

# NUTRITION AND FOOD SCIENCE MAJOR, FOOD SCIENCE CONCENTRATION (B.S.)

The B.S. in Nutrition and Food Science with concentration in Food Science prepares students for careers in the food and beverage, agricultural, and processing industries as well as food regulatory agencies such as the U.S. Food and Drug Administration (FDA) and U.S. Department of Agriculture (USDA). Food science is a multidisciplinary field with the overarching goals of improving the safety and quality of food products, developing new food products, and designing new, safer and more energy-efficient food preservation methods. Food scientists strive to improve the microbial and chemical safety of foods as well as to enhance the quality of foods through traditional and emerging technologies.

Students in the Food Science concentration will gain in-depth knowledge of the physical, chemical, and biochemical nature of food and the standards of nutritional processing, safety, food quality, and food security and develop their aptitudes in areas such as food processing, food accessibility, food quality, food safety, food sensory experiences, and food regulations.

Private industry has increased its demand for food scientists because their expertise is necessary for developing healthy food products and increasing crop yields, along with assuring quality and safety. Research in food genomics and agricultural sustainability is also expected to increase the number of available food science positions. Also, many food scientists are expected to retire in the next 10 years, creating even more job availability in private industry and regulatory agencies such as the FDA and USDA.

Graduates from the Food Science concentration can pursue careers in food science, quality assurance, food chemistry, food product development, food processing and production, food corporation management, food safety, research and development, and sensory analysis.

## Program Requirements Overview

Code	Title	Credits
	General Education Requirements	29
	World Languages and Cultures Requirements	3-6
	Major Requirements	80
	Free Electives	8-5
	<b>Total Credits</b>	<b>120</b>

## Major Requirements

Code	Title	Credits
<b>Nutrition and Food Science Core</b>		
NUFD 130	Introduction to Nutrition and Food Science Profession	1
NUFD 150	Food Composition and Scientific Preparation	3
NUFD 153	Dynamics of Food and Society	3
NUFD 192	Nutrition with Laboratory	4

NUFD 240	Sanitation Management and Food Microbiology: Certification	1
NUFD 258	Experimental Food Science	3
NUFD 381	Applied Nutrition in the Lifecycle	3
NUFD 404	Introduction to Research	3
NUFD 452	Organization and Management of Foodservice Systems	3

### Food Science Concentration Courses

NUFD 253	Quantity Food Purchasing and Production	3
NUFD 299	Professional Development for Careers in Nutrition, Food Science and Wellness	3
NUFD 358	Principles of Food Science	3
NUFD 387	Molecular Cuisine	3
NUFD 409	Internship in Nutrition and Food Science	3
NUFD 436	Sensory Evaluation of Foods	3
NUFD 446	Food Processing and Preservation	3
NUFD 456	Research in Foods	3
NUFD 466	Food Product Development	3

### Required Electives

Complete two courses from the following:		6
NUFD 300	Fundamentals of Healthy Cuisine	
NUFD 310	International Cultures and Cuisines	
NUFD 473	Food Regulations and Compliances	
NUFD 476	Food Ethics, Sustainability and Alternatives	

### Collateral Courses

BIOL 100	Biological Sciences	4
BIOL 254	Applied Microbiology	3
CHEM 113	Fundamentals of Chemistry	4
CHEM 130	Fundamentals of Organic Chemistry	4
CHEM 270	Fundamentals of Biochemistry	5
STAT 109	Statistics	3

**Total Credits** 80

## General Education Requirements

Click here for a list of courses that fulfill General Education categories. (<http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/general-ed-ba-bs/>)

Code	Title	Credits
<b>A. New Student Seminar</b>		
	Complete a 1 credit New Student Seminar course.	1
<b>C. Communication</b>		
	1. Writing	3
	2. Literature	3
	3. Communication	3
<b>D. Fine and Performing Arts</b>		
	Complete a 3 credit Fine and Performing Arts course.	3
<b>F. Humanities</b>		
	1. Great Works and Their Influences	3
	2. Philosophical and Religious Perspectives	3
<b>G. Computer Science</b>		
	Complete a 3 credit Computer Science course.	3
<b>H. Mathematics</b>		

