

# NUTRITION AND FOOD SCIENCE (B.S.)

## Program Overviews

### Applied Nutrition and Wellness Concentration

The B.S. in Nutrition and Food Science with a concentration in Applied Nutrition and Wellness is ideal for those students who are interested in working with groups of people in non-clinical settings. The curriculum gives students the opportunity to acquire knowledge and skills in nutrition education techniques with the aim of promoting overall good health among diverse population groups. Graduates are prepared to develop and coordinate wellness programs within a variety of settings including community health centers, fitness centers, state health departments, harm reduction agencies, supplement stores, or corporate institutions, to name a few.

Students have the unique opportunity to combine their coursework in nutrition with courses from other disciplines by building a minor into their major program. A minor option in Public Health, Sports Nutrition, Communication Studies, Journalism, Business, Political Science, Psychology, or Sociology allows graduates to apply their knowledge of nutrition-based wellness in a tangential but specialized field such as public health programming and policy, nutrition communication, social marketing, substance abuse rehabilitation, supplement industry, or corporate wellness programming.

The specific objectives of the program are:

- To prepare practitioners with skills in performing group-level nutritional needs assessments in the community.
- To prepare practitioners with skills in analyzing gaps in existing policies and planning appropriate population-based nutrition education initiatives.
- To prepare practitioners who are committed to social justice and the elimination of health disparities in their community using advanced-level critical thinking and problem solving skills.
- To contribute to a diverse student body representing multiple cultural, educational and other professional backgrounds.
- To collaborate with other professionals in the field and work together to advance the standing of the health and wellness industry.

This concentration can also serve as the first part of an accelerated BS/MS program (<http://catalog.montclair.edu/programs/nutrition-food-science-combined-bs-ms/>). Contact [nufs@montclair.edu](mailto:nufs@montclair.edu) for more information about this option.

### Dietetics Concentration

Accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, the B.S. in Nutrition and Food Science with a concentration in Dietetics prepares students for careers in a variety of clinical, community and wellness settings. As part of the program, students complete a series of courses called the Didactic Program in Dietetics (DPD) and, when they graduate, receive, not only the baccalaureate degree, but also an ACEND Verification Statement which enables them to apply to a post-graduate Academy of Nutrition and Dietetics (AND) Dietetic Internship,

the completion of which is the final prerequisite to taking the Registration Examination to become a Registered Dietitian (RD).

Incoming freshmen and transfer students who are interested in becoming Registered Dietitians must start their course of study in one of the other three concentrations in the B.S. in Nutrition and Food Science Program:

- Applied Nutrition and Wellness,
- Food Systems, or
- Food Science.

Students in those concentrations who wish to be admitted to the Dietetics concentration must apply after having completed the following four courses:

Code	Title	Credits
NUFD 192	Nutrition with Laboratory	4
NUFD 150	Food Composition and Scientific Preparation	3
STAT 109	Statistics	3
CHEM 113	Fundamentals of Chemistry	4

Or their equivalents.

In order to be accepted into the Dietetics concentration, students must have obtained an overall GPA of at least 3.2 at Montclair State with no grades lower than a "C" (2.0). Applications are accepted and evaluated every May, after grades from the Spring semester are posted. Because of other General Education requirements they must complete, freshman may not be able to apply until the end of their sophomore year. Students can apply for admittance to the Dietetics concentration as many times as they would like.

This concentration can also serve as the first part of an accelerated BS/MS program (<http://catalog.montclair.edu/programs/nutrition-food-science-combined-bs-ms/>). Contact [nufs@montclair.edu](mailto:nufs@montclair.edu) for more information about this option.

### The Second Bachelor's Degree in Nutrition and Food Science with a Concentration in Dietetics

Individuals who have already earned a Bachelor of Arts or Sciences, but who wish to become Registered Dietitians may complete a 2<sup>nd</sup> Bachelor's in Nutrition and Food Science with a concentration in Dietetics. There are no prerequisites required, regardless of a student's previous field of study; however, incoming 2<sup>nd</sup> Bachelor's students will also have to begin their course of study in one of the other three concentrations in Nutrition and Food Science and then apply for admission to the Dietetics concentration (see above for Dietetics concentration admission requirements). Students earning their 2<sup>nd</sup> Bachelor's in Nutrition and Food Science will not be required to complete the General Education or World Languages and Cultures requirements and will be given credit for equivalent major core, required, and collateral courses they have taken elsewhere. They will, however, be required to meet the residency requirement, which demands that students complete a minimum of 32 credits at Montclair State University. Because of this, students considering applying to earn a second Bachelor's degree in Nutrition and Food Science should weigh their options very carefully. The Department also offers a post-graduate Academy of Nutrition and Dietetics (AND) certificate, through which students can take the same undergraduate courses required for completion of the Didactic Program in Dietetics (DPD) and issuance of the ACEND Verification Statement. Students in the 2<sup>nd</sup> Bachelor's program pay undergraduate tuition to take the DPD courses; students in the AND certificate program pay graduate tuition to take these same courses, but are not required to complete a minimum

