

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. (Lecture, 3 hours). Three Units.
Semesters offered: Fall and Spring.
Satisfies 5A. Physical Science (Formerly Area B1).
- 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.
Semesters offered: Fall and Spring.
- 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. (Lecture, 3 hours). Three Units.
Semesters offered: Fall and Spring.
Satisfies E: Human Understanding & Development.
- 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. (Lecture 2 hours/lab 3 hours). Three Units.
Semesters offered: Fall and Spring.
Satisfies E: Human Understanding & Development
- 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. Three units.
Semesters offered: Fall and Spring.
Satisfies 5B. Life Science (Formerly Area B2).
- NuFS 20:** ***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 Two units.
Semesters offered: Fall and Spring.
- NuFS 21**
HSPM21: ***Culinary Principles and Practices*** - Introduction to principles of food and beverage production and techniques. Emphasis on quality and culinary standards. (Lecture 2 hours/Lab 3 hours). Three units.
Semesters offered: Fall and Spring.

- NuFS 22**
HSPM22: **Catering & Beverage Management** - Planning and executing catering and buffet function. Evaluation of alcoholic and non-alcoholic beverages regarding purchasing, storage, preparation, merchandising and regulations. (Lecture 2 hours/Lab 3 hours). Three units.
Semesters offered: Fall only.
Prerequisite: NuFS 20 or instructor consent.
- NUFS 24:** **Introductory Baking and Pastry Arts** - Introduction to the principles and techniques essential for producing a diverse range of classical and contemporary baked goods suitable for professional bakeshop operations. Emphasis on ingredients, equipment, standardized formulations, and bakery management skills. (Lecture 2 hours/Lab 3 hours). Three units.
Semesters offered: Fall and Spring.
- 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. (Credit/No credit grading). 1-2 units; repeatable for a maximum of 2 units.
Semesters offered: Fall and Spring.
Prerequisite: NuFS 20 and instructor consent.
- NuFS 31:** **Professionalism in Nutrition, Food Science & Packaging** - Professional roles, skills, and opportunities in the fields of dietetics, food service, food science and packaging. (Lecture, one hour). One unit.
Semesters offered: Fall and Spring.
- NuFS 40:** **Debunking Nutrition Misinformation** - Explore the spread of nutrition misinformation and learn how to critically assess the credibility of nutrition-related claims. Develop logical reasoning and information literacy skills to identify, analyze, and effectively debunk misinformation. Examine how nutrition misinformation impacts diverse communities and contributes to social inequities. Three units
Semesters offered: Fall and Spring.
Satisfies GE Area: 1B. Critical Thinking and Writing (Formerly Area A3).
- NuFS 41:** **Quantitative Reasoning in Human Nutrition** - Develop essential quantitative reasoning skills by applying mathematical methods to real-world nutrition problems. Analyze dietary data, interpret health-related information, and solve practical issues using graphs, equations, and data sets. Emphasis is on enhancing quantitative literacy through the lens of nutrition and health outcomes. Three units.
Semesters offered: Fall and Spring.
Satisfies GE Area: 2. Mathematical Concepts and Quantitative Reasoning (Formerly Area B4).
- NUFS 100W:** **Writing Workshop** - Development of skills in scientific and technical writing. How to write a critical review of published writing, a business letter, a scholarly paper, and give an oral presentation. Three Units.
Semesters offered: Fall and Spring.
Satisfies Writing in the Disciplines (WID).
Prerequisite(s): 1B or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing.
Allowed Declared Majors: Nursing and pre-Nursing, Occupational Therapy, Public Health, Recreation, Communicative Disorders and Sciences, Nutritional Science, Special Majors, and Individual Studies. Or Graduate or Postbaccalaureate level. **Note(s):** Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement.

