**DEPARTMENT OF NUTRITION, FOOD SCIENCE & PACKAGING**
**SAN JOSE STATE UNIVERSITY**

## UNDERGRADUATE COURSE DESCRIPTIONS

**NuFS 1A** ***Physical Science of Food*** **-** Introductory course to the physical, chemical and sensory properties of food for students not majoring in the sciences. Basic structure, function and organization of foods, laws of thermodynamics, systems of classification, as well as the interactions of energy and matter. GE Area: B1 (Lecture, 3 hours). Three Units

**NuFS 8** ***Nutrition for the Health Professions*** – Nutrients and their functions, recommended nutrient intakes and evaluation of dietary adequacy; relationship of nutrition to optimum health and dietary changes in disease. For nutritional science, nursing and other health profession majors. (Lecture, 3 hours). Three units

**NuFS 9** ***Introduction to Human Nutrition*** – Principles and methodology of nutritional science; standards of nutrient intake; physiological functions and chemical classification of nutrients; nutrient needs throughout the lifespan; relationship between diet and disease; scientific, social, and psychological issues. Not open to nutrition majors. GE: E. (Lecture, 3 hours). Three Units

**NuFS 10** ***Basic Life Skills*** **-** Introduction to basic nutrition and culinary concepts for selecting and preparing healthy, budget-friendly foods to establish healthy eating habits for independent living. Emphasis on self-care, wellness, and development of personal resource management skills to foster academic, professional, and personal growth. GE: E. (Lecture 2 hours/lab 3 hours). Three Units

**NuFS 16** ***Science, Physiology, and Nutrition*** **-** Introduction to life sciences, from chemistry to cellular and physiologic functions, with nutrition as an underlying theme. Interactions with environment, including effect of culture, genetics, and nutrition on susceptibility to disease. Applications of biotechnology in the life sciences. GE Area: B2 (Lecture, 3 hours). Three units

**NuFS20/ HSPM20** ***Sanitation & Environmental Issues in the Hospitality Industry*** – Sanitation in food service, hotel and travel/tourism industries; study of pathogenic organisms and food handling procedures. Occupational health, safety, and environmental control in the hospitality industry. Prerequisites: Micro-biology course or instructor consent. (Lecture, 2 hours). Two units.

**NuFS 21 HSPM 21** ***Culinary Principles and Practices*** – Introduction to principles of food and beverage production and techniques. Emphasis on quality and culinary standards. (Lecture/Lab, 4 hours). Three units.

**NuFS 22/ HSPM 22** ***Catering & Beverage Management*** – Planning and executing catering and buffet function. Evaluation of alcoholic and non-alcoholic beverages regarding purchasing, storage, preparation, merchandising and regulations. Prerequisite NuFS 20 or instructor consent. (Lecture/Lab 4 hours). Two units.

**NuFS 25** ***Internship in Foodservice Management*** – Approved professional broad-based work experience in foodservice management industry for total of 200 hours. Written report

and oral presentation due at completion. Prerequisite: NuFS 20 and instructor consent. (Credit/No credit grading). 1-2 units; repeatable for a maximum of 2 units.

**NuFS 31** ***Professionalism in Nutrition, Food Science & Packaging*** – Professional roles, skills, and opportunities in the fields of dietetics, foodservice, food science and packaging. (Lecture, one hour). One unit.

**NuFS 101A** ***Food Science*** – Experimental study of food and introduction to scientific methods used in food evaluation; functions of ingredients in prepared foods. Prerequisite: Chem 30B or Chem 8; College basic food preparation course or instructor consent. (Lecture and Laboratory, 6 hours). Four units.

**NuFS 103** ***Food Processing and Packaging I*** – Principles and methods of food preservation/processing and packaging operation. Raw materials handling, effect of processing on nutritional value of foods, packaging and food additives. Recommended: College basic food preparation course. Prerequisite: Chem30B or Chem 8, or instructor consent. (Lecture and Laboratory, 5 hours). Three units

**NuFS 103L** ***Food Processing Laboratory*** – Laboratory activities associated with the principles and methods of food preservation/processing and packaging operations; raw materials handling, effect of processing on nutritional value of foods, packaging and food additives. Pre-requisites: CHEM 030B or Chem 008; instructor consent. One units

**NuFS 104A** ***Current Aspects of Food*** – Regional, ethnic, and religious influences on food patterns. Demonstration with foods of several cultures. Prerequisite: Upper division standing. (Lecture and Activity, 4 hours). Three units.