of 32 credits. Students should determine whether to choose the 2<sup>nd</sup> Bachelor's in Nutrition or the post-graduate AND certificate based on the number of DPD courses they have left to complete and the cost of graduate vs. undergraduate tuition. Those interested in applying to the AND Certificate program should contact The Graduate School.

## Food Science Concentration

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.

This concentration can also serve as the first part of an accelerated BS/MS program (<http://catalog.montclair.edu/programs/nutrition-food-science-combined-bs-ms/>). Contact [nufs@montclair.edu](mailto:nufs@montclair.edu) for more information about this option.

## Food Systems Concentration

Issues of sustainability and the environment, adequate food supply for the future, growing rates of hunger, malnutrition, and food insecurity, all set against the backdrop of increasingly knowledgeable and demanding consumers in both international and local markets are among the many challenges that are confronting the globalizing food system in the 21<sup>st</sup> century. This program is designed to provide tomorrow's leaders with the skills and knowledge they will need to manage these challenges and to foster the creation of a sustainable food system locally and globally. Students will gain a holistic knowledge base, enriched with practical training and experiences, to prepare them for careers in the food systems field, including:

- Food service and management
- Supply chain management and alternative distribution, such as farm-to-school/institution networks

- Food policy
- Food education and outreach
- Food production and processing
- Retail and wholesale
- International development
- Community and non-profit organizations

This concentration can also serve as the first part of an accelerated BS/MS program (<http://catalog.montclair.edu/programs/nutrition-food-science-combined-bs-ms/>). Contact [nufs@montclair.edu](mailto:nufs@montclair.edu) for more information about this option.

## Program Requirements

### Program Requirements Overview

Code	Title	Credits
General Education Requirements		29
World Languages and Cultures Requirements		3-6
Major Requirements		61-85
Free Electives		27-0
<b>Total Credits</b>		<b>120</b>

Code	Title	Credits
<b>Major Requirements</b>		
<i>Nutrition and Food Science Core</i>		
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

<b>Concentration Requirements</b>	
Complete one concentration from the list below.	
<b>Total Credits</b>	<b>24</b>

## Concentrations

### Applied Nutrition and Wellness

Code	Title	Credits
<b>Required Courses</b>		
NUFD 285	Nutrition in Chronic Disease Prevention	3
NUFD 299	Professional Development for Careers in Nutrition, Food Science and Wellness	3
NUFD 300	Fundamentals of Healthy Cuisine	3
NUFD 388	Nutrition for Community Fitness Programs	3
NUFD 395	Managing Programs	3
NUFD 409	Internship in Nutrition and Food Science	3
NUFD 410	Policy and Advocacy for Nutrition Based Wellness Programs	3

NUFD 412	Nutrition Education Techniques	3
NUFD 476	Food Ethics, Sustainability and Alternatives	3
or NUFD 477	Social Marketing in Nutrition	
NUFD 482	Nutrition Counseling	3
<b>Collateral Courses</b>		
BIOL 240	Mammalian Anatomy and Physiology I	3
CHEM 113	Fundamentals of Chemistry	4
FSHD 120	Mindfulness: Theory, Research and Practice across the Life Course	3
STAT 109	Statistics	3
<b>Required Minor</b>		
Select one of the required minors (see below)		18
<b>Total Credits</b>		<b>61</b>

**Required Minor (complete one)**

Business Minor (<http://catalog.montclair.edu/programs/business-minor/>)

Communication Studies Minor (<http://catalog.montclair.edu/programs/communication-studies-minor/>)

Entrepreneurship Minor (<http://catalog.montclair.edu/programs/entrepreneurship-minor/>)

Gerontology Minor (<http://catalog.montclair.edu/programs/gerontology-minor/>)

Journalism Minor (<http://catalog.montclair.edu/programs/journalism-minor/>)

Political Science Minor (<http://catalog.montclair.edu/programs/political-science-minor/>)

Psychology Minor (<http://catalog.montclair.edu/programs/psychology-minor/>)

Public Administration Minor (<http://catalog.montclair.edu/programs/public-administration-minor/>)

Public Health Minor (<http://catalog.montclair.edu/programs/public-health-minor/>)

