NUTRITIONAL SCIENCE (H SCI)

Nutritional science looks at the connection between diet and health. Students learn how diet can play a crucial role in the cause, treatment, and prevention of many diseases. There are two options in nutritional science. The pre-health professional and research option coursework prepares students for work in research laboratories, graduate study in nutrition or biological sciences, or entrance into health professional programs, such as medical, dental, physician assistant, and pharmacy schools. Students gain a strong science education along with human nutrition expertise. The nutrition and wellness option prepares students for work positions in program planning and evaluation for community, public health, non-profit, and corporate wellness programs addressing the growing public interest in nutrition, wellness, and preventative health. Students learn about the role of nutrition and healthy eating for disease prevention and wellness.

The department also offers a nutrition minor (http://catalog.iastate.edu/collegeofhumansciences/foodscienceandhumannutrition/#undergraduateminortext).

Administered by the Department of Food Science and Human Nutrition

Pre-Health Professional and Research Option
Total Degree Requirement: 120 cr.
Students must fulfill International Perspectives and U.S. Diversity requirements by selecting coursework from approved lists. These courses may also be used to fulfill other area requirements. Only 65 cr. from a two-year institution may apply to the degree which may include up to 16 technical cr.; 9 P-NP cr. of electives; 2.00 minimum GPA.

International Perspectives: 3 cr.
U.S. Diversity: 3 cr.
Communications and Library: 13 cr.
ENGL 150 Critical Thinking and Communication 3
ENGL 250 Written, Oral, Visual, and Electronic Composition 3
ENGL 314 Technical Communication 3
LIB 160 Information Literacy 1
SP CM 212 Fundamentals of Public Speaking 3
Total Credits 13

Humanities and Social Sciences: 6-12 cr.
Select Humanities courses from approved list 3
Select Social Science course from approved list 3
If H Sci student, select: 6
Additional Humanities course
Additional Humanities or Social Science course

Ethics and Environmental: 3-6 cr.
FS HN 342 World Food Issues: Past and Present 3
If AgLS student, select from:
ENV S 120 Introduction to Renewable Resources 2-3
ENV S 201 Introduction to Environmental Issues

Mathematical Sciences: 6-12 cr.
Select at least 3 credits from:
MATH 140 College Algebra 3-8

MATH 143 Preparation for Calculus
MATH 160 Survey of Calculus
MATH 165 Calculus I
MATH 165 & MATH 166 Calculus I and Calculus II
MATH 181 Calculus and Mathematical Modeling for the Life Sciences I
MATH 181 & MATH 182 Calculus and Mathematical Modeling for the Life Sciences I and Calculus and Mathematical Modeling for the Life Sciences II
Select at least 3 credits from:
STAT 101 Principles of Statistics
STAT 104 Introduction to Statistics
Total Credits 6-12

Physical Sciences: 17 cr.
CHEM 177 General Chemistry I 4
CHEM 177L Laboratory in General Chemistry I 1
CHEM 178 General Chemistry II 3
CHEM 178L Laboratory in College Chemistry II 1
CHEM 331 Organic Chemistry I 3
CHEM 331L Laboratory in Organic Chemistry I 1
CHEM 332 Organic Chemistry II 3
CHEM 332L Laboratory in Organic Chemistry II 1
Total Credits 17

Biological Sciences: 24-29 cr.
BIOL 211 Principles of Biology I 3
BIOL 211L Principles of Biology Laboratory I 1
BIOL 212 Principles of Biology II 3
BIOL 212L Principles of Biology Laboratory II 1
BIOL 255 Fundamentals of Human Anatomy 3
BIOL 255L Fundamentals of Human Anatomy Laboratory 1
Select at least 3 credits from:
BIOL 256 Fundamentals of Human Physiology and Fundamentals of Human Physiology Laboratory
BIOL 334 Metabolic Physiology of Mammals
BIOL 335 Principles of Human and Other Animal Physiology
BIOL 313 Principles of Genetics 3
Select at least 3 credits from:
BBMB 301 Survey of Biochemistry
BBMB 316 Principles of Biochemistry
BBMB 404 Biochemistry I & BBMB 405 Biochemistry II
MICRO 201 Introduction to Microbiology 2-3
MICRO 301 or MICRO 302 Biology of Microorganisms
MICRO 201L Introductory Microbiology Laboratory 1
MICRO 301L Microbiology Laboratory 3
Total Credits 24-29

