FAFS Undergraduate Handbook 2012-2013
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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 School 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 four departments that offer outstanding undergraduate and many graduate programs in various disciplines. The departments of Agricultural Sciences, Animal and Veterinary Sciences, Landscape Design and Ecosystem Management, and Nutrition and Food Sciences currently offer seven undergraduate degrees. These are in Agribusiness, Agriculture, Food Science and Management, Landscape Design and Eco-Management, Nutrition and Dietetics (BS and CP), and Veterinary Science.

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 design and eco-management 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.

I encourage you to browse our Web Site for further information and details.

With Best Regards

Nahla Hwalla
Professor and Dean, Faculty of Agricultural and Food Sciences
Background

Historical
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 Agricultural Research and Education Center (AREC), a 100 hectare facility located the Bekaa, 80 km from the main AUB campus. The School offered a 4-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 aimed at government extension agents from 1956 to 1971. 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 3-year BS program in Nutrition and Dietetics (ND) 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. The rising importance of animal production in the Middle East, and the associated concerns around zoonotic diseases, triggered the initiation of the BS in Veterinary Sciences in October 2008. 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

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.
FAES Faculty
& Staff Members
# FAFS Faculty and Staff Members

## A. List of Faculty Advisors

### Table 1. List of Faculty Advisors

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Specialty</th>
<th>Office</th>
<th>Ext</th>
<th>e-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural Sciences Dept.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abou Jawdah, Yusuf</td>
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<tr>
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</tr>
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<td>Chalak, Ali</td>
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</tr>
<tr>
<td>Chaaban, Jad</td>
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<tr>
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<tr>
<td><strong>Animal and Veterinary Sciences Dept.</strong></td>
<td></td>
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</tr>
<tr>
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</tr>
<tr>
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<td>Professor</td>
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</tr>
<tr>
<td><strong>Landscape Design and Ecosystem-Management Dept.</strong></td>
<td></td>
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</tr>
<tr>
<td>Abunnasr, Yaser</td>
<td>Assistant Professor</td>
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<tr>
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</tr>
</tbody>
</table>

## B. Supporting Staff

### Table 2. Name of FAFS Student Section's Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Office</th>
<th>Ext</th>
<th>e-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weltzien, Julie</td>
<td>Research Associate</td>
<td>Landscape</td>
<td>129 W.A</td>
<td>4494</td>
</tr>
<tr>
<td>Abiad, Mohammad</td>
<td>Assistant Professor</td>
<td>Food Sc.</td>
<td>309 W.A</td>
<td>4412</td>
</tr>
<tr>
<td>Chamieh, Marie Cl.</td>
<td>Instructor</td>
<td>Nutrition</td>
<td>415 W.B</td>
<td>4484</td>
</tr>
<tr>
<td>Deryan, Basma</td>
<td>Instructor</td>
<td>Food Sc.</td>
<td>418 W.B</td>
<td>4550</td>
</tr>
<tr>
<td>Ghattas, Hala</td>
<td>Assistant Professor</td>
<td>Nutrition</td>
<td>405 W.B</td>
<td>4544</td>
</tr>
<tr>
<td>Kassaify, Zeina</td>
<td>Associate Professor</td>
<td>Food Sc.</td>
<td>317 W.A</td>
<td>4456</td>
</tr>
<tr>
<td>Naja, Farah</td>
<td>Assistant Professor</td>
<td>Nutrition</td>
<td>407 W.B</td>
<td>4504</td>
</tr>
<tr>
<td>Nasreddine, Lara</td>
<td>Assistant Professor</td>
<td>Nutrition</td>
<td>413 W.B</td>
<td>4547</td>
</tr>
<tr>
<td>Obeid, Omar</td>
<td>Professor</td>
<td>Nutrition</td>
<td>409 W.B</td>
<td>4440</td>
</tr>
<tr>
<td>Olabi, Ammar</td>
<td>Associate Professor</td>
<td>Food Sc.</td>
<td>315 W.A</td>
<td>4500</td>
</tr>
<tr>
<td>Toufelli, Imad</td>
<td>Professor</td>
<td>Food Sc.</td>
<td>301 W.A</td>
<td>4551</td>
</tr>
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</table>

<table>
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<th>Name</th>
<th>Title</th>
<th>Office</th>
<th>Ext</th>
<th>e-mail</th>
</tr>
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<tbody>
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</tr>
</tbody>
</table>
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 campus public computer lab, or from assigned labs.

To register, students should:

- Go to the AUB webpage, http://www.aub.edu.lb
- Select from the student menu, current students.
- Select AUB Student Information System (AUBSIS)
- Find the name of Primary and Secondary advisor
- Go to the Advisor office for advising in relation to appropriate courses to be registered and for getting the allocated pin number
- After Activation of the pin code by the system, follow instructions.

Web registration information sheets are available at the office of the Registrar and on the Registrar’s Office webpage.

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 renewal stickers for continuing students are available from the Office of the Registrar in College Hall. At the beginning of the semester, the registrar will announce the date and time of distribution.

C. Registration Tips

Here is what to do in case you face any of these sentences during registration:

- Prerequisite Test Score Error: Meaning to take the pre-requisite or register the co-requisite course.
- Time Conflict: Meaning to select another time or section.
- Closed Section: Meaning 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.
- Registering Error: Meaning this course need to be assigned by the corresponding department; for example, ARAB 201A cannot be registered by you unless you have taken the placement test at the Arabic department.