- NuFS 101A:** ***Food Science*** - Experimental study of food and introduction to scientific methods used in food evaluation, functions of ingredients in prepared foods. (Lecture and Laboratory, 6 hours). Four units.
Semesters offered: Fall and Spring.
Prerequisite: Chem 30B or Chem 8; College basic food preparation course or instructor consent.
- 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. (Lecture and Laboratory, 5 hours). Three units.
Semesters offered: Fall and Spring.
Prerequisite: Chem30B or Chem 8, or instructor consent.
- 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. One unit.
Semesters offered: Fall and Spring.
Prerequisite(s): CHEM 030B or Chem 008; instructor consent.
- NuFS 104A:** ***Current Aspects of Food*** - Regional, ethnic, and religious influences on food patterns. Demonstration with foods of several cultures. (Lecture and Activity, 4 hours). Three units.
Semesters offered: Spring only.
Prerequisite: Upper division standing.
- 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. Three units.
Semesters offered: Fall and Spring.
Prerequisite(s): NUFS 8, NUFS 9, NUFS 163 or equivalent introductory course in human nutrition.
- 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. Three units.
Semesters offered: Fall and Spring.
Prerequisite(s): NUFS 8 (with a grade of 'C' or better) or passing grade on a challenge exam.
Corequisite(s): NUFS 100W / PH 100W and NUFS 31.
- 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. Three units.
Semesters offered: Fall and Spring.
Prerequisite(s): STAT 95 or PH 67.
Corequisite(s): NUFS 106A and NUFS 100W / PH 100W.

- NuFS 108A:** ***Nutrition & Metabolism*** - Chemical and physiological studies of carbohydrates, protein, lipid, vitamin and mineral metabolism. Application to the normal nutrition of human beings. Three units.
Semesters offered: Spring only.
Prerequisite(s): NUFS 106A, BIOL 66, and NUFS 100W / PH 100W.
- NuFS 108L:** ***Nutrition Laboratory*** - Chemical and biological analysis of nutrients and metabolites in body fluids for the assessment of nutrition and nutritional status of human subjects. (Lecture 1 hour, Lab 3 hours). Two units.
Prerequisite: Stat 95 or HS 67
Co-requisite: NuFS 108A.
- NuFS 109:** ***Advanced Nutrition*** - Advanced studies of vitamins and minerals. Evaluation and interpretation of nutritional research methodology and findings. Three units.
Semesters offered: Fall only.
Prerequisite(s): NUFS 106A (with a grade of 'C' or better); NUFS 100W / PH 100W; and BIOL 66; BUS2 90, STAT 95 or PH 167.
- NuFS 110A:** ***Medical Nutrition Therapy*** - Application of nutritional principles and dietary intake to meet the needs of various pathological conditions. Three units.
Semesters offered: Fall only.
Prerequisite(s): NUFS 108A (with grade of 'C' or better).
Corequisite(s): NUFS 109.
- NuFS 110B:** ***Medical Nutrition Therapy*** - Application of nutritional principles and dietary intake to meet the needs of various pathological conditions. Three units.
Semesters offered: Fall only.
Prerequisite(s): NUFS 110A and NUFS 109 (with a grade of C or better in each).
- 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. (Lecture 2 hours/Lab 3 hours). Three units.
Semesters offered: Fall and Spring.
Prerequisite: NUFS 101A or HSPM 011; NUFS 008 or NUFS 009; or instructor consent.
- 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 food service systems: materials (food and supplies), facilities (equipment and space), human (management and employee labor), operational (time and money). Misc./Lab: Lecture/lab 5 hours. Three units.
Semesters offered: Fall only.
Prerequisite: NUFS 111 or instructor consent.
- NuFS 114A:** ***Community Nutrition*** - Nutrition problems; public policy, advocacy and legislation; government programs; needs assessments; management of community services. Three units.
Semesters offered: Spring only.
Prerequisite(s): NUFS 106A, senior standing, and instructor consent.

