NUTR - NUTRITION (NUTR)

NUTR 202 Fundamentals of Human Nutrition

Credits 3. 3 Lecture Hours. (BIOL 1322, HECO 1322) Fundamentals of Human Nutrition. Principles of nutrition with application to the physiologic needs of individuals; food sources and selection of an adequate diet; formulation of Recommended Dietary Allowances; nutritional surveillance; for non-nutrition majors only.

NUTR 203 Scientific Principles of Human Nutrition

Credits 3. 3 Lecture Hours. Chemistry and physiology of proteins, carbohydrates, lipids, vitamins and minerals; their ingestion, digestion, absorption, transport and metabolism. **Prerequisites:** CHEM 119 or concurrent enrollment; NUTR majors and minors only.

NUTR 204 Perspectives in Nutrition

Credit 1. 1 Lecture Hour. Examination of current trends in nutrition through critical review and appraisal of relevant literature to understand, write, and communicate the research evidence for nutrients, food and/ or dietary patterns underlying human health and disease. **Prerequisites:** Concurrent enrollment in NUTR 203.

NUTR 210/FSTC 210 Horizons in Nutrition and Food Science

Credit 1. 1 Lecture Hour. Introduction to nutrition and food science career opportunities through presentations by nutrition and food science researchers and industry professionals; addresses issues of professionalism including portfolio development, teamwork, and critical thinking skills. **Cross Listing:** FSTC 210/NUTR 210.

NUTR 211 Scientific Principles of Foods

Credits 4. 3 Lecture Hours. 3 Lab Hours. Basic principles underlying selection, preparation and preservation of food in relation to quality standards, acceptability and aesthetics; introduction to composition, nutritive value, chemical and physical properties of foods; introduction to experimental study of foods. **Prerequisites:** CHEM 119; NUTR 202 or NUTR 203; Dietetics (DPD) track; or approval of instructor.

NUTR 222 Nutrition for Health and Health Care

Credits 3. 3 Lecture Hours. Analysis of nutrition with emphasis on providing a basic understanding of nutrition and its role in disease prevention and treatment.

NUTR 285 Directed Studies

Credits 0 to 4. 0 to 4 Other Hours. Directed study of selected problems in the area of nutrition. **Prerequisites:** Approval of instructor; 2.0 GPR in major and overall.

NUTR 289 Special Topics in...

Credits 1 to 4. 1 to 4 Other Hours. Selected topics in an identified area of nutrition. May be repeated for credit. Prerequisite: Approval of instructor.

NUTR 291 Research

Credits 0 to 4. 0 to 4 Other Hours. Research conducted under the direction of faculty member in nutrition. May be repeated 2 times for credit. **Prerequisites:** Freshman or sophomore classification and approval of department head.

NUTR 300/FSTC 300 Religious and Ethnic Foods

Credits 3. 3 Lecture Hours. Understanding religious and ethnic foods with application to product development, production, and nutritional practices; emphasis on different food rules and priorities with attention given to different religious and ethnic groups within the US and around the world. **Prerequisites:** Junior or senior classification or approval of instructor; basic knowledge of food science and nutrition helpful. **Cross Listing:** FSTC 300/NUTR 300.

NUTR 301 Nutrition Through Life

Credits 3. 3 Lecture Hours. Analysis of nutrition with emphasis on human biological needs through stages of the life cycle; biochemical, physiological and anthropometric aspects of nutrition. **Prerequisites:** NUTR 202 or NUTR 203; NUTR majors and minors only.

NUTR 303 Principles of Animal Nutrition

Credits 3. 3 Lecture Hours. Scientific approach to nutritional roles of water, carbohydrates, proteins, lipids, minerals, vitamins, and other dietary components; emphasis on the comparative aspects of gastrointestinal tracts and on digestion, absorption, and metabolism of nutrients. **Prerequisites:** CHEM 119 and a grade of C or better in ANSC 113, or CHEM 222, CHEM 227 or CHEM 257; junior classification or approval of instructor.

NUTR 304 Food Service Systems and Management

Credits 3. 3 Lecture Hours. 0 Lab Hours. Application of basic management principles in food service operations, including human resource management, personnel issues, ethics, and negotiation. **Prerequisites:** Grade of B or better in NUTR 211; junior or senior classification; Dietetics (DPD) track.

NUTR 306 Nutrition in Sports

Credits 3. 3 Lecture Hours. Exploration of energy systems and the macronutrient and micronutrient needs in different sport contexts. **Prerequisites:** NUTR 301.

NUTR 307 Quantity Food Production

Credits 4. 3 Lecture Hours. 3 Lab Hours. Principles of food service management used in selecting, storing, preparing, and serving food in quantity; emphasis is on menu planning, quality control, purchasing, production, food service equipment, and layout design. **Prerequisite:** Grade of B or better in NUTR 211; junior or senior classification; Dietetics (DPD) track.

NUTR 320/FSTC 320 Understanding Obesity - A Social and Scientific Challenge

Credits 3. 3 Lecture Hours. Perspectives of obesity in food science, nutrition, health and psychology; study of obesity factors in relation to genetics, exercise physiology and sociology with emphasis on food and nutrition. **Prerequisites:** Junior or senior classification or approval of instructor. **Cross Listing:** FSTC 320/NUTR 320.