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 the 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 that 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 Science.

Candidates for the degree of BS in Landscape Design and Eco-Management (LDEM) must complete; three credits of elective courses offered by FAFS, 12 credits in humanities and 3 credits in Social Science.

Candidates for the degree of BS in Nutrition and Dietetics (NTDT) 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 Veterinary Science** (VTSC) must complete 12 credits in humanities and 6 in Social Sciences.

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 life-long learning that they will need to compete successfully in the twenty-first century. The General Education 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 of general education requirements distributed in the following fields:

- 3 credits in Arabic Communication Skills (exempted students must take humanity course in its place).
- 3-6 credits in English Communication Skills through English 204.
- 12 credits in Humanities.
- 6 credits in Social Science.
- 6 credits in Natural Science.

For updates on General Education courses, kindly access the following link: [http://www.aub.edu.lb/registrar/Documents/pdfdoc/general-education-courses.pdf](http://www.aub.edu.lb/registrar/Documents/pdfdoc/general-education-courses.pdf)

#### 1. Arabic Communication Skills Courses

ARAB 201A, ARAB 201B, ARAB 211, ARAB 212, ARAB 221, ARAB 225, ARAB 227, ARAB 228, ARAB 229, ARAB 230, ARAB 231, ARAB 232, ARAB 234, ARAB 235, ARAB 236, ARAB 237, ARAB 238, ARAB 243, ARAB 245, ARAB 246, ARAB 249, ARAB 251J, ARAB 252C, ARAB290.

#### 2. English Communication Skills Courses

ENGL 201, ENGL 205, ENGL 207, ENGL 210, ENGL 211, ENGL 212, ENGL 213, ENGL 214, ENGL 215, ENGL 216, ENGL 217, ENGL 218, ENGL 219, ENGL 221, ENGL 222, ENGL 223, ENGL 224, ENGL 225, ENGL 226, ENGL 227, ENGL 229, ENGL 232, ENGL 233, ENGL 235, ENGL 236, ENGL 237, ENGL 239, ENGL240, ENGL 241, ENGL 242, ENGL 243, ENGL 244D, ENGL 244G, ENGL 244H, ENGL 244I, ENGL 244J, ENGL 246, ENGL 248A, ENGL 249, ENGL 250, ENGL 251, ENGL 252, ENGL 253.

#### 3. Humanities


- **ARAB:** ARAB 201B, ARAB 215, ARAB 216, ARAB 230, ARAB 232, ARAB 233, ARAB 234, ARAB 235, ARAB 236, ARAB 238, ARAB 239, ARAB 240, ARAB 243, ARAB 245, ARAB 246, ARAB 247, ARAB 251, ARAB 290.

- **ARCH:** ARCH 121, ARCH 122, ARCH 223, ARCH 224.

- **AROL:** AROL 201, AROL 211, AROL 212, AROL 213, AROL 214, AROL 215, AROL 216, AROL 217, AROL 219, AROL 222, AROL 223, AROL 224, AROL 225, AROL 226, AROL 231, AROL 235F, AROL 235I, AROL 235J, AROL235K, AROL 235L.

- **CVSP:** CVSP 212, CVSP 215, CVSP 216, CVSP 250, CVSP 251, CVSP 2950.

- **CVSP Sequence I:** CVSP 201, CVSP 202, CVSP 205, CVSP 207A, CVSP 207C, CVSP 207E, CVSP 207H, CVSP 207R, CVSP207I, CVSP295L.

- **CVSP Sequence II:** CVSP 203, CVSP 204, CVSP206, CVSP 208C, CVSP 208D, CVSP 208F, CVSP 208G, CVSP 208H, CVSP 208J, CVSP208K, CVSP208L.

- **ENGL:** ENGL 201, ENGL 205, ENGL 207, ENGL 210, ENGL 211, ENGL 212, ENGL 213, ENGL 214, ENGL 215, ENGL 216, ENGL 217, ENGL 218, ENGL 219, ENGL 221, ENGL 222, ENGL 223, ENGL 224, ENGL 225, ENGL 226, ENGL 227, ENGL 229, ENGL 232, ENGL 233, ENGL 235, ENGL 236, ENGL 237, ENGL 239, ENGL240, ENGL 241, ENGL 242, ENGL 243, ENGL 244D, ENGL 244G, ENGL 244H, ENGL 244I, ENGL 244J, ENGL 246, ENGL 248A, ENGL 249, ENGL 250, ENGL 251, ENGL 252, ENGL 253.


- **OTHERS:** LDEM 201, LDEM 207, LDEM 208, LDEM 260, BUSS 215, EDUC 228, EDUC 229, EDUC 290C, ENGM 504, PSPA 210, PSPA 216, PSPA 217, SOAN 207/MCOM 202, SOAN 215, SOAN 217, SOAN 225, SOAN 238A/MCOM 291, SOAN 243E, MCOM 204, MCOM 280.
4. Social Science

**ECON:** ECON 203, ECON 211, ECON 212, ECON 217

**EDUC:** EDUC 211, EDUC 215, EDUC 218, EDUC 223, EDUC 230, EDUC 290K.

**PSPA:** PSPA 201, PSPA 202, PSPA 212, PSPA 213, PSPA 218, PSPA 221, PSPA 222, PSPA 238.

**PSYC:** PSYC 202.

**SOAN:** SOAN 201, SOAN 203, SOAN 204/MCOM 201, SOAN 205/MCOM 203, SOAN 206/MCOM 240, SOAN 207/MCOM 202, SOAN 210, SOAN 213, SOAN 221, SOAN 227, SOAN 228/MCOM 220, SOAN 229/MCOM 221, SOAN 230/MCOM 250, SOAN 231/MCOM 251, SOAN 232, SOAN 233/MCOM 260, SOAN 234/MCOM 230, SOAN 235/MCOM 231, SOAN 236/MCOM 241, MCOM 242, MCOM 252, SOAN 240, SOAN 241, SOAN 242, SOAN 243/MCOM 261, MCOM281, SOAN 245, SOAN 290/MCOM 290, SOAN 290I, SOAN 290L.

