NUTRITION SCIENCE, BACHELOR OF SCIENCE

College of Agricultural & Environmental Sciences

The study of nutrition encompasses all aspects of the consumption and utilization of food and its constituents. Key areas of study include: the biochemical reactions important to the utilization of nutrients and food constituents; the impact of diet on health and disease; and, nutrition-related policy and public health issues. The nutrition science major includes two options for studying these areas: nutritional biology and nutrition in public health.

The Program

Nutrition, as it is taught on the Davis campus, is a biological science and requires a complete background in chemistry and biology, along with calculus and physics (nutritional biology option) or economics (nutrition in public health option). These courses are generally completed during the first two years, and along with biochemistry, must be completed before most nutrition classes can be taken. During their junior and senior years, students in the nutritional biology option take additional course work in biochemistry, physiology, and toxicology. Students in the nutrition in public health option take additional course work in social and health-related sciences.

Career Alternatives

Both options are excellent preparation for professional or graduate training in medicine, public health, or other health sciences. The nutritional biology option also provides preparation for technical work in nutrition in the animal, food, and pharmaceutical industries. The nutrition in public health option prepares students for jobs in administrative, teaching, or public health/public service positions.

Dietetics Internship

To fulfill the academic requirements for an internship in Dietetics, students are strongly advised to declare the Clinical Nutrition major. Within the Nutrition in Public Health option, students should also take: ENL 003 or UWP 001 & CMN 001. The following courses must also be added (some of which may meet restricted elective requirements): ARE 112; NUT 116B, NUT 116AL-NUT 116BL; FSM 120, FSM 120L, FSM 122. Students intending to apply for admission to a dietetic internship should contact the Advising Center no later than the first quarter of the junior year for information on procedures. Effective January 1, 2024, the Commission on Dietetic Registration (CDR) will require a complete background in chemistry and biology, along with nutrition and food science elements, for admission to a dietetic internship. The remaining preparatory subject matter is based on which major option you choose:

Nutritional Biology Option (p. 2)

Nutrition in Public Health Option (p. 2)

Preparatory Subject Matter Subtotal 62-70

Depth Subject Matter

Biochemistry

Choose a series:

6-10

ABI 102 & ABI 103 Animal Biochemistry & Metabolism and Animal Biochemistry & Metabolism

OR

BIS 102 & BIS 103 Structure & Function of Biomolecules and Bioenergetics & Metabolism

Biological Science

BIS 101 Genes & Gene Expression 4

Food Science & Technology
Nutrition Science, Bachelor of Science

FST 100A  Food Chemistry  4
FST 100B  Food Properties  4

Microbiology
MIC 102  Introductory Microbiology  3
MIC 103L  Introductory Microbiology Laboratory  2

Neurobiology, Physiology, & Behavior
NPB 101  Systemic Physiology  5
NPB 101L  Systemic Physiology Laboratory  3

Nutrition
NUT 111AY  Introduction to Nutrition & Metabolism  3
NUT 111B  Recommendations & Standards for Human Nutrition  2
NUT 112  Nutritional Assessment  4
NUT 116A  Clinical Nutrition  3

The remaining depth subject matter is based on which major option you chose when completing your preparatory courses:

- Nutritional Biology Option (p. 2)
- Nutrition in Public Health Option (p. 3)

Depth Subject Matter Subtotal  76-80

Total Units  138-150

Focus Area
Nutritional Biology Option  139-150
Nutrition in Public Health Option  138-147

Preparatory Subject Matter

Nutritional Biology Option

Choose one:
- ANT 002  Cultural Anthropology  4-5
- PSC 001  General Psychology  4
  or PSC 001Y  General Psychology  4
- SOC 001  Introduction to Sociology  4
- SOC 003  Social Problems  4

Choose a series:
- MAT 016A & MAT 016B  Short Calculus and Short Calculus  6-8
- MAT 017A & MAT 017B  Calculus for Biology & Medicine and Calculus for Biology & Medicine  6-8

