## NFS - Nutrition and Food Science

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<tr>
<th>Course Code</th>
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<tr>
<td>NFS 2030</td>
<td>Nutrition and Health</td>
<td>Cr. 3</td>
<td></td>
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<td>$90</td>
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<td></td>
<td>Satisfies General Education Requirement: Life Sciences, Natural Scientific Inquiry</td>
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<td>Food as a carrier of nutrients; food availability; nutrient utilization including digestion, metabolism and excretion. Patterns of food consumption based on biological, psychological and social needs; and anthropological findings. Meets General Education Laboratory Requirement only when taken concurrently with coreq: NFS 2220. Offered Every Term.</td>
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<td>$90</td>
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<tr>
<td>NFS 2130</td>
<td>Introductory Food Science Cr. 3</td>
<td>Cr. 3</td>
<td>Chemical, physical and biological properties of foods which affect their keeping quality, nutritional and organoleptic values. For students interested in the scientific study of foods. Offered Every Term.</td>
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<td>$90</td>
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<tr>
<td>NFS 2220</td>
<td>Nutrition Laboratory Cr. 1</td>
<td>Cr. 1</td>
<td>Laboratory course for introductory nutrition. Meets General Education Laboratory Requirement only when taken concurrently with coreq: NFS 2030. Offered Every Term.</td>
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<tr>
<td>NFS 2320</td>
<td>Human Nutrition Cr. 3-4</td>
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<td>Principles of the science of nutrition. Emphasis on physiological requirements as well as biochemical and metabolic processes of nutrients for human growth, development and maintenance within the life cycle. Honors students participate in additional reading, discussion and presentations. Offered Every Term.</td>
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<td>NFS 2370</td>
<td>Eating Disorders Cr. 3</td>
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<td>Causes and treatments of anorexia nervosa, bulimia nervosa, binge eating, and overeating, from biological, psychological, and social perspectives. Offered Winter.</td>
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<tr>
<td>NFS 3200</td>
<td>Science, History, and Culture of Italian Cuisine Cr. 3</td>
<td></td>
<td>Satisfies General Education Requirement: Cultural Inquiry, Global Learning Inquiry. Explores the science, history, and culture of Italian food and the Mediterranean Diet, and how Italian food culture has evolved throughout the centuries. Taught in English. Offered Spring/Summer.</td>
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<td>NFS 3300</td>
<td>Nutrition Care Process I Cr. 2</td>
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<td>Interpretation of lab values in assessing patients, review of medical records, medical terminology. Offered Fall.</td>
<td>Prerequisite: NFS 5220 (may be taken concurrently) with a minimum grade of C and NFS 5350 (may be taken concurrently) with a minimum grade of C and NFS 3230 with a minimum grade of C- Restriction(s): Enrollment limited to students in a PBC in Dietetics degree.</td>
<td>$700</td>
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<td>NFS 4100</td>
<td>Dietetic Practice I Cr. 4</td>
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<td>Supervised practice in various dietetic services venues. Offered Winter.</td>
<td>Prerequisite: NFS 4100 with a minimum grade of D and NFS 5350 with a minimum grade of D- Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students with a class of Senior.</td>
<td>$700</td>
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<tr>
<td>NFS 4140</td>
<td>Introductory Food Science Laboratory Cr. 1</td>
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<td>Experimental study of principles discussed in NFS 2130. For students interested in the scientific study of food. Offered Every Term.</td>
<td>Prerequisite: NFS 2130 (may be taken concurrently) with a minimum grade of C-</td>
<td>$90</td>
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<tr>
<td>NFS 4160</td>
<td>Food Laws and Regulations Cr. 3</td>
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<td>State, federal and international food law; interpretations of regulatory food standards and determination of conformity of food products to them. Methods of food inspection. Role of the food law in assuring food safety, wholesomeness and nutritional quality. Offered Fall, Winter.</td>
<td>Prerequisite: NFS 2210 with a minimum grade of C- or NFS 3230 with a minimum grade of C- and NFS 2130 with a minimum grade of D-</td>
<td>$400</td>
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<td>NFS 4170</td>
<td>Dietetic Practice II Cr. 2</td>
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<td>Nutritional assessment, documentation in the medical record, planning therapeutic diets. Offered Winter.</td>
<td>Prerequisite: NFS 4100 with a minimum grade of C- and NFS 5250 (may be taken concurrently) with a minimum grade of C-</td>
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<td>NFS 4180</td>
<td>Dietetic Practice III Cr. 1</td>
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<td>Supervised practice in various dietetic services venues. Offered Winter.</td>
<td>Prerequisite: NFS 4100 with a minimum grade of D- and NFS 5350 with a minimum grade of D- Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students with a class of Senior.</td>
<td>$700</td>
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<td>NFS 4200</td>
<td>Dietetic Practice I Cr. 4</td>
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<td>Supervised practice in various dietetic services venues. Offered Winter.</td>
<td>Prerequisite: NFS 4100 with a minimum grade of D- and NFS 5350 with a minimum grade of D- Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students with a class of Senior.</td>
<td>$700</td>
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<td>NFS 4210</td>
<td>Dietetic Practice II Cr. 10</td>
<td></td>
<td>Supervised practice in various dietetic services venues. Offered Winter.</td>
<td>Prerequisite: NFS 4100 with a minimum grade of D- and NFS 5350 with a minimum grade of D- Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students with a class of Senior.</td>
<td>$700</td>
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<tr>
<td>NFS 4220</td>
<td>Dietetic Practice III Cr. 10</td>
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<td>Supervised practice in various dietetic services venues. Offered Winter.</td>
<td>Prerequisite: NFS 4100 with a minimum grade of D- and NFS 5350 with a minimum grade of D- Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students with a class of Senior.</td>
<td>$700</td>
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NFS 4230 Macronutrient Metabolism Cr. 3
Focus on normal human nutrition and physiological functions. Biochemical properties of macronutrients and their interrelationships at the cellular and subcellular level. Offered Fall.
Prerequisites: NFS 2130 with a minimum grade of D- and NFS 3230 with a minimum grade of D-
Restriction(s): Enrollment is limited to Undergraduate level students.