- NuFS 114B:** ***Community Nutrition (non-majors)*** - Key nutrition concepts and terms; age-appropriate nutritional interventions; nutrition and public policy, advocacy and legislation; government programs and provision of community nutrition services. Three units.
Semesters offered: Fall and Spring.
Satisfies UD Area: 4. Self, Society, and Equality in the U.S. (Formerly Area S).
Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.
- NuFS 115:** ***Issues in Food Toxicology*** - Introduction to toxicology of foods, 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. Three units.
Semesters offered: Fall and Spring.
Satisfies UD Area: 2/5. Earth, Environment, and Sustainability (Formerly Area R).
Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all UD GE courses. Completion of, or co-registration in, 100W is strongly recommended.
- NuFS 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. Three units.
Semesters offered: Fall and Spring.
Prerequisite(s): One college nutrition course or instructor consent.
- NuFS 117:** ***Food Evaluation and Techniques*** - Food evaluation techniques used to evaluate the appearance, aroma, flavor, texture and acceptability of foods. Relationships between sensory and instrumental measurements of color and texture. Work independently and cooperatively to identify sensory evaluation objectives, write hypotheses, design and conduct experiments, and analyze and interpret data. Intended for majors. (Lecture 2 hours/Lab 3 hours). Three units.
Semesters offered: Alternating spring semesters.
Prerequisite(s): NUFS 8 and NUFS 101A; CHEM 30A, CHEM 30B, CHEM 1A; or instructor consent.
- 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. (Lecture/lab 5 hours). Three units.
Semesters offered: Fall only.
Prerequisite(s): NUFS 101A and/or NUFS 103; CHEM 30B or CHEM 8; or Instructor Consent
- 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. (2-hour lecture/3- hour lab) Three units.
Semesters offered: Alternating spring semesters.
Prerequisite(s): NUFS 103 or NUFS 101A, NUFS 100W / PH 100W, STAT 95 or PH 67.
- 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. Three units.
Semesters offered: Fall only. **Prerequisite(s):** NUFS 8 or NUFS 9.

- NuFS 124:** ***Disordered Eating and Nutrition Therapy*** - Metabolic, physiological, and psychological determinants and effects of disordered dietary 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. Three units.
Semesters offered: Spring only.
Prerequisite(s): NUFS 8.
- 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. Two units.
- NuFS 134:** ***Multicultural Complementary and Alternative Medicine*** - Explores complementary and alternative medicine (CAM) in the U.S., emphasizing its evidence-based efficacy and ties to cultural, racial, and individual identities. Dives into the historical and societal influences on CAM, understanding its role in shaping health equity and U.S. healthcare dynamics. Through discussions, writings, and community engagement, students will champion inclusive health practices in a multicultural setting. Three units.
Semesters offered: Fall and Spring.
Satisfies UD Area: 4. Self, Society, and Equality in the U.S. (Formerly Area S).
Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all UD GE courses. Completion of, or co-registration in, 100W is strongly recommended.
- 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 to population research and food production and their effect on the environment. Three units.
Semesters offered: Fall, Spring, and Summer.
Satisfies UD Area: 2/5. Earth, Environment, and Sustainability (Formerly Area R).
Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all UD GE courses.
- 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 on culture, society, health, and economics. Three units.
Semesters offered: Fall, Spring, and Summer.
Satisfies UD Area: 3. Cultures and Global Understanding (Formerly Area V).
Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all UD GE courses. Completion of, or co-registration in, 100W is strongly recommended.
- 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. Two units.
Semesters offered: Spring only.
Prerequisite(s): NUFS 103, CHEM 30B or CHEM 8; introductory courses in nutrition and biology and instructor consent.

