics in Thematic Focus: Justice (0-4)**

Focus topics courses in Justice.

### **NUTR 300 Culinology of French Cuisine (2)**

Learn about the history, preparation methods, and food science of traditional French gastronomy including the creation of classic sauces at the heart of this archetypical cuisine. Structure of the class will combine lecture, discussion, readings, and laboratory experiences. Research on food production will be combined with the culinary preparation techniques to create appealing food from taste, texture, and visual perspective. Culinology, Culinary Science, combines culinary arts and food science. Prerequisite NUTR 223 or 225. Offered for A-F grading only.

### **NUTR 301 Diet, Health & Disease Prevention (4)**

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. Does not meet curriculum requirements for the Didactic Program in Dietetics (DPD). Prerequisites: NUTR 125, BIOL 201 or 216 and CHEM 125 or permission of the instructor.

### **NUTR 302 Physiology of Weight Regulation (2)**

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 gut bacteria in energy balance, and the influence of viruses 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.

### **NUTR 303 Food Labeling and Regulations (2)**

This course will provide students with an understanding of the U.S. system of regulation of food products including formulation, manufacturing, labeling, and advertising. Understanding how regulation and food laws are affected by scientific developments and changing societal values and concerns will also be examined. The course is meant to give an overview of the basic laws and regulations governing the formulation, manufacturing, labeling, and advertising of foods in the U.S.; to introduce students to the different governmental agencies involved in food labeling, regulations, and advertising such as the FDA, USDA, FTC. There is no textbook. Readings will be selected by the instructor and will include FDA regulations, other FDA documents such as proposed rules and industry guidance, USDA documents, FTC complaints and consent orders, laws affecting food regulation, and court

decisions. Students will prepare brief summaries of the assigned reading, prior to class discussion. Each student will select a commercial food product during the first week of class and will evaluate regulatory issues throughout the semester not only in a general sense but also with particular reference to that product. Prerequisite NUTR 223 or 225.

### **NUTR 305 Leadership in Dietetics (2)**

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. Prerequisites: NUTR 323, 330 and 343. Senior Dietetics majors only. Course is offered for S/U grading only. Fall.

### **NUTR 310 SENSORY EVALUATION OF FOOD (2)**

Principles and procedures for sensory evaluation of food. Appropriate uses of specific tests are discussed, along with physiological, psychological, and environmental factors affecting sensory outcomes. Prerequisites: NUTR 125, NUTR 223/225.

### **NUTR 312 Nutrition Assessment (2)**

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 323.

### **NUTR 320 Micronutrient Metabolism and Nutritional Supplementation (2)**

Micronutrient metabolism is the study of micronutrients (vitamins and minerals) and includes the food sources, the process of digestion, absorption, metabolism and biochemical functions. 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, NUTR 323 and CHEM 125 and 250 (can be enrolled in CHEM 250 concurrently).

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

Study of nutrition and human growth and development including pregnancy, lactation, infancy, childhood and adolescence, adulthood, and aging. Physiological, psychological, and chronic degenerative conditions associated with aging and related nutritional implications are examined. An epidemiological approach is utilized to examine relationships between diet, disease, and health status; implications for public health policy; and existing federal, state, and community programs. Course offered for A-F grading only. Prerequisite: NUTR 125.

### **NUTR 326 Global Malnutrition and Disease (4)**

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. Prerequisite: NUTR 125 and 323.

### **NUTR 330 Nutritional Biochemistry and Assessment (Macronutrients) (4)**

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 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.

#### **NUTR 333 Nutrition Therapy - Chronic Disease (4)**

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: the Nutrition Care Process, nutrient/drug interactions, cardiovascular diseases, diabetes, food allergy and intolerance, nutrition and neurological/psychiatric disorders, selected topics in alternative medicine. Course offered for A-F grading only. Prerequisites: 323 & 330 or concurrent w/NUTR 330. Fall.

#### **NUTR 337 Nutrition Therapy - Critical Care (4)**

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 the fundamentals of nutrition support. Topics: kidney diseases, critical care nutrition, nutrition support, gastrointestinal diseases, pulmonary disease, ethical issues related to nutritional care. Prerequisites: 323 & 330 (or concurrent with NUTR 330). Spring.

#### **NUTR 341 Nutrition Education (2)**

This course examines the principles and theories of effective nutrition education. Using the principles and theories, students do some of the following: develop nutrition education presentations for adults and children, create public displays, write nutrition articles and materials, and use and evaluate media. Prerequisites: NUTR 125 and 323.

#### **NUTR 342 Interviewing and Counseling Skills (2)**

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. S/U grading only.

#### **NUTR 343 Food Production and Procurement (4)**

The principles of food planning and production, menu planning, procurement, service and distribution, sanitation and safety, facility management including layout and 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. Laboratory required. Prerequisite: NUTR 223 or 225.

#### **NUTR 345 Entrepreneurship and Management in Food Industry (4)**

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; 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. Then, the major management functions of: 1) planning, decision-making, communication and marketing, 2) organizing structures, 3) leadership and organizational change, 4) human resources management, and 5) controls and financial management will provide the guiding structure for review of the fundamental principles and responsibilities of the modern leader in food and nutrition services. 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 (12) and outside catered events. Prerequisites: NUTR 223 or 225 and NUTR 343. Spring. Course is offered for A-F grading only.

#### **NUTR 371 Individual Learning Project (1-4)**

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 required. Consult department for applicability towards

major requirements.

### **NUTR 377 Topics in Thematic Focus: Justice (0-4)**

Focus topics courses in Justice.

### **NUTR 377A Native Food Sovereignty (4)**

This co-taught course focuses on the role of food sovereignty and nutrition in the context of Native and Indigenous population experiences and health. This course will focus on the ways that colonization affected the norms and structures of Indigenous food practices. Students will also investigate different biological, social, and political factors that have led to Native populations experiencing a high prevalence of chronic disease in the United States.

### **NUTR 380 Nutrition Research Seminar I (2)**

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. Prerequisite: 330. Spring.

### **NUTR 381 Nutrition Research Seminar II (2)**

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; develop a poster presentation and a formal oral presentation. Prerequisites: NUTR 330 and MATH 124.

### **NUTR 390 Independent Nutrition Research (1-4)**

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.

### **NUTR 395 Senior Nutrition Seminar (2)**

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. Spring.

### **NUTR 396 Nutrition Research Capstone (2)**

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 student 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. Prerequisites: NUTR 380 & 381, or permission of instructor. Course offered for A-F grading only. Spring.

### **NUTR 397 Internship (1-16)**

Completed Application for Internship Form REQUIRED. See Internship Office Web Page.