Choose a series:
- PHY 001A & PHY 001B  Principles of Physics and Principles of Physics  6-8
- PHY 007A & PHY 007B  General Physics and General Physics  6-8

Total Units  15-18

Nutrition in Public Health Option

Choose one:
- ANT 002  Cultural Anthropology  4-5
- SOC 001  Introduction to Sociology  4

Total Units  16-21

Depth Subject Matter

Nutritional Biology Option

Requirements
NBP 114  Gastrointestinal Physiology  3
NUT/ETX 104  Environmental & Nutritional Factors in Cellular Regulation & Nutritional Toxicants  4
NUT 117  Experimental Nutrition  6

Restricted Electives  20

Choose at least 9 units from Nutrition:
- NUT 105  Nutrition through the Life Cycle  3
- NUT 113  Principles of Epidemiology in Nutrition  3
- NUT 114  Developmental Nutrition  3
- NUT 115  Animal Nutrition  3
### Nutrition Science, Bachelor of Science

**NUT 116B**  Clinical Nutrition  
**NUT 118**  Community Nutrition  
**NUT 119A**  Global Nutrition  
**NUT/ETX 127**  Environmental Stress & Development in Marine Organisms  
**NUT 129**  Journalistic Practicum in Nutrition  
**NUT 130**  Experiments in Nutrition: Design & Execution  
**NUT 141**  Comparative Animal Nutrition & Metabolism  
**NUT 190**  Proseminar in Nutrition  
**NUT 192**  Internship  
**NUT 199**  Special Study for Advanced Undergraduates

The remaining balance of restricted elective units may be chosen from any of the following courses:

- **BIM 152**  Molecular Control of Biosystems  
- **BIS 104**  Cell Biology  
- **CHA 101/EXB 106**  Human Gross Anatomy  
- **CHA 101L/EXB 106L**  Human Gross Anatomy Laboratory  
- **CHE 130A**  Principles of Medicinal Chemistry  
- **CHE 130B**  Computational Drug Design  
- **ENT 156**  Biology of Parasitism  
- **ENT 156L**  Biology of Parasitism Laboratory  
- **ETX/FST 128**  Food Toxicology  
- **ETX 140**  Genes & the Environment  
- **EXB 110**  Exercise Metabolism  
- **EXB 116**  Nutrition for Physically Active Persons  
- **FST 104**  Food Microbiology  
- **GDB 103**  Microbiome of People, Animals, & Plants  
- **HDE 100A**  Infant & Early Childhood  
- **HDE 100B**  Middle Childhood & Adolescence  
- **HDE 100C**  Adulthood & Aging  
- **MCB 120**  Molecular Biology & Biochemistry Laboratory Associated Lecture  
- **MCB 120L**  Molecular Biology & Biochemistry Laboratory  
- **MCB 162**  Human Genetics & Genomics  
- **MIC 111**  Human Microbiology  
- **MIC 162**  General Virology  
- **MMI 130**  Medical Mycology  
- **MMI 188A**  Human Immunology  
- **MMI 188B**  Human Immunology  
- **NPB 110A**  Foundations 1: From Molecules to Individuals  
- **NPB 116**  Stress Physiology in Health & Disease  
- **NPB 128**  Comparative Physiology: Endocrinology  
- **NPB 132**  Nature vs. Nurture: Physiological Interactions Among Genes, Nutrients & Health  
- **NPB 134**  General Immunology for Physiologists  

PLB/PLP 148  Introductory Mycology  
PMI 126  Fundamentals of Immunology  
PMI 127  Medical Bacteria & Fungi  
PMI 129Y  One Health: Human, Animal & Environment Interfaces  
UWP 102B  Writing in the Disciplines: Biology  
UWP 104F  Writing in the Professions: Health  
UWP 104FY  Writing in the Professions: Health

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tr>
<td>NUT 113</td>
<td>Principles of Epidemiology in Nutrition</td>
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<td>NUT 118</td>
<td>Community Nutrition</td>
<td>4</td>
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<tr>
<td>SPH 101</td>
<td>Introduction to Public Health</td>
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<td><strong>Total Units</strong></td>
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### Nutrition in Public Health Option