**OTHERS:** AGSC 212, AGSC 213, ARCH 331, ENGL 230, ENGL 235, ENGL 230, ENGL235, ENGL 247, GRDS 231, HBED/HPCH 200, HBED HPCH 201, HBED/HPCH 203, HMPD 204, HMPD 251, MNGT 215.

5. Natural Sciences

**BIOL:** BIOL 200, BIOL 201, BIOL 209, BIOL 210, BIOL 290EE

**CHEM:** CHEM 200, CHEM 201, CHEM 202, CHEM 204, CHEM 205, CHEM 207, CHEM 208, CHEM 209

**GEOL:** GEOL 201, GEOL 205

**PHYS:** PHYS 200, PHYS 204, PHYS 205, PHYS 210, PHYS 211, PHYS 212

**OTHERS:** ARCH 151, AGSC 203, AGSC 204, AVSC 220, AVSC 224, AVSC 281, BIOC 246, ENHL 220, LDEM 217, PHYL 246

6. Quantitative Thought

**CMPS:** CMPS 200, CMPS 206, CMPS 209

**MATH:** MATH 201, MATH 203, MATH 204, MATH 211, MATH 218

**OTHERS:** EECE 230, EPHD 203, EPHD 213, NURS 203, PHIL 211, PHIL220, STAT201, STAT210, EDUC271, PHIL256.

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, and NFSC 293. Additional courses may be required from Agriculture and Food Sciences and Management students to replace required courses common to the major and minor.
- The courses required for a Minor in Food Sciences and Management are NFSC 265, NFSC 278, NFSC 282, NFSC 288, NFSC 290, 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.
- The Animal and Veterinary Sciences Department offers one Minor in Veterinary Sciences (VTSC) with a minimum of 18 credits. Students who wish to obtain a minor in VTSC must apply to the Department of Animal and Veterinary Sciences to evaluate 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 after completing 24 credit hours in his/her major with a cumulative grade average of 70.
- The courses required for a Minor in Veterinary Sciences are AVSC 271 (3 cr.), AVSC 275 (3 cr.), AVSC 241 (3 cr.), AVSC 279 (3 cr.), and AVSC 281 (3 cr.).
- In addition, students should take 3 extra credits from the following: AVSC 242 (3 cr.), AVSC 278 (3 cr.), AVSC 280 (3 cr.), AVSC 203 (1 cr.), AVSC 210 (2 cr.), AVSC 213 (4 cr.), AVSC 215 (4 cr.). Agriculture students who have taken the required AVSC courses will have to compensate for the credits by taking other electives from within AVSC.
- 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; students should take extra 3 credits, of each of the majors, from the following: NFSC 220, NFSC 252, LDEM 211, AVSC, 220, AGSC 203 and AGSC 210.
J. Transfer to another Faculty

Students wanting to transfer to another faculty must take at least 50% of their courses at FAFS including one FAFS course (2 or 3 cr.) in corresponding major per semester. Students who do not register at least 50% of courses required by their major in the first semester will be automatically given the status of majorless in the second semester. A student should transfer after 2 semesters, if s/he fails to secure acceptance to the desired major by the end of the second semester s/he will be 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 that effect to the Academic and Curriculum Committee: (http://www.aub.edu.lb/fafs/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). Maximum credit load a student can take is 17 credits. To register for more than 17 credits, a student should be of good standing and is in his/her junior or senior year. A petition should be submitted to the Academic and Curriculum Committee (ACC) for approval. (Undergraduate petitions: http://www.aub.edu.lb/fafs/fafs_home/StudentResources/Pages/PetitionsandForms.aspx).

During the Drop and Add period, students should not be below 12 credits. If for any reason a student is left below 12 credits a petition should be filled in and submitted to ACC 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 ACC. 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, in certified checks only; cheques 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 cheque should be the exact amount shown on the Statement of Fees.
• Students who are sponsored by foundations and institutions such as Hariri, Faculty and 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’s 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 Period will result in the student being dropped from the added course(s). The student will still be obliged to pay the due fees including the tuition for the added credits.
Academic Advising
Academic Advising

Each student has an academic advisor 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 advisers first; if they encounter academic problems, they consult with the Academic Advising Coordinator at FAFS. The academic advisor 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 personal nature, University counselors are also available for help.

Students, who are exempted from ENGL 203, can substitute this course by any 3-credit free elective.

Students, who are exempted from ARAB, can substitute this course by any 3-credit humanity elective. 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, 215, 216, 217 and 218 are excluded).

Students who have BACC II Humanities or Socio-Economics, or French BACC Humanities or Socio-economics must take BIOL 103 and CHEM 102 as prerequisite course for CHEM 208.