NFS 4231 Human Nutrition: Micronutrients Cr. 3
Principles of micronutrient metabolism, including function, toxicity, and deficiency; principles and techniques for assessing micronutrient status. Micronutrients in the physiopathology of chronic disease; sources of micronutrients and factors affecting nutrient bioavailability. Impact of disease and/or genetics on nutrient function and nutrient requirement; role of fortification, enrichment, and/or supplementation of micronutrients in the food supply and on health outcomes. Offered Winter.
Prerequisites: NFS 2130 with a minimum grade of D- and NFS 3230 with a minimum grade of D-

NFS 4800 Special Topics in Nutrition and Food Science Cr. 1
New and emerging topics in nutrition and food science or topics presented by a visiting faculty member in his or her research area. Topics to be announced in Schedule of Classes. Offered Irregularly.
Prerequisites: BIO 1050 with a minimum grade of D- or BIO 2870 with a minimum grade of D- and NFS 2030 with a minimum grade of D-
Restriction(s): Enrollment is limited to Undergraduate level students.

NFS 4990 Directed Study Cr. 1-4
Offered Every Term.
Repeatable for 4 Credits

NFS 5130 Food Chemistry Cr. 3
Study of the chemical constituents of foods, their relationship to the biological and physical properties, and overall food quality. Offered Fall, Winter.
Prerequisites: CHM 2220 with a minimum grade of C- (must be taken at WSU) and NFS 2130 with a minimum grade of C-

NFS 5140 Laboratory Techniques in Nutrition and Food Science Cr. 3
Satisfies General Education Requirement: Writing Intensive Competency
Basic modern and classical analytical techniques and instruments in nutrition and food science. Background theory to principles of instrumental assays. Procedures for evaluation of macro and micro food components analysis. Physiological functions relevant to nutrition. Offered Fall, Spring/Summer.
Prerequisites: CHM 2220 with a minimum grade of C- and NFS 2130 with a minimum grade of C- and NFS 2210 with a minimum grade of C-
Course Material Fees: $90

NFS 5200 Advanced Diabetics Cr. 3
Development and refinement of dietetic practitioner skills through applications in critical care and specialty practice areas and in community agencies; theoretical basis for individual counseling and group process. Offered Fall.
Prerequisite: NFS 5230 with a minimum grade of C- and NFS 5250 with a minimum grade of C-
Restriction(s): Enrollment limited to students in a PBC in Dietetics degree.
Course Material Fees: $90
Equivalent: NFS 4200

NFS 5220 Community Nutrition Cr. 2
Introduction to management of nutritional care in healthy and at-risk persons throughout the lifespan. Identifying problems and planning interventions to meet population nutritional problems and to reduce nutrition-related health risks in community settings. Community assessment; organization and function of community agencies; interventions appropriate to small and large groups, including nutrition education. Offered Fall, Winter.
Prerequisite: NFS 2130 with a minimum grade of C- and NFS 2140 with a minimum grade of C- and NFS 2210 with a minimum grade of C- or NFS 3230 with a minimum grade of C- and NFS 5230 with a minimum grade of C- and NFS 5250 with a minimum grade of C-

NFS 5230 Nutrition and Metabolism Cr. 3
The physio-biochemical properties of nutrients and their bionutritional interrelationships at the cellular and sub-cellular level. Carbohydrate, protein, and lipid metabolism and the role of vitamins and minerals in these metabolic processes. Offered Fall, Winter.
Prerequisites: NFS 3230 with a minimum grade of C-