- NuFS 151:** ***Food Microbiology*** - Role of microorganisms in foodborne illness, food quality, spoilage, and preservation. Control of microorganisms in foods. Methods to enumerate, identify, and characterize microorganisms in foods. Two units.
Semesters offered: Fall and Spring.
- NuFS 155:** ***Sustainable Local Food Systems through a Food Justice Lens*** - Examination of local food systems with emphasis on food justice and sustainability through field trips, guest speakers, and course projects. Three units.
Semesters offered: Fall only.
Prerequisite(s): NUFS 106A.
- NuFS 163:** ***Physical Fitness and Nutrition*** - Use of scientific principles, scientific investigation, and current technological advances to assess the relationship between diet, physical fitness, and disease. Examine scientific literature to evaluate the effects of nutritional intervention on exercise performance. Three units.
Semesters offered: Fall and Spring.
Satisfies UD Area: 2/5. Earth, Environment, and Sustainability (Formerly Area R).
Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all UD GE courses. Completion of, or co-registration in, 100W is strongly recommended.
- NuFS 180:** ***Individual Studies*** - Individual work for majors or minors on special topics by arrangement. (Credit/No Credit grading). 1-6 units.
Semesters offered: Fall and Spring.
Prerequisites: NuFS 8; instructor and Department Chair consent during the semester prior to enrollment.
- NuFS 190:** ***Nutrition Education and Counseling*** - Education principles and behavior change theories; counseling and communication techniques for nutritionists and dietitians working with individuals and groups. Three units.
Semesters offered: Spring only.
Prerequisite(s): NUFS 106A or Instructor Consent.
- NuFS 192:** ***Field Experience*** - Practical application of academic principles in nutrition, food science, packaging, dietetics food management, nutrition education, and/or sports nutrition. Repeatable for a maximum of 6 units. Misc./Lab: Supervision 3 to 18 hours. 2 units.
Semesters offered: Fall and Spring.
Prerequisite(s): Senior standing in NUFS; instructor consent by end of prior semester
- NuFS 194:** ***Entrepreneurial Nutrition*** - Introduction to entrepreneurial nutrition, including professional roles, skills and opportunities. One unit.
Semesters offered: Alternating fall semesters.
Prerequisites: English 1A or instructor consent. One unit.

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. Three units.
Semesters offered: Fall and Spring.

Prerequisites: ENGL 1A or equivalent.

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.
Semesters offered: Fall only.

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.
Semesters offered: Spring only.

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. (Lecture: Two hours, Activity: Two hours). Three units.
Semesters offered: Fall only.
Prerequisites: Pkg 107, Pkg 141A.

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. (Lecture: Two hours, Activity: Two hours). Three units
Semesters offered: Spring only.
Prerequisites: Pkg 141A or instructor consent.

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. Lecture: Two hours, Activity: Two hours). Three units.
Semesters offered: Fall only.
Prerequisites: Pkg 107, Pkg 141A, Pkg 141B or instructor consent.

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. (Lecture: Two hours, Activity: Three hours). Three Units.
Semesters offered: Spring only.
Prerequisites: Pkg 107, Pkg 141A, Pkg 141B, Math 70, Math 71, Stat 95.

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. (Lecture: Two hours, Activity: Three hours). Three units.
Semesters offered: Spring only.
Prerequisites: Pkg 107, Pkg 141A, Pkg 141B, Math 70, Math 71, Stat 95.

- 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. (Lecture: Three hours). Three units.
Semesters offered: Fall only.
Prerequisites: Pkg 158 or instructor consent.
- PKG 160:** **Hazardous Materials Packaging** - Identification and classification of hazardous materials, standards and requirements, proper documentation practices, identifying and sourcing the proper packaging materials to comply with hazardous materials packaging requires, and testing a package to provide United Nations Performance Orientated Packaging (UN POP) certification for shipping. (Lecture 2 hours/Activity 2 hours). Three units.
Semesters offered: Fall only.
- PKG 168:** **Advanced Laboratory Testing** - Laboratory testing course that elaborates on concepts learned in previous classes. The focus is on good laboratory practices along with test methods covered in medical device package testing (PKG 146), packaging materials testing (PKG 141A/PKG 141B), and packaging dynamics testing (PKG 158). Lab 3 hours.
Prerequisite(s): PKG 141A, PKG 146 and PKG 158.
- 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. Three units.
Semesters offered: Spring only.
Prerequisite: PKG 107 or instructor consent.
- Pkg 170:** **Packaging Developments and Management** - Capstone course emphasizes development and evaluation of packaging systems. Specifications and design, marketing criteria, package production, distribution performance, legal and environmental evaluations. (Lecture: Two hours, Activity: Two hours). Three units.
Semesters offered: Spring only.
Prerequisites: Pkg 107, Pkg 141A, Pkg 141B, Pkg 156, Pkg 158
- Pkg 180:** **Packaging Individual Studies** - Individual work for majors or minors on special topics by arrangements. One to six units.
Semesters offered: Fall and Spring.
Prerequisites: Pkg 107; instructor and department chair consent during semester prior to enrollment.