

# Department of Nutrition and Food Science (NFSC)

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The mission of the Department of Nutrition and Food Science is to produce qualified graduates capable of serving the region in various areas of food science, nutrition, and dietetics. The department participates in offering courses within the FAFS undergraduate core program and, in addition, offers junior and senior courses that cover areas of major importance in food science, nutrition, and dietetics.

The department offers two three-year programs, one leading to a BS degree in Nutrition and Dietetics, and the other leading to a BS degree in Food Science and Management. Graduates wishing to qualify as professional dietitians must complete the "Dietetics Internship 01936" program by spending 11 months in the dietary department of the AUB Medical Center or at another qualified and approved hospital to acquire practical training in administrative and therapeutic dietetics. Students who intend ultimately to enter the Faculty of Medicine must complete the premedical requirements as outlined in the AUB catalogue Faculty of Arts and Sciences section titled Premedical Study. Graduates of these programs do not receive the Diploma of *Ingénieur Agricole*.

The department offers a graduate program leading to the MS degree in either food technology or nutrition (thesis or non-thesis). The nutrition degree is also offered under the Interfaculty Graduate Nutrition Program. (For more details refer to the Nutrition Program section or the Graduate Studies section in this catalogue).

The following courses are offered by the department:

## Course Descriptions

### Core Courses for the BS Degree in Nutrition and Dietetics

**NFSC 221**                      **Basic Nutrition**    **3.0; 3 cr.**  
Nutritional survey of nutrients, including their food sources, digestion, metabolism, functions, and requirements in humans. *Course offered in fall and spring.*

**NFSC 222**                      **Community Nutrition**    **3.0; 3 cr.**  
The role of nutrition in promoting, maintaining, and improving health in the community. The course discusses methods for discovering community problems and the practical application of nutrition information for improvement of the nutritional status of the population.  
*Prerequisite: NFSC 221.*

- NFSC 240**                      **Nutritional Status Assessment**                      **1.3; 2 cr.**  
Exposes students to the theoretical basis of various aspects of nutritional counseling and assessment (dietary assessment, anthropometric measurement, biochemical assays, and clinical assessment). The course also familiarizes students with nutritional status assessment tools and techniques through practical experimentation in the lab. *Prerequisite: NFSC 221; Pre- or corequisite: NFSC 274.*
- NFSC 261**                      **Introductory Biochemistry**                      **3.0; 3 cr.**  
Chemistry of biological compounds, their enzymatic degradation and intermediary metabolism. *Prerequisite: CHEM 208. Course offered in fall and spring.*
- NFSC 265**                      **Food Chemistry**                      **3.0; 3 cr.**  
Chemical composition, physical and sensory properties of foods. *Prerequisite: CHEM 208.*
- NFSC 267**                      **Food Analysis**                      **1.3; 2 cr.**  
Laboratory methods for chemical analysis of nutrients and chemicals in food products. *Prerequisites: CHEM 205, CHEM 209; Pre- or corequisite: NFSC 265. Course offered in fall and spring.*
- NFSC 274**                      **Human Nutrition**                      **3.0; 3 cr.**  
Human physiological needs for energy, carbohydrates, fats, proteins, vitamins, and minerals; control of nutrient metabolism. *Prerequisites: NFSC 221, NFSC 261, and PHYL 246.*
- NFSC 277**                      **Food Microbiology I**                      **3.0; 3 cr.**  
A survey of microorganisms and their role in causing food spoilage and food poisoning, and the control of microbial spoilage and pathogenic microorganisms in foods.
- NFSC 285**                      **Nutrition in the Life Cycle**                      **2.3; 3 cr.**  
Focuses on the basic nutritional needs of individuals throughout their life cycle: infancy, childhood, adolescence, adulthood, and old age, and special nutritional requirements for pregnancy and lactation. *Prerequisites: NFSC 221 and NFSC 274.*
- NFSC 287**                      **Food Processing**                      **2.0; 2 cr.**  
Technology and processing of foods; includes processing food products in the Pilot Plant. *Prerequisites: NFSC 265, ND III or FSM III.*
- NFSC 289**                      **Food Processing Laboratory**                      **0.3; 1 cr.**  
Laboratory exercises in the Pilot Plant in food preservation and processing. *Corequisites: NFSC 287, ND III or FSM III.*
- NFSC 290**                      **Food Service Management**                      **2.3; 3 cr.**  
Techniques of management of functional operation of food service; training and supervision; field trips, self-study modules, reports, and discussion. *Prerequisites: MNGT 215 and NFSC 221.*
- NFSC 292**                      **Therapeutic Nutrition I**                      **3.0; 3 cr.**  
Examines selected metabolic diseases, HIV, and cancer by covering their etiology, metabolic pathways, and the importance of medical nutrition therapy. *Prerequisites: NFSC 240 and NFSC 274.*
- NFSC 293**                      **Therapeutic Nutrition II**                      **3.0; 3 cr.**  
Process of assessing nutritional status and identifying nutritional needs; nutritional care in various diseases. *Prerequisites: NFSC 274 and NFSC 240.*
- NFSC 294**                      **Therapeutic Nutrition Laboratory I**                      **0.3; 1 cr.**  
Self-study modules, case studies, reports, and discussions of NFSC 292 topics. *Corequisite: NFSC 292.*

