

**Faculty of
Agricultural and
Food Sciences
(FAFS)**

Faculty of Agricultural and Food Sciences (FAFS)

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Maya Nabhani Zeidan	Director of Continuous Academic Improvement

Coordinator of Graduate Programs

Isam Bashour	Coordinator of Graduate Studies Program
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Historical Background

The MS graduate program at FAFS was initiated in 1956. The program aims to offer specialized training in a variety of fields in food and agriculture and to prepare students for further studies in Europe and North America. The first MS degree in Horticulture was granted in 1958 and the first MS in Food Technology in 1959. Since then, FAFS has continued to adapt its graduate programs to meet the needs of an evolving regional demand. An MS in Nutrition was introduced in 1963, and the first degree was granted in 1965. An MS in Ecosystem Management, a major of the interfaculty MS in Environmental Sciences, has been offered since 1997. FAFS currently offers MS specialization in animal science, poultry science, agricultural economics, irrigation, plant protection, plant science, nutrition, public health nutrition, food technology, food safety, ecosystem management, rural community development and food security. FAFS also offers a non-degree Food Security Graduate Diploma - Online.

Mission

The mission of FAFS is to foster the sustainable enhancement of the health and well-being of people and nature throughout Lebanon and the region. To achieve its goals, the faculty uses basic and applied research as well as student-centered learning to prepare leaders and agents of change to address issues of local and global relevance at the nexus of human nutrition, food security and the sustainable use of resources.

Vision

FAFS is a reference academic center specialized in issues of agriculture, food, nutrition and the environment for the enhancement of livelihoods, human health and well-being, as related to the Middle East.

Graduate Study

The faculty offers the MS degree, with or without thesis, in the following majors which include animal science, poultry science, agricultural economics, irrigation, plant protection, plant science, nutrition, food safety and food technology. The faculty offers an MS in Environmental Sciences (MSES), major: Ecosystem Management (ECOM) as part of an Interfaculty Graduate Environmental Sciences Program (IGESP) and offers an Interfaculty Graduate Nutrition Program (GNP). The faculty also offers two interdepartmental graduate programs: an MS in Rural Community Development (RCOD) and an MS in Food Security. MS in Public Health Nutrition is a new graduate program offered jointly by the Faculty of Agricultural and Food Sciences (FAFS) and the Faculty of Health Sciences (FHS).

Students following a thesis program are required to take a minimum of 21 graduate level course credits plus a thesis (equivalent to 9 credits). Exceptionally, students pursuing an MS in Ecosystem Management or Food Security are required to take a minimum of 24 graduate level course credits plus a thesis (equivalent to 6 credits); students pursuing an MS in Rural Community Development are required to take a minimum of 27 graduate level course credits plus a thesis (equivalent to 6 credits); students pursuing the MS in Public Health Nutrition are required to take a minimum of 34 graduate level course credits plus a thesis. The thesis program may include a maximum of 3 tutorial course credits. Core regular courses should constitute a minimum of 12 credits excluding seminars and tutorials and a minimum of 15 credits in the case of ECOM, with graduate elective courses to be determined under the supervision of an advisor. A student following a non-thesis program is required to take a minimum of 27 graduate level course credits. The program should include a minimum of 3 credits and a maximum of 6 tutorial credits with at least 12 credits being from core courses in the major. In the case of Ecosystem Management, a minimum of 27 graduate level course credits is required in addition to a 3 credit project.

By the end of the 1st year, the student would have had ample time to know the various specialties within his or her program and to become familiar with the professors and their concentrations. In addition, the student would have taken the needed foundational courses necessary to make an informed decision about his/her research focus.

Rules and regulations for graduate programs are given in the Admissions section of this catalogue and include details about the Environmental Sciences Program. Information is also available in the FAFS Graduate Study Manual. Changes made after the publication of this catalogue will be made available through academic advisors. FAFS also offers a non-degree Food Security Graduate Diploma - Online. Details of this program are provided below.

Graduate Research Requirements

Research Plan

- Every graduate student is expected to present his/her research plan and to have a thesis committee meeting by the end of the first year of joining FAFS.
- Thesis students will have to register for FAFS 300 (0 cr.) in the second semester. This course will guide them in their research proposal write-up and plan.
- The proposal defense will allow the student (by the start of the third semester at the latest):
 - To have a clear plan of his/her research journey.
 - To vet the research objectives and methodology with his/her committee members.
 - To take the Proposal Review exam. The grade of a successful exam will be a Pass (P/F).

Thesis Committee Meeting (before the Thesis Defense)

A thesis committee meeting is to be held one semester before graduation. This meeting will outline the up-to-date progress and challenges and the expected outcome of the thesis. This meeting can be combined with the comprehensive exam.

Thesis/Non-Thesis Data Handling

It is expected that the student delivers a data notebook, with an electronic version of the thesis data, to the major professor before graduation. A data notebook is to be examined by the major professor for proper research conduct. The above applies to the project/tutorial data of non-thesis students.

