NUTRITIONAL SCIENCE (AGLS)

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/previouscatalogs/2016-2017/collegeofagricultureandlifesciences/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 coures 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:		2-3
ENV S 120	Introduction to Renewable Resources	
ENV S 201	Introduction to Environmental Issues	

Mathematical Sciences: 6-12 cr.

Select at least 3 credits from:		3-8
MATH 140	College Algebra	
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:		3-4
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:		3-4
BIOL 256 & 256L	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:		3-6
BBMB 301	Survey of Biochemistry	
BBMB 316	Principles of Biochemistry	
BBMB 404 & BBMB 405	Biochemistry I and Biochemistry II	
MICRO 201	Introduction to Microbiology	2-3
or MICRO 302	Biology of Microorganisms	
MICRO 201L	Introductory Microbiology Laboratory	1
or MICRO 302L	Microbiology Laboratory	
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

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:		15
BIOL 314	Principles of Molecular Cell Biology	
FS HN 214 & FS HN 215	Scientific Study of Food and Advanced Food Preparation Laboratory (or FS HN 115 lab)	
FS HN 242	Societal Impacts on Food Systems	
FS HN 311	Food Chemistry	
FS HN 365	Obesity and Weight Management	
FS HN 367	Medical Terminology for Health Professionals	
FS HN 403	Food Laws, Regulations, and the Regulatory Process	
FS HN 419	Foodborne Hazards	
FS HN 420	Food Microbiology	
FS HN 461	Medical Nutrition and Disease I	
FS HN 463	Community Nutrition	
FS HN 464	Medical Nutrition and Disease II	
FS HN 466	Nutrition Counseling and Education Methods	
FS HN 490C	Independent Study: Nutrition	
FS HN 499	Undergraduate Research	
FS HN 575	Processed Foods	
NUTRS 501	Biochemical and Physiological Basis of Nutrition: Macronutrients and Micronutrients	
NUTRS 503	Biology of Adipose Tissue	
NUTRS 504	Nutrition and Epigenetic Regulation of Gene Expression	
NUTRS 562	Assessment of Nutritional Status	
PHYS 111	General Physics	
or PHYS 221	Introduction to Classical Physics I	
PHYS 112	General Physics	
or PHYS 222	Introduction to Classical Physics II	
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	
SOC 134	Introduction to Sociology	3
or POL S 314	Special Topics in Comparative Politics	
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:		2-3
ENV S 120	Introduction to Renewable Resources	
or ENV S 201	Introduction to Environmental Issues	

Mathematical Sciences: 6-8 cr.

Select at least 3 credits from:		3-4
MATH 140	College Algebra	
MATH 143	Preparation for Calculus	
MATH 160	Survey of Calculus	
MATH 165	Calculus I	
MATH 181	Calculus and Mathematical Modeling for the Life Sciences I	
Select at least 3 credits from:		3-4
STAT 101	Principles of Statistics	
STAT 104	Introduction to Statistics	
Total Credits		**6-8**

Physical Sciences: 5 cr.

CHEM 163	College Chemistry	4
or CHEM 177	General Chemistry I	
CHEM 163L	Laboratory in College Chemistry	1
or CHEM 177L	Laboratory in General Chemistry I	
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

BIOL 255	Fundamentals of Human Anatomy	3
BIOL 255L	Fundamentals of Human Anatomy Laboratory	1
BIOL 256	Fundamentals of Human Physiology	3
BIOL 256L	Fundamentals of Human Physiology Laboratory	1
MICRO 201	Introduction to Microbiology	2
MICRO 201L	Introductory Microbiology Laboratory	1
Total Credits		**19**

Food Systems: 9 cr.