**NuFS 105** ***Current Issues in Nutrition*** – Controversial topics, including the relation of nutrition to cancer, coronary heart disease, hypertension, diabetes, eating disorders, osteoporosis, and athletic performance; recommended nutrient intakes; and other current issues. Prerequisite: NuFS 8, NuFS 163 or equivalent introductory course in human nutrition. (Lecture, 3 hours). Three units.

**NuFS 106A** ***Human Nutrition in the Life Span*** – Integrates chemical, biological, and social sciences into a comprehensive concept of human nutrition. Emphasis on assessing nutrient status; planning and intervention throughout the life cycle. Prerequisites: NuFS 8 or passing grade on challenge exam; instructor consent. (Lecture, 3 hours). Three units.

**NuFS 106B** ***Research Methodology in Nutrition and Food Science*** – Introduction to research methodology, interpretation and data analysis with a focus on developing strong information literacy skills, as well as critical thinking, reading, and writing skills in refining scholarly writing in the style of the discipline.. Prerequisite: Stat 95 and PH/NUFS 100W. Corequisite: NuFS 106A, HPrf 100W (Lecture, 3 hours). Three unit.

**NuFS 108A** ***Nutrition & Metabolism*** – Chemical and physiological studies and carbohydrate, protein, lipid, vitamin and mineral metabolism. Application to the normal nutrition of human beings. Prerequisites: NuFS 106A, Chem 132 (with a grade of 'C' or better), PH/NUFS 100W, Biol 66. (Lecture, 3 hours). Three units.

**NuFS 108L** ***Nutrition Laboratory*** – Chemical and biological analysis of nutrients and metabolites in body fluids for the assessment of nutrition, nutritional status of human subjects,

Prerequisite: Chem 132L, Stat 95 or HS 67 Co-requisite: NuFS 108A,. (Lecture 1 hour, Lab 3 hours). Two units.

**NuFS 109** ***Advanced Nutrition*** – Advanced studies of vitamins and minerals. Evaluation and interpretation of nutritional research methodology, and findings. Prerequisites: NuFS 106A, Chem 132 (with grades of 'C' or better in each), Biol 66, Stat 95 or HS 67, and PH/NUFS100W.

**NuFS 110A,B** ***Medical Nutrition Therapy*** – Application of nutritional principles and dietary intake to meet the needs of various pathological conditions. Prerequisite to 110A: NuFS 108A (with grade of 'C' or better) and Co-requisite: NuFS 109. Prerequisites to NuFS 110B: NuFS 110A and NuFS 109. (Lecture and Activity, 4 hours). Three units each NuFS 110A and NuFS 110B.

**NuFS 111** ***Foodservice Production: Management and Procurement*** – Principles and procedures for menu planning, production scheduling, volume food production, operation of foodservice equipment, sanitation control and formula costing. Prerequisite: NUFS 101A or HSPM 011; NUFS 008 or NUFS 009; or instructor consent. Misc/Lab: Lecture 2 hours/Lab 3 hours. Three units.

**NuFS 113** ***Foodservice Systems Management*** – Selection and purchasing in foodservice operations: food and equipment and writing food/equipment specifications. Allocation and management of resources in foodservice systems: materials (food and supplies), facilities (equipment and space), human (management and employee labor), operational (time and money). Prerequisite: NUFS 111 or instructor consent. Misc/Lab: Lecture/lab 5 hours.. Three units.

**NuFS 114A** ***Community Nutrition*** – Nutrition problems; public policy, advocacy and legislation; Government programs; needs assessments; management of community services. (Lecture, 3 hours). Three units.

**NuFS 114B** ***Community Nutrition (non-majors)*** – Key nutrition concepts and terms; age appropriate nutritional interventions focusing on school-age children; nutrition and public policy, advocacy and legislation; government programs and provision of community nutrition services focusing on mother and children.. (Lecture, 3 hours). Three units.

**NuFS 115** ***Issues in Food Toxicology*** – Introduction to the toxicology of foods, and food-borne chemicals and organisms. Scientific basis for determining biological and environmental safety of the food supply from food development, growth and production through harvesting, processing, storage and eventual consumption. Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of or corequisite in a 100W course is required. Passage of *Writing Skills Test*, upper division standing, and completion of Core GE. (Lecture, 3 hours). Three units. GE: R

**NuFS 116/ Gero 116** ***Aging and Nutrition*** – The aging process, physiological changes, dietary requirements, diseases, environmental factors, housing, economic status, handicaps, personal relations, and current programs for the aged. Prerequisite: One college nutrition course or consent of instructor. (Lecture, 3 hours). Three units

**NuFS 117** ***Food Evaluation and Techniques*** – Studies in food experimentation, sensory evaluation, and objective methods. Prerequisites: NuFS 8, NuFS 101A, Chem 30A or Chem 1A, Chem 30B or instructor consent. (Lecture and Lab, 5 hours). Two units.

