Faculty of Agricultural and Food Sciences
Healthy Earth, Healthy Food, Healthy People

FAFS Undergraduate Manual 2016–17

Table of Contents

Letter from the Dean of FAFS

"Advances in medicine and agriculture have saved vastly more lives than have been lost in all the wars in history."

Carl Sagan (1934–96)

Welcome to the Faculty of Agricultural and Food Sciences (FAFS) at the American University of Beirut. Established in 1952, FAFS has continuously educated a growing number of students using a learner-centered approach to meet the needs of a changing world. Over the years our faculty has addressed through teaching, research, and service, challenges facing rural societies and has tackled issues of global interest related to the food industry, the natural environment, and nutrition, all aiming at enhancing the health and wellbeing of society.

FAFS is organized into three departments that offer outstanding undergraduate and many graduate programs in various disciplines. The departments of Agriculture, Landscape Design and Ecosystem Management, and Nutrition and Food Sciences currently offer six undergraduate degrees. These are in Agribusiness, Agriculture, Food Science and Management, Landscape Architecture, Nutrition and Dietetics and Nutrition and Dietetics Coordinated Program.

At FAFS, we promote interdisciplinary educational programs and we encourage students to think holistically outside narrow disciplines and seek collaboration and partnership with other faculties. This is evident in our interfaculty programs and in the collaborative research we conduct. We have two graduate interfaculty programs; a nutrition program leading to an M.Sc. degree in collaboration with the Faculty of Medicine and the Faculty of Health Sciences, and an ecosystem management program leading to an M.Sc. degree in collaboration with the Faculties of Engineering and Architecture, Medicine, Health Sciences, and Arts and Sciences.

Our campus is a green landmark situated in the center of Beirut, overlooking the Mediterranean Sea and encompassing a rich history and legacy. The campus offers excellent facilities for teaching and research, including well-equipped classrooms, design studios, and laboratories. Hands-on experience is integral to all our programs, and we strive to connect our students to out-of-classroom activities that can truly prepare them for their working lives. FAFS has an additional facility, the Agricultural Research and Education Center (AREC) in the Beqa'a valley, where students enrolled in the agriculture science and Landscape Architecture programs spend their residency requirements. The AREC campus is also used as an advanced Research and Development center serving Lebanon, the Middle East, and North Africa.

With Best Regards,

Nahla Hwalla
Professor and Dean
Faculty of Agricultural and Food Sciences

Historical Background

Historical Background

Basic university-level courses in agriculture were offered by the School of Arts and Sciences at AUB as early as 1914. Between the 1930s and 1940s, the University fulfilled its commitment to improving the livelihood of the poor through the creation of the Institute of Rural Life. The Institute brought together students and faculty from various university schools and departments to implement improvement projects in rural health, education, and farming. The School of Agriculture was established in 1952, along with the Advancing Research, Enabling Communities (AREC), a 100-hectare facility located the Bekaa, 80 km from the main AUB campus. The School offered a four-year program leading to a BS degree in Agriculture and the Diploma of Ingénieur Agricole, and also a one-year Technical Vocational Training (TVT) course, from 1956 to 1971, aimed at government extension agents. These programs contributed greatly to building the capacity of agricultural scientists and technicians from the Middle East region. A graduate program leading to the MS in Agriculture was initiated in 1956.

The importance of food and nutrition and their linkage to agriculture was recognized in the late seventies. The school, which had become the Faculty of Agricultural Sciences in 1958, was renamed the Faculty of Agricultural and Food Sciences (FAFS) in 1979, and a three-year BS program in Nutrition and Dietetics (NTDT) was initiated in 1980. An eleven-month Dietary Internship program was established at the AUB Medical Center in 1983. The programs proved very successful and grew rapidly to become a significant component of FAFS. Global and regional changes in the role and functions of agriculture, nutrition and food created a demand for new courses. FAFS responded by launching several new programs. The BS program in Landscape Design and Eco-Management was started in 2000 and reflected the mounting significance of landscape and environmental issues. The BS program in Food Sciences and Management was launched in October 2002 in response to the rapid expansion of the agrifood industry in Lebanon and in the region. Lastly, the importance of entrepreneurship and the need to develop efficient and effective food value chains in the region led to the initiation of the Agribusiness program in February 2009.

Mission

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.

FAFS Faculty and Staff Members

A. List of Faculty Advisers

Table 1. List of Faculty Advisers

Name	Title	Office	Ext	e-mail
Agriculture Major				
Abou Jawdah, Yusuf	Professor	504 W.B	4483	abujawyf@aub.edu.lb
Barbour, Elie	Professor	306 W.A	4460	eb01@aub.edu.lb
Bashour, Issam	Professor	516 W.B	4579	ib02@aub.edu.lb
Farran, Mohammad	Professor	321 W.A	4450	mf02@aub.edu.lb
Haidar, Mustapha	Professor	515 W.B	4492	mhaidar@aub.edu.lb
Hamadeh, Shady	Professor, Chairperon	323 W.A	4458	shamadeh@aub.edu.lb
Jaafar, Hadi	Assistant Professor	517A W.B	4501	hj01@aub.edu.lb
Prattis, Suzan M.	Assistant Professor	305 W.A	4451	sp07@aub.edu.lb
Agribusiness Major				
Abebe, Gumataw Kifle	Assistant Professor	120 Reynolds	4511	ga81@aub.edu.lb
Chalak, Ali	Associate Professor	122 Reynolds	4502	ac22@aub.edu.lb
Chaaban, Jad	Associate Professor	124 Reynolds	4442	Jc11@aub.edu.lb
Landscape Architecture Major				
Abunnasr, Yaser	Assistant Professor	224 Reynolds	4548	ya20@aub.edu.lb
Al-Akl, Nayla	Assistant Professor	221 Reynolds	4457	na143@aub.edu.lb
Madani, Mehran	Assistant Professor	217 Reynolds	4507	mm189@aub.edu.lb
Talhouk, Salma	Professor	216 Reynolds	4508	ntsalma@aub.edu.lb

Name	Title	Office	Ext	e-mail
Trovato, Maria Gabriella	Assistant Professor	219 Reynolds	4494	mt63@aub.edu.lb
Zurayk, Rami	Professor, Chairperson	215 Reynolds	4571	rzurayk@aub.edu.lb
Nutrition and Dietetics and Nutrition and Dietetics-Coordinated Program Majors				
Chamieh, Marie Claire	Lecturer	415 W.B	4484	mc31@aub.edu.lb
El-Halabi, Dima	Instructor	416 W.B	4584	de18@aub.edu.lb
Gholmie, Yara	Instructor	416 W.B	4585	yg03@aub.edu.lb
Jomaa, Lamis	Assistant Professor	405 W.B	4544	lj18@aub.edu.lb
Nasreddine, Lara	Associate Professor, Chairperson	413 W.B	4547	ln10@aub.edu.lb
Naja, Farah	Associate Professor	407 W.B	4504	fn14@aub.edu.lb
Obeid, Omar	Professor	409 W.B	4440	oo01@aub.edu.lb
Kharroubi, Samer	Associate Professor	302 W.A	4541	sk157@aub.edu.lb
Food Science and Management Major				
Abiad, Mohamad	Assistant Professor	309 W.A	4412	ma192@aub.edu.lb
Diryan, Basma	Instructor	418 W.B	4550	bd00@aub.edu.lb
Olabi, Ammar	Associate Professor	315 W.A	4500	ao01@aub.edu.lb
Toufeili, Imad	Professor	301 W.A	4551	toufeili@aub.edu.lb

W.A: Wing A; W.B: Wing B.

B. Supporting Staff

Table 2. Name of FAFS Student Section Staff

Name	Title	Office	Ext	e-mail
Nabhani, Maya	Director of Continuous Academic Improvement	101 W.A	4406	mn66@aub.edu.lb
Haddad, Tharwat	Student Records Officer	103a W.A	4424	thhaddad@aub.edu.lb
Koubayssi, Rabia	Assistant for Student Services	103 W.A	4408	rk09@aub.edu.lb

Registration Information

Registration Information

The academic year at AUB is divided into two semesters, fall and spring, followed by a summer session.

A. Course Registration for New Students

Students, can web register from home via the internet, from the campus public computer lab, or from assigned labs.

To register, students should

- Go to the AUB webpage, http://www.aub.edu.lb
- Log in to AUB Student Information System (AUBSIS)
- Find the name of primary and secondary adviser (Student Record/ Adviser)
- Go to the adviser's office for advising in relation to appropriate courses to be registered and for getting the allocated pin number from your adviser during the advising period (the alternate pin is different from the pin used to log in to AUBsis).
- Plan your schedule ahead of time with your adviser
- Keep a list of the Course Registration Number (CRN) courses you want to register
- Using Add/Drop/Withdraw Classes, you will be able to add all the courses with one click

B. Course Registration for Currently Enrolled Students

All currently enrolled students will register before the end of each semester for the upcoming academic semester. The registrar announces all registration dates via e-mail. ID card renewals for new and continuing students are available in Fisk Hall, Ground Floor, Ext: 2376/7.

C. Registration Tips

Here is what any of these phrases you may face during registration means:

- Disabled Pin Code Message: Means that you entered your AUBSIS password three times incorrectly. In order to reset your AUBSIS password, you should contact the Office of the Registrar at Ext. 2580.
- Prerequisite Test Score Error: Means you need to take the prerequisite or register the co-requisite course.
- Time Conflict: Means you need to select another time or section.
- Closed Section: Means capacity is not available in the selected section.

In case no places are available, write your name in the waiting lists available in the FAFS Dean's Office-Students Section for courses offered at FAFS or register in the wait list sections for courses offered by other AUB faculties.

- Class Restriction: Means that you are not yet promoted to the required class.

- Major or College Restriction: Means that you need special approval from the chair of the department or the faculty committee.
- Registering Error: Means this course needs to be assigned by the corresponding department; for example, ARAB 201A cannot be registered by you unless you have taken the Arabic Placement Test (APT) at the Arabic Department. To know the exact dates and times of the APT, check the Department of Arabic and Near Eastern Languages Website: http://www.aub.edu.lb/fas/arabic/Pages/index.aspx.

D. Late Registration

Students unable to register at the scheduled time will be permitted to register during a period of no more than five working days after the announced deadline, but subject to a late registration fee of $100.

E. Cross Registration

Students Enrolled at AUB Taking Courses at Other Universities: A student studying at the American University of Beirut may be allowed to cross-register for a course at other specific institutions (such as Balamand, Haigazian, LAU, NDU, etc....) if all of the following conditions are met:

- The course is required by AUB.
- The course is not offered at AUB during the semester at the end of which the student expects to graduate.
- The course in which the student intends to cross-register is equivalent to a course that AUB offers. (The number and title of each of the two equivalent courses should be clearly indicated.)
- The chairperson of the department in which the student is majoring sends to the registrar a written statement confirming that all of the conditions listed above have been met.
- The registrar authorizes the student to cross-register; the student submits authorization to the concerned institution.

F. Auditors

Students who wish to audit courses must secure the approval of the professor who is teaching the course they wish to audit and should pay fees due to the Comptroller's Office. Auditors are not issued student identity numbers and the University does not provide them with university identity cards.

G. Elective Courses

Candidates for the degree of **BS in Agriculture** (AGRI) must complete 9 credits of elective courses offered by FAFS, 12 credits in humanities and 3 credits in social sciences.

Candidates for the degree of **Bachelor of Landscape Architecture (BLA)** must complete 9 credits of elective courses offered by FAFS, 6 credits in humanities, 6 credits in social sciences and 3 credits in the natural sciences.

Candidates for the degree of **BS in Nutrition and Dietetics** (NTDT)/**BS in Nutrition and Dietetics-Coordinated Program (NDCP)** must complete 12 credits in humanities.

Candidates for the degree of **BS in Food Science and Management** (FSMT) must complete 12 credits in humanities.

Candidates for the degree of **BS in Agribusiness** (AGBU) must complete 12 credits in humanities.

H. General Education

AUB is committed to offering its students a broad undergraduate liberal arts education that enables them to acquire the analytical skills and habits of lifelong learning that they will need to compete successfully in the twenty-first century. The General Education (GE) distribution requirements are intended to expose students to a range of intellectual experiences during their time at AUB. We want to give our students the opportunity to make choices and to question and test what they believe are their career goals and their intellectual interests.