Food Science and Human Nutrition: 37 cr.
FS HN 110 Professional and Educational Preparation 1
FS HN 167 Introduction to Human Nutrition 3
Nutritional Science (H SCI)

FS HN 203  Contemporary Issues in Food Science and Human Nutrition  1
FS HN 265  Nutrition for Active and Healthy Lifestyles  3
FS HN 360  Advanced Human Nutrition and Metabolism  3
FS HN 361  Nutrition and Health Assessment  2
FS HN 362  Nutrition in Growth and Development  3
FS HN 467  Molecular Basis of Nutrition in Disease Prevention  3
FS HN 480  Professional Communication in Food Science and Human Nutrition  1
FS HN 492  Research Concepts in Human Nutrition  2

Select at least 15 additional credits from:

- BIOL 314  Principles of Molecular Cell Biology  1
- FS HN 214  Scientific Study of Food
- & FS HN 215  and Advanced Food Preparation Laboratory (or FS HN 115 lab)
- FS HN 242  Societal Impacts on Food Systems  1
- FS HN 311  Food Chemistry  1
- FS HN 365  Obesity and Weight Management  1
- FS HN 367  Medical Terminology for Health Professionals  1
- FS HN 403  Food Laws, Regulations, and the Regulatory Process  1
- FS HN 419  Foodborne Hazards  1
- FS HN 420  Food Microbiology  1
- FS HN 461  Medical Nutrition and Disease I  1
- FS HN 463  Community Nutrition  1
- FS HN 464  Medical Nutrition and Disease II  1
- FS HN 466  Nutrition Counseling and Education Methods  1
- FS HN 490C  Independent Study: Nutrition  1
- FS HN 499  Undergraduate Research  1
- FS HN 575  Processed Foods  1
- NUTRS 501  Biochemical and Physiological Basis of Nutrition: Macronutrients and Micronutrients  1
- NUTRS 503  Biology of Adipose Tissue  1
- NUTRS 504  Nutrition and Epigenetic Regulation of Gene Expression  1
- NUTRS 562  Assessment of Nutritional Status  1
- PHYS 111  General Physics  1
- or PHYS 221  Introduction to Classical Physics I  1
- PHYS 112  General Physics  1
- or PHYS 222  Introduction to Classical Physics II  1

Total Credits  37

Electives: 0-12 cr. Select from any university coursework to earn at least 120 total credits. Students planning to apply to health professional programs should review entrance requirements and select appropriate courses as electives.

Concurrent B.S. and M.S. Program: Well-qualified students in Nutritional Science, pre-health professional and research option, who are interested in graduate study may apply for concurrent enrollment in the Graduate College to simultaneously pursue both a Bachelor of Science (B.S.) degree in Nutritional Science and a Master of Science (M.S.) degree in Nutritional Sciences. For more information, refer to www.fshn.hs.iastate.edu (http://www.fshn.hs.iastate.edu)

Nutrition and Wellness Option

Total Degree Requirement: 120 cr.

Students must fulfill International Perspectives and U.S. Diversity requirements by selecting coursework from approved lists. These courses may also be used to fulfill other area requirements. Only 65 cr. from a two-year institution may apply to the degree which may include up to 16 technical cr.; 9 P-NP cr. of electives; 2.00 minimum GPA.

International Perspectives: 3 cr.
U.S. Diversity: 3 cr.

Communications/Library: 10 cr.
- ENGL 150  Critical Thinking and Communication  3
- ENGL 250  Written, Oral, Visual, and Electronic Composition  3
- LIB 160  Information Literacy  1
- SP CM 212  Fundamentals of Public Speaking  3

Total Credits  10

Humanities and Social Sciences: 12-15 cr.

Select Humanities course from approved list  3
- PSYCH 101  Introduction to Psychology  3
- or PSYCH 230  Developmental Psychology  3
- SOC 134  Introduction to Sociology  3
- or POL S 314  Special Topics in Comparative Politics  3
- POL S 344  Public Policy  3
- If H Sci student, select additional Humanities course  3

Ethics and Environmental: 3-6 cr.
- FS HN 342  World Food Issues: Past and Present  3
- If AgLS student, select from:
  - ENV S 120  Introduction to Renewable Resources  2-3
  - ENV S 201  Introduction to Environmental Issues  2-3

Mathematical Sciences: 6-8 cr.