<b>NFSC 295</b>	<b>Therapeutic Nutrition Laboratory II</b>	<b>0.3; 1 cr.</b>
Self-study modules, case studies, reports, and discussions of NFSC 293 topics. <i>Corequisite:</i> NFSC 293.		
<b>NFSC 296</b>	<b>Seminar Presentation in Food Sciences and Nutrition</b>	<b>1 cr.</b>
<i>Prerequisite:</i> ND III. <i>Course offered in fall and spring.</i>		
<b>NFSC 298</b>	<b>Dietetics Internship 01936</b>	<b>0 cr.</b>
Training for eleven months in the dietary department of the AUB Medical Center.		
<b>NFSC 299</b>	<b>Special Topics in Nutrition and Food Sciences</b>	<b>2 cr.</b>
Directed study. <i>Prerequisite:</i> ND III.		

### **Core Courses for the BS Degree in Food Science and Management**

<b>NFSC 261</b>	<b>Introductory Biochemistry</b>	<b>3.0; 3 cr.</b>
Chemistry of biological compounds, their enzymatic degradation, and intermediary metabolism. <i>Prerequisite:</i> CHEM 208. <i>Course offered in fall and spring.</i>		
<b>NFSC 265</b>	<b>Food Chemistry</b>	<b>3.0; 3 cr.</b>
Chemical composition, physical and sensory properties of foods. <i>Prerequisite:</i> CHEM 208.		
<b>NFSC 267</b>	<b>Food Analysis</b>	<b>1.3; 2 cr.</b>
Laboratory methods for chemical analysis of nutrients and chemicals in food products. <i>Prerequisites:</i> CHEM 205, CHEM 209; <i>Pre- or corequisite:</i> NFSC 265. <i>Course offered in fall and spring.</i>		
<b>NFSC 272</b>	<b>Introduction to Food Service and Industries</b>	<b>1.3; 2 cr.</b>
An introduction to food service and the food industry. This course explains the food chain system, and describes the food service institutions and the different food industries; also includes visits to different institutions in the food chain. <i>Prerequisites:</i> NFSC 265 and NFSC 277.		
<b>NFSC 277</b>	<b>Food Microbiology I</b>	<b>3.0; 3 cr.</b>
A survey of microorganisms and their role in causing food spoilage and food poisoning, and the control of microbial spoilage and pathogenic microorganisms in foods.		
<b>NFSC 278</b>	<b>Food Microbiology II</b>	<b>2.3; 3 cr.</b>
Microbiological aspects of food preservation; beneficial utilization of microorganisms in food applications; detection of microbial contamination and hazards of importance to public health. <i>Prerequisite:</i> NFSC 277.		
<b>NFSC 280</b>	<b>Summer Training in Food Establishments</b>	<b>1 cr.</b>
Involves students in supervised training in one of the food service institutions or food industries. <i>Prerequisite:</i> NFSC 272.		
<b>NFSC 282</b>	<b>Food Quality Management</b>	<b>2.0; 2 cr.</b>
Basic principles of food quality control, quality assurance, and quality management in food service establishments and food industries; emphasis on modern concepts such as HACCP, ISO 9000, and Good Manufacturing Practices.		
<b>NFSC 287</b>	<b>Food Processing</b>	<b>2.0; 2 cr.</b>
Technology and processing of foods; includes processing food products in the Pilot Plant. <i>Prerequisites:</i> NFSC 265, ND III or FSM III.		

**NFSC 288 Technology of Food Products 2.3; 3 cr.**  
Principle of food spoilage, food preservation, and the different methods of food processing.  
*Prerequisites: NFSC 261, ND III, FSM III or AGR IV.*

**NFSC 289 Food Processing Laboratory 0.3; 1 cr.**  
Laboratory exercises in the Pilot Plant in food preservation and processing. *Corequisite: NFSC 287, ND III or FSM III.*

**NFSC 290 Food Service Management 2.3; 3 cr.**  
Techniques of management of functional operation of food service; training and supervision; field trips, self-study modules, reports, and discussion. *Prerequisites: MNGT 215 and NFSC 221.*