All AUB students must take a minimum of 33-36 credits from the list of approved GE courses distributed as follows:

- 3 credits in Arabic Communication Skills (exempted students must take a humanity course in its place, but first they need to fill out the Arabic exempt form https://dl.dropboxusercontent.com/u/27208501/Arabic _Exemption_Form.pdf) and submit it to the Registrar's Office before registration).
- 3-6 credits in English Communication Skills through English 204. Students who are exempted from ENGL 203 can substitute this course by any 3-credit free elective.
- 12 credits in humanities (two humanities courses from Humanities List I and two humanities courses from either Humanities List I or II. No more than two courses from the student's major may fulfil the humanities requirement.).
- 6 credits in social sciences (one social sciences course from Social Sciences List I and one social sciences course from either Social Sciences List I or II. No more than one course from the student's major may fulfil the social sciences requirement).
- 6 credits in natural sciences (no more than one course from the student's major may fulfil the natural sciences requirement).
- 3 credits in a quantitative thought course.

The list of approved General Education courses will be updated regularly on the Registrar's Office website: http://www.aub.edu.lb/units/general-education/courses/Pages/default.aspx .

I. Minors at FAFS

- ***The Nutrition and Food Sciences Department*** offers two minors: A **minor in Nutrition and Dietetics**, and a minor **in Food Sciences and Management**, with a minimum of 16 credits/program.

  Students already working on a bachelor's degree outside Nutrition and Dietetics (NTDT) or Food Sciences and Management (FSMT), and who wish to obtain a minor in NTDT or FSMT, must apply to the relevant minor before taking any course in the requested minor. The Department of Nutrition and Food Sciences evaluates all applicants for a minor and makes recommendations to the Academic and Curriculum Committee (ACC).

  A student is eligible to be considered for a minor in either major after completing 24 credit hours in his/her major with a cumulative grade average of 75.

  The courses required for a minor in **Nutrition and Dietetics** are NFSC 221, NFSC 222, NFSC 240, NFSC 265, NFSC 274, NFSC 285 and NFSC 281. Additional courses may be required from Agriculture and Food Sciences and Management students to replace required courses common to the major and minor, and/or to fulfill pre-requisite courses.

  The courses required for a minor in **Food Sciences and Management** are NFSC 265, NFSC 278, NFSC 282, NFSC 288, MNGT 215, and MKTG 210. Additional courses may be required from Agriculture and Nutrition and Dietetics students to replace required courses common to the major and minor, and/or to fulfill pre-requisite courses.

- ***Minor in Agribusiness:*** The courses required for a minor in Agribusiness are AGBU 210, AGBU 213, AGBU 229 or AGBU 236, AGBU 239, AGBU 240, AGBU 248 and AGBU 292.
- ***Minor in Food Systems:*** This interdisciplinary minor in Food Systems equips students with the knowledge and skills required to develop a comprehensive view and understanding of the different yet interdependent stages of food systems including food production, processing, marketing, distribution, and consumption. Eighteen credit hours are required; 3 credits of each of the majors listed below: NFSC 220, NFSC 252, LDEM 211, AVSC, 220, AGSC 203 and AGBU 210.

J. Transfer to another faculty

A student who wishes to transfer to another faculty must take at least 50% of his/her courses at FAFS.

Students are given two academic semesters to transfer to the desired major. If, by the end of the second semester, the student does not secure acceptance to the desired major, s/he is dropped from the Faculty.

K. Transfer of Courses

Transfer of basic science courses taken at AUB with a minimum grade of 60 is allowed if these are also required courses in the core programs of FAFS. A minimum grade of 70 is required for transfer of elective courses. Students wishing to transfer one or more required or elective courses should submit a written request to the Academic and Curriculum Committee: (http://www.aub.edu.lb/fafs/fafs_home/Documents/credit-transfer-form.pdf).

L. Course Load

To be considered full-time, a student must be registered for a minimum load of 12 credits per semester (excluding summer). Students can normally register for up to 17 credits per semester and 9 credits during the summer term. Students who wish to register for more than 17 credits should submit an online undergraduate petition to the Undergraduate Academic and Curriculum Committee (UACC) for approval https://fafsapps.aub.edu.lb/FAFSPetitions/StdForms/login.aspx?ReturnUrl=%2fFAFSPetitions.

During the Drop and Add Period, students should not be below 12 credits. If for any reason a student is left below 12 credits an online undergraduate petition should be filled in and submitted to the UACC for approval. Petitions will be denied if credits are below 11 and with no valid reason. Students cannot withdraw, or be withdrawn, from a course after the announced deadline unless approved by the UACC through an online undergraduate petition that should be submitted to the UACC for approval https://fafsapps.aub.edu.lb/FAFSPetitions/StdForms/login.aspx?ReturnUrl=%2fFAFSPetitions. Students who withdraw will receive a grade of **"W."**

M. Payment of Tuition and Fees

Guidelines for payment of fees

- Bursary students should go in person to the Office of Student Affairs to collect their statements of fees and finalize their registration.
- Fees are paid by certified checks only; checks should be issued to the order of the bank concerned according to the following format: **"**Pay to the order of (name of bank) Account AUB.**"** The value of the check should be the exact amount shown on the statement of fees.
- Students, who are sponsored by foundations and institutions such as Hariri, are faculty or staff dependents, graduate assistants, and student staff members (including students with zero or credit balance on their statement of fees) should go in person to the Comptroller's Office (Student Accounts Section) to finalize their registration.
- Once you have completed your registration including payment of fees, no further changes in your schedule will be allowed until the Drop and Add Period.
- Students wishing to add courses during the Drop and Add Period should report to the Student Accounts Section, Comptroller's Office, College Hall, as soon as their courses are registered in order to pay any additional fees that may result from the adjustments that they introduced to their schedules.

- Failure to pay the additional fees within a period of fourteen days beginning with the last day of Drop and Add will result in the student's being dropped from the added course(s). The student will still be obliged to pay the fees due, including the tuition for the added credits.

Academic Advising

Academic Advising

Each student has an academic adviser who must approve the student's course schedule each semester and personally provide his/her advisee with an alternate pin code for registration. Students must consult their primary/secondary adviser first; if they encounter academic problems, they consult with the Academic Advising Coordinator at FAFS. The academic adviser helps the students in registration and course selection. Advisers maintain their relationship until the students graduate or change their majors. Student services staff are also available in the FAFS Dean's Office to assist students with problems related to registration, evaluation, and other matters. For problems of a personal nature, university counselors are also available for help. General advising hints include the following:

- Students who are exempted from ENGL 203 can substitute any 3-credit free elective for this course.
- Students who are exempted from Arabic, can substitute any 3-credit humanity elective for this course. Students who opt not to sit for the Arabic Placement Test (APT is optional) will have to register in ARAB 201B or any course 211 or above (ARAB 213, 214, 217 and 218 are excluded).
- Students who have BACC II Humanities or French BACC II Philo should take MATH 203 as prerequisite for MATH 204.
- FAFS students must take 12 credits in humanities (two humanities courses from Humanities List I and two humanities courses from either Humanities List I or II). Humanities courses lists are posted on the FAFS Website and Registrar's Website: http://www.aub.edu.lb/units/general-education/courses/Pages/default.aspx.

Academic Misconduct

Academic Misconduct

In principle, enforcement of disciplinary actions for academic violations is carried out by those immediately responsible.

It is the responsibility of the faculty to uphold university policies. Thus, the immediate responsibility for dealing with instances of cheating, plagiarism, and other academic violations rests with the faculty member. If a faculty member has good reason to believe that a student has violated academic standards, it is his/ her responsibility to discipline the student expeditiously. A faculty member who has good reason to believe that a student has violated academic standards must give a grade of zero on the exam or assignment where the violation occurred.

When the instructor has taken the initial disciplinary action, he/she should send a letter to the Office of the Dean of the faculty or school in which the incident occurred, informing him/her of the incident and the initial action he/she has taken. A copy of the letter will be placed in the student's file, and another copy forwarded to the student's adviser for follow-up.

A. Cheating

Students who use non-permissible written, verbal, or oral assistance, including that obtained from another student during examinations, in course assignments, or on projects, are guilty of cheating. The unauthorized possession or use of examination or course-related material may also constitute cheating. Cheating is essentially fraud. It deceives others and causes them to make an assessment based on the misinterpretation of a student's actual ability or performance. Cheating is a violation of the University's academic regulations and is subject to disciplinary action.

B. Plagiarism

Students who fail to credit properly ideas or materials taken from others commit plagiarism. Putting your name on a piece of work, any part of which is not yours, constitutes plagiarism, unless that piece is clearly marked and the work from which you have borrowed is fully identified. Plagiarism is a violation of the University's academic regulations and is subject to disciplinary action.

All AUB students are required to complete a plagiarism tutorial and pass a plagiarism test during the first semester they join the University. You can reach the "Plagiarism Test" by following this path:

- AUB Homepage
- A-Z
- Academic Core Processes and Systems (ACPS)
- Services
- Plagiarism Prevention
- The Plagiarism Tutorial and Test

You can take the test as many times as necessary. When you achieve 100 percent on the test a notification will be generated and saved in your files in the Office of the Registrar. This notification will become part of your permanent record as evidence of your understanding of plagiarism and how to recognize it. Failure to pass the plagiarism test will prevent your registration for the next semester at AUB.

C. Student Disciplinary Procedures

Students charged with violations of academic regulations or misconduct must be informed of the nature of the charges in writing and the nature of evidence against them. The University must not be arbitrary in its decisions to discipline students and must always provide the opportunity for students to appeal any disciplinary sanction. When disciplinary decisions are rendered, students must be provided with the procedural guidelines for appeal. Whenever possible, except for reasons related to the mental or physical safety or well-being of the student or others on the campus, a student's status, including the right to attend classes, participate in university activities, or use university facilities, should not be altered pending disciplinary action.

Individual faculties and schools establish and approve their own regulations for academic misconduct. Misconduct outside the classroom is handled by the Dean of Student Affairs. Cases of serious misconduct and violation of university rules and regulations may be referred to the University Disciplinary Committee.

D. Dean's Warning

The Dean's Warning will be in writing. Only two Dean's Warnings are allowed in a student's academic career at AUB. It is recommended that any violation of university regulations after the second Dean's Warning results in consideration of suspension. Cases whereby the Student Affairs Committee (SAC) recommends suspension or expulsion should be referred to the University Disciplinary Committee.

Examples: Plagiarism, academic dishonesty, disruption-obstruction, in-class disruption, mental or physical harm, discrimination, and harassment.

- A student who receives a Dean's Warning shall not be placed on the Dean's Honor List.
- A student who accumulates three Dean's Warnings shall be expelled from the faculty.
- Dean's Warnings shall appear on the academic transcript of the student. The student may petition the dean to have the Dean's Warning removed from the transcript after not being subject to any other disciplinary action for at least three regular terms following the term during which he/she received the first Dean's Warning.

Academic Rules and Regulations

A. Grading System

In FAFS, the following grading system is used.

CAV*	GPA	CAV*	GPA	CAV*	GPA	CAV*	GPA
<60	0	67	1.86	75	2.73	83	3.46
60	1	68	1.98	76	2.82	84	3.54
61	1.13	69	2.09	77	2.92	85	3.63
62	1.26	70	2.2	78	3.02	86	3.7
63	1.38	71	2.31	79	3.11	87	3.78
64	1.5	72	2.42	80	3.2	88	3.86
65	1.63	73	2.52	81	3.29	89	3.93
66	1.74	74	2.62	82	3.38	>=90	4
I	Incomplete						
P	Pass						
PR	In Progress						
W	Withdrawn						
F	Fail						

* CAV Cumulative Average

B. Incomplete Grade

A student who receives an incomplete grade for a course must petition (http://www.aub.edu.lb/fafs/fafs_home/StudentResources/Pages/PetitionsandForms.aspx) or submit a valid reason for missing the work to the FAFS UACC within two weeks from the date of the scheduled final exam for permission to complete the course. Coursework must be completed within one month of the start of the next regular semester. In exceptional circumstances, the appropriate faculty committee may decide to give the student additional time to complete a course.

Incomplete coursework is reported as "I." Normally, "I" is followed by a numerical grade reflecting the evaluation of the student available at the end of the semester for the course. This evaluation is based on a grade of zero on all missed work and is reported in units of five. If the work is not completed within the period specified, the "I" is dropped and the numerical grade becomes the final grade.

C. Withdrawal from Courses

- Students who, during a semester, miss more than one-fifth of the sessions of any course in the first ten weeks of the semester (five weeks during the summer term) will be dropped from the course if the faculty member has stated in the syllabus that attendance will be taken.
- Students can withdraw from only one required course per semester. Students who wish to withdraw from more than one required course in any given semester must petition the FAFS UACC.
- Students are permitted to withdraw from elective courses, down to a minimum of 12 credits, not later than ten weeks after the start of the semester (five weeks in the case of the summer session); students receive a grade of W for the course.
- A student may petition the FAFS UACC to withdraw from the complete program of a given term not later than two weeks before the start of the reading period. Beyond this date, petitions will be considered for medical reasons only. If the petition is approved, the student will receive a W grade for the courses of that term.

