

# Nutrition Sciences (BS): Applied Nutrition Concentration

The Nutrition Science Bachelor of Science degree has two sub-plans to choose from: the Science track or the Applied track. The Science curriculum is designed for those students with an interest in graduate school or post-graduate training in a human health profession for which physics and 4 semesters of chemistry are required. The Applied curriculum is designed for those interested in health-related jobs immediately after graduation, obtaining further training to become a Registered Dietitian after graduation, or going on for post-graduate training in a human health profession for which no physics courses and only 3 semesters of chemistry are required.

## Plan Requirements

Code	Title	Hours
<b>Orientation</b>		
LSC 103	Exploring Opportunities in the Life Sciences	1
<b>Communication</b>		<b>3</b>
COM 110	Public Speaking	
COM 112	Interpersonal Communication	
ENG 333	Communication for Science and Research	
<b>Mathematics &amp; Sciences</b>		
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity <sup>1</sup>	4
BIO 183	Introductory Biology: Cellular and Molecular Biology <sup>1</sup>	4
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory <sup>1</sup>	4
CH 201 & CH 202	Chemistry - A Quantitative Science and Quantitative Chemistry Laboratory	4
CH 220 & CH 222	Introductory Organic Chemistry and Organic Chemistry I Lab	4
MA 121 or MA 131	Elements of Calculus Calculus for Life and Management Sciences A	3
ST 311	Introduction to Statistics	3
PSY 200	Introduction to Psychology	3
<b>Required Courses</b>		
LSC 101	Critical and Creative Thinking in the Life Sciences <sup>1</sup>	2
FS 201	Introduction to Food Science <sup>1</sup>	3
NTR 301	Introduction to Human Nutrition <sup>1</sup>	3
NTR 302	Introduction to Nutrition Research, Communication, and Careers <sup>1</sup>	3
NTR 401	Advanced Nutrition and Metabolism <sup>1</sup>	3
GN 311	Principles of Genetics	4
MB 351 & MB 352	General Microbiology and General Microbiology Laboratory	4
NTR 490	Senior Capstone Experience in Nutrition <sup>1</sup>	4
<b>Restricted Electives</b>		
Restricted Nutrition Elective (p. 1) <sup>1</sup>		3

Application Electives (p. 1)	12
ZO 250 Animal Anatomy and Physiology	4
Nutrition Electives (p. 2) <sup>1</sup>	9
<b>GEP Courses</b>	
ENG 101 Academic Writing and Research <sup>1</sup>	4
GEP Humanities ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )	6
GEP Social Sciences ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/</a> )	3
GEP Health and Exercise Studies ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a> )	2
GEP Additional Breadth ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/</a> ) (Humanities/Social Sciences/Visual and Performing Arts)	3
GEP Interdisciplinary Perspectives ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/</a> )	3
GEP U.S. Diversity ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/</a> ) (verify requirement)	
GEP Global Knowledge ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/</a> ) (verify requirement)	
Foreign Language Proficiency (verify requirement)	
<b>Free Electives</b>	
Free Electives (12 Hr S/U Lmt) <sup>2</sup>	12
<b>Total Hours</b>	<b>120</b>

<sup>1</sup> A grade of C- or higher is required.

<sup>2</sup> Students should consult their academic advisors to determine which courses fill this requirement.

## Restricted Nutrition Elective

Code	Title	Hours
ANS 454	Lactation, Milk and Nutrition	3
ANS 554	Lactation, Milk and Nutrition	3
FS 555	Exercise Nutrition	3
FS 557	Nutraceuticals and Functional Foods	3
NTR 320		3
NTR 330	Public Health Nutrition	3
NTR 410	Maternal and Infant Nutrition	3
NTR 419	Human Nutrition and Chronic Disease	3
NTR 454	Lactation, Milk and Nutrition	3
NTR 510	Maternal and Infant Nutrition	3
NTR 555	Exercise Nutrition	3
NTR 557	Nutraceuticals and Functional Foods	3

## Application Electives

Code	Title	Hours
<b>Application Electives I</b>		
AEC 360	Ecology	4
AEE 230	Introduction to Cooperative Extension	3
AEE 325	Planning and Delivering Non-Formal Education	3
AEE 478	Advanced Issues in Extension Education	3
ANS 415	Comparative Nutrition	3