**NuFS 118** ***Food Chemistry*** – Important classes of food constituents, their nature, occurrence, chemical and biochemical significance and the changes they undergo during food preservation and processing. Prerequisites: NuFS 101 and/or 103, Chem 30B or Chem 8; Chem 132 and Chem 132L or Chem 135; or Instructor consent. (Lecture and lab, 5 hours). Three units.

**NuFS 122** ***Chemical Analysis of Food*** – Techniques in chemical analysis of nutrients and other components of food. Planning, conducting and evaluating a scientific experiment and presenting the data in technical written form. NuFS 103, NuFS 118, PH/NUFS 100W, HS 67 or Stat 95, instructor consent. (Lecture and Lab, 7 hours). Three units.

**NuFS 123** ***Nutrition for Sport*** – Planning optimum diets for performance and health; metabolism and energy systems; roles of nutrients in physical performance; efficacy of ergogenic nutrition aids. Prerequisites: NuFS 8. (Lecture, 3 hours). Three units.

**NuFS 124** ***Disordered Eating and Nutrition Therapy*** – Metabolic, physiological, and psychological determinants and effects of disordered eating behaviors. Disorders in regulation of food intake, case studies, and different intervention approaches explored. Screening and treatment of disordered eating in athletes emphasized. Opportunities provided to develop counseling strategies. Prerequisites: NuFS 8. (Seminar). Three units.

**NuFS 125** ***Child Nutrition Program Administration*** – Study of the components of model child nutrition programs through application of current child health and nutrition principles, educational practices, marketing procedures, communication strategies, computer-based nutritional analysis, and operations management skills. Prerequisite: Upper division standing. Offered summer only. Two units.

**HPrf 134/ NuFS 134** ***Complementary and Alternative Health Practices*** – Philosophical, historical, clinical, and scholarly aspects of complementary and alternative medicine and associated health practices
Used in the US, with emphasis on scientific clinical investigation and evidence based efficacy. (Lecture, 3 hours). Three units.

**NuFS 139** ***Hunger and Environmental Nutrition*** – Physiology of hunger/malnutrition on human development and health; political, social, cultural and gender factors that contribute to world hunger; scientific/technological foundation and their effect on the environment. Prerequisites: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is requires (Lecture, 3 hours). Three units

**NuFS 144** ***Food and Culture: Consuming Passions*** – Cultural aspects of food as related to regional, ethnic and religious influences. Issue based examination of effects of food behavior in the on culture, society, health, and economics. Prerequisites: Completion of core GE, upper division standing (60 units). For students who begin continuous

enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required and passage of *Writing Skills Test*. Three units.

**NuFS 150** ***Food & Nutritional Toxicology*** – Major classes of food toxicants, their importance, properties, detection, metabolism, control and regulation; and basic issues in food/diet safety and toxicology. Prerequisites: NuFS 103, Chem 30B or Chem 8, and introductory courses in nutrition and biology. (Lecture, 2 hours). Two units.

**NuFS 163** ***Physical Fitness and Nutrition*** – Integrating and applying principles of sound nutrition and physical activities to optimize physiological, and social lifelong development; and using scientific principles and technological advances to assess and evaluate physical fitness, dietary patterns, energy expenditure, and their interrelationships. Prerequisites: Upper division standing, passing score on *Writing Skills Test*, and completion of Core GE requirements. Not allowed for NuFS Majors or Minors (Lecture, 3 hours). Three units.

**NuFS 180** ***Individual Studies*** – Individual work for majors or minors on special topics by arrangement. Prerequisites: NuFS 8; instructor and Department Chair consent during the semester ***prior*** to enrollment. (Credit/No Credit grading). 1-6 units.

**NuFS 190** ***Nutrition Education and Counseling*** – Education principles; counseling; and communication techniques for nutritionists and dietitians working with individuals, small, and large groups. Prerequisites: NuFS 106A or admission to teacher education program and one basic nutrition course ***or*** permission of instructor. (Lecture: 3 hours). Three units.