D. Second BS Degree

FAFS students can transfer their earned residency between any two programs.

To obtain a second **BS in Agriculture** and the **Diploma of Ingénieur Agricole**, a student must complete all AGRL III and AGRL IV courses, including all FAFS electives and humanities courses.

Applicants who have a BS degree in Biology, Chemistry, or Environmental Health do not need to take any additional prerequisite courses. Holders of BS degrees from other majors will be required to:

- complete additional prerequisite courses as recommended by the Admissions Committee and approved by the FAFS Academic and Curriculum Committee.
- complete at least five terms of residency at FAFS.

To obtain a second **BS in Agriculture** and the **Diploma of Ingénieur Agricole** for **Agribusiness students:**

A candidate with a BS degree in Agribusiness wishing to obtain a second degree in Agriculture and the Diploma of **Ingénieur** Agricole must complete a minimum of 45 credit hours with a minimum residency period of two semesters, and must complete the following course requirements with a minimum average of 70:

- Fall Semester: NFSC 221, AGSC 221, AVSC 243, AVSC 271, AGSC 220.
- Spring Semester (at AREC): AGSC 222, AVSC 222/226, AGSC 228, AGSC 231, AGSC 224, AGSC 284.
- Fall Semester: AGSC 232, AGSC 295, AGSC 235, 3 credits of AGSC electives and 3 credits of AVSC electives.

To obtain a second **BS in Nutrition and Dietetics**, a student must complete:

- a minimum of 52 credits while registered in FAFS, including all NTDT II and NTDT III required core courses listed in the catalogue (of which up to 15 credits can be transferred course credits)
- additional prerequisite courses as recommended by the Admissions Committee and approved by the Academic and Curriculum Committee
- at least three semesters of residency at FAFS.

To obtain a second **BS in Food Science and Management**, a student must complete:

- a minimum of 53 credits while registered in FAFS, including all FSMT II and FSMT III required core courses listed in the catalogue (of which up to 15 credits can be from transferred course credits)
- additional prerequisite courses as recommended by the Admissions Committee and approved by the Academic and Curriculum Committee
- at least three semesters of residency at FAFS.

E. Dual Degree

Students may, upon approval of the faculty concerned, complete the requirements for a second degree while registered in another faculty at AUB. In such a case, a student will be granted two degrees at the same time of graduation. If tuition differs, students will pay the higher of the tuitions.

Information about deadlines and applications are available on the following link: http://www.aub.edu.lb/registrar/Documents/pdfdoc/dual-degree-form.pdf.

F. Double Major

Students may, upon approval of the faculty concerned, earn a double major if the two majors fall within the same degree structure (that is, both are BS majors) and if the graduation requirements for both majors are met simultaneously. The student must also satisfy requirements of both majors and must complete a minimum of 127 credits hours. Note that both majors must lead to the same bachelor's degree and one diploma will be issued indicating both majors.

G. Evaluation of Academic Performance

1. Placement on Academic Probation

- A student is placed on probation if his/her overall average is less than 68 at the end of the second regular semester, if the semester average is less than 69 at the end of the third or fourth regular semester, or if the semester average is less than 70 in any subsequent semester, excluding the summer term.

- It is to be understood that the semester in which the student is considered to be 'on probation' is the semester that immediately follows the semester in which the student has earned the grades leading to that placement.
- For evaluation purposes, the minimum number of credits at the end of the second regular semester at the University should be 24, including all repeated courses, and 12 in each subsequent fall or spring semester, including all repeated courses. Courses/credits taken during a summer term are counted towards the semester average of the next regular semester. If the number of credits taken in any one regular semester is less than 12 (for approved reasons), courses/credits taken during that semester are counted toward the semester average of the next regular semester.
- Credit for incomplete courses will be included in the semester in which the incomplete courses were taken. The evaluation for that semester will be carried out as soon as the grades for the incomplete courses have been finalized.
- Probation is removed when the student attains a semester average of 69 or more in the third or fourth regular semester, or a semester average of 70 or more in any subsequent regular term.
- Probation is removed within two regular semesters, excluding summer, after the student is placed on probation or when the student completes his/her graduation requirements.

2. Dismissal

A student may be dismissed from the faculty for any of the following reasons:

- if the overall average is less than 60 at the end of the second regular semester.
- if the student fails to clear academic probation within two regular semesters, excluding the summer term, after being put on probation; i.e., the student's academic status is (2,2) or (2,3), and the student has failed to remove the probation.
- if the student is placed on academic probation for a total of four regular semesters (a student can be dropped for this reason even if s/he is in the final year at AUB); i.e., the student's academic status is (0,3) or (1,3), and the student is again placed on probation.

3. Readmission

A student will normally be considered for readmission only if, after spending a year at another recognized institution of higher education, the student is able to present a satisfactory record and recommendation. Exceptions may be made for students who left the University for personal or health reasons.

4. Repetition of Courses

Failed courses should be repeated when next offered. When courses are repeated, the following shall apply:

- The highest grade in a repeated course is used in calculating averages. However, all course grades remain a part of the student's permanent record.
- A student cannot register for a course more than three times including withdrawals. However, the third registration requires the approval of the Academic and Curriculum Committee and the concerned department.

5. Dean's Honor List

For outstanding academic achievement, students are placed on the Dean's Honor List. To be placed on the list at the end of a given fall or spring semester, a student must be carrying at least 12 credits, not be on probation, have passed all courses of the semester and attained an overall average of 85, or be ranked in the top 10 percent of the class and have an overall average of 80, be deemed worthy by the dean to be placed on the Honor List, and not have been subjected to any disciplinary action within the University during the semester.

6. Promotion

BS in Agriculture and Diploma of Ingénieur Agricole

For clear promotion from year I to year II a student must complete a minimum of 27 credits. For promotion from year II to year III a student must complete a minimum of 58 credits. For promotion from year III to year IV a student must complete a minimum of 98 credits. All such credits should be from courses specified in the regular program.

Bachelor's degree in Landscape Architecture (BLA) and Diploma of Ingénieur Agricole

For clear promotion from year I to year II a student must complete a minimum of 35 credits. For promotion from year II to year III a student must complete a minimum of 74 credits. For promotion from year III to year IV a student must complete a minimum of 110 credits. All such credits should be from courses specified in the regular program.

BS degree in Nutrition and Dietetics or in Food Science and Management

For clear promotion from year I to year II a student must complete a minimum of 30 credits. For promotion from year II to year III a student must complete a minimum of 63 credits. All such credits should be from courses specified in the regular program.

BS degree in Nutrition and Dietetics - Coordinated Program

For clear promotion from year I to year II a student must complete a minimum of 30 credits. For promotion from year II to year III a student must complete a minimum of 63 credits. For promotion from year III to year IV a student must complete a minimum of 97 credits. All such credits should be from courses specified in the regular program.

BS degree in Agribusiness

For clear promotion from year I to year II a student must complete a minimum of 30 credits. For promotion from year II to year III a student must complete a minimum of 60 credits. All such credits should be from courses specified in the regular program.

7. Graduation Requirements

Eligibility for Graduation

To be eligible for graduation with the degree of BS in Agriculture (AGRI) or Bachelor of Landscape Architecture (LDAR), and the Diploma of Ingénieur Agricole, a student must

- complete a minimum of 128 semester credit hours (AGRI) or 144 semester credit hours (LDAR)
- complete a minimum of seven semesters of residency
- achieve an overall minimum grade average of 70
- be approved for graduation by the faculty.

To be eligible for graduation with the degree of BS in Nutrition and Dietetics (NTDT) or BS in Food Sciences and Management (FSMT), or BS in Agribusiness (AGBU) a student must

- complete a minimum of 97 semester credit hours for the NTDT program, 97 semester credit hours for the FSMT program, and 96 semester credit hours for the AGBU
- complete a minimum of five semesters of residency
- achieve an overall minimum average grade of 70
- be approved for graduation by the faculty.

To be eligible for graduation with the degree of BS in Nutrition and Dietetics Coordinated Program (NDCP), a student must

- successfully complete a minimum of 133 credits hours
- complete a minimum of 1,200 hours of supervised practice in an affiliated hospital
- achieve an overall minimum average grade of 80 in each of the three years of the NDCP
- achieve an overall minimum average grade of 80 in the supervised practice
- complete the program within four and a half years of enrollment in NDCP.

Failure to meet the above NDCP graduate requirements will result in dismissal from the NDCP program in which case students will graduate with a BS in Nutrition and Dietetics (NTDT).

8. Eligibility for the AREC Program

To be eligible to enroll in the regular program at AREC during the third year of Agriculture, a student must

- complete a minimum of 58 credits by the end of the first semester of Agriculture III with a cumulative grade average of higher than 70 and must not have accumulated more than 12 credits of failed-missed courses (of which no more than 6 credits are failed courses) specified in the regular program.
- be approved for such action by the Academic and Curriculum Committee.

FAFS Awards

FAFS Awards

A. Joana Haidar Award

An annual award of $500 given to a deserving and needy AREC student having a cumulative average of 75 and above. The student should be environmentally aware and interested in agricultural practices and development.

B. Edgecombe Award

$500 awarded to the outstanding student in the third year of agriculture.

C. Penrose Award

Non-cash honorary awards made on the basis of scholarship, character, leadership, and contribution to University life to the outstanding graduate of each faculty.

The Student Affairs Committee (SAC) chair seeks nominations from different programs at departmental levels. The departments send a memo to the SAC with the names and CVs of their nominees. The committee reviews the records of the nominees. Candidates are asked to make short presentations about their qualifications for the award during the committee meeting. Candidates' performances are graded by the committee and ranked from one to five.

Undergraduate Program Curriculum

A. Curriculum for the BS Degree in Agriculture (AGRI) and Diploma of Ingénieur Agricole

Agriculture[1] I

First Semester			Cr.	Second Semester			Cr.
AGSC	201	Orientation to Agriculture and Food Systems	2	ARAB		Arabic Communication Skills[2]	3
BIOL	200	Diversity for Life	4	AGSC	212	Agricultural Economics, Principles, and Policy[3]	3
CHEM	200	Basic Chemistry and Applications	3	CHEM	208	Brief Survey of Organic Chemistry	3
CHEM	205	Introductory Chemistry Laboratory	2	ENGL	203	Academic English	3
CMPS	209	Computers and Programming for the Sciences	3	MATH	201 Or 204	Calculus and Analytic Geometry III/ Mathematics for Social Sciences II	3
Total			14	Total			15

Agriculture II

First Semester			Cr.	Second Semester			Cr.
AGSC	215	Introduction to Soils	3	AGSC	225	Rural Social Systems	3
AGSC	220	Principles of Plant Physiology	3	AGSC	265	Soil Fertility	3
AGSC	241	Farm Management	3	AVSC	224	Agricultural Microbiology	3
AVSC	243	Genetics	3	ENGL	204	Advanced Academic English	3
NFSC	261	Introductory Biochemistry[3]	3	STAT	210	Elementary Statistics for the Sciences	3
Total			15	Total			15

Agriculture III

First Semester			Cr.	Second Semester (AREC)			Cr.
AGSC	221	Principles of Entomology	3	AGSC	222	Farm Practices	1
AGSC	232	Principles of Plant Pathology	3	AGSC	224	General Horticulture	3
AVSC	271	Animal Nutrition	3	AGSC	231	Principles of Agronomy	3
AVSC	275	Anatomy and Physiology of Farm Animals	3	AGSC	228	Irrigation Principles	3
Humanities Elective			3	AGSC	284	Weed Science	3
				AVSC	222	General Livestock Production	3
Total			15	Total			16

Summer Term (AREC)			Cr.
AGSC	223	Agricultural Project	2
AGSC	226	Farm Power and Machinery	3
AVSC	226	Poultry Production	3
Total			8

Agriculture IV

First Semester			Cr.	Second Semester			Cr.
AGSC	235	Agricultural Extension in Development	2	AGSC	296	Agriculture Project Presentation	1
NFSC	221	Basic Nutrition	3	Electives in FAFS			9
NFSC	288	Technology of Food Product	3	Humanities Elective			6
Social Sciences Elective			3				
Humanities Elective			3				
Total			16	Total			16

[1] A minimum of 128 credits are required for graduation.
[2] The Arabic Placement Test is optional.
[3] Course offered in Fall and Spring
Agriculture (AGSC/AVSC) Courses
Nutrition and Food Sciences (NFSC) Courses
AUB requirements
Arts and Sciences Courses

Core course descriptions for the BS Degree in Agriculture offered by the Department of Agriculture

AGSC 201 Orientation to Agriculture and Food Systems 2.0 — 2 cr.