Students who have BACC II Humanities or French BACC II Philo should take MATH 203 as prerequisite for MATH 204.

Humanities courses lists are posted on the FAFS Website and Registrar’s Website: http://www.aub.edu.lb/registrar/Documents/pdfdoc/general-education-courses.pdf
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 or 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 or 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 advisor 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 Tutorial and Test" by following this path:

• AUB Homepage
• A-Z
• Academic Computing Center
• Plagiarism Tutorial and Test

You can take the test as many times as necessary. When you achieve 100% 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

• A student who receives a Dean's Warning shall not be placed on the Dean's Honor List.
• A student who accumulates 3 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 3 regular terms following the term during which he/she received the first Dean's Warning
C. Withdrawal from Courses
- Students who during a semester miss more than one-fifth of the sessions of any courses 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 more than one required course in any given semester must petition the FAFS ACC committee for petition.
- 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 Academic Curriculum Committee or ACC 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 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 Ingenieur Agricole must complete a minimum of 45 credit hours with a minimum residency period of three semesters, and must complete the following course requirements with a minimum average of 70:
- Fall Semester: BIOL 200, CHEM 200, LDEM 215, AGSC 220, AGSC 235, AVSC 275.
- Spring Semester: AGSC 265, AVSC 226 OR AVSC 281, AGSC 224, LDEM 227.
- Fall Semester: AGSC 262, NFSC 221, AGSC 295, Six Credits of AGSC Electives.
To obtain a second **BS in Nutrition and Dietetics or Food Science and Management**, a student must:

- complete a minimum of 51 credits while registered in FAFS, including all NTDT II and NTDT III or FSMT II and FSMT III required core courses listed in the catalogue (of which up to 15 credits can be from transferred course credits)
- complete additional prerequisite courses as recommended by the Admissions Committee and approved by the Academic and Curriculum Committee
- complete at least three semesters of residency in the NTDT program

To obtain a second **BS in Landscape Design and Eco-Management and Diploma of Ingénieur Agricole**, a student must

- complete a minimum of 99 credits while registered at FAFS.
- complete all LDEM courses required in the program.
- complete at least 6 terms of residency at FAFS.
- 60 credits of the required 99 credits can be in transferable courses.

To obtain a second **BS in Agriculture and the Diploma of Ingénieur Agricole for Veterinary Sciences Students**

A candidate with a BS degree in Veterinary Sciences wishing to obtain a second degree in Agriculture and the Diploma of Ingenieur Agricole must complete a minimum of 31 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:** AGSC 215, AGSC 221, AGSC 232, AGSC 296, FAFS electives (from list below).
- **Spring Semester (AREC):** AGSC 222, AGSC 228, AGSC 231, AGSC 224, AGSC 284.
- **Summer Semester (AREC):** AGSC 223.

**Elective List:** AVSC 241, AVSC 242, AVSC 278, AVSC 279, AVSC 280, AVSC 281, AVSC 282, AGSC 212, AGSC 225, AGSC 235, AGSC 250 and AGSC 236.

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

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### 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 needs to consult with the registrar for the required forms and he/she will be granted two degrees at the same time of graduation. If tuition differs, student 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/dualdegree.pdf](http://www.aub.edu.lb/registrar/Documents/pdfdoc/dualdegree.pdf)

### F. Evaluation of Academic Performance

#### 1. Placement on Academic Probation

- A student is placed on probation if the student’s overall average is less than 68 at the end of the 2nd regular semester; if the semester average is less than 69 at the end of the 3rd or 4th regular semester, or if the semester average is less than 70 in any subsequent semester, excluding the summer term.
- Probation is removed when the student attains a semester average of 69 or more in the 3rd or 4th 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 student completes his/her graduation requirements.

#### 2. Dismissal

- A student will be dismissed if the overall average is less than 60 at the end of the 2nd regular semester.
- A student will be dismissed if he/she fails to clear academic probation within two regular semesters, excluding the summer term, after being put on probation.
- A student is placed on academic probation for a total of four regular semesters. A student can be dropped for this reason even if he/she is in the final year at AUB.

#### 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 for 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

1) be carrying at least 12 credits,
2) not be repeating the semester nor have a probation,
3) have passed all the courses of the semester and attained an overall average of 85 or more in the required courses, or of 80 or more while ranking approximately in the top 10 percent of the class,
4) not have been subjected to any disciplinary action within the university, and
5) be deemed worthy by the dean to be on the Honor List.

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.

**BS in Landscape Design and Ecosystem Management and Diploma of Ingénieur Agricole**
For clear promotion from year I to year II a student must complete a minimum of 33 credits. For promotion from year II to year III a student must complete a minimum of 69 credits. For promotion from year III to year IV a student must complete a minimum of 107 credits. All such credits should be from courses specified in the regular program.

**BS 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 in Veterinary Science**
For clear promotion from year I to year II a student must complete a minimum of thirty six credits. For promotion from year II to year III a student must complete a minimum of seventy six credits. All such credits should be from courses specified in the regular program.