**NFSC 291 Elements of Food Engineering 3.0; 3 cr.**  
Basic concepts and principles of food engineering; emphasis on food handling and unit operations utilized in food processing. *Prerequisites: MATH 204, FSM III.*

**NFSC 296 Seminar Presentation in Food Sciences and Nutrition 1 cr.**  
*Prerequisite: ND III or FSM III. Course offered in fall and spring.*

**NFSC 299 Special Topics in Nutrition and Food Sciences 2 cr.**  
Directed study. Tutorial. *Prerequisite: ND III or FSM III.*

### Elective Course for the BS Degree in Nutrition and Dietetics

**NFSC 220 Food and Nutrition Awareness 3.0; 3 cr.**  
Introduces the discipline of nutrition and assists students in making optimal food choices for better health. *Science elective. Not offered to FAFS students.*

## Graduate Programs

Graduate study programs leading to the MS degree thesis and non-thesis options are offered in two majors: Nutrition and Food Technology. The specific areas of research in Nutrition include clinical nutrition, community nutrition, and food service management. Areas of emphasis for research within the Food Technology major include food processing, sensory and food analysis, food microbiology, and food safety.

**NFSC 300 Graduate Tutorial 1-3 cr.**  
Directed study.

**NFSC 302 Dairy Technology 2.3; 3 cr.**  
The chemistry, technology, and processing of milk and milk products. *Prerequisite: NFSC 288.*

**NFSC 304 Traditional Methods of Food Processing 2.3; 3 cr.**  
Scientific basis of common traditional processing and preservation methods used in the Middle East. *Prerequisite: NFSC 287 or NFSC 288.*

**NFSC 305 Sensory Evaluation of Food 3.0; 3 cr.**  
Designed to help the food scientist solve typical sensory problems; select appropriate panelists for specific sensory tests; and conduct such tests, analyze and interpret the results, and write a report. *Prerequisite: STAT 210 or EDUC 227.*

- NFSC 306**                      **Community Nutrition: Research and Intervention**                      **3.0; 3 cr.**  
Identification and assessment of nutritional status in the community, nutritional surveys, program development, nutritional education planning policies, and nutritional ecology. *Prerequisite: NFSC 221 or NFSC 274.*
- NFSC 308**                      **Advanced Therapeutic Nutrition**                      **3.0; 3 cr.**  
Advances in nutritional care, metabolic changes, and dietary management of diseases. *Prerequisite: NFSC 274.*
- NFSC 310**                      **Advanced Food Biochemistry**                      **3.0; 3 cr.**  
Study of food enzymes, lipid oxidation in foods and biological systems, and genetically modified food. *Prerequisite: NFSC 261.*
- NFSC 311**                      **Advanced Nutrition: Macro Nutrients**                      **3.0; 3 cr.**  
Advances in carbohydrate, protein, lipid, fiber and ethanol nutrition, and metabolism. *Prerequisite: NFSC 274.*
- NFSC 312**                      **Sports Nutrition**                      **3.0; 3 cr.**  
Nutritional needs for the various types of athletic performance, and selected ergogenic and ergolytic supplements as related to physical performance.
- NFSC 314**                      **Advanced Nutrition: Minerals**                      **3.0; 3 cr.**  
Advanced nutritional, biochemical, and physiological aspects of macro- and micro-mineral elements, and toxic elements in humans. *Prerequisite: NFSC 274.*
- NFSC 315**                      **Advanced Nutrition: Vitamins**                      **3.0; 3 cr.**  
Advanced nutritional, biochemical, and physiological aspects of vitamins and vitamin-like substances in humans. *Prerequisite: NFSC 274.*
- NFSC 351**                      **Food Safety: Contaminants and Toxins**                      **3.0; 3 cr.**  
General principles of food toxicology with emphasis on toxic constituents in plant, animal, marine, and fungal origin, contaminants and food processing induced toxins. Risk characterization and laws and regulation of food safety.
- NFSC 370**                      **Food Product Development**                      **3.0; 3 cr.**  
To learn the chemical and physical properties of food ingredients. To apply the product development process from idea generation to marketing. *Prerequisite: NFSC 287.*
- NFSC 371**                      **Food Engineering**                      **3.0; 3 cr.**  
Basic concepts and principles of food engineering and their applications; focus on engineering design and analysis of unit operations common to food processing. *Prerequisite: NFSC 287.*
- NFSC 391**                      **Laboratory Methods in Nutrition and Food Science**                      **1.6; 3 cr.**  
Principles of animal experiments, analytical techniques, and instrumentation used in nutrition and food science research studies. *Prerequisite: NFSC 267.*
- NFSC 395**                      **Graduate Seminar in Nutrition and Food Science**                      **1.0; 1 cr.**
- NFSC 399**                      **MS Thesis**