This course provides students with a basic introductory knowledge about the various disciplines and related subjects in the FAFS, covering the various aspects of agricultural production and development including natural resources, plant sciences, plant health management, animal production and management, agribusiness, nutrition and food sciences; and landscape design and eco-management.

AGSC 212 Microeconomic Theory of Food and Farming 3.0 — 3 cr.

The course introduces economic principles which are then used to explain the production of goods and services, household behavior, economic equilibrium and the welfare consequences of alternative exchange mechanisms. Special applications will be given to decision-making and the allocation of resources for the agricultural firm, and consumer behavior and demand for agricultural and food products. Fall and Spring. Students cannot receive credit for both AGSC 212 and ECON 211; however, the two courses will be treated as equivalent.

AGSC 215 Introduction to Soils 2.3 — 3 cr.

Origin, properties, classification, and management of soil with emphasis on soil behavior in relation to irrigated agriculture, ecology, and the environment. Prerequisite: CHEM 200 or equivalent.

AGSC 220 Principles of Plant Physiology 2.3 — 3 cr.

An introduction to environmental and physiological factors affecting crop growth and development. Prerequisite: BIOL 200.

AGSC 221 Principles of Entomology 2.3 — 3 cr.

Insect morphology, anatomy, classification, and biology in relation to pest control in agroecosystems. Prerequisite: BIOL 200.

AGSC 222 Farm Practices 0.6 — 1 cr.

Practical experience in operational activities and management decisions essential in modern agriculture. Prerequisites: AGRI III standing and eligibility for enrollment in the regular program at AREC.

AGSC 223 Agricultural Project 0.6 — 2 cr.

Directed study with field and laboratory work. Prerequisites: AGRI III standing and eligibility for enrollment in the regular program at AREC.

AGSC 224 General Horticulture 2.3 — 3 cr.

Principles and practices in the production of fruits, ornamentals, and vegetables.

AGSC 225 Rural Social Systems in Agricultural and Rural Development 3.0 3 cr.
An examination of institutional and sociological problems of rural areas; influence of rural institutions on rural development.

AGSC 226 Farm Power and Machinery 2.3 3 cr.
Internal combustion engines, power trains, drawbar performance, stability, and safe operation of tractors; functional requirements, principles of operation, performance evaluation, and selection of farm machinery.

AGSC 227 Surveying and Irrigation Principles 0.3 1 cr.
Topographic surveying, irrigation methods evaluation, soil physical properties, soil water, and water flow measurement.

AGSC 228 Irrigation Principles 2.3 3 cr.
Plant water requirements, irrigation scheduling, soil-plant-water relations, flow measurements, wells, pumping, drainage, and surveying, and introduction to irrigation systems design and methods.

AGSC 231 Principles of Agronomy 2.3 3 cr.
Principles and cultural practices in the production of field crops.

AGSC 232 Principles of Plant Pathology 2.3 3 cr.
Fundamentals and practical aspects of plant diseases, their causes, and control.

AGSC 235 Agricultural Extension in Development 2.0 2 cr.
A comparative study of developmental philosophy, objectives, and adaptation to developing countries; principles and methods of extension and adult teaching. Prerequisite: AGSC 225.

AGSC 241 Farm Management 3.0 3 cr.
A course that focuses on the application of modern principles and techniques of management to the farm sector. Prerequisite: AGSC 212 or ECON 203.

AGSC 265 Soil Fertility 2.3 3 cr.
Behavior of native and applied fertilizer elements in soils in relation to crop production, soil fertility evaluation, fertilizer manufacture, fertilizer application in irrigation systems, and economics of fertilizer use. Prerequisite: AGSC 215.

AGSC 284 Fundamentals of Weed Science 2.3 3 cr.
Fundamentals of weed ecology and weed management practices with emphasis on chemical weed control and integrated weed management systems.

AGSC 290 Project Planning and Appraisal 3.0 3 cr.
Introduces different techniques commonly used in project planning and appraisal.

AGSC 296 Agriculture Project Presentation 1 cr.
Prerequisite: AGRI IV standing.

AVSC 222 General Livestock Production 2.3 3 cr.
Modern principles and practices in beef, sheep, and dairy production and reproduction.

AVSC 224 Agricultural Microbiology 2.3 3 cr.
A course that covers basic and applied microbiology. The basic microbiology includes bacteriology, virology, parasitology, and immunology; applied microbiology includes veterinary, soil, water, and food microbiology.

AVSC 226 Poultry Production 2.3 3 cr.
Modern principles and practices in poultry production with special emphasis on Middle Eastern conditions. Prerequisite: AVSC 271.

AVSC 243 Genetics 3.0 3 cr.
Principles of inheritance, with an introduction to modern genetics.

AVSC 271 Animal Nutrition 3.0 3 cr.
Structure and functioning of digestive systems of livestock and poultry; bioenergetics, nutritional deficiencies, and nutrient requirements of farm animals. Prerequisite: NFSC 261.

AVSC 275 Anatomy and Physiology of Farm Animals 3.0 3 cr.
Systematic anatomy and physiology of farm animals.

Elective courses for the BS Degree in Agriculture offered by the Department of Agriculture

AGSC 219 Apiculture 2.3 3cr.
The course introduces the basics of the honeybee world by exploring the natural history of apiculture, honeybee biogeography and evolution, biology, social structure, natural enemies, hive products, and pollination dynamics. It illustrates the ecological aspects of one of nature's most fascinating creatures under the looming environmental degradation and focuses on hands-on beekeeping activities.

AGSC 250 Organic Farming 1.2 3 cr.
Advances in organic farming and growing systems with emphasis on farm planning, certification, marketing, information, and organic farming practices.

AGSC 251 Vegetable Production 3.0 3 cr.
The course introduces students in the agriculture program to a good scientific and hands-on practical knowledge of vegetable production. Students will also gain an understanding of the physiological controls on vegetable crop yield under protective and local environments. They will become familiar with the current sources of information

available to produce and develop production management skills through the production of vegetables. Practical sessions will guide the students to understand different vegetable crop production techniques used in Lebanon and worldwide.

AGSC 252 Conservation Agriculture 2,3 3 cr.

The course is an introduction to conservation agriculture. Options and suitable agricultural techniques which enhance the amount of water and organic matter in the soil and reduce erosion and pests will be discussed. Prerequisites: AGSC 215, AGSC 231, and AGSC 284.

AGSC 262 Introduction to Irrigation Methods 3.0 3 cr.

Innovative methods for the design of irrigation systems including micro-irrigation, sprinkle irrigation and surface irrigation. Conceptual and detailed design of irrigation networks and system components from the professional perspective. Prerequisites: AGSC228 or AGSC202.

AGSC 293 Integrated Plant Health Management for Economic Crops 3.0 3 cr.

Basic concepts of the integrated approach to the proper management of plant diseases and insect pests of economic crops including components of plant health management (PHM) programs, and the feasibility and economics of various management strategies; specific PHM cases about major crops are discussed. Prerequisites: AGSC 221 and AGSC 232.

AGSC 294 Applied Plant Protection 2.3 3 cr.

Observations and study of major insect pests and plant diseases on field and greenhouse crops, with emphasis on recognition, identification, and management evaluation, and control. Prerequisites: AGSC 221, AGSC 232 or equivalent.

AGSC 295 Pesticides 3.0 3 cr.

A survey of the commonly used insecticides, fungicides, rodenticides, and related materials as to their chemistry, mode of action, and relation of structure to activity, toxicity, metabolism, and hazards to the environment.

AGSC 299 Special Topics in Agricultural Science 2 cr.

Directed study. Tutorial. Prerequisites: fourth year standing and consent of instructor.

AVSC 230 Animal Health and Diseases 3.0 3 cr.

The course introduces students of varying backgrounds to principles of Animal Biological and Health Sciences. Presents selected different commensal and pathogenic organisms causing common symptomatic and asymptomatic diseases; signs of health and disease specific to different domestic, marine mammal, fish and wildlife animal species; epidemiology of disease incidence; immunology, immune competence vs. tolerance, and vaccination principles; emerging animal diseases; monitoring disease incidence using surveillance techniques; vector biology; and methods used to prevent disease occurrence

including principles of management, environmental modification and nutritional support. Free elective.

AVSC 241 Principles of Dairying 2.3 3 cr.

Management, housing, feeding, breeding, and record-keeping in dairy production.

AVSC 242 Small Ruminant Production in Arid Regions 2.3 3 cr.

Breeding, feeding, and management of sheep and goats under arid conditions.

AVSC 260 Introduction to Laboratory Animal Science and Management 2.3 3 cr.

This is an introductory course covering the essentials of laboratory animal species biology, behavior, physiology, and genetics; health and diseases; experimental models; facility and staff management within laboratory animal facilities; and regulatory compliance requirements in the US and European countries. Students should have previously taken any combination of two courses in the natural and health sciences, and in management to gain prerequisite knowledge. Free elective

AVSC 276 Animal Physiology Laboratory 0.3 1 cr.

Pre- or co-requisite: AVSC 275.

AVSC 277 Animal Breeding 2.0 2 cr.

Principles of permanent improvement of animal and poultry production. Prerequisite: AVSC 243 or BIOL 223.

AVSC 278 Feeds and Feeding 2.3 3 cr.

Characteristics, conservation, and preparation of feeds; feeding of various classes of livestock.

AVSC 279 Companion Pet Birds and Animals 3.0 3 cr.

Breed and stock selection, equipment, stocking densities, routine management, rearing, feeding, behavior and interaction with humans, optimum production, and health care of pet birds and pet animals. Free elective.

AVSC 280 Aquarium, Marine, and Farming Fish 3.0 3 cr.

A course that covers the different fishing techniques, fish farming, characteristics of fish, comparison of classes of fish, the setup of fresh water and marine aquariums, and the common diseases of fish. Free elective.

AVSC 281 Production of Novel Avian Species 3.0 3 cr.

Management practices in the production of economically beneficial avian species other than the domestic chicken (e.g., ratites, turkey, water fowl, and others). Free elective.

AVSC 282 Pet Birds and Animals 3.0 3 cr.

A course that describes the anatomy and physiology of pets belonging to mammalia, reptilia, aves, and osteichthyes. The history, classification, breeds, selection, rearing, feeding, production, and health of sixteen pets will be studied. Prerequisite: BIOL 200.

AVSC 299A Special Topics in Animal Sciences for Agriculture Program 2 cr.

Directed study. Tutorial. Prerequisites: Fourth year standing and consent of instructor.

B. Curriculum for the BS Degree in Agribusiness (AGBU)

Agriculture[1] I

First Semester			Cr.	Second Semester			Cr.
AGSC	204	Natural Sciences for Agribusiness	3	ACCT	210	Financial Accounting	3
AGBU	211	Introduction to Agricultural Issues and Policies	3	AGSC	202	Introduction to Land and Water Resources	3
CMPS	209	Computers and Programming for the Sciences	3	AGSC	203	Crop Production and Protection	3
ENGL	203	Academic English	3	ARAB	201A or 201B, or higher[2]		3
MATH	204	Mathematics for Social Sciences	3	ENGL	204	Advanced Academic English	3
Total			15	Total			15

Agriculture II

First Semester			Cr.	Second Semester (AREC)			Cr.
ACCT	215	Management Accounting	3	AGBU	210	Marketing in Agribusiness	3
AGSC	212	Microeconomics Theory of Food and Farming3	3	AGSC	253	Harvest and Post-harvest Issues and Strategies	3
AGBU	239	Agribusiness Communication Skills Workshop	0	AGBU	255	Field Study of the Rural Agro-economy	3
NFSC	252	Food Processing	3	AVSC	220	Livestock Production	3
STAT	210	Elementary Statistics for the Sciences	3	ECON	212	Elementary Macroeconomic Theory	3
Humanities Elective: To be chosen from PHIL 206 or PHIL 209			3				
Total			15	Total			15

Summer Term			Cr.
AGBU	229	Entrepreneurship in Agriculture (Theory + Project)	3
AGBU	256	Summer Internship	1
Total			4

Agriculture III

First Semester			Cr.	Second Semester			Cr.
AGBU	236	New Trends in Agricultural and Food Systems	3	AGBU	213	Legal Aspects of Agribusiness	3
AGBU	240	Career Planning Workshop for Agribusiness	0	AGBU	248	Operation Management for Agribusiness	3
DCSN	205	Managerial Decision Making: Models and Techniques	3	AGBU	292	Agribusiness Final Year Project (capstone course)	5
FINA	210	Business Finance	3	Humanities Elective			3
MNGT	215	Principles of Management	3	Humanities Elective			3
Humanities Elective			3				
Total			15	Total			17

1 A minimum of 96 credits are required for graduation.
2 The Arabic Placement Test is optional
3 Course offered in Fall and Spring.
Agriculture (AGSC/AVSC) Courses
Nutrition and Food Sciences (NFSC) Courses
Business Courses
AUB requirements
Arts and Sciences Courses

Core courses for the BS Degree in Agribusiness offered by the Department of Agriculture

AGSC 202 Introduction to Land and Water Resources 2.3 — 3 cr.