STAT 109	Statistics (Fulfilled in the major.)	
<b>I. Natural Science Laboratory</b>		
NUFD 192	Nutrition with Laboratory (Fulfilled in the major.)	
<b>J. Physical Education</b>		
Complete a 1 credit Physical Education course.		1
<b>K. Social Science</b>		
1. <i>American and European History</i>		3
2. <i>Global Cultural Perspectives</i>		3
3. <i>Social Science Perspectives</i>		
NUFD 153	Dynamics of Food and Society (Fulfilled in the major.)	
<b>L. Interdisciplinary Studies</b>		
NUFD 150	Food Composition and Scientific Preparation (Fulfilled in the major.)	
<b>Total Credits</b>		<b>29</b>

## World Languages and Cultures Requirements

Click here for a list of courses that fulfill World Languages and Cultures categories. (<http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/world-languages-cultures-requirement/>)

Code	Title	Credits
<b>A. World Languages</b>		
Based on placement exam complete one or two sequential courses in 3-6 one language.		
<b>B. World Cultures</b>		
NUFD 153	Dynamics of Food and Society (Fulfilled in the major.)	
<b>Total Credits</b>		<b>3-6</b>

## Recommended Roadmap to Degree Completion

This recommended four-year plan is provided as an outline for students to follow in order to complete their degree requirements within four years. This plan is a recommendation and students should only use it in consultation with their academic advisor.

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
GENERAL EDUCATION: (A) New Student Seminar		1
GENERAL EDUCATION: (C1) Writing		3
GENERAL EDUCATION: (D) Fine and Performing Arts		3
NUFD 130	Introduction to Nutrition and Food Science Profession	1
NUFD 150	Food Composition and Scientific Preparation	3
NUFD 153	Dynamics of Food and Society	3
<b>Credits</b>		<b>14</b>

<b>Spring</b>		
GENERAL EDUCATION: (C2) Literature		3
World Language I		3
CHEM 113	Fundamentals of Chemistry	4
STAT 109	Statistics	3
NUFD 192	Nutrition with Laboratory	4
<b>Credits</b>		<b>17</b>

<b>Second Year</b>		
<b>Fall</b>		
GENERAL EDUCATION: (C3) Communication		3
GENERAL EDUCATION: (J) Physical Education		1
CHEM 130	Fundamentals of Organic Chemistry	4
NUFD 240	Sanitation Management and Food Microbiology: Certification	1
NUFD 253	Quantity Food Purchasing and Production	3
NUFD 258	Experimental Food Science	3
<b>Credits</b>		<b>15</b>

<b>Spring</b>		
BIOL 100	Biological Sciences	4
BIOL 254	Applied Microbiology	3
CHEM 270	Fundamentals of Biochemistry	5
NUFD 387	Molecular Cuisine	3
<b>Credits</b>		<b>15</b>

<b>Third Year</b>		
<b>Fall</b>		
GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences		3
GENERAL EDUCATION: (F2) Humanities – Philosophical and Religious Perspectives		3
World Language II		3
NUFD 358	Principles of Food Science	3
NUFD 381	Applied Nutrition in the Lifecycle	3
<b>Credits</b>		<b>15</b>

<b>Spring</b>		
GENERAL EDUCATION: (G) Computer Science		3
GENERAL EDUCATION: (K1) Social Science – American and European History		3
GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives		3
NUFD 436	Sensory Evaluation of Foods	3

NUFD 446	Food Processing and Preservation	3
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**Credits 15**

**Fourth Year**

**Fall**

NUFD 299	Professional Development for Careers in Nutrition, Food Science and Wellness	3
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NUFD 409	Internship in Nutrition and Food Science	3
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NUFD 466	Food Product Development	3
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NUFD 473	Food Regulations and Compliances	3
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NUFD 476	Food Ethics, Sustainability and Alternatives	3
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**Credits 15**

**Spring**

NUFD 404	Introduction to Research	3
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NUFD 452	Organization and Management of Foodservice Systems	3
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NUFD 456	Research in Foods	3
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Free Elective		3
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Free Elective		2
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**Credits 14**

**Total Credits 120**