**BS in Agribusiness**
For clear promotion from year I to year II a student must complete a minimum of thirty credits. For promotion from year II to year III a student must complete a minimum of sixty 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 or BS in Landscape Design and Ecosystem Management, and the Diploma of Ingénieur Agricole, a student must

- complete a minimum of 128 semester credit hours (Agriculture) or 139 semester credit hours (Landscape Design and Ecosystem Management)
- 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 Nutrition and Dietetics – Coordinated Program (NTCP) or BS in Food Sciences and Management (FSMT) or BS in Veterinary Sciences (VTSC), or BS in Agribusiness (AGBU) a student must

- complete a minimum of 96 semester credit hours for the NTDT program, 129 semester credit hours for the NTCP, 97 semester credit hours for the FSMT program, and 93 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

8. Eligibility for the AREC Program
To be eligible to register in the regular program at AREC during the third year of Agricultural Sciences or Landscape Design & Ecosystem Management, a student must:

- complete a minimum of fifty eight credits by the end of the first semester of Agriculture III with a cumulative grade average >70 what about the Landscape?
- not have accumulated more than twelve credits of failed / missed required courses in AGRI/LDEM I & II (of which no more than six credits are in failed courses) specified in the regular program
- be approved for such action by the Academic and Curriculum Committee
FAFS Awards

A. Joana Haidar Award
It is 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. FAFS Alumni Award
It is an annual award of $500 given to a qualified and needy agriculture student(s) at AREC with a cumulative average of 75% or more.

C. Edgecombe Award
It is a $500 awarded to the outstanding student in the Third year Agriculture.

D. Dean Thomas Sutherland Prize for Graduate Excellence
Awarded annually at graduation to outstanding graduates. For undergraduate excellence, $500 to the recipient of the Penrose Award for the year. For graduate excellence, $1000 to the M.S. graduate with the thesis judged best overall for design, research, presentation, and contribution to its field.

An e-mail is sent by the Chairperson to all faculty members to call for nominations for this award. Each professor is asked to nominate only one graduate student along with a copy of the thesis, resume/C.V. and justification for making the nomination. Each thesis is reviewed by two outside reviewers.

Ranking is based on the originality, design, research, clarity of presentation and importance to the field.

E. Abdul Hadi Debs Endowment Award for Academic Excellence
It is an annual award to graduating students, preferably at the graduate level. Each Faculty will nominate one candidate with outstanding academic record, and who has demonstrated research capabilities through a paper, project or thesis deemed by the Faculty worthy of publication. The recipients will receive equally a cash award depending on the amount generated by the endowment. The maximum amount of each award shall not exceed $1,000.

F. 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 Chairperson would send an e-mail to all FAFS faculty members asking them to submit nominations for this award with the deadline initially set for Mid-June. The Committee reviews the records of the nominees. After reviewing them, the committee recommends to the Dean all nominees, in order of preference. Candidates would be asked to make short presentations about their qualifications for the award during the faculty meeting.

G. Dean Nuhad Daghir FAFS Graduate Student Award
Awarded annually at graduation to outstanding graduates. This award is set at $1000 and will go to the graduating student with a Master’s degree from the Department of Animal and Veterinary Sciences who succeeded to accumulate the highest average over his/her graduate studies at AUB.
Undergraduate Program Curriculum
Undergraduate Program Curriculum

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

| Agriculture I | | |
|-------------|-------------|-------------|-------------|
| First Semester | Credits | Second Semester | Credits |
| AGSC 201 | Orientation to Agriculture and Food Systems | 2 | ARAB | Arabic Communication Skills 2 | 3 |
| BIOL 200 | Diversity for Life | 4 | AGSC | Agricultural Economics, Principles, and Policy | 3 |
| CHEM 200 | Basic Chemistry | 3 | CHEM | Survey of Organic Chemistry | 3 |
| CHEM 205 | Introductory Chemistry Laboratory | 2 | ENGL | Academic English | 3 |
| CMPS 209 | Computers and Programming for the Sciences | 3 | MATH | Calculus and Analytic Geometry III/Mathematics for Social Sciences II | 3 |
| **Total** | 14 | **Total** | 15 |

| Agriculture II | | |
|-------------|-------------|-------------|-------------|
| First Semester | Credits | Second Semester | Credits |
| AGSC 215 | Introduction to Soils | 3 | AGSC | Rural Social Systems | 3 |
| AGSC 220 | Principles of Plant Physiology | 3 | AGSC | Soil Fertility | 3 |
| AGSC 241 | Farm Management | 3 | AVSC | Agricultural Microbiology | 3 |
| AVSC 243 | Genetics | 3 | ENGL | Advanced Academic English | 3 |
| NFSC 261 | Introductory Biochemistry | 3 | STAT | Elementary Statistics for the Sciences | 3 |
| **Total** | 15 | **Total** | 15 |

Agriculture III

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<th>Second Semester (AREC)</th>
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<td>AGSC 221</td>
<td>Principles of Entomology</td>
<td>3</td>
<td>AGSC</td>
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<tr>
<td>AGSC 232</td>
<td>Principles of Plant Pathology</td>
<td>3</td>
<td>AGSC</td>
</tr>
<tr>
<td>AVSC 271</td>
<td>Animal Nutrition</td>
<td>3</td>
<td>AGSC</td>
</tr>
<tr>
<td>AVSC 275</td>
<td>Anatomy and Physiology of Farm Animals</td>
<td>3</td>
<td>AGSC</td>
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<tr>
<td>Humanities Elective</td>
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<td>AGSC</td>
<td>Weed Science</td>
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Summer Semester (AREC)

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<td>AGSC 223</td>
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<td>AGSC</td>
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<tr>
<td>AGSC 226</td>
<td>Farm Power and Machinery</td>
<td>3</td>
<td>AVSC</td>
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Agriculture IV

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<tbody>
<tr>
<td>AGSC 235</td>
<td>Agricultural Extension in Development</td>
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<td>AGSC</td>
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<td>NFSC 221</td>
<td>Basic Nutrition</td>
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<td>Electives in FAFS</td>
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<td>NFSC 288</td>
<td>Technology of Food Product</td>
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<td>Humanities Elective</td>
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<td><strong>Social Sciences</strong></td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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A minimum of 128 credits are required for graduation.