In this course, students develop an understanding of current issues in land and water resources, including: soil and water conservation and management; land classification and reclamation; soils and environmental quality; sustainable agro-ecosystems. Prerequisite: AGSC 204. Greedy

AGSC 203 Crop Production and Protection 2.3 — 3 cr.

The course provides an overview of the technologies used in the production of crops. The student will acquire a knowledge and understanding of current crop production systems, the end market requirements for products as well as the quality standards of these products. Students will also learn current techniques in crop protection and yield management.

AGSC 204 Natural Sciences for Agribusiness 3.0 — 3 cr.

This course is an introduction to chemistry and biology designed for first year agribusiness students. It aims to familiarize students with the basic concepts and theoretical principles of modern chemistry and biology. Students will gain an appreciation of the importance that biology and chemistry play in our natural lives.

AGBU 210 Marketing in Agribusiness 3.0 — 3 cr.

An overview of marketing activities in agro-food industries, including marketing inputs in strategic planning, global marketing, marketing research, analysis of buyer behavior, market segmentation and positioning, and development of the marketing mix elements. Prerequisite: Junior status standing.

AGBU 211 Introduction to Agricultural Issues and Policies 3.0 — 3 cr.

Survey of global food and agricultural issues. Covers role of agriculture in economic development, trade in food and agricultural products, global food production, consumption, and marketing patterns; economics of technical change and food assistance; agriculture and the environment.

AGSC 212 Microeconomic Theory of Food and Farming 3.0 — 3 cr.

The course introduces economic principles, which are then used to explain the production of goods and services, household behavior, economic equilibrium and the welfare consequences of alternative exchange mechanisms. Special applications will be given to decision-making and the allocation of resources for the agricultural firm, and consumer behavior and demand for agricultural and food products.

AGBU 213 Legal Aspects of Agribusiness — 3 cr.

The main objective of the course is to help Agribusiness students understand the Lebanese and American legal aspects of common agricultural business activities, as well as the formation and function of Agri-commercial companies and related ethical principles. Prerequisite: Junior status standing.

AGBU 229 Entrepreneurship in Agriculture 3.0 — 3 cr.

Integration of production, marketing, accounting, finance, agricultural policy, human behavior, and business environment concepts in management of agricultural businesses using the compilation by students of agribusiness plans. Prerequisite: Junior status standing.

AGBU 236 New Trends in Agricultural and Food Systems 3.0 — 3 cr.

Current trends in agricultural trade; developments in private sector markets and in public policy; the concerns related to the effects of agricultural trade on the environment, food security and regional development. The course will also address the issue of the challenges to food exporters from developing countries posed by the need to comply with ever-stricter standards. The course will also cover the global market structures of the agricultural products most relevant to the Mediterranean countries and the experience and present thinking about the pros and cons of the spread of genetically modified products, designation of origins and other food labeling mechanisms. Prerequisite: Senior status standing.

AGBU 239 Agribusiness Communication Skills Workshop — 0 cr.

A ten-hour workshop designed to introduce students to the various communication skills needed in a typical work environment. Mastering these skills plays a profound role in shaping and advancing professional careers in all types of industries and work scopes. The workshop introduces specific guidelines for the effective use of a variety of communication skills in the workplace in an interactive manner, simulating the work environment.

AGBU 240 Career Planning Workshop for Agribusiness — 0 cr.

A ten-hour workshop to build awareness of changing career patterns and major personal and professional influences that impact future careers. Issues such as preparation for joining the labor market, basic career guidance, understanding career stages, and practicing self-assessment are emphasized. Prerequisite: Junior status standing.

AGBU 248 Operation Management for Agribusiness 3. — 3 cr.

This course covers the essentials of supply chain management and quantitative techniques needed for the planning and implementation of agribusiness operations. This course includes optimization of production and cost minimization. Prerequisite: Senior status standing.

AGBU 253 Harvest and Post-harvest Issues and Strategies 3.0 — 3 cr.

This course discusses the structure of the agricultural harvesting and marketing system with emphasis on factors determining farm level prices; emphasizes how markets coordinate consumer desires and producer costs through marketing channels; impact of market structure, grades, information, product form, and advertising on farm prices;

international trade impact on producers, consumers, agribusiness, and government. Prerequisites: AGSC 202, AGSC 203, and AGSC 212.

AGSC 255 Field Study of the Rural Agro-economy 3.0 — 3 cr.

Tours of agribusiness enterprises and rural farms in Lebanon are organized with the intent to observe the management and marketing practices used in successful operations of different agribusiness structures. Students will also learn how the agriculture value chain is structured within the rural economy. Prerequisites: AGSC 202 and AGSC 203.

AGSC 256 Summer Internship — 1 cr.

AGBU 292 Agribusiness Final Year Project 5.0 — 5 cr.

Milestone course for students in agribusiness. Application of concepts, tools, and principles including management, finance, marketing, economic theory, and quantitative methods to applied agricultural decisions on selected agricultural and agribusiness projects that enhance team-building as well as written, and oral communication skills. Prerequisite: Senior status standing.

AVSC 220 Livestock Production 2.3 — 3 cr.

The course is divided into three main sections. The first section introduces the types and breeds of livestock, terminology, methods, management systems, techniques of animal production and consumer impact. The second section introduces the students to the modern management practices required for the production of economically beneficial avian species including domestic chickens, turkeys, water fowl, game birds, and others. The third section discusses the nature of economic diseases in domestic animals and avian species and the regulations of the World Trade Organization in import and export of animals, including rules that prevent the trans-boundary transmission of microbes causing economic diseases.

Elective Course

AVSC 213 Comparative Animal Anatomy 3.2 — 4 cr.

This course is the study of differences in structure, form, and function among humans, invertebrate and vertebrate animals. This course is broad in scope and will examine anatomy within the unifying framework of form, function, and molecular evolutionary morphology using textbook and primary journal article readings, specimens, and fossil examination, with laboratory anatomic dissection. This course will lay a foundation for further graduate work and so is most helpful for students interested in biomedical and veterinary medical studies, physical and biological anthropology, agriculture and biodiversity, and evolutionary biology.

Core course descriptions for the BS Degree in Agribusiness offered by the NFSC Department

NFSC 252 Food Processing 3.0 — 3 cr.

Technology and processing of foods includes processing of food products and field visits to local food companies. Prerequisite: Junior status standing.

C. Curriculum for the Bachelor of Landscape Architecture (LDAR) and Diploma of Ingénieur Agricole

Landscape[1] I

First Semester			Cr.	Second Semester			Cr.
ENGL	203	Academic English	3	LDEM	201	Landscape Descriptive Drawing	4
LDEM	200	Landscape Technical Drawing	4	LDEM	211	Landscape Horticulture	3
LDEM	202	Studio I: Landscape Design Fundamentals	4	LDEM	216	Studio II: Landscape Garden Design	4
LDEM	207	Landscape Architecture History I	3	LDEM	217	Soils in the Landscape	3
LDEM	214	Landscape and Geomorphology	3	LDEM	291	Surveying and Base Plan Development	3
Total			17	Total			17

Summer Term			Cr.
LDEM	219	Plant Material I	2
LDEM	252	Computer Aided Design	3
Total			5

Landscape II

First Semester			Cr.	Second Semester			Cr.
LDEM	210	Botany and Plant Ecology for Landscape Architects	3	LDEM	204	Studio IV: Cultural Landscape Design	6
LDEM	221	Plant Material III	1	LDEM	208	Landscape Architecture History II	3
LDEM	222	Studio III: Landscape Planting Design	4	LDEM	248	Site Engineering II - Construction Material	3

LDEM	247	Site Engineering I	3	LDEM	263	Landscape Appreciation and Site Analysis	3
Humanities Elective			3				
Natural Sciences Elective			3				
Total			17	Total			15
Summer Term			**Cr.**				
LDEM	221	Plant Material II	1				
LDEM	231	Sustainable Water Management Techniques	3				
LDEM	249	Site Engineering - Design Implementation	4				
Total			8				

Landscape III

First Semester			**Cr.**	**Second Semester**			**Cr.**
LDEM	218	Landscape Ecology	3	LDEM	246	Studio VI: Natural Landscape Design	6
LDEM	228	Studio V: Urban Landscape Design	6	LDEM	265	Landscape Management	3
LDEM	251	Geographic Information System (GIS)	3	LDEM	290	Professional Practice	3
Social Science Elective			3	Quantitative Thought Elective		Any course from the GE list, except; MATH 203 (only for students coming from Humanities school back); EDUC 271, EPHD 203 and NURS 203	3
Total			15	Total			15
Summer Term			**Cr.**				
LDEM	292	Internship (Practicum)	2				
FAFS Electives			3				
Total			5				

Landscape IV

First Semester			**Cr.**	**Second Semester**			**Cr.**
LDEM	241	Research Project	4	LDEM	242	Advanced Design	6
LDEM	260	Contemporary Issues in Landscape Architecture	3	ARAB	201 A or 201B, or higher [2]		3
FAFS Electives			3	FAFS Electives			3
ENGL	204	Advanced Academic English	3	Humanities Elective			3
Social Science Elective			3				
Total			16	Total			15

[1] A minimum of 144 credits are required for graduation.
[2] Arabic Placement is optional.
Agricultural and Food Sciences (FAFS) Courses
Landscape Design and Ecosystem Management (LDEM) Courses
AUB requirements

Core courses for the Bachelor of Landscape Architecture offered by the Department of Landscape Design and Ecosystem Management (LDEM)

LDEM 200 Landscape Technical Drawing — 4 cr.

This is a course in descriptive geometry and graphic communication in landscape architecture. Students learn to use drawing tools. They acquire techniques of representation of 3D and space on 2D surfaces, including orthogonal (plans, sections, and elevations), paraline (axonometrics and isometrics), and perspective drawings. Applications cover construction of shades and shadows, representation of open space, trees, and elements of the natural and built landscapes. Students are introduced to the basics of manual and digital drawing techniques.

LDEM 201 Landscape Descriptive Drawing — 4 cr.

The focus of the studio is to emphasize visual thinking techniques and graphical information representation. Through the use of multiple media to sketch and draw the landscape, students learn to understand their environment through developing skills in mapping information, understanding their relationship, and graphically representing it.

LDEM 202 Studio I: Landscape Design Fundamentals — 4 cr.

This course is the first of two fundamental design courses (the second is LDEM 216). It is a foundation for subsequent design courses. It introduces students to theories of design through readings, analysis and hands-on projects. The course is structured as series of short exercises and is divided into two parts:

Part 1: Fundamental Elements of Landscape Design

An exploration into the modes of space: two-dimensional surfaces, three-dimensional objects, spatial enclosure, and the open continuous landscape. The emphasis is on the

media of landform, water, plants, and structures as defining agents of human space in the garden and the landscape at large. The form and character of the space are further determined by the context of the site and the nature of spatial geometry with studies of form, pattern, texture, tone, and color.

Part 2: Basics of Design

This studio introduces students to reading and responding to the site. Goals include learning to experience and record the landscape, to design in response to the site, to think creatively, to generate design ideas and understand design as a process, to gain knowledge of design precedents and principles, and to learn tools and techniques of visual expression. Students will learn through in-class exercises, reading assignments, and design projects. Studio time is divided between lectures, field trips, studio design work, desk critiques, pin-ups, and presentations.

LDEM 204 Studio IV: Cultural Landscape Design 6 cr.

Part 1: Cultural Landscapes

The cultural landscape studio introduces students to the process of research, planning, design, and management of historically and culturally significant landscapes through selected real world site projects. Part one introduces methods of assessment, approaches and policies (local and international), case studies of similar projects as well as historical analysis of the study area.

Part 2: Historic Preservation and Design

Landscape design proposals for sites within historically significant areas. Emphasis is on methods of analysis and design development. Graphic and photographic documentation of existing built forms serves as the basis for design proposals. Students engage in the following five steps in the process of their study:: 1. Investigating a landscape's site history using primary and secondary resources; 2. Analyzing, documenting and evaluating existing conditions; 3. Interpreting the significance of the natural, historic, and cultural importance of the landscape site; 4. Recommending appropriate treatment strategies; and 5. Presenting the findings of this research process. Prerequisite: LDEM 222.