NUTR 365 Nutritional Physiology of Vitamins and Minerals

Credits 3. 3 Lecture Hours. Fundamental nutritional significance of fat soluble and water soluble vitamins and minerals to human metabolism, cell biology and physiology; micro-nutrient groups as per metabolic function or biochemical and physiological actions; important dietary sources, absorption, storage, metabolism, (bio)chemistry, deficiency and toxicity of individual nutrients in this context and basis of DRIs. **Prerequisites:** NUTR 203 and NUTR 301; junior or senior classification.

NUTR 366 Nutrients and the Human Body

Credits 4. 3 Lecture Hours. 3 Lab Hours. Exploration of the role of nutrients in maintaining normal organ systems; nutritional significance of vitamins, minerals, and other nutrients to normal and diseased organs; investigation of dietary sources, absorption, storage, metabolism, biochemistry, deficiency, and toxicity of nutrients on development and homeostasis of the integumentary, skeletal, muscular, and nervous systems. **Prerequisites:** NUTR 301 or concurrent enrollment; NUTR major; junior or senior classification or approval of instructor.

NUTR 367 Nutrients and the Human Body II

Credits 4. 3 Lecture Hours. 3 Lab Hours. Exploration of the role of nutrients in maintaining normal organ systems; nutritional significance of vitamins, minerals, and other nutrients to normal and diseased organs; investigation of dietary sources, absorption, storage, metabolism, biochemistry, deficiency, and toxicity of nutrients on development and homeostasis of the endocrine, digestive, urinary, cardiovascular, lymphatic, reproductive, adipose, and respiratory systems. **Prerequisites:** NUTR 366; NUTR majors; junior or senior classification or approval of instructor.

NUTR 400 Ethics in Nutrition and Healthcare

Credit 1. 1 Lecture Hour. Discussion of ethical issues and societal challenges experienced by professionals derived from scientific research and professional activities related to delivering wellness and healthcare services; review of sources, fundamental principles, scope of practice and applications of ethical behavior in the field of nutrition; application of ethical principles and scope of practice to different professional groups and organizations, including business, non-profits, government, health care, and science and technology. **Prerequisites:** NUTR major or minor or NUTR certificate; senior classification.

NUTR 403 Advanced Nutrition in Sports

Credits 3. 3 Lecture Hours. Examination of sports nutrition for specific athlete populations, training settings, and lessons on being a sports dietitian beyond the nutrition knowledge need. **Prerequisites:** NUTR 306.

NUTR 404 Nutrition Assessment and Planning

Credits 3. 3 Lecture Hours. Examines the methods of determining the nutritional status of individuals, dietary assessment techniques, planning nutritional care including diet modification and nutrition counseling. **Prerequisites:** NUTR 203, NUTR 211 and NUTR 301; junior classification or approval of department head.

NUTR 406 Nutrition in Developmental Origins of Health and Diseases

Credits 3. 3 Lecture Hours. Overview of the connection between maternal nutrition and the Developmental Origins of Health and Diseases (DOHaD); focus on prenatal and perinatal nutrition and how it affects DOHaD; examination of the discovery of the DOHaD concept and how exposure status is remembered in the body over the long term; exploration of the associations between DOHaD-related diseases and specific nutrients; discussion of how genetic variation and sexual dimorphism influence these disease outcomes. **Prerequisites:** NUTR 301, NUTR 366, and NUTR 367; GENE 301 or GENE 302; junior or senior classification, or approval of instructor.

NUTR 407 Nutrition Care and Therapy

Credits 4. 3 Lecture Hours. 3 Lab Hours. Application of the Nutrition Care Process for clinical diagnoses and conditions; planning of nutritional care plans for complex patients, including the formulation and planning for enteral and parenteral nutrition support. **Prerequisites:** NUTR 203, NUTR 211, NUTR 301 and NUTR 404; junior classification; dietetics track; or approval of instructor.

NUTR 408 Professional Development in Nutrition and Dietetics

Credit 1. 1 Lecture Hour. Techniques in professional development with focus on knowledge requirements for a Registered Dietitian Nutritionist; emphasis on oral and written communication, professional leadership, interprofessional relationships, mentoring, and critical thinking. **Prerequisites:** Senior classification; NUTR-DPD majors.

NUTR 409 Nutrition Education and Counseling

Credits 2. 2 Lecture Hours. Principles and techniques of nutrition education and counseling methods applied to diverse areas of the dietetic profession, including motivational interviewing, communication skills, and evaluation methods. **Prerequisites:** Grade of B or better in NUTR 404 or concurrent enrollment; junior or senior classification; Dietetics (DPD) track.

NUTR 410/FSTC 410 Nutritional Pharmacometrics of Food Compounds

Credits 3. 3 Lecture Hours. Nutritional pharmacokinetics and pharmacodynamics of food compounds; specific examples of toxicological and pharmacological effects of food compounds. **Prerequisites:** NUTR 201, NUTR 202, NUTR 203, CHEM 222, or CHEM 227, or approval of instructor; junior or senior classification. **Cross Listing:** FSTC 410/NUTR 410.