- Dependent on Arabic Placement Test.
- Agricultural Sciences (AGSC) Courses
- Animal and Veterinary Sciences (AVSC) Courses
- Nutrition and Food Sciences (NFSC) Courses
- AUB Requirements
- Arts & Sciences Courses

Core Courses description for the BS Degree in Agriculture offered by AGSC Department

**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 Faculty of Agricultural and Food Sciences. It covers 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.

**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 CHEM 202 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.
Surveying, land preparation, water measurement, conveyance and application, pumping, drainage and soil-water relationships; introduction to farm irrigation 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 biology and weed management practices with emphasis on chemical weed control.

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.

**Elective Courses for the BS Degree in Agriculture**

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 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 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. **Prerequisite:** AGSC 215, AGSC 231 and AGSC 284.

AGSC 261 Hydraulics 3.0 3 cr.
Principles of mass and energy conservation, pipe flow, canal flow, measurement of fluid flow, and application of hydraulic principles to irrigation system design.

AGSC 219 Apiculture 2.3 3 cr.
The basics of apiculture and the biology of honey bees will be introduced in this course by exploring the natural history of beekeeping, biogeography in terms of honeybee species and race evolution, and ecology of honey bees. Comprehensive information related to honey bee anatomy, physiology, colony social structure, pests/diseases and other natural enemies, hive products, pollination ecology, management and current topics in beekeeping will be discussed. The course illustrates both the individual and social aspects of one of nature’s most fascinating creatures, depicting the delicate ecological interaction of the honeybee with its surrounding flora and fauna. The course provides hands-on experience to help students start, maintain and care for a honey bee colony students will learn how to construct and maintain healthy hives, introduce queen bees and extract honey.

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 on 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.

**Core Courses description for the BS Degree in Agriculture offered by AVSC Department**

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, and the 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  
Principles of inheritance, with an introduction to modern genetics.

AVSC 271 Animal Nutrition 3.0  
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  
Systematic anatomy and physiology of farm animals

Elective Courses for the BS Degree in Agriculture and Veterinary Science

AVSC 241 Principles of Dairying 2.3  
Management, housing, feeding, breeding, and record-keeping in dairy production.

AVSC 242 Small Ruminant Production in Arid Regions 2.3  
Breeding, feeding, and management of sheep and goats under arid conditions.

AVSC 276 Animal Physiology Laboratory 0.3  
Pre- or co-requisite: AVSC 275.

AVSC 277 Animal Breeding 2.0  
Principles of permanent improvement of animal and poultry production. Prerequisite: AVSC 243 or BIOL 223.

AVSC 278 Feeds and Feeding 2.3  
Characteristics, conservation, and preparation of feeds feeding of various classes of livestock.

AVSC 279 Companion Pet Birds and Animals 3.0  
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  
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 28 Production of Novel Avian Species 3.0  
Management practices in the production of economically beneficial avian species other than the domestic chicken (e.g., ratites, turkey, water fowl, etc.).

AVSC 282 Pet Birds and Animals 3.0  
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

### Agribusiness I

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
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<td>AGSC 204</td>
<td>Natural Sciences for Agribusiness</td>
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<td>ACCT 210</td>
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<td>AGSC 211</td>
<td>Introduction to Agricultural Issues and Policies</td>
<td>3</td>
<td>AGSC 202</td>
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<td>Computers and Programming for the Sciences</td>
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### Agribusiness II

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<td>AGSC 212</td>
<td>Microeconomics Theory of Food and Farming</td>
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<td>AGSC 239</td>
<td>Agribusiness Communication Skills Workshop</td>
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### Summer Semester

| Credits |
|------------------------|---------|
| AGSC 229               | Entrepreneurship in Agriculture (Theory + Project) | 3 |
| AGSC 256               | Summer Internship | 1 |
| **Total**              | 4 |

### Agribusiness III

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<td>AGSC 236</td>
<td>New Trends in Agricultural and Food Systems</td>
<td>3</td>
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<td>AGSC 240</td>
<td>Career Planning Workshop for Agribusiness</td>
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A minimum of 96 credits are required for graduation.

- Dependent on Arabic Placement Test.
- Agricultural Sciences (AGSC) Courses
- Animal and Veterinary Sciences (AVSC) Courses
- Nutrition and Food Sciences (NFSC) Courses
- Business Courses
- AUB Requirements
- Arts & Sciences Courses
Core Course for the BS Degree in Agribusiness offered by the AGSC Department

AGSC 202 Introduction to Land and Water Resources 3.0
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.

AGSC 203 Crop Production and Protection 3.0
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
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.

AGSC 210 Marketing in Agribusiness 3.0
An overview of marketing activities in Agro-food industries, including marketing inputs in strategic planning, global marketing, marketing research, analysis of buyer behaviour, market segmentation and positioning, and development of the marketing mix elements. 
Prerequisite: Junior status standing.

AGSC 211 Introduction to Agricultural Issues and Policies 3.0
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
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.