LDEM 207 Landscape Architecture History I 3 cr.

The course surveys the evolution of structures, settlements and landscapes in the western world and the Mediterranean region including the Arab world. The period spans from the origins of human societies to the end of the medieval period. Students will be assessed on written exams, research papers, and an individual project. Examination of the history of landscape architecture since Frederick Law Olmsted and of the evolution of the landscape architecture status with emphasis on environmental planning and activism; town planning and the design of infrastructure, park design and garden design. Introduction to the discipline of landscape architecture and architecture in the built environment; concepts and themes in design focusing on historical examples.

LDEM 208 Landscape Architecture History II 3 cr.

The course will explore the evolution of human settlements and structures in the landscapes and survey the development of outdoor space and man's effort to control his physical environment in the Western world and the Mediterranean including the Arab world. This evolution is studied in relationship to allied fine arts from the Renaissance to the present. The course will also go through the history of landscape architecture design as a product of cultural, political, social and environmental factors; it will focus on historical examples of gardens, parks, community, environmental planning, and design in a holistic approach to detect trends, to relate yesterday to today, and to question the present and its connection to the future. Prerequisite (only for LDEM students): LDEM 207.

LDEM 210 Botany and Plant Ecology for Landscape Architects 3cr.

This course introduces botany, ecology, and taxonomy of landscape plants. The material highlights how plants function, their ecological importance, and their value for other organisms as well as for people.

LDEM 211 Landscape Horticulture 2.3 3 cr.

This course covers basic principles of selection and management of landscape plants. Students will learn how to select plants appropriate to site and purpose, and will be introduced to concepts and applications of environmental horticulture and its contribution to the well-being of humans and nature. The course relies on hands-on field projects, site visits, essays, and photo-documentation.

LDEM 214 Landscape and Geomorphology 3cr.

This course introduces students to the geomorphological underpinnings of landscape formation and trains them to read the natural and anthropogeomorphic aspects of landscapes.

LDEM 216 Studio II: Landscape Garden Design 4 cr.

This course is the second of two design introductory courses. It is a foundation for subsequent courses that explore project design in varied contexts and scales. It introduces students to theory and practice of landscape design and site planning by doing, observing, reading, and reflecting. Students apply knowledge acquired from LDEM 202 on real site contexts with an emphasis on site design. Focus is on two dominant landscape design types: the park (public) and the garden (private). Students will analyze case studies and relevant readings pertaining to both landscape typologies. Prerequisite: LDEM 202.

Part 1: The Park

The focus is on the application of spatial theory and design process to a specific site context. Work will develop map-reading skills at various scales; strengthen drawing, lettering, and cross-section representation skills. Emphasis is on landform design in a public park setting (urban and non-urban).

Part 2: The Garden

The garden is a personal, direct, and intimate expression of landscape architecture. It is explored here as a contemporary art primarily through the design of individual sites; and, secondarily, through guided research and discussion sessions which explore important works and design theory in the genre. The emphasis is on developing an informed and creative personal approach that inspires while solving practical problems on real sites. Focus here is on residential gardens or gardens pertaining to institutions.

LDEM 217 Soils in the Landscape 2.3 — 3 cr.

This course will examine soils as integral components of the landscape and as a medium for landscaping activities. It is designed to help students 1) acquire a good understanding of the relationship between geology, landform, soil, vegetation, and landscape, and 2) implement management actions essential in landscaping, such as soil preparation, soil amendment and fertilization. Emphasis will be placed on soils as a component of Mediterranean ecosystems and land mosaics with special focus on soil resources in Lebanon. Labs and field trips will be organized in order to observe and analyze soils in the environment, and to manipulate soil substrates for optimizing plant growth. Prerequisite: LDEM 214 for LDEM students

LDEM 218 Landscape Ecology — 3 cr.

Students will be introduced to the discipline of landscape ecology. The course will focus on the interplay between spatial patterns and ecological processes. It also focuses on detecting and characterizing social and natural patterns of influence on landscapes and landscape dynamics. Implications of landscape pattern and landscape management will also be covered. Prerequisites: LDEM 210 and LDEM 217.

LDEM 219 Plant Material I 0.6 — 2 cr.

This course will introduce the student to the botanical and horticultural dimension of designed landscapes by focusing on the species and cultivars that are native or introduced to the Mediterranean climate and to semi-arid regions. In the process of learning about landscape plants, the student will be introduced to the taxonomic, horticultural, ornamental and landscape aspects of approximately 200 plants during the sessions. Emphasis is placed on major categories of herbaceous plants and woody plants used in landscape including trees, shrubs, vines, flowering plants, ornamentals, and hedge plants commonly utilized in this region by a combination of experiential activities (walks on the campus and public places), discussions, on-line resources, and homework assignments. The student will also learn the proper selection and usage of these plants in landscape situations, plant assets and liabilities, alternative plants for various situations, and cultural aspects.

LDEM 221 Plant Material II 0.3 — 1 cr.

This course will introduce the botanical and horticultural dimension of designed landscapes by focusing on the species and cultivars used in urban areas such as streets, parks, green roofs, vertical walls, or containers. In the process of learning about landscape plants, the student will be introduced to the taxonomic, horticultural, ornamental and

landscape aspects of approximately 200 plants during the sessions. Emphasis is placed on major categories of herbaceous plants and woody plants used in landscape including trees, shrubs, vines, flowering plants, ornamentals and hedge plants, extensive and intensive green roof plants, façade and container plantation commonly utilized, by a combination of experiential activities (walks on public places), discussions, on-line resources, and homework assignments. The student will also learn the proper selection and usage of these plants in landscape situations, plant assets and liabilities, alternative plants for various situations, and cultural aspects.

LDEM 222 Studio III: Landscape Planting Design — 4 cr.

The course introduces students to the basic principles of designing with plants. Landscape Architecture combines elements of art and science to create a functional, aesthetic and spatial experience of the outdoor space. One initial purpose of designing with plants is to understand how to blend technology (the built environment) into the natural surroundings and to bring natural elements into the built environment. In order to work toward a desirable landscape design and hence successful planting plan, the student will develop a working knowledge of artistic elements, design principles and basic horticultural knowledge of plants. Successful plant composition and layout is obtained with acknowledgement of the importance of plants as a design material that enhances the definition and spatial experience of outdoor spaces. Prerequisites: LDEM 216, LDEM 211, LDEM 219.

LDEM 228 Studio V: Urban Landscape Design — 6 cr.

The focus of this studio is "site design in the urban context;" as such, it will enable students to explore the particular challenges of designing in complex urban environments. By their nature, urban environments have multiple layers and meanings and are influenced by an array of forces. Urban landscapes are an amalgam of a myriad of social, cultural, political, economic, and ecological processes on physical space. Designing in the urban context therefore requires sensitivity to these many layers and influences. Creative response to the challenges of urban environments means careful attention to the landscape narratives students choose to tell, and how users of a space learn and discover new things from a site. Prerequisite: LDEM 204, and LDEM 222.

Part 1: Understanding and Analyzing Urban Landscape Systems

The purpose here is to briefly overview basic concepts of urbanism (transportation, infrastructure, zoning laws, real estate markets, economic development, social issues, and so on) with a strong emphasis on understanding urban open spaces and networks through readings. Students will analyze case studies of similar contexts and analyze urban landscape systems pertaining to the study area.

Part 2: Study Area

An application of urban design theories to various scales of urban design, with special focus on civic scale design elements and spatial and functional requirements. The end goal is to design a landscape system or site with an urban context.

LDEM 231 Sustainable Water Management Techniques 3 cr.

The course will focus on water as a scarce resource in Lebanon and the region. Students will be exposed to theoretical and practical aspects of sustainable water resources management as related to landscape design, namely in the areas that demand efficient water use and management. Students will learn about efficient indigenous and exotic landscape irrigation, surface and subsurface drainage design, rainwater harvesting, and water conservation.

LDEM 241 Studio VII: Landscape Capstone Project I 4 cr.

This course is intended to assist students in selecting an individual capstone project, finding and organizing appropriate information needed for the project, and establishing parameters and questions for the design and development of the project. The studio focuses on an approved design problem requiring individual work, which will serve as a comprehensive examination. Preparation and presentation include a written and graphic problem statement, analysis, and detailed plans, or other approaches approved by the instructor. Prerequisites: LDEM 228 and LDEM 246.

LDEM 242 Studio VIII: Landscape Capstone Project II 6 cr.

The Final Year Project (FYP), conducted with a faculty adviser, includes collection, analysis, and interpretation of project information. The final studio covers a variety of projects that may include landscape design projects involving fine arts, urban design, and town planning. Students are expected to achieve a comprehensive understanding of ideas, processes, and concepts. This is the capstone project where students demonstrate their acquired design skills and knowledge. They are expected to develop their design, produce presentation drawings and defend their ideas orally at a professional level. Students are assessed by department faculty. Note: Fulfills the capstone writing intensive requirement for the Landscape Architecture major. Prerequisite: LDEM 241.

LDEM 246 Studio VI: Natural Landscape Design 6 cr.

Sustainability is a pivotal, evolving paradigm of central importance to landscape architecture. It has profound implications on how we think, plan, and design landscapes. The studio explores the theory and application of sustainability principles to a broad region (watershed, city) as well as at finer scales relating to the larger context. The emphasis is on environmental and physical sustainability and understanding connections to social and economic patterns. The overall goal of this studio is to teach students how to plan and implement open space protection at a landscape scale. This will require the ability to synthesize information about natural features, cultural resources, and development patterns to create spatial landscape strategies (such as greenway networks, ecological networks, green infrastructure) that address the unique problems and opportunities of a chosen study area. Prerequisite: LDEM 228.

LDEM 247 Site Engineering I 3 cr.

Study of techniques essential to the horizontal and vertical development of site designs; emphasis on grading, cut and fill calculation, storm-water drainage and management, erosion control, road alignments, and earthwork. This is a lecture course with intensive exercises for engineering calculation and drawing techniques.

LDEM 248 Site Engineering II - Construction Material 3.2 3 cr.

This studio course will serve as a capstone to landscape architectural construction with emphasis on understanding and preparing complete sets of construction documents for landscape architecture projects. It includes methods and procedures necessary for transforming a design idea into a set of construction drawings that is accurate, precise, and clearly understood; and the principles, processes, and techniques of site engineering for the "hard" and "soft" elements of landscape architecture and surfaces, including wood construction, free-standing and retaining walls, pavement, steps, decks, lighting, and planting irrigation. Students will also implement their designs through hands-on experience. Prerequisite: LDEM 247.

LDEM 249 Site Engineering III - Design Implementation 3.5 4 cr.

This course includes presentation and classification of landscape construction and materials; material types and measurement standards of construction elements. Floor elements: paving materials, pedestrian ways, stairs and ramps. Border and enclosure elements: walls, fences. Shelter elements: pergolas and gazebos. Water elements: ponds, waterfalls, pools and fountains. Outdoor space, furniture and ornaments: benches, litterbins, lighting elements, pedestrian bridges, decks. Interactions between: materials, buildings, spaces, and humans. Research studies and case studies: for designing original landscape constructions and materials. This studio course will focus on lectures, exercises, and projects dealing with landscape equipment and design methods. In addition, students have exposure to measuring quantities and defining specifications. Prerequisite: LDEM 247 and LDEM 248.

LDEM 251 Geographic Information System (GIS) 2.3 3 cr.

The goal of this course is to explore various approaches to modeling landscape pattern and change. The focus is on the design and use of computerized geographic information systems for land planning and design decisions and in understanding, describing, and predicting land-use and land-cover. The course will move between social and ecological processes and applications of the models. Students will learn to evaluate the trade-offs associated with use of a particular modeling approach within a given situation, and to implement (at least minimally) several of the approaches discussed.

LDEM 252 Computer Aided Design 2,3 3 cr.

This is an introductory course that covers computer aided design digital drawings to develop skills for landscape architects to communicate, create, and implement. The course includes lectures and computer labs focused on learning the basic commands for drawing

in two dimensions including absolute and relative coordinates, working in layers, paper and model space, manipulation of text, and plotting. Focus on understanding the software environment and basic applications of AutoCAD using relevant tools of this graphic design software to develop high quality landscape design graphic outputs, such as diagrams, perspectives, sections, plans, and 3D models. These skills will enable students to employ computer graphic design tools in landscape architecture studios throughout the rest of their degree courses.

LDEM 260 Contemporary Issues in Landscape Architecture 3 cr.