NUTR 412 Nutritional Treatment of Disease

Credits 3. 3 Lecture Hours. Nutritional intervention in pathological conditions, based on biochemical, physiological and psychological effects of disease state; current research in clinical nutrition. **Prerequisites:** NUTR 203; NUTR 301, BIOL 319 and BICH 410, or concurrent enrollment; senior classification or approval of instructor.

NUTR 430 Community Nutrition

Credits 3. 3 Lecture Hours. Principles of assessing nutrition problems in populations and planning nutrition programs to promote health in communities including nutrition education and food and nutrition policy; introduction to food and nutrition assistance programs. **Prerequisites:** NUTR 301; junior or senior classification.

NUTR 440 Microbes and Microbiome in Nutrition

Credits 4. 3 Lecture Hours. 3 Lab Hours. Contemporary approaches to nutrition-associated microbes and toxins with an emphasis on the alimentary (gastrointestinal) system including normal intestinal microbiota and dysbiosis; probiotic and prebiotic nutritional supplements; recombinant pharmabiotics; nutrient and microbiota modulation of gut-associated lymphoid tissue and mucosal immunity; foodborne pathogens; fermented products as functional foods, and food safety approaches. **Prerequisites:** NUTR 301 or concurrent enrollment; NUTR major; junior or senior classification or approval of instructor.

NUTR 450 Nutrition and Metabolism of Minerals

Credits 3. 3 Lecture Hours. The role of minerals in living systems and the exploration of their multitude of functions; chemical properties of minerals and how that relates to function in cells and tissues; consequences of mineral deficiencies based on known functions; insight into experimental approaches used to assess minerals in a living environment. **Prerequisite:** NUTR 203, BICH 303, or BICH 410, or approval of instructor.

NUTR 454 Nutrigenomics and Precision Nutrition

Credits 3. 3 Lecture Hours. Perspectives on the interaction between genetic variation and diet/nutrients; dietary and nutrient impacts on gene expression mediate by variation in individual genomes; modulation of the host epigenome by the microbiome; novel treatment of important diseases addressed through improved nutrition and the development of improved health through precision nutrition. **Prerequisites:** NUTR 202 or NUTR 203; GENE 301, GENE 302, GENE 310, or GENE 320/BIMS 320; junior or senior classification; or approval of instructor.

NUTR 469 Experimental Nutrition Laboratory

Credits 3. 2 Lecture Hours. 3 Lab Hours. Investigation of tools and molecular techniques used in studies of nutrition and metabolism (e.g. obesity, diabetes, cardiovascular disease, etc.); didactic and handson laboratory components; includes model systems, measurements of energy balance, body composition, RNA and protein analyses. **Prerequisites:** Junior or senior classification or approval of instructor.

NUTR 471 Critical Evaluation of Nutrition and Food Science Literature - Evidence Based Reviews

Credits 3. 3 Lecture Hours. Evaluation of scientific literature, research methods within the literature, and the quality of scientific studies to produce an evidence-based review in areas specific to nutrition and food science. **Prerequisites:** NUTR 202 or NUTR 203; STAT 302; junior or senior classification; knowledge of technical writing helpful.

NUTR 475 Nutrition and Physiological Chemistry

Credits 3. 3 Lecture Hours. Fundamentals of physiology, biochemistry and nutrition and their relationship to the organismic and cellular metabolism of animals; biochemical basis of hormonal action. **Prerequisites:** NUTR 301; NUTR 366 or BIOL 319; BICH 409, BICH 410, or BICH 440; senior classification; or approval of instructor.

NUTR 481 Seminar

Credit 1. 1 Lecture Hour. Critical review and synthesis of current peerreviewed publications in the field of nutrition; structured evaluation of literature, independent research and experiences gained in classroom will culminate in a written professional paper and an oral presentation based on a nutrition topic of interest. **Prerequisite:** Senior classification; NUTR majors only.

NUTR 483 Practicum for Nutrition in Sports

Credits 3. 3 Other Hours. Exploration of applied aspects of sports nutrition; topics include team talks to athletes, one-on-one counseling, planning travel nutrition, needs assessments of athletes, pre and post workout fueling, and accompanying dietitians with grocery tours. **Prerequisites:** NUTR 403.

NUTR 485 Directed Studies

Credits 0 to 4. 0 to 4 Other Hours. Directed study on selected problems in the area of nutrition not covered in other courses. **Prerequisites:** Junior or senior classification; approval of department head; 2.0 GPR in major and overall.

NUTR 489 Special Topics in...

Credits 1 to 4. 1 to 4 Other Hours. Selected topics in an identified area of nutrition. May be repeated for credit. **Prerequisite:** Junior or senior classification.

NUTR 491 Research

Credits 0 to 4. 0 to 4 Other Hours. Research conducted under the direction of a faculty member in nutrition. May be repeated 3 times for credit. Registration in multiple sections of this course are possible within a given semester provided that the per semester credit hour limit is not exceeded.