ANS 515	Comparative Nutrition	3
ANT 374	Disease and Society	3
ARE 201	Introduction to Agricultural & Resource Economics	3
ARE 201A	Introduction to Agricultural & Resource Economics	3
BCH 351	General Biochemistry	3
BIO 414	Cell Biology	3
BIO 424	Endocrinology	3
BIO 488	Neurobiology	3
BIO 588	Neurobiology	3
COM 332	Relational Communication	3
COM 362	Communication and Gender	3
COM 441	Ethical Issues in Communication	3
COM 466	Nonprofit Leadership & Development	3
CS 224	Seeds, Biotechnology and Societies	3
CS 230	Introduction to Agroecology	3
CS 430	Advanced Agroecology	4
FS 330	Science of Food Preparation	3
FS 402	Chemistry of Food and Bioprocessed Materials	4
FS 403	Analytical Techniques in Food & Bioprocessing Science	4
FS 405	Food Microbiology	3
FS 416	Quality Control in Food and Bioprocessing	3
FS 421	Food Preservation	3
FS 502	Chemistry of Food and Bioprocessed Materials	4
FS 505	Food Microbiology	3
FS 516	Quality Control in Food and Bioprocessing	3
FS 521	Food Preservation	3
GPH 201		3
HESM 478	Exercise Physiology and Sports Science	3
HI 360	U.S. Agricultural History	3
HI 380	History of Nonprofits, Philanthropy, and Social Change	3
MB 405	Food Microbiology	3
MB 505	Food Microbiology	3
NTR 415	Comparative Nutrition	3
NTR 515	Comparative Nutrition	3
PB 213	Plants and Civilization	3
PB 215	Medicinal Plants	3
PB 360	Ecology	4
PHI 325	Bio-Medical Ethics	3
PHI 420	Global Justice	3
PO 415	Comparative Nutrition	3
PO 515	Comparative Nutrition	3
PRT 200	Health, Wellness and the Pursuit of Happiness	3
PS 203	Introduction to Nonprofits	3
PS 231	Introduction to International Relations	3
PS 236	Issues in Global Politics	3
PS 312	Introduction to Public Administration	3
PSY 311	Social Psychology	3
PSY 312	Applied Psychology	3
PSY 360	Community Psychology Principles and Practice	3
PSY 376	Developmental Psychology	3

PSY 410	Learning and Motivation	3
PSY 411	The Psychology of Interdependence and Race	3
PSY 420	Cognitive Processes	3
PSY 430	Biological Psychology	3
PSY 431	Health Psychology	3
SOC 241	Sociology of Agriculture and Rural Society	3
SOC 241A	Sociology of Agriculture and Rural Society	3
SOC 311	Community Relationships	3
SOC 342	International Development	3
SOC 350	Food and Society	3
SOC 351	Population and Planning	3
SOC 381	Sociology of Medicine	3
SOC 404	Families and Work	3
SOC 440	Social Change	3
STS 323	World Population and Food Prospects	3
STS 325	Bio-Medical Ethics	3
WGS 200	Introduction to Women's, Gender, and Sexuality Studies	3
WGS 330	Women and Health	3
WGS 362	Communication and Gender	3
<b>Application Electives II (Max: 3 Units )</b>		
GPH 425		6

## Nutrition Electives

Code	Title	Hours
ANS 454	Lactation, Milk and Nutrition	3
ANS 554	Lactation, Milk and Nutrition	3
FS 555	Exercise Nutrition	3
FS 557	Nutraceuticals and Functional Foods	3
IDS 211	Eating through American History	3
NTR 220	Food and Culture in Italy	3
NTR 320		3
NTR 330	Public Health Nutrition	3
NTR 410	Maternal and Infant Nutrition	3
NTR 419	Human Nutrition and Chronic Disease	3
NTR 420		3
NTR 421		3
NTR 454	Lactation, Milk and Nutrition	3
NTR 510	Maternal and Infant Nutrition	3
NTR 521		3
NTR 555	Exercise Nutrition	3
NTR 557	Nutraceuticals and Functional Foods	3

## Semester Sequence

This is a sample.

### First Year

Fall Semester		Hours
LSC 101	Critical and Creative Thinking in the Life Sciences <sup>1</sup>	2
LSC 103	Exploring Opportunities in the Life Sciences	1

BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity <sup>1</sup>	4
CH 101	Chemistry - A Molecular Science <sup>1</sup>	3
CH 102	General Chemistry Laboratory	1
MA 121 or MA 131	Elements of Calculus or Calculus for Life and Management Sciences A	3
GEP Health and Exercise Studies ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a> )		1
<b>Hours</b>		<b>15</b>
<b>Spring Semester</b>		
BIO 183	Introductory Biology: Cellular and Molecular Biology <sup>1</sup>	4
NTR 301	Introduction to Human Nutrition <sup>1</sup>	3
ENG 101	Academic Writing and Research <sup>1</sup>	4
PSY 200	Introduction to Psychology	3
<b>Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall Semester</b>		
CH 220 & CH 222	Introductory Organic Chemistry and Organic Chemistry I Lab	4
ST 311	Introduction to Statistics	3
NTR 302	Introduction to Nutrition Research, Communication, and Careers <sup>1</sup>	3
GEP Humanities ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )		3
Free/Minor Elective <sup>2</sup>		3
<b>Hours</b>		<b>16</b>
<b>Spring Semester</b>		
CH 201	Chemistry - A Quantitative Science	3
CH 202	Quantitative Chemistry Laboratory	1
FS 201	Introduction to Food Science <sup>1</sup>	3
Nutrition Elective (p. 2)		3
Application Elective (p. 1)		3
GEP Interdisciplinary Perspectives ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/</a> )		3
<b>Hours</b>		<b>16</b>
<b>Third Year</b>		
<b>Fall Semester</b>		
NTR 401	Advanced Nutrition and Metabolism <sup>1</sup>	3
Physiology Elective (p. 1)		4
Nutrition Elective (p. 2)		3
Writing/Speaking Elective (p. 1)		3
Free/Minor Electives <sup>2</sup>		3
<b>Hours</b>		<b>16</b>
<b>Spring Semester</b>		
GN 311	Principles of Genetics	4
Restricted Nutrition Elective (p. 1)		3
Application Elective (p. 1)		3
GEP Health and Exercise Studies ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a> )		1