This course addresses recent trends in landscape architecture that cover the multitude of approaches, in order to broaden the students' theoretical knowledge, to encourage their critical and analytical abilities, their understanding of systems and of the landscape as a cultural expression. The course discusses recent interventions by landscape architects in different parts of the world and assesses them in relation to their natural, cultural, and socio-economic contexts. At the same time students are asked to evaluate critically one of the current open space situations in Beirut and discuss ideas and approaches related to it. Prerequisites (only for LDEM students): LDEM 207 and LDEM 208.

LDEM 263 Landscape Appreciation and Site Analysis 3 cr.

This course introduces to students specific landscapes of Lebanon and teaches them how to read the spaces by analyzing the interrelationship between natural conditions and human settlement and land use over time. Prerequisite: LDEM 291.

LDEM 265 Landscape Management 2.3 3cr.

This course is designed to help students develop landscape management and maintenance expertise and practical skills by building on knowledge acquired in previous science courses (landscape horticulture, soils in the landscape and sustainable water management techniques) and learn implementation and management actions essential in landscaping. Prerequisites: LDEM 211, LDEM 217 and LDEM 231.

LDEM 290 Professional Practice 3 cr.

The course discusses the professional practice of landscape architecture. It is structured to give students an overview of the professional opportunities, roles, and responsibilities within which graduates of the program will most likely practice their trade. The course will be structured as a series of lectures, workshops, discussions and presentations from practicing landscape architects, engineers, and other professionals who will expose the students to the different aspects of the trade. It introduces basic issues in the practice and the profession of landscape architecture, challenging the student to examine critically professional, ethical, economic, political, social, and other issues in the current practice. It covers the different typologies of landscape projects, firms, and clients, and introduces the full cycle of a landscape project from award and conception to construction and site supervision.

LDEM 291 Surveying and Base Plan Development 2.3 3 cr.

The course focuses on the fundamentals of plan surveying: basic measurement of distance, angle, and elevation; use of basic surveying equipment: total station, levels, and tapes, field notes; and basic computations: traverse closure and determination of areas. It is comprised of lectures and studio projects dealing with earthwork estimating, storm water management, site surveys, site layout, and horizontal and vertical road alignment. Students will survey a site and transform measurements into a base plan essential for any design process. This will include features such as topographic contours, spot levels, structures, vegetation, water ways, and utilities.

LDEM 292 Internship (Practicum) 2 cr.

The objective of the landscape architecture internship is to offer the students the opportunity to broaden their educational experiences by actively participating in professional landscape architecture, planning, and/or engineering office environment. The intention is to provide an opportunity for exploring the world of landscape architectural practice through professional activities and reflective activities that address educational goals and objectives.

Elective courses for the Bachelor of Landscape Architecture

LDEM 203 The Environment and Sustainable Development 3.0 3 cr.

An introduction to sustainable development: concepts, goals, and economic and social aspects; environmental issues associated with development: natural resource management, population, food production, and energy; institutional framework; standards and policies; emerging technological applications and their impacts; resolution of environmental conflicts; and future trends.

LDEM 209 Plant Biology 2.3 3 cr.

An introduction to botany and to the general principles of plant biology. The course material is aimed at developing an understanding and appreciation of the interaction of plants with their environment, and at providing applications and insights relevant to landscape students.

LDEM 229 Turfgrass Culture, Machinery, and Management 2.3 3 cr.

An introduction to turfgrass use, establishment, and management. This course focuses on the environmental impact of turfgrass landscapes in arid regions. Students are introduced to the machinery used in landscape management.

LDEM 230 Water and the Environment 3 cr.

This is an introductory course in water resources management emphasizing physical hydrological processes and the interactions between these and the natural environment and the role of human activities in these interactions. This course covers a broad range of topics: e.g. the hydrologic cycle, watershed hydrology, runoff generation, groundwater, point and nonpoint sources of pollution, best management practices and a multitude

of water quality issues. Local, regional and international case studies will be covered along with short field trips to foster a better understanding of water quality and quantity concepts, applications, and principles (Open to all except LDEM students).

LDEM 254 Regional and Community Studies 1.3 — 3 cr.

Up to ten landscape design students will be selected to be part of this course. The department will identify a community-driven project in which local and possible international students will participate. The target community will be selected at least six months prior to the start of the summer semester. The selection process will depend on input from outreach activities performed by the department and by other academic units with which the department coordinates closely, such as NCC and CCECS. This course focuses on applied knowledge and is thus taught by doing, i.e., creating a design that is ready to be applied and a full proposal. Landscape designed elements are thus site/context dependent; therefore, applied ecology and cultural landscape history are important to concept development. Students enrolled in the course will work fourteen days on-site with community partners and will stay with local families during that period and spend one week working on the design and proposal on campus. Working together in groups, students will create a practical design. Using a combination of lectures, discussions, interactions with nature, hands-on projects, and community immersion, students will analyze the local environment and design holistic systems that meet the needs of people while respecting the needs of nature.

LDEM 261 Spatial Structure and Movement — 3 cr.

The course is concerned with the experience of outdoor and indoor spaces, and the direct influence the placement of any object has on the perception of the latter and the movement within. The course is based on the assumption that the notion of movement and body proportion for mankind has been a primary design tool throughout history, and will try to reevaluate this tool for contemporary design.

LDEM 262 Healing Gardens: Theoretical Perspectives and Applications — 3 cr.

This course is offered relative to the current view that an outdoor garden at health care facilities is an essential supplement to medical interventions. Introducing the concepts of healing environments in terms of medical geography and environmental psychology, the course proceeds to examine prevailing approaches to the design of healing gardens at medical settings in the present day. Theoretical perspectives from social sciences are used to interpret these healing places as well as those associated with historic precedents for healing—the Japanese garden and the landscape traditions of medieval Christianity and Islam.

LDEM 264 Interior Landscaping 2.3 — 3 cr.

An introduction to the principles and practices of interior landscaping with an emphasis on plant selection and handling, environmental conditions, specifying and maintaining healthy plant materials, and developing portfolios of interior landscape designs for proper installation of drainage and irrigation.

LDEM 270 Ornamental Plants for Dry Landscapes — 3 cr.

A survey of native, wild, and domesticated plants adapted to dry areas with potential use in dry landscapes, with an overview of the different environmental and physiological factors that determine plant growth and developments under such dry conditions.

D. Curriculum for the BS Degree in Food Science and Management (FSMT)

Food Science[1] I

First Semester			Cr.	Second Semester			Cr.
BIOL	200	Diversity of Life	4	AGSC	212	Microeconomics Theory of Food and Farming[3]	3
CHEM	200	Basic Chemistry and Applications	3	CHEM	208	Brief Survey of Organic Chemistry	3
CHEM	205	Introductory Chemistry Laboratory	2	CHEM	209	Introductory Organic Chemistry	2
ENGL	203	Academic English	3	ENGL	204	Advanced Academic English	3
MATH	204	Mathematics for Social Sciences II	3	NFSC	221	Basic Nutrition[3]	3
				Humanities Elective			3
Total			15	Total			17

Food Science II

First Semester			Cr.	Second Semester			Cr.
NFSC	210	Statistics in Nutrition and Food Science	3	ACCT	210	Financial Accounting	3
MNGT	215	Management of Organizations	3	ARAB	201A, 201B, or higher[2]		3
NFSC	261	Introductory Biochemistry[3]	3	CMPS	209	Computers and Programming for the Sciences	3
NFSC	265	Food Chemistry[3]	3	NFSC	272	Introduction to Food Service and Industries	2
NFSC	267	Food Analysis[3]	2	NFSC	278	Food Microbiology II	3
NFSC	277	Food Microbiology I	3	Humanities Elective			3

Total			17	Total			17
Summer Term			**Cr.**				
NFSC	280	Summer Training in Food Establishments	1				
Total			1				

Food Science III

First Semester			**Cr.**	**Second Semester**			**Cr.**
ACCT	215	Management Accounting	3	MKTG	210	The Marketing Function	3
FINA	210	Business Finance	3	NFSC	287	Food Processing[3]	2
NFSC	282	Food Quality Management	3	NFSC	289	Food Processing Lab	1
NFSC	288	Technology of Food Products	3	NFSC	291	Elements of Food Engineering	3
Humanities Elective			3	NFSC	296	Current Topics in Food Science and Nutrition[3]	1
				NFSC	299	Projects in Nutrition and Food Science[3]	2
				Humanities Elective			3
Total			15	Total			15

[1] A minimum of 97 credits are required for graduation.
[2] The Arabic Placement Test is optional.
[3] Course offered in Fall and Spring
Agricultural Sciences (AGSC) Courses
Nutrition and Food Sciences (NFSC) Courses
AUB requirements
Arts and Sciences Courses
Business Courses

Core courses for the BS Degree in Food Science and Management offered by the NFSC Department

NFSC 221 Basic Nutrition 3.0 — 3 cr.

Nutritional survey of nutrients, including their food sources, digestion, metabolism, functions, and requirements in humans. Fall and spring.

NFSC 261 Introductory Biochemistry 3.0 — 3 cr.

Chemistry of biological compounds, their enzymatic degradation, and intermediary metabolism. Prerequisite: CHEM 208. Fall and spring.

NFSC 265 Food Chemistry 3.0 — 3 cr.

Chemical composition, physical, and sensory properties of foods. Prerequisite: CHEM 208. Fall and spring.

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 co-requisite: NFSC 265. Fall and spring.

NFSC 272 Introduction to Food Service and Industries 1.3 — 2 cr.

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; it also includes visits to different institutions in the food chain. Prerequisites: NFSC 265 and NFSC 277.

NFSC 277 Food Microbiology I 3.0 — 3 cr.

A survey of micro-organisms and their role in causing food spoilage and food poisoning, and the control of microbial spoilage and pathogenic micro-organisms in foods.

NFSC 278 Food Microbiology II 2.3 — 3 cr.

Microbiological aspects of food preservation; beneficial utilization of micro-organisms in food applications; detection of microbial contamination and hazards of importance to public health. Prerequisite: NFSC 277.

NFSC 280 Summer Training in Food Establishments — 1 cr.

Involves students in supervised training in one of the food service institutions or food industries. Prerequisite: NFSC 272.

NFSC 282 Food Quality Management 3.0 — 3 cr.

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.

NFSC 287 Food Processing 2.0 — 2 cr.

Principle of food spoilage, food preservation, and the different methods and food processing. Prerequisites: NFSC 265, and NTDT III or FSMT III. Fall and spring.

NFSC 288 Technology of Food Products 2.3 — 3 cr.

Technology and processing of foods; includes processing food products in the Pilot Plant. Prerequisites: NTDT III, and FSMT III or AGRL IV.

NFSC 289 Food Processing Laboratory 0.3 — 1 cr.

Laboratory exercises in the Pilot Plant in food preservation and processing. Corequisite: NFSC 287, NTDT/NDCP III, or FSMT III.

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, FSMT III.

NFSC 296 Current Topics in Food Sciences and Nutrition 1 cr.
Prerequisite: NTDT/NDCP III or FSMT III. Fall and spring.

NFSC 299 Projects in Nutrition and Food Sciences 2 cr.
Directed study. Tutorial. Prerequisite: NTDT III or FSMT III.

E. Curriculum for the BS Degree in Nutrition and Dietetics (NTDT)

Nutrition[1] I

First Semester			Cr.	Second Semester			Cr.
BIOL	201	General Biology I	4	CHEM	208	Brief Survey of Organic Chemistry	3
CHEM	200	Basic Chemistry and Applications	3	CHEM	209	Introductory Organic Chemistry	2
CHEM	205	Introductory Chemistry Laboratory	2	ENGL	204	Advanced Academic English	3
ENGL	203	Academic English	3	PHYL	246	Physiology for Nursing Degree Students and Undergraduates	4
PSYC	201	Introduction to Psychological Sciences	3	Humanities Elective			3
Total			15	Total			15

Nutrition II

First Semester			Cr.	Second Semester			Cr.
AGSC	212	Microeconomics Theory of Food and Farming[3]	3	MNGT	215	Fundamentals of Management and Organizational Behavior	3
ARAB	201A, 201B, or higher[2]		3	NFSC	274	Human Nutrition and Metabolism	3
NFSC	221	Basic Nutrition3	3	NFSC	240	Nutrition Status Assessment	2
NFSC	261	Introductory Biochemistry3	3	NFSC	265	Food Chemistry3	3
CMPS	209	Computers and Programming for the Sciences	3	NFSC	267	Food Analysis3	2
Humanities Elective			3	NFSC	290	Food Service Management3	3
				NFSC	229	Menu Planning	1
Total			18	Total			17

Nutrition II

First Semester			Cr.	Second Semester			Cr.
NFSC	210	Statistics in Nutrition and Food Science	3	NFSC	287	Food Processing3	2
NFSC	285	Nutrition in the Life Cycle	2	NFSC	289	Food Processing Lab	1
NFSC	281	Nutrition in the Life Cycle Lab for NTDT	1	NFSC	293	Medical Nutrition Therapy II	3
NFSC	222	Community Nutrition	3	NFSC	295	Medical Nutrition Therapy Lab II for NTDT	1
NFSC	277	Food Microbiology	3	NFSC	296	Current Topics in Food Science and Nutrition3	1
NFSC	292	Medical Nutrition Therapy I	3	NFSC	299	Projects in Nutrition and Food Science3	2
NFSC	294	Medical Nutrition Therapy Lab I for NTDT	1	Humanities Elective			3
				Humanities Elective			3
Total			16	Total			16

[1] A minimum of 97 credits are required for graduation.
[2] Arabic Placement is optional.
[3] Course offered in Fall and Spring
Agricultural Sciences (AGSC) Courses
Nutrition and Food Sciences (NFSC) Courses
AUB requirements
Arts and Sciences Courses
Business Courses
Medical Courses

F. Curriculum for the BS Degree in Nutrition and Dietetics-Coordinated Program (NDCP)

The program combines both a didactic and a supervised practice component, whereby the following courses should be completed in addition to those of the BS in Nutrition and Dietetics program.