AGSC 213 Legal Aspects of Agribusiness 3.0
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.

AGSC 229 Entrepreneurship in Agriculture 3.0
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.

AGSC 236 New Trends in Agricultural and Food Systems 3.0
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 in Agribusiness.

AGSC 239 Agribusiness Communication Skills Workshop 0.0
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.

AGSC 240 Career Planning Workshop for Agribusiness 0.0
A ten-hour workshop designed 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.

AGSC 248 Operation Management for Agribusiness 3.0
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.
AGSC 253 Harvest and Post-harvest Issues and Strategies 3.0 3 cr.
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.

AGSC 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.

Core Courses description for the BS Degree in Agribusiness offered by 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.

Core Courses description for the BS Degree in Agribusiness offered by AVSC Department

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 the domestic chickens, turkeys, water fowls, game birds and others. The third section discusses the nature of economic diseases in domestic animals and avian species and the regulations of World Trade Organization in import and export of animals, including rules that prevent the trans-boundary transmission of microbes causing economic diseases.
### C. Curriculum for the BS Degree in Veterinary Science

#### Veterinary Science I

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
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<tr>
<td>BIOL 200 Diversity of Life</td>
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<td>AVSC 224 Agricultural Microbiology</td>
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<td>CHEM 200 Basic Chemistry</td>
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<td>ENGL 203 Academic English</td>
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<td>CHEM 205 Introductory Chemistry Laboratory</td>
<td>2</td>
<td>CHEM 208 Survey of Organic Chemistry</td>
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<td>CMPS 209 Computers and Programming for the Sciences</td>
<td>3</td>
<td>MATH 201 or 204 Calculus and Analytic Geometry II or Mathematics for Social Sciences II</td>
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Humanities Elective 3

Total 15

#### Veterinary Science II

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<th>First Semester</th>
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<tbody>
<tr>
<td>AVSC 271 Animal Nutrition</td>
<td>3</td>
<td>AVSC 203 History of Veterinary Medicine</td>
<td>1</td>
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<tr>
<td>AVSC 275 Anatomy and Physiology of Animals</td>
<td>3</td>
<td>AVSC 210 Applied Ethology</td>
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<td>AVSC 243 Genetics</td>
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<td>ENGL 204 Advanced Academic English</td>
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<td>NFSC 261 Introductory Biochemistry (Biochemistry I)</td>
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<td>PHYS 204 Classical Physics for Life Sciences</td>
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Total 16

#### Veterinary Science III

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<tr>
<td>AGSC 220 Principles of Plant Physiology</td>
<td>3</td>
<td>AVSC 215 Veterinary Embryology</td>
<td>4</td>
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<tr>
<td>AVSC 206 Clinical Diagnostics</td>
<td>2</td>
<td>AVSC 222 General Livestock Production</td>
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<td>AVSC 213 Comparative Vertebrate Anatomy</td>
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<td>AVSC 277 Animal Breeding</td>
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<td>LABM 201 Clinical Chemistry I</td>
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<td>AVSC 299B Special Topic in Animal Sciences for Veterinary Science Program</td>
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<tr>
<td>HUMR 246 Human Morphology for Paramedical Students</td>
<td>3</td>
<td>LABM 202 Clinical Chemistry II</td>
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<td>PHRM 240 Pharmacology and Therapeutics</td>
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Total 17

#### Summer Semester (At AUB Campus and/or AREC)

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<tr>
<td>AVSC 226 Poultry Production</td>
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<td>NURS 210 Pathophysiology</td>
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### Notes

- The Veterinary Science program has been frozen effective fall 2012-2013.
- A minimum of 102 credits are required for graduation.
- Dependent on Arabic Placement Test.
- Agricultural Sciences (AGSC) Courses
- Animal and Veterinary Sciences (AVSC) Courses
- Nutrition and Food Sciences (NFSC) Courses
- AUB Requirements
- Arts & Sciences Courses
- Medical and Nursing Courses
Core Courses description for the BS Degree in Veterinary Science offered by AVSC Department

**AVSC 203 History of Veterinary Medicine**  
1 cr.  
The course explores the beginnings of veterinary medicine from ancient times to the middle ages and ending with modern times. The different specializations and branches of veterinary medicine are also explored.

**AVSC 205 Topographic and Applied Anatomy**  
2 cr.  
The course is divided into six major sections starting with the palpable landmarks of the body followed by the topography of the thorax, abdomen, pelvic cavity and ending with the limbs. Superficial veins, sites of venous blood sampling, and investigation points will be explored in different body parts.

**AVSC 206 Clinical Diagnostics**  
2 cr.  
The course deals with examination techniques and symptomology of internal diseases. The course is organized according to organs and organic systems, with special attention to the corresponding instrumentation used and species specific differences.

**AVSC 210 Applied Ethology**  
2 cr.  
Applied ethology is the branch of animal science, which on the basis of the description of the innate behavior of farm animals and pets, studies the behavior of animals kept in intensive farming systems or, in the case of companion animals, kept in the close vicinity of humans. It also studies the effects of housing, nutrition, and attendants’ care on the establishment of behavioral patterns. This subject also deals with the formation, prevention, and treatment of abnormal behavior (misbehavior, ethostasis) and describes ethical aspects of animal welfare.

**AVSC 213 Comparative Vertebrate Anatomy**  
4 cr.  
This course introduces the students to the field of Comparative Vertebrate Anatomy. It is organized in a manner within the unifying framework of form, function, and evolution.