Social Work Minor (<http://catalog.montclair.edu/programs/social-work-minor/>)

Sociology Minor (<http://catalog.montclair.edu/programs/sociology-minor/>)

Sports Nutrition Minor (<http://catalog.montclair.edu/programs/sports-nutrition-minor/>)

**Dietetics**

Code	Title	Credits
<b>Required Courses</b>		
NUFD 253	Quantity Food Purchasing and Production	3
NUFD 255	Meal Design and Management	4
NUFD 382	Advanced Nutrition	4
NUFD 383	Applied Community Nutrition	3
NUFD 412	Nutrition Education Techniques	3
NUFD 450	Quantity Food Applications	3
NUFD 482	Nutrition Counseling	3
NUFD 488	Medical Nutrition Therapy	4

NUFD 490	Nutrition and Food Science Professional Seminar	1
NUFD 499	Medical Nutrition Applications	3
<b>Collateral Courses</b>		
BIOL 243	Human Anatomy and Physiology	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
ECON 101	Applied Macroeconomics	3
or ECON 102	Applied Microeconomics	
STAT 109	Statistics	3
PSYC 101	Introduction to Psychology	3
<b>Total Credits</b>		<b>60</b>

**Food Science Concentration**

Code	Title	Credits
<b>Required Courses</b>		
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
<b>Electives</b>		
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	
<b>Collateral Courses</b>		
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
<b>Total Credits</b>		<b>56</b>

**Food Systems Concentration**

Code	Title	Credits
<b>Required Courses</b>		
NUFD 253	Quantity Food Purchasing and Production	3
NUFD 299	Professional Development for Careers in Nutrition, Food Science and Wellness	3
NUFD 310	International Cultures and Cuisines	3
NUFD 353	Catering and Banquet Management	3
NUFD 409	Internship in Nutrition and Food Science	3
NUFD 450	Quantity Food Applications	3
NUFD 492	Food Systems and Agribusiness Issues	3

**Electives**

Complete at least 9 credits from the following:	9
NUFD 202 Food in World History	
NUFD 286 Gender in Food and Nutrition Issues	
NUFD 387 Molecular Cuisine	
NUFD 405 Concepts of the Sommelier	
NUFD 465 Urban Agriculture and Sustainable Food Systems	
NUFD 470 Special Topics in Nutrition and Food Science	
NUFD 473 Food Regulations and Compliances	
NUFD 476 Food Ethics, Sustainability and Alternatives	
NUFD 496 Special Topics in Advanced Culinary Techniques	

**Collateral Courses**

CHEM 113 Fundamentals of Chemistry	4
STAT 109 Statistics	3

**Total Credits** 37

**General Education Requirements**

Click here for a list of courses that fulfill General Education categories. (<http://catalog.montclair.edu/programs/general-education-requirements-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. American and European History		3
2. Global Cultural Perspectives		3
3. Social Science Perspectives		
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/programs/world-languages-and-cultures-requirements/>)

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.

**Applied Nutrition and Wellness Concentration**

First Year			
Fall	Credits	Spring	Credits
GENERAL EDUCATION: (A) New Student Seminar		1 GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing		3 World Language I	3
FSHD 120		3 CHEM 113	4
NUFD 130		1 STAT 109	3
NUFD 150		3 NUFD 192	4
NUFD 153		3	
	<b>14</b>		<b>17</b>
Second Year			
Fall	Credits	Spring	Credits
GENERAL EDUCATION: (C3) Communication		3 GENERAL EDUCATION: (D) Fine and Performing Arts	3
BIOL 240		3 NUFD 300	3
NUFD 240		1 NUFD 381	3
NUFD 258		3 NUFD 388	3
NUFD 285		3 NUFD 395	3
NUFD 299		3	
	<b>16</b>		<b>15</b>
Third Year			
Fall	Credits	Spring	Credits
GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences		3 GENERAL EDUCATION: (F2) Humanities – Philosophical and Religious Perspectives	3

GENERAL EDUCATION: (G) Computer Science	3	GENERAL EDUCATION: (K1) Social Science – American and European History	3
GENERAL EDUCATION: (J) Physical Education	1	GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives	3
World Language II	3	NUFD 476 or 477	3
NUFD 410	3	Minor Course	3
	<b>13</b>		<b>15</b>

**Fourth Year**

Fall	Credits	Spring	Credits
NUFD 409		3 NUF404	3
NUFD 412		3 NUF452	3
Minor Course		3 NUF482	3
Minor Course		3 Minor Course	3
Minor Course		3 Minor Course	3
	<b>15</b>		<b>15</b>