Nutrition I

First Semester			Cr.	Second Semester			Cr.
BIOL	201	General Biology I	4	CHEM	208	Brief Survey of Organic Chemistry	3
CHEM	200	Basic Chemistry and Applications	3	CHEM	209	Introductory Organic Chemistry	2
CHEM	205	Introductory Chemistry Laboratory	2	ENGL	204	Advanced Academic English	3
ENGL	203	Academic English	3	PHYL	246	Physiology for Nursing Degree Students and Undergraduates	4
PSYC	201	Introduction to Psychological Science	3	Humanities Elective			3
Total			15	Total			15

Nutrition-CP II

First Semester			Cr.	Second Semester			Cr.
AGSC	212	Microeconomics Theory of Food and Farming[3]	3	MNGT	215	Fundamentals of Management and Organizational Behavior	3
ARAB	201A, 201B, or higher[2]		3	NFSC	274	Human Nutrition and Metabolism	3
NFSC	221	Basic Nutrition[3]	3	NFSC	240	Nutrition Status Assessment	2
NFSC	261	Introductory Biochemistry[3]	3	NFSC	265	Food Chemistry[3]	3
Humanities Elective			3	NFSC	267	Food Analysis[3]	2
				NFSC	290	Food Service Management[3]	3
				NFSC	229	Menu Planning	1
Total			15	Total			17

Summer Term			Cr.
CMPS	209	Computers and Programming for the Sciences	3
NFSC	225A	Job Shadowing	0
Total			3

Nutrition-CP III

First Semester			Cr.	Second Semester			Cr.
NFSC	210	Statistics in Nutrition and Food Science	3	NFSC	287	Food Processing[3]	2
NFSC	285	Nutrition in the Life Cycle	2	NFSC	289	Food Processing Lab	1
NFSC	286	Nutrition in the Life Cycle Lab for ND|CP	1	NFSC	293	Medical Nutrition Therapy II	3
NFSC	222	Community Nutrition	3	NFSC	297	Medical Nutrition Therapy Lab II for NDCP	1
NFSC	277	Food Microbiology	3	NFSC	224	Advanced Nutrition Principles and Practices	1
NFSC	292	Medical Nutrition Therapy I	3	NFSC	296	Current Topics in Food Science and Nutrition[3]	1
NFSC	279	Medical Nutrition Therapy Lab I for NDCP	1	NFSC	299	Projects in Nutrition and Food Science[3]	2
				NFSC	275	Quantity Food Production	2
				Humanities Elective			3
Total			16	Total			16

Summer Term			Cr.
Humanities Elective			3
NFSC	225B	Job Shadowing	0

Total			16

Nutrition-CP IV

First Semester			Cr.	Second Semester			Cr.
NFSC	283	Nutrition Education and Communication	3	NFSC	284B	Seminar in Clinical Dietetics	1
NFSC	284A	Seminar in Clinical Dietetics	1	NFSC	298S	Dietetic Practicum (not billed)	14
NFSC	298F	Dietetic Practicum (not billed)	14				
Total			18	Total			15

[1] A minimum of 133 credits are required for graduation.
[2] Arabic Placement is optional.
[3] Course offered in Fall and Spring
Agricultural Sciences (AGSC) Courses
Nutrition and Food Sciences (NFSC) Courses
AUB requirements
Arts and Sciences Courses
Business Courses
Medical Courses

Core courses for the BS Degree in Nutrition and Dietetics offered by the NFSC Department

NFSC 221 Basic Nutrition 3.0 — 3 cr.

Nutritional survey of nutrients, including their food sources, digestion, metabolism, functions, and requirements in humans. Fall and spring.

NFSC 222 Community Nutrition 3.0 — 3 cr.

An introduction to key concepts and current topics in community nutrition. This course discusses the role of nutrition in improving the health and well-being of communities and familiarizes students with population nutritional status assessment, principles of nutrition research, and factors involved in planning, implementing and evaluating community nutrition programs and policies.. Prerequisites: NFSC 221. Corequisite: NFSC 285.

NFSC 229 Menu Planning 0.3 — 1 cr.

The course explores the principles and techniques of menu planning for healthy persons. Topics include nutrients needs for optimum health, dietary guidelines, food groups, food portion sizes, and the use of exchange lists for meal planning and client nutrition education in both the English and Arabic languages. Prerequisite: NFSC 221. Corequisite: NFSC 240.

NFSC 240 Nutritional Status Assessment 1.3 — 2 cr.

The course exposes students to the theoretical basis of various aspects of nutritional assessment (counseling 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. Fall and spring.

NFSC 265 Food Chemistry 3.0 — 3 cr.

Chemical composition, physical, and sensory properties of foods. Prerequisite: CHEM 208. Fall and spring.

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. Fall and spring.

NFSC 274 Human Nutrition and Metabolism — 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 micro-organisms and their role in causing food spoilage and food poisoning, and the control of microbial spoilage and pathogenic micro-organisms in foods.

NFSC 281 Nutrition in the Life Cycle Lab for NTDT 0.3 — 1 cr.

Emphasizes the practical applications of the principles of nutrition and human development in the context of the normal physiologic changes that occur throughout the life cycle. It includes evidence-based recommendations and interventions to improve nutrition status and food related behaviors through the life cycle, for individuals, groups, and populations. Prerequisites: NFSC 221 and NFSC 229; Corequisites: NFSC 274, NFSC 285.

NFSC 285 Nutrition in the Life Cycle 2.0 — 2 cr.

The course 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, NTDT/NDCP III or FSMT III.

NFSC 289 Food Processing Laboratory 0.3 — 1 cr.

Laboratory exercises in the Pilot Plant in food preservation, preparation and processing. Corequisites: NFSC 287, NTDT/NDCP III or FSMT III.

NFSC 290 Food Service Management 2.3 — 3 cr.

Techniques of management of functional operation of food service; field trips, self-study modules, reports, and discussion. Prerequisite: NFSC 221; pre- or corequisite: MNGT 215. Fall and spring.

NFSC 292 Medical Nutrition Therapy I 3.0 — 3 cr.

The course examines selected metabolic diseases, HIV, and cancer by covering their etiology, metabolic pathways, and the importance of medical nutrition therapy. Prerequisites: NFSC 274, NFSC 240; corequisite: NSFC 285.

NFSC 293 Medical Nutrition Therapy II 3.0 — 3 cr.

A thorough review of the nutrition care process in the treatment of diet-related diseases. The course prepares students to implement the nutrition care process for various conditions, including but not limited to overweight and obesity, diabetes, cardiovascular, gastrointestinal and renal diseases and helps students: 1) understand the pathophysiology of selected diseases in which nutritional intervention plays a major role; 2) identify the nutritional needs of patients with disease; and 3) develop an appropriate patient nutrition care plan. Prerequisites: NFSC 274, NFSC 240 and NSFC 285.

NFSC 294 Medical Nutrition Therapy Laboratory I for NTDT 0.3 — 1 cr.

An intensive laboratory course designed to help students learn and practice the application of the evidence-based medical nutrition therapy for diseases and disorders discussed in NFSC 292. This is done through the use of self-study modules, case studies, reports, and discussions. Prerequisites: NFSC 240, NFSC 274, and NFSC 285. Corequisites: NFSC 292.

NFSC 295 Medical Nutrition Therapy Laboratory II for NTDT 0.3 — 1 cr.

An intensive laboratory course designed to help students learn and practice the application of the evidence-based medical nutrition therapy for diseases and disorders discussed in NFSC 293. This is done through the use of self-study modules, case studies, reports, and discussions. Prerequisites: NFSC 274, NFSC 240, and NFSC 285. Co-requisite: NFSC 293.

NFSC 296 Current Topics in Food Sciences and Nutrition — 1 cr.

Prerequisite: NTDT/NDCP III or FSMT III. Fall and spring.

NFSC 299 Projects in Nutrition and Food Sciences — 2 cr.

Directed study. Tutorial. Prerequisite: NTDT/NDCP III or FSMT III. Fall and spring.

In addition to the requirements for the BS degree in Nutrition and Dietetics, students accepted in the Coordinated Program should complete the following courses:

NFSC 224 Advanced Nutrition Principles and Practices 0.3 — 1 cr.

Principles essential for being a successful registered dietitian (RD) including code of ethics, scope of dietetics practice, medical coding, and process of nutrition legislation within the United States. Through the use of real life clinical case study scenarios and role playing. Students will use the Nutrition Care Process (NDCP) in developing their nutrition care plans, and practice counseling techniques to improve their effectiveness in providing nutrition education and working with an interdisciplinary team. Prerequisite: NDCP III.

NFSC 225A/B Job Shadowing — 0 cr.

Students will shadow dietitians at different types of facilities covering MNT, Community Nutrition, and Foodservice Management. Prerequisite: NDCP status.

NFSC 275 Quantity Food Production 1.3 — 2cr.

A course whereby principles and methods of buying, preparing, and serving foods for various types of quantity food facilities are considered. Standardization of recipes, cost control, safety, and sanitation are practiced. Students demonstrate proficiency with food service equipment and utensils, participate in large-scale recipe preparation, and work in teams to create, plan, and produce high quality meal(s) for 40-75 people. Prerequisites: NFSC 290, NDCP III.

NFSC 279 Medical Nutrition Therapy Lab I for NDCP 0.3 — 1 cr.

An intensive laboratory course designed to help students learn and practice the application of evidence-based medical nutrition therapy utilizing the nutrition care process for diseases and disorders discussed in NFSC 292. This is done through the use of self-study modules, case studies, reports, and discussions. Prerequisites: NFSC 240, and NFSC 274. Corequisites: NFSC 285, NFSC 292 and NDCP III.

NFSC 283 Nutrition Education and Communication — 3 cr.

Focuses on principles of health behavior, learning theories, and their application to nutrition education and nutrition counseling practice. Equips students with the necessary communication tools and techniques to help prevent nutrition-related disease and promote health. Prerequisite: NDCP IV.

NFSC 284 (A, B) Seminar in Clinical Dietetics — 1 cr.

This course focuses on developing communication and research skills as well as strengthening the critical thinking capacities of CP students undergoing an intensive internship program, by providing them the opportunity to present and discuss all interesting nutritional issues arising during their CP practicum. It is divided into NFSC 284A and 284B. Prerequisite: NDCP IV.

NFSC 286 Nutrition in the Life Cycle Lab for NDCP 0.3 — 1 cr.

The course emphasizes the practical applications of the principles of nutrition and human development in the context of the normal physiologic changes that occur throughout the life cycle. It incorporates problem-based learning through case studies, and employs the

nutrition care process for evidence-based implementation of interventions to improve nutrition status and food related behaviors through the life cycle. Prerequisites: NFSC 221, NFSC 229, and NDCP III. Corequisites: NFSC 274, NFSC 285.

NFSC 297 Medical Nutrition Therapy Lab II for NDCP 0.3 1 cr.

An intensive laboratory course designed to help students learn and practice the application of evidence-based medical nutrition therapy utilizing the nutrition care process for diseases and disorders discussed in NFSC 293. This is done through the use of self-study modules, case studies, reports, and discussions. Prerequisites: NFSC 240, NFSC 274, and NFSC 285.Corequisites: NFSC 293 and NDCP III.

NFSC 298 (F, S) Dietetic Practicum 28 cr.

Training for a minimum of 1,200 hours at an affiliated medical facility. Prerequisite: NDCP IV.

Elective course not for Nutrition and Dietetics or Food Science and Management offered by the NFSC Department

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. Free elective.