Thesis Format/Manuscript Submission

Every thesis-track graduate student is expected to prepare a manuscript/paper for submission to a peer-reviewed journal. Accordingly, students are expected to prepare their thesis in a manuscript format.

With regards to its length, the whole thesis, excluding references, appendices and all other supportive material for the thesis will include:

- A shorter literature review compared to the regular, non-manuscript format, thesis.
- A typical manuscript length for the materials and methods and results and discussion sections.
- A formatting change would be needed to make the thesis/manuscript compatible with the relevant journal formatting requirements.
- By the time of graduation, the student need to ensure that the manuscript is at least submitted for peer-review journal of relevance to the research topic/field of studies.

PhD Program

A PhD program in Biomedical Sciences/Nutrition is offered in collaboration with the Faculty of Medicine. For more information, see Faculty of Medicine and Medical Center (FM/AUBMC) page 506.

Food Security Program

Director:	Zurayk, Rami
Food Security Program Executive Committee:	Bahn, Rachel ¹ ; Chalak, Ali; Ghattas, Hala; Hamadeh, Shady; Jaafar, Hadi; Nasreddine, Lara; Tell, Tariq; Zurayk, Rami (Chair)

Mission

The Food Security Program aims to promote food security through education, research, community action and policy-oriented professional practice. The program pursues a holistic approach to the many aspects of food security, including nutritional health, agricultural production, economic development, environmental sustainability and socio-cultural considerations. The program educates a new generation of leaders in the Middle East and North Africa and throughout the Arab world, preparing graduates to address the vital issue of food security in an interdisciplinary and hands-on fashion.

Through its Food Security Program, the Faculty of Agricultural and Food Sciences offers a Master of Science in Food Security as well as a non-degree Food Security Graduate Diploma - Online.

Graduate Programs

The Faculty of Agricultural and Food Sciences offers two graduate-level programs of study through the Food Security Program, leading to an MS in Food Security or the Food Security Graduate Diploma - Online. Both programs address the multiple dimensions of food security by drawing on key disciplines including agriculture, nutrition and development economics.

MS in Food Security

Requirements

The MS in Food Security requires completion of a total of 30 credits, including six required courses. Candidates for the MS in Food Security have the option of selecting a thesis or non-thesis program of study. Thesis students must complete 15 credits of required core courses, 9 credits from approved elective courses (at least 6 credits within FAFS) and 6 credits of thesis. Non-thesis students must complete 15 credits of required core courses, 12 credits from approved elective courses (at least 6 credits within FAFS), and 3 credits of project. In addition, all students must pass a comprehensive examination.

¹) on leave

Students may opt to earn a further specialization in one of the following three areas: rural development; economics and policies; or food production and consumption. For thesis students, specialization is earned through completion of two FAFS electives in the desired focus area of the thesis. For non-thesis students, specialization is earned through completion of three FAFS electives in the desired focus area of the project.

Required Courses		Credits
FSEC 300	Food Security: Challenges and Contemporary Debate	3
FSEC 305	Agriculture: Technology, Supply Chains, Sustainability	3
FSEC 310	Nutrition Security: Assessment and Intervention Strategies	3
FSEC 315	Food Policies and their Planning Process	3
FSEC 320	Graduate Seminar in Food Security	0
AGSC 301 / NFSC 301	Statistical Methods in Agriculture	3
FSEC 396	Comprehensive Exam	0
FSEC 397 or 399	Project or MS Thesis	3 or 6

Elective Courses:

The following list reflects suggested elective courses that have been offered in recent terms, and is illustrative only. An updated list of suggested electives is provided to enrolled students on a term-by-term basis. The listing and availability of elective courses is subject to change based on course offerings.

Approved Electives:		Credits
Rural Development Specialization		
AGSC 384/ NFSC 301	Political Economy of Middle East Development	3
NFSC 306	Community Nutrition: Research and Intervention	3
RCOD 341	Rural Community Development: Theories, Debates and Challenges	3
RCOD 342	Qualitative Methods	4
Economics and Policies Specialization		
AGSC 376	Resource and Environmental Economics	3
AGSC 389	Research Methods in Applied Economics	3
ENSC 342	Options and Derivatives Instruments	3
ENSC 630/ LDEM 630	Natural Resource Management	3
FSEC 306	Indicators and Tools for Measuring Food Security	3
PPIA 301	Public Policy	3
PPIA 305	Economics for Public Policy	3

Economics and Policies Specialization		
PPIA 309	Evidence, Policy and Communication	3
PSPA 316	International Environmental Policy	3
PSPA 352	Foundations of Public Policy	3
PSPA 361	Public and Non-Profit Program Evaluation	3
Food Production and Consumption Specialization		
AGSC 389	Research Methods in Applied Economics	3
CIVE 648	Climate Change and Water Resources	3
LDEM 635/ ENSC 635/ PSPA 346A	Political Ecology of Water	3
NFSC 351	Food Safety: Contaminants and Toxins	3

Course Descriptions

AGSC 301 Statistical Methods in Agriculture 2.3; 3 cr.
An investigation of the statistical techniques needed to design experiments and analyze and interpret agricultural research data. *Prerequisites: STAT 210 or EDUC 227, and CMPS 209. Fall and Spring.*

FSEC 300 Food Security: Challenges and Contemporary Debate 3.0; 3 cr.
This course introduces concepts and principles of food security, namely availability, accessibility, utilization and stability of food supply. Students are familiarized with the history of thought on food security, from Malthus to the Green Revolution to Sen and the inclusion of political and social factors in considering food security.