**Total Credits 120****Dietetics Concentration****First Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (A) New Student Seminar		1 GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing		3 World Language 1	3
NUFD 130		1 CHEM 113	4
NUFD 150		3 NUF4192	4
NUFD 153		3 STAT 109	3
PSYC 101		3	
	<b>14</b>		<b>17</b>

**Second Year**

Fall	Credits	Spring	Credits
CHEM 130		4 GENERAL EDUCATION: (C3) Communication	3
NUFD 240		1 BIOL 243	4
NUFD 253		3 CHEM 270	5
NUFD 255		4 ECON 101	3
NUFD 258		3	
	<b>15</b>		<b>15</b>

**Third Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (F2) Humanities – Philosophical and Religious Perspectives		3 BIOL 254	3
NUFD 381		3 GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences	3

NUFD 382	4	GENERAL EDUCATION: (G) Computer Science	3
NUFD 383	3	GENERAL EDUCATION: (K1) Social Science – American and European History	3
Free Elective	3	GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives	3
	<b>16</b>		<b>15</b>

**Fourth Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (D) Fine and Performing Arts		3 NUF404	3
GENERAL EDUCATION: (J) Physical Education		1 NUF452	3
NUFD 412		3 NUF488	4
NUFD 450		3 NUF499	3
NUFD 482		3 Free Elective	1
NUFD 490		1	
	<b>14</b>		<b>14</b>

**Total Credits 120****Food Science Concentration****First Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (A) New Student Seminar		1 GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing		3 World Language I	3
GENERAL EDUCATION: (D) Fine and Performing Arts		3 CHEM 113	4
NUFD 130		1 STAT 109	3
NUFD 150		3 NUF4192	4
NUFD 153		3	
	<b>14</b>		<b>17</b>

**Second Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (C3) Communication		3 BIOL 100	4
GENERAL EDUCATION: (J) Physical Education		1 BIOL 254	3
CHEM 130		4 CHEM 270	5
NUFD 240		1 NUF4387	3
NUFD 253		3	
NUFD 258		3	
	<b>15</b>		<b>15</b>

**Third Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences	3	GENERAL EDUCATION: (G) Computer Science	3
GENERAL EDUCATION: (F2) Humanities – Philosophical and Religious Perspectives	3	GENERAL EDUCATION: (K1) Social Science – American and European History	3
World Language II	3	GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives	3
NUFD 358	3	NUFD 436	3
NUFD 381	3	NUFD 446	3
	<b>15</b>		<b>15</b>

**Fourth Year**

Fall	Credits	Spring	Credits
NUFD 299	3	NUFD 404	3
NUFD 409	3	NUFD 452	3
NUFD 466	3	NUFD 456	3
NUFD 473	3	Free Elective	3
NUFD 476	3	Free Elective	2
	<b>15</b>		<b>14</b>

**Total Credits 120****Food Systems Concentration****First Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (A) New Student Seminar	1	GENERAL EDUCATION: (C2) Literature	3
GENERAL EDUCATION: (C1) Writing	3	World Language I	3
GENERAL EDUCATION: (K1) Social Science – American and European History	3	CHEM 113	4
NUFD 130	1	STAT 109	3
NUFD 150	3	NUFD 192	4
NUFD 153	3		
	<b>14</b>		<b>17</b>

**Second Year**

Fall	Credits	Spring	Credits
NUFD 240	1	GENERAL EDUCATION: (C3) Communication	3
NUFD 253	3	GENERAL EDUCATION: (F2) Humanities – Philosophical and Religious Perspectives	3
NUFD 299	3	NUFD 258	3
Required Elective	3	NUFD 310	3
Free Elective	3	NUFD 381	3

Free Elective	3
	<b>16</b>

**Third Year**

Fall	Credits	Spring	Credits
GENERAL EDUCATION: (G) Computer Science	3	GENERAL EDUCATION: (D) Fine and Performing Arts	3
GENERAL EDUCATION: (J) Physical Education	1	GENERAL EDUCATION: (F1) Humanities – Great Works and Their Influences	3
World Language II	3	GENERAL EDUCATION: (K2) Social Science – Global Cultural Perspectives	3
Required Elective	3	Required Elective	4
Free Elective	3	Free Elective	3
	<b>13</b>		<b>16</b>

**Fourth Year**

Fall	Credits	Spring	Credits
NUFD 409	3	NUFD 353	3
NUFD 450	3	NUFD 404	3
Free Elective	3	NUFD 452	3
Free Elective	4	NUFD 492	3
		Free Elective	4
	<b>13</b>		<b>16</b>

**Total Credits 120**