**NuFS 192** ***Field Experience*** – Practical application of academic principles in nutrition, food science, packaging, dietetics food management, nutrition education, and/or sports nutrition. Prerequisites: Senior standing in NuFS; instructor consent by end of the ***prior*** semester. Repeatable for credit. Credit/No credit grading. (Supervision 3 to 18 hours). One to six units.

**NuFS 194** ***Entrepreneurial Nutrition*** – Introduction to entrepreneurial nutrition, including professional roles, skills and opportunities. Prerequisites: English 1A or instructor consent. (One hour). One unit.

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**Pkg 107** ***Principles of Packaging*** – Basic knowledge of Packaging functions, materials, and industry. A variety of packaging topics including distribution systems, package development, package design, legislation, regulations, societal and environmental issues, ergonomics and packaging careers. Prerequisites: ENGL 1A or equivalent. Three units

**Pkg 120** ***Artios CAD For Packaging*** - Prepares students for ArtiosCAD (a packaging design tool common to the folding carton and corrugated industries). Introduces basic commands of ArtiosCAD to draw and design the representations for different products. Students use the structure database, change from 2D to 3D models, and make simple animations. (Misc/lab: 2 hours lecture/ 2 hours activity). Three units.

**Pkg 121** ***Solidworks For Packaging*** - Prepare students for SolidWorks (a computer drawing tool) so they can generate 3-D drawings suitable for specifications and transference to computer-driven cutting tables and 3-D printers to make prototype packages. (Misc/Lab: 2 hours lecture/ 2 hours lab) Three units.

**Pkg 141A** ***Packaging Materials I*** – In-depth study of plastic and glass materials in packaging; chemical and physical properties, development, evaluation and design. Experiments in applications, design limitations and cost. Prerequisites: Pkg 107, Pkg 141A. (Lecture: Two hours, Activity: Two hours). Three units.

**Pkg 141B** ***Packaging Materials II*** – In-depth study of plastic and glass materials in Packaging; chemical and physical properties, design, manufacturing, compatibility, and evaluation. Experiments in applications, design limitations and cost. Prerequisites: Pkg 141A or instructor consent. (Lecture: Two hours, Activity: Two hours). Three units.

**Pkg 146** ***Packaging for Medical Devices and Pharmaceuticals*** – Chemical and physical properties of medical device and pharmaceuticals packages, fabrications techniques, package testing and evaluation methods, regulatory requirements, ergonomics and child resistant packages, tamper evidence, shelf life & aging, coding. Prerequisites: Pkg 107, Pkg 141A, Pkg 141B or instructor consent. (Lecture: Two hours, Activity: Two hours). Three units.

**Pkg 156** ***Packaging Machinery Systems*** – Evaluation of packaging machinery as a subset of a packaging production system. Component selection, design, and implementation of package filling lines in a production facility. Package design requirements for filling lines. Prerequisites: Pkg 107, Pkg 141A, Pkg 141B, Math 70, Math 71, Stat 95. (Lecture: Two hours, Activity: Three hours). Three Units.

**Pkg 158** ***Protective Packaging Design and Testing*** – In-depth study of protective packaging dynamics; theory and practice of shock, vibration, compression, humidity, temperature extremes. Measurement & analysis of the dist environment, product fragility, package design principles, package testing and evaluation. Prerequisites: Pkg 107, Pkg 141A, Pkg 141B, Math 70, Math 71, Stat 95. (Lecture: Two hours, Activity: Three hours). Three units.

**Pkg 159** ***Packaging Material Handling and Distribution*** – Transportation handling, and storage of packaged goods. Transportation modes, environment hazards, measurement, techniques. Military and Hazmat packaging regulations and testing classification of goods, legal requirements, export packaging. Prerequisites: Pkg 158 or instructor consent. (Lecture: Three hours). Three units.

**Pkg 169** ***Food Packaging and Preservation*** – This course investigates the interaction of food processing and packaging technology. Content includes food chemistry, microbiology in foods, food processing, and finally how packaging augments these areas in food protection and preservation. Prerequisite: PKG 107 or instructor consent.

**Pkg 170** ***Packaging Developments and Management*** – Capstone course emphasizing development and evaluation of packaging systems. Specifications and design, marketing criteria, package production, distribution performance, legal and environmental evaluations. Prerequisites: Pkg 107, Pkg 141A, Pkg 141B, Pkg 156, Pkg 158. (Lecture: Two hours, Activity: Two hours). Three units.

**Pkg 180** ***Packaging Individual Studies*** – Individual work for majors or minors on special topics by arrangements. Prerequisites: Pkg 107; instructor and department chair consent during semester prior to enrollment. One to six units.