Select at least 3 credits from:
- MATH 140  College Algebra  3-4
- MATH 143  Preparation for Calculus  3
- MATH 160  Survey of Calculus  3
- MATH 165  Calculus I  3
- MATH 181  Calculus and Mathematical Modeling for the Life Sciences I  3
- MATH 182  Calculus and Mathematical Modeling for the Life Sciences II  3
- STAT 101  Principles of Statistics  3-4
- STAT 104  Introduction to Statistics  3-4

Total Credits  6-8

Physical Sciences: 5 cr.
- CHEM 163  College Chemistry  4
- or CHEM 177  General Chemistry I  4
- CHEM 163L  Laboratory in College Chemistry  1
- or CHEM 177L  Laboratory in General Chemistry I  1

Total Credits  5

Biological Sciences: 19 cr.
- BIOL 211  Principles of Biology I  3
- BIOL 211L  Principles of Biology Laboratory I  1
- BIOL 212  Principles of Biology II  3
- BIOL 212L  Principles of Biology Laboratory II  1
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<td>BIOL 256</td>
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<td>MICRO 201L</td>
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**Total Credits**: 19

**Food Systems: 9 cr.**

- BIOL 173 or GLOBE 201 Select from:
  - HORT 221 Principles of Horticulture Science
  - AGRON 114 Principles of Agronomy
  - GLOBE 302 Resource Systems of Developing Nations

**Total Credits**: 9

**Food Science and Human Nutrition: 36 cr.**

- FS HN 110 Food and the Consumer
- FS HN 110 Professional and Educational Preparation
- FS HN 115 Fundamentals of Food Preparation
- FS HN 203 Contemporary Issues in Food Science and Human Nutrition
- FS HN 264 Fundamentals of Nutritional Biochemistry and Metabolism
- FS HN 265 Nutrition for Active and Healthy Lifestyles
- FS HN 266 Communicating Nutrition Messages
- FS HN 361 Nutrition and Health Assessment
- FS HN 364 Nutrition and Prevention of Chronic Disease
- FS HN 365 Obesity and Weight Management
- FS HN 403 Food Laws, Regulations, and the Regulatory Process
- FS HN 463 Community Nutrition
- FS HN 480 Professional Communication in Food Science and Human Nutrition
- FS HN 495 Practicum

**Total Credits**: 36

**Electives: 9-18 cr.** At least 9 credits of electives must be 300-400 level courses. Select from any university coursework to earn at least 120 total credits.

Go to FS HN courses. (http://catalog.iastate.edu/azcourses/fs_hn)

### Nutritional Science, B.S. - Nutrition & wellness option

#### First Year

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**Total Credits**: 15

**Second Year**

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<td>FS HN 264</td>
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<td>FS HN 242</td>
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<td>BIO 255</td>
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<td>BIOL 256</td>
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**Total Credits**: 16

**Third Year**

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<td>HORT 221 or AGRON 114 or GLOBE 302</td>
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<td>FS HN 361</td>
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**Fourth Year**

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<td>POL S 344</td>
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<td>FS HN 495</td>
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**Total Credits**: 120-124

* Choose elective courses to total 120 credits or more. At least 9 credits of electives must be 300-400 level courses.

**Note:** This sequence is only an example. The number of credits taken each semester should be based on the individual student's situation. Factors that may affect credit hours per semester include student ability, employment, health, activities, and grade point consideration.

### Nutritional Science, B.S. - Pre-health professional & research option

#### First Year

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<td>CHEM 177</td>
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**Nutritional Science (H SCI)**

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<td>BIOL 211L</td>
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<td>ENGL 150</td>
<td>3 MATH 140, 143, 160, 165, or 181</td>
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**Second Year**

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<td>CHEM 331</td>
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<td>BIOL 313</td>
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**Third Year**

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<td>BIOL 255</td>
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<td>BIOL 255L</td>
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<td>FS HN 360</td>
<td>3 FS HN 362</td>
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<td>MICRO 201 or 302</td>
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**Fourth Year**

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<td>FS HN 492</td>
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**Total Credits: 120-125**

* Choose elective courses to total equal to or greater than 120 credits.

** Select at least 15 additional credits from: BIOL 314; FS HN 214 with lab (FS HN 115 or 215); FS HN 242, 311, 365, 367, 403, 419, 420, 461, 463, 464, 466, 490C, 499, 575; NUTRS 501, 503, 504, 562; PHYS 111 or 221; PHYS 112 or 222.

**Note**: This sequence is only an example. The number of credits taken each semester should be based on the individual student’s situation. Factors that may affect credit hours per semester include student ability, employment, health, activities, and grade point consideration.