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<td><strong>Restricted Electives</strong></td>
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Choose at least 9 units from Nutrition:

- **NUT/ETX 104**  Environmental & Nutritional Factors in Cellular Regulation & Nutritional Toxicants
- **NUT 105**  Nutrition through the Life Cycle
- **NUT 114**  Developmental Nutrition
- **NUT 116B**  Clinical Nutrition
- **NUT 117**  Experimental Nutrition
- **NUT 119A**  Global Nutrition
- **NUT 120AN**  Nutritional Anthropology
- **NUT 129**  Journalistic Practicum in Nutrition
- **NUT 130**  Experiments in Nutrition: Design & Execution
- **NUT 190**  Proseminar in Nutrition
- **NUT 192**  Internship
- **NUT 199**  Special Study for Advanced Undergraduates

The remaining balance of restricted elective units may be chosen from any of the following courses:

**Community Health & Education**

- **CMN 165**  Media & Health  
- **EDU 110**  Educational Psychology: General  
- **EDU 120**  Philosophical & Social Foundations of Education  
- **HDE 135**  Health Behaviors Across the Lifespan  
- **PLS 193**  Garden & Farm-Based Experiential Education Methods  
- **PSC 126**  Health Psychology  
- **PSC 130**  Human Learning & Memory  

**Cultural Diversity & Community Change**

- **AAS 100**  Survey of Ethnicity in the US  
- **ARE 112**  Fundamentals of Organization Management  
- **CMN 136**  Organizational Communication  
- **CRD 152**  Community Development  
- **CRD 176**  Comparative Ethnicity
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<td>IAD 103</td>
<td>Social Change &amp; Agricultural Development</td>
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<td>SAS 130</td>
<td>Contemporary Leadership</td>
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<td>ARE 120</td>
<td>Agricultural Policy</td>
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<td>POL 109</td>
<td>Public Policy &amp; the Governmental Process</td>
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**Health Policy**

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<td>CHA 101L/EXB 106L</td>
<td>Human Gross Anatomy Laboratory</td>
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<td>CHI 140A</td>
<td>Quantitative Methods: Chicano/Latino Health Research</td>
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<td>EXB 101</td>
<td>Exercise Physiology</td>
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<td>EXB 102</td>
<td>Introduction to Motor Learning &amp; the Psychology of Sport &amp; Exercise</td>
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<tr>
<td>EXB 110</td>
<td>Exercise Metabolism</td>
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<td>EXB 117</td>
<td>Exercise &amp; Aging in Health &amp; Disease</td>
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<tr>
<td>HDE 100A</td>
<td>Infancy &amp; Early Childhood</td>
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<tr>
<td>or HDE 100AV</td>
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<td>Middle Childhood &amp; Adolescence</td>
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**Human & Applied Sciences**

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<td>Principles of Environmental Toxicology</td>
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<tr>
<td>FST/ETX 128</td>
<td>Food Toxicology</td>
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<tr>
<td>NPB 132</td>
<td>Nature vs. Nurture: Physiological Interactions Among Genes, Nutrients &amp; Health</td>
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**Physiology & Applied Sciences**

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<tbody>
<tr>
<td>SPH 103</td>
<td>Introduction to Health Economics, Services, Policy, Administration &amp; Management</td>
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<tr>
<td>SPH 104</td>
<td>Globalization &amp; Health: Evidence &amp; Policies</td>
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<tr>
<td>SPH 106</td>
<td>Intermediate Human Epidemiology</td>
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<tr>
<td>SPH 108</td>
<td>Introduction to Program Planning &amp; Evaluation</td>
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<td>SPH 109</td>
<td>History of Epidemiology in Public Health</td>
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<td>SPH 113</td>
<td>Health Disparities in the U.S.</td>
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<tr>
<td>SPH 120</td>
<td>Introduction to Health Informatics</td>
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**Total Units**: 33