NFS 5250 Nutrition and Disease Cr. 4
Application of the principles of biochemistry and physiology in the study of nutrient metabolism as altered by disease. The physio-biochemical basis for diet in the treatment of disease. May include some field experiences or clinical assignments. Units on team approach to patient care also included. Offered Winter.
Prerequisites: NFS 4230 with a minimum grade of C-

NFS 5350 Organization and Management of Food Service Systems Cr. 4
Survey of food service systems; factors affecting their successful practical work. Offered Every Term.
Prerequisite: NFS 2130 with a minimum grade of C- and NFS 2140 with a minimum grade of C- and (NFS 2210 with a minimum grade of C- or NFS 3230 with a minimum grade of C-)

NFS 5360 Management of Nutritional Care and Services Cr. 3
Application of management theory and principles in the three areas of dietetic practice; career planning and professional role development. Offered Winter.
Prerequisite: NFS 5200 with a minimum grade of C- and NFS 4220 (may be taken concurrently) with a minimum grade of C-

NFS 5990 Honors Directed Study Cr. 1-4
Offered for undergraduate credit only. Offered Every Term.
Restriction(s): Enrollment is limited to Undergraduate level students; enrollment is limited to students with a major in Nutrition and Food Science Hon.
Repeatable for 6 Credits

NFS 5992 Supervised Field Experience Cr. 2-4
Supervised field experience designed to correlate classroom theory with practical work. Offered Every Term.

NFS 5996 Research in Food Science and Nutrition Cr. 1-4
Research projects under direction of faculty active in research. Offered for undergraduate credit only. Offered Every Term.
Restriction(s): Enrollment is limited to Undergraduate level students; enrollment limited to students with a class of Unranked Undergrad, Freshman, Sophomore, Junior or Senior.
Repeatable for 6 Credits

NFS 6000 Nutritional Biochemistry Cr. 3
Biochemical effects of nutrients at cellular and organ levels. Offered for graduate credit only. Offered Fall.
Restriction(s): Enrollment is limited to Graduate level students.
NFS 6020 Nutrient and Gene Interaction Cr. 3  
Introduction to molecular genetics concepts, terminology and molecular methodologies, with emphasis on nutrition and food science. Overview of nutrition and gene interaction in onset and progression of disease, cancer, and aging. Offered for graduate credit only. Offered Biannually.  
Prerequisites: NFS 5130 with a minimum grade of C- and NFS 5140 with a minimum grade of C- and NFS 5230 with a minimum grade of C-  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 6030 Microbiological Safety of Foods Cr. 3  
Food-borne microorganisms as causes of human illnesses, including bacteria, mold, viruses and parasites. Microbial toxins and their mode of action. Antimicrobial agents in food. Means of prevention and protection. Offered Fall.  
Prerequisites: NFS 4150 with a minimum grade of C- and NFS 5130 with a minimum grade of C-  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 6150 Functional Foods for Health Cr. 3  
Introduction to functional foods (those with specific health benefits) and nutraceuticals, as well as a variety of functional food ingredients and extracts, their chemical and potential health promoting properties, processing, production, safety and regulation. Offered Winter.  
Prerequisite: NFS 2030 with a minimum grade of D- and NFS 2130 with a minimum grade of D- and NFS 3230 with a minimum grade of D-  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 6210 Nutrition through the Life Cycle Cr. 3  
Biological growth and nutritional requirements from fetal stages of development through aging. Nutritional standards in light of current epidemiological data and scientific research. Offered for graduate credit only. Offered Irregularly.  
Prerequisites: NFS 5230 with a minimum grade of C  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 6230 Nutrition and Physical Performance Cr. 3  
How nutrients affect physical fitness and physical performance; how physical performance can be improved by adopting optimal dietary practice and how exercise and optimal nutrition can prevent human diseases. Offered Fall.  
Prerequisites: NFS 5230 with a minimum grade of C  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 6270 Eating Behavior and Body Weight Regulation Cr. 3  
Central and peripheral regulation of food intake, normal and abnormal eating behavior, physiological and psychological regulation of body weight, different models of obesity, etiology of treatment of obesity. Offered Winter.  
Prerequisite: BIO 2870 with a minimum grade of C-  
Restriction(s): Enrollment is limited to students with a major in Dietetics and Food Science or Nutrition and Food Science Hon.  
Restriction(s): Enrollment is limited to students with a major in Dietetics; enrollment limited to students in the BS in Dietetics or PBC in Dietetics programs.

NFS 6850 Controversial Issues Cr. 2  
Topics to be announced in Schedule of Classes. Offered Fall.  
Prerequisite: NFS 5230 with a minimum grade of C-  
Restriction(s): Enrollment is limited to students with a major in Nutrition and Food Science or Nutrition and Food Science Hon.  
Restriction(s): Enrollment is limited to students with a major in Dietetics; enrollment limited to students in the BS in Dietetics or PBC in Dietetics programs.