FSEC 305 Agriculture: Technology, Supply Chains, Sustainability 3.0; 3 cr.
This course provides an understanding of sustainable agricultural production through a value chain approach as it relates to production and productivity, water and soil management, technology and post-harvest practices; with special application to the dry lands of the Middle East North Africa region.

FSEC 306 Indicators and Tools for Measuring Food Security 3.0; 3 cr.
This course introduces tools and datasets that are of importance to analyze the different elements (availability, access, utilization and stability) of food and nutrition security. Students are familiarized on how to use and interpret internationally state-of-the-art datasets. Students gain a critical perspective on data availability and gaps that will equip them with applied knowledge for future work in the field. The datasets and tools introduced cover population, agricultural production, economic, environmental, health and nutrition.

FSEC 310 Nutrition Security: Assessment and Intervention Strategies 3.0; 3 cr.
This course introduces students to basic principles of nutrition security, community nutrition and nutritional ecology; and highlights the role that nutrition plays in improving the health and wellbeing of communities. The course aims to equip students with the knowledge and skills required to conduct population-based nutrition research, assess the nutrition needs of a population, to plan, implement and evaluate community nutrition programs and policies based on evidence-based practice and taking into consideration cultural, social and contextual dimensions.

FSEC 315	Food Policies and their Planning Process	3.0; 3 cr.
This course builds knowledge of the food system from local planning, and policy and applied economic perspectives. The course familiarizes students with key players and issues related to the practice of food system planning (the process and practice of creating and implementing food policies), how this practice interfaces with the economy and how to place these issues in a global context.		
FSEC 320	Graduate Seminar in Food Security	0 cr.
This course provides a forum for exchange of experiences and knowledge sharing. Students will participate in field trips, complete individual tasks and projects related to food security issues in the Middle East North Africa and the broader developing country context, and present and discuss findings.		
FSEC 396	Comprehensive Exam	0 cr.
FSEC 397	Project	3 cr.
FSEC 399	MS Thesis	6 cr.

Food Security Graduate Diploma – Online

The Food Security Graduate Diploma – Online offers a multi-disciplinary perspective and area of study. This program is designed for working professionals and future leaders who are looking for a career-transforming opportunity that explores the areas of food security, agricultural production, nutrition security, and public policy and development programming. The Food Security Graduate Diploma – Online is delivered in a flexible, fully online format.

Those students who wish to extend their course of study can transfer up to 12 credits (four courses) that have been successfully completed under the Food Security Graduate Diploma towards the MS in Food Security degree program.

Requirements

The Food Security Graduate Diploma – Online requires completion of a total of 12 credits, divided across four required courses.

Required Courses		Credits
FSEC 300D	Food Security: Challenges and Contemporary Debate	3
FSEC 305D	Agriculture: Technology, Supply Chains, Sustainability	3
FSEC 310D	Nutrition Security: Assessment and Intervention Strategies	3
FSEC 315D	Food Policies and their Planning Process	3

Course Descriptions

FSEC 300D Food Security: Challenges and Contemporary Debate 3.0; 3 cr.

This course introduces concepts and principles of food security, namely availability, accessibility, utilization and stability of food supply. Students are familiarized with the history of thought on food security, from Malthus to the Green Revolution to Sen and the inclusion of political and social factors in considering food security.

FSEC 305D Agriculture: Technology, Supply Chains, Sustainability 3.0; 3 cr.

This course provides an understanding of sustainable agricultural production through a value chain approach as it relates to production and productivity, water and soil management, technology and post-harvest practices; with special application to the dry lands of the Middle East North Africa region.

FSEC 310D Nutrition Security: Assessment and Intervention Strategies 3.0; 3 cr.

This course introduces students to basic principles of nutrition security, community nutrition and nutritional ecology; and highlights the role that nutrition plays in improving the health and wellbeing of communities. The course aims to equip students with the knowledge and skills required to conduct population-based nutrition research, assess the nutrition needs of a population, to plan, implement and evaluate community nutrition programs and policies based on evidence-based practice and taking into consideration cultural, social and contextual dimensions.

FSEC 315D Food Policies and their Planning Process 3.0; 3 cr.

This course builds knowledge of the food system from local planning, and policy and applied economic perspectives. The course familiarizes students with key players and issues related to the practice of food system planning (the process and practice of creating and implementing food policies), how this practice interfaces with the economy and how to place these issues in a global context.