BIOL 173	Environmental Biology	3
or GLOBE 201	Global Resource Systems	
FS HN 242	Societal Impacts on Food Systems	3
Select from:		3
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 101	Food and the Consumer	3
FS HN 110	Professional and Educational Preparation	1
FS HN 111	Fundamentals of Food Preparation	2
FS HN 115	Food Preparation Laboratory	1
FS HN 167	Introduction to Human Nutrition	3
FS HN 203	Contemporary Issues in Food Science and Human Nutrition	1
FS HN 264	Fundamentals of Nutritional Biochemistry and Metabolism	3
or BBMB 301	Survey of Biochemistry	
FS HN 265	Nutrition for Active and Healthy Lifestyles	3
FS HN 361	Nutrition and Health Assessment	2
FS HN 364	Nutrition and Prevention of Chronic Disease	3
FS HN 365	Obesity and Weight Management	3
FS HN 366	Communicating Nutrition Messages	3
FS HN 403	Food Laws, Regulations, and the Regulatory Process	2
FS HN 463	Community Nutrition	3
FS HN 480	Professional Communication in Food Science and Human Nutrition	1
FS HN 495	Practicum	2
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/previouscatalogs/2016-2017/azcourses/fs_hn)

Nutritional Science, B.S. - nutritional and wellness option

First Year

Fall	Credits	Spring	Credits
FS HN 110	1	FS HN 101	3
CHEM 163 or 177	4	FS HN 167	3
CHEM 163L or 177L	1	BIOL 212	3
BIOL 211	3	BIOL 212L	1
BIOL 211L	1	MATH 140, 143, 160, 165, or 181	3-4
ENGL 150	3	PSYCH 101 or 230	3
LIB 160	1		
	14		**16-17**

Second Year

Fall	Credits	Spring	Credits
FS HN 111	2	BIOL 173 or GLOBE 201	3
FS HN 115	1	FS HN 203	1
FS HN 264 (Or, BBMB 301, if organic chem. completed)	3	FS HN 242	3
BIOL 255	3	FS HN 265	3
BIOL 255L	1	BIOL 256	3
ENGL 250	3	BIOL 256L	1
Humanities course	3		
	16		**14**

Third Year

Fall	Credits	Spring	Credits
FS HN 364	3	FS HN 342	3
HORT 221 or AGRON 114 or GLOBE 302	3	FS HN 361	2
SP CM 212	3	FS HN 365	3
SOC 134 or POL S 314	3	FS HN 366	3
STAT 101 or 104	3-4	Humanities (H Sci) or ENV S (AgLS)	2-3
		Elective*	3
	15-16		**16-17**

Fourth Year

Fall	Credits	Spring	Credits
FS HN 463	3	FS HN 403	2
POL S 344	3	FS HN 480	1
MICRO 201	2	FS HN 495	2
MICRO 201L	1	300-400 level elective course*	3
300-400 level elective course*	3	300-400 level elective course*	3
Elective*	3	Electives*	3-4
	15		**14-15**

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

Freshman

Fall	Credits	Spring	Credits
FS HN 110	1	FS HN 167	3
CHEM 177	4	CHEM 178	3
CHEM 177L	1	CHEM 178L	1
BIOL 211	3	BIOL 212	3

BIOL 211L	1	BIOL 212L	1
ENGL 150	3	MATH 140, 143, 160, 165, or 181	3-4
LIB 160	1		
Humanities	3		
	17		**14-15**

Sophomore

Fall	**Credits**	**Spring**	**Credits**
CHEM 331	3	CHEM 332	3
CHEM 331L	1	CHEM 332L	1
BIOL 313	3	BBMB 301 or 316, or BBMB 404 and 405 the next year	3
STAT 101 or 104	3-4	FS HN 265	3
ENGL 250	3	FS HN 203	1
SP CM 212	3	Social Science	3
	16-17		**14**

Junior

Fall	**Credits**	**Spring**	**Credits**
BIOL 255	3	BIOL 256 and 256L, or 334 or 335 Physiology	3-4
BIOL 255L	1	FS HN 361	2
FS HN 360	3	FS HN 362	3
MICRO 201 or 302	2-3	Humanities/Social Sci. (H Sci) or ENV S (AgLS)	3
MICRO 201L or 302L	1	Additional course from approved list**	3
Humanities course (H Sci) or elective*	3		
FS HN 342	3		
	16-17		**14-15**

Senior

Fall	**Credits**	**Spring**	**Credits**
FS HN 480	1	ENGL 314	3
FS HN 492	2	FS HN 467	3
Additional course from approved list**	3	Additional course from approved list**	3
Additional course from approved list**	3	US Diversity (if not already taken) or elective*	3
Additional course from approved list**	3	Elecitve*	2-3
Elective*	3		
	15		**14-15**

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.