NFS 6860 Controversial Issues in Clinical Nutrition: Dietetics Cr. 2  
Current controversial topics; differing points of view will be debated; discussion of modes of communication of nutrition information. Offered Winter.  
Prerequisite: NFS 5230 with a minimum grade of D-  
Restriction(s): Enrollment is limited to students with a major in Dietetics.

NFS 7000 Nutritional Metabolomics and Bioinformatics Cr. 3  
Introduction to and application of the "omics" technologies to nutrition: genomics, proteomics, and metabolomics. Examples and exercises using bioinformatic software for multivariate data analyses. Offered Winter.  
Prerequisite: NFS 6000 with a minimum grade of C- and STA 1020 with a minimum grade of C-  
Restriction(s): Enrollment is limited to Graduate level students.  
Course Material Fees: $90

NFS 7060 Research Problems in Nutrition and Food Science Cr. 2  
Research orientation: acquaintance with published data, principles of design, methods of collecting data, and basic statistical analysis. Offered Biannually.  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 7140 Advanced Laboratory Techniques in Nutrition and Food Science Cr. 4  
Laboratory techniques in nutrition and food science research, including: animal experimentation, isotope use and quantitation, radioimmunoassay and receptor assays, atomic absorption; chromatography; microbial assays. Offered Yearly.  
Prerequisite: (BMB 5010 with a minimum grade of C- or CHM 5600 with a minimum grade of C-) and NFS 5140 with a minimum grade of C-  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 7230 Nutrition and Physical Performance Cr. 3  
How nutrients affect physical fitness and physical performance; how physical performance can be improved by adopting optimal dietary practice and how exercise and optimal nutrition can prevent human diseases. Offered Fall.  
Prerequisite: NFS 5230 with a minimum grade of C-  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 7240 Nutritional Epidemiology Cr. 3  
Introduction to epidemiology concepts and terminology. Emphasis on examining the associations between nutrition and chronic disease. Offered Irregularly.  
Prerequisites: NFS 2210 with a minimum grade of C-  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 7250 Nutrition and Aging Cr. 3  
Topics include: conserved pathways determining longevity and the role of nutrition in these pathways; role of metabolic/nutritional factors on longevity and successful aging; premature aging disorders; interventional strategies impacting longevity and health span. Offered Fall.  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 7850 Graduate Seminar Cr. 1  
Presentations by graduate students, graduate faculty, and visiting scientists. Offered Fall, Winter.  
Restriction(s): Enrollment is limited to Graduate level students.

NFS 7890 Advanced Workshop Cr. 2-4  
Application of theoretical principles to selected areas of nutrition and food science. Topics and prerequisites to be announced in Schedule of Classes. Offered Irregularly.  
Restriction(s): Enrollment is limited to Graduate level students.  
Repeatable for 8 Credits

NFS 7990 Directed Study Cr. 1-4  
Offered for each area of specialization. Offered Every Term.  
Restriction(s): Enrollment is limited to Graduate level students.  
Repeatable for 4 Credits

NFS 7991 Lab Rotation Cr. 1  
For new graduate students; students spend at least two weeks in all research labs. Offered Every Term.  
Restriction(s): Enrollment is limited to Graduate level students.
NFS 7996 Research Cr. 1-8
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.
Repeatable for 20 Credits

NFS 7999 Master's Essay Direction Cr. 1-3
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students; enrollment limited to students with a class of Candidate Masters.
Repeatable for 3 Credits

NFS 8999 Master's Thesis Research and Direction Cr. 1-8
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students; enrollment limited to students with a class of Candidate Masters.
Repeatable for 8 Credits

NFS 9990 Pre-Doctoral Candidacy Research Cr. 1-8
Research in preparation for doctoral dissertation. Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.
Repeatable for 12 Credits

NFS 9991 Doctoral Candidate Status I: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.

NFS 9992 Doctoral Candidate Status II: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Prerequisite: NFS 9991 with a minimum grade of S
Restriction(s): Enrollment is limited to Graduate level students.

NFS 9993 Doctoral Candidate Status III: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Prerequisite: NFS 9992 with a minimum grade of S
Restriction(s): Enrollment is limited to Graduate level students.

NFS 9994 Doctoral Candidate Status IV: Dissertation Research and Direction Cr. 7.5
Offered Every Term.
Prerequisite: NFS 9993 with a minimum grade of S
Restriction(s): Enrollment is limited to Graduate level students.

NFS 9995 Candidate Maintenance Status: Doctoral Dissertation Research and Direction Cr. 0
Offered Every Term.
Restriction(s): Enrollment is limited to Graduate level students.
Course Material Fees: $358.78
Repeatable for 0 Credits