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.
Prerequisite: CHEM 119; majors only.

NUTR 204/FSTC 204 Perspectives in Nutrition and Food Science
Credit 1. 1 Lecture Hour.
Current trends in the fields of nutrition and food science; critical review of relevant literature in these fields ranging from popular press to peer-reviewed research; study of original research and market trends in understanding food, food processing, nutrients, health and diseases.
Prerequisites: NUTR and FSTC majors.
Cross Listing: FSTC 204/NUTR 204.

NUTR 210/FSTC 210 Horizons in Nutrition and Food Science
Credits 2. 2 Lecture Hours.
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.

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 101, CHEM 111; NUTR 202 or NUTR 203; sophomore classification or above.

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 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.

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 203; junior classification or approval of department head.

NUTR 303/ANSC 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 or CHEM 227; junior classification or approval of instructor.
Cross Listing: ANSC 303/NUTR 303.

NUTR 304 Food Service Systems Management
Credits 4. 3 Lecture Hours. 3 Lab Hours.
Principles of food service management used in selecting, storing, preparing and serving food in quantity; emphasis on menu planning, quality control, purchasing, equipment and layout/design; application of basic food service systems management principles, including financial planning and personnel issues.
Prerequisites: NUTR 203 and NUTR 211, junior or senior classification.

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 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 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 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 203 and NUTR 301; junior or senior classification.

NUTR 440 Therapeutic Microbiology - Probiotics and Related Strategies
Credits 3. 3 Lecture Hours.
Topics relevant to alimentary (gastrointestinal) microbiology including (i) the "normal" intestinal microbiota; (ii) probiotic and prebiotic nutritional supplements; (iii) recombinant pharmabiotics; (iv) gut-associated lymphoid tissue and mucosal immunity; (v) foodborne gastrointestinal pathogens; and (vi) fermented products as functional foods.
**Prerequisites:** Undergraduate survey course in microbiology or approval of instructor; junior or senior classification.

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 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 hands-on laboratory components; includes model systems, measurements of energy balance, body composition, RNA and protein analyses.
**Prerequisites:** Junior or senior classification or approval of instructor.