GEP Additional Breadth ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/</a> )		3
<b>Hours</b>		<b>14</b>
<b>Fourth Year</b>		
<b>Fall Semester</b>		
MB 351	General Microbiology	3
MB 352	General Microbiology Laboratory	1
Nutrition Elective (p. 2)		3
Application Elective (p. 1)		3
GEP Social Sciences ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/</a> )		3
Free/Minor Elective <sup>2</sup>		3
<b>Hours</b>		<b>16</b>
<b>Spring Semester</b>		
NTR 490	Senior Capstone Experience in Nutrition <sup>1</sup>	4
Application Elective (p. 1)		3
GEP Humanities ( <a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )		3
Free/Minor Elective <sup>2</sup>		3
<b>Hours</b>		<b>13</b>
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> A grade of C- or higher is required.

<sup>2</sup> These electives cannot be remedial nor can they be taken at an elementary level after you have taken comparable coursework at a more advanced level. They can be taken S/U unless they are being used to fulfill the requirements for a minor.

## Career Opportunities

Consumer demand for safe, high quality, nutritious foods and biopharmaceutical products, as well as for educational programs designed to promote healthy eating, creates a variety of career opportunities in the food, pharmaceutical and the allied health industries. Industrial opportunities include management, research and development, process supervision, quality control and assurance, procurement, distribution, and sales. Public health opportunities include educational program development, delivery, and assessment. In addition, graduates hold positions with government agencies and many with advanced degrees have teaching and/or research positions in colleges and universities.

## Nutrition Sciences

Nutrition professionals provide evidence-based guidance on what we should eat, study relationships between diet and health, assess eating behavior, design and evaluate community nutrition programs, teach nutrition and healthy eating skills, and advocate for policies that support good nutrition.

Nutrition students gain a strong foundation by studying chemistry, statistics, genetics, physiology and psychology. They develop skills for applying that knowledge through research, internships and service-learning programs.

Graduates are prepared to tackle health challenges head-on, with a sound understanding of nutrient functions, nutrition in disease processes,

life cycle and exercise nutrition, research methods, principles of nutrition education and public health.

Our students have the flexibility to choose between two options when pursuing their B.S. in Nutrition Science. The **Nutrition Science** option is designed to fulfill the prerequisites for medical school and other health professional programs, such as dentistry, physical therapy and pharmacy.

The **Applied Nutrition** option helps students become qualified to consult or develop programming for public health initiatives on healthy eating and other health-related activities to improve quality of life and lower health care costs. It is also designed for students planning to pursue post-graduate programs to become a nurse, physician assistant or registered dietitian.

Graduates in nutrition are competitive job and professional school applicants because of their deep understanding of the physical, social and life sciences as they relate to human health. They stand out due to the many opportunities to apply their knowledge to the major health challenges facing our country and the world today.

- Note: Only entering freshmen studying Biochemistry, Nutrition Sciences, or Plant Biology participate in the Life Sciences First Year Program (<https://departments.sciences.ncsu.edu/lsfy/>).

## Scholarships

The department provides both merit and financial need scholarships to encourage and assist students preparing for careers in Food, Bioprocessing, or Nutrition Science.

## Career Titles

- Biology Professor
- Clinical Dietitian
- Dietetic Technician
- Dietitian and Nutritionist
- Food & Drug Inspector
- Food Science Technicians
- Food Technologist
- Home Health Aide

## Learn More About Careers

NCcareers.org (<https://nccareers.org/>)

Explore North Carolina's central online resource for students, parents, educators, job seekers and career counselors looking for high quality job and career information.

Occupational Outlook Handbook (<https://www.bls.gov/ooh/>)

Browse the Occupational Outlook Handbook published by the Bureau of Labor Statistics to view state and area employment and wage statistics. You can also identify and compare similar occupations based on your interests.

Career One Stop Videos (<https://www.careeronestop.org/>)

View videos that provide career details and information on wages, employment trends, skills needed, and more for any occupation. Sponsored by the U.S. Department of Labor.

Focus 2 Career Assessment (<https://careers.dasa.ncsu.edu/explore-careers/career-assessments/>) (NC State student email address required)

This career, major and education planning system is available to current NC State students to learn about how your values, interests,

competencies, and personality fit into the NC State majors and your future career. An NC State email address is required to create an account. Make an appointment with your career counselor (<https://careers.dasa.ncsu.edu/about/hours-appointments/>) to discuss the results.

Focus 2 Apply Assessment (<https://www.focus2career.com/Portal/Register.cfm?SID=1929>) (Available to prospective students)

A career assessment tool designed to support prospective students in exploring and choosing the right major and career path based on your unique personality, interests, skills and values. Get started with Focus 2 Apply and see how it can guide your journey at NC State.