**AVSC 215 Veterinary Embryology**  
4 cr.  
This course describes changes on the cellular, molecular and tissue levels before the birth of an animal to help in understanding the normal and abnormal structural developmental processes.

**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, and the 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.

**AVSC 277 Animal Breeding 2.0**  
2 cr.  
Principles of permanent improvement of animal and poultry production. **Prerequisite: AVSC 243 or BIOL 223.**

**AVSC 299B Special Topics in Animal Sciences for Agriculture Program**  
2 cr.  
Directed study. Tutorial. **Prerequisites: Fourth year standing and consent of instructor.**
D. Curriculum for the BS Degree in Landscape Design and Eco-system Management and Diploma of Ingénieur Agricole

### Landscape I

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**Summer Semester Credits**

| Social Science Elective | 3 |
| LDEM 250 Computer Aided Design | 3 |
| **Total**               | 6 |

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</table>

A minimum of 140 credits are required for graduation.

- Dependent on Arabic Placement Test.
- Agricultural Sciences (AGSC) Courses
- Landscape Design and Eco-system Management (LDEM) Courses
- Architecture Courses
- AUB Requirements
- Arts & Sciences Courses
- Business Courses
Core Courses for the BS Degree in Landscape Design and Eco-Management offered by the LDEM Department

**LDEM 200 Landscape Technical Drawing** 4 cr.
An introduction to basic graphical skills in landscape design. Students learn to use different drawing tools and techniques, 2D-orthographic projections and 3D-drawings. Course material also covers understanding of scale and of shade and shadow.

**LDEM 202 Landscape Design I** 6 cr.
An introductory studio that guides students through the multi-layered meaning of landscape. Visual, perceptual, and spatial qualities are explored and alternatives for their graphic representation investigated. *Prerequisite: ARCH 100.*

**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 204 Ecological Landscape Design I** 6 cr.
An introduction to the objectives and methodology of ecological landscape design in Mediterranean and semi-arid ecosystems. This course emphasizes the larger context for landscape design introducing students to environmental sustainability, use of native plant resources and, biodiversity conservation. Applications are selected from urban and rural public spaces. *Prerequisite: LDEM 246.*

**LDEM 207 Landscape Architecture History I** 3 cr.
The course is a survey of the evolution of structures, settlements and landscapes in the western world and the Mediterranean region including the Arab world. The period spans from origins of human societies, to the close of the medieval period. Students will be assessed on a research papers and a project of individual interest as well as written exams. Introduction to the discipline of landscape architecture and architecture through the analysis of the built environment, concepts and themes in design; focusing on historical examples.

**LDEM 208 Landscape Architecture History II** 3 cr.
The course is a survey of the evolution of structures, settlements and landscapes in the western world and the Mediterranean region including the Arab world. The period spans from the Renaissance to the present. Students will be assessed on a research papers and a project of individual interest as well as written exams. Examination of the history of landscape architecture since Frederick Law Olmsted and 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 through the analysis of the built environment, concepts and themes in design; focusing on historical examples.

**LDEM 209 Plant Biology 3.3** 4 cr.
An introduction to botany and 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 providing applications and insights relevant to landscape students.

**LDEM 211 Landscape Horticulture I 2.3** 3 cr.
This course explores the science, the technique and the art of landscape horticulture. Students will identify plants, learn how to represent and produce them through practical sessions, and understand the theory behind successful plant management practices. They will become familiar with the landscape horticulture literature through written exercises, and will be introduced to concepts of environmental horticulture and its role in promoting nature conservation.

**LDEM 212 Landscape Horticulture II 2.3** 3 cr.
Survey, identification, landscape characters, and management of herbaceous and woody landscape plants. The student will learn about the landscape uses of plants and the management requirements in different site/use situations. *Prerequisite: LDEM 211.*

**LDEM 216 Landscape Design II** 6 cr.
The process of landscape design is introduced, starting with site appreciation and analysis, through concept development and articulation using building materials, plants, and landscape furniture. The focus is on conceptual thinking and communication both verbally and graphically. *Prerequisite: LDEM 202.*

**LDEM 217 Soils in the Landscape 2.3** 3 cr.
Specifically designed for landscape students, the course aims at developing an understanding of the relationship between geology, landform, soils and landscapes. The course also aims to emphasize the management actions essential in landscaping, such as soil preparation, soil amendments and fertilization.

**LDEM 218 Landscape Ecology 3.0** 3 cr.
Students will be introduced to the discipline of landscape ecology. The course will focus on the interplay between spatial patterns and ecological process. It focuses on detecting and characterizing social and natural patterns influence on landscapes and landscape dynamics. Implications of landscape pattern and landscape management will also be covered.
LDEM 228 Ecological Landscape Design II
A course offered at the Agricultural Research and Educational Center (AREC) in the Bekaa. The concepts and methods introduced in the previous term are applied to rural and agricultural landscapes with a hands-on approach to landscape design. **Prerequisite:** LDEM 204.

LDEM 230 Water and the Environment 3.0
Introduces physical hydrological processes and their interactions with natural environment and human activities. Topics covered include hydrologic cycle, watershed hydrology, runoff generation, precipitation, evapotranspiration, infiltration, stream processes, groundwater, erosion, and statistical hydrology.

LDEM 241 Final Year Project: Landscape Design 6 cr.
Each student will work on a project of his/her choice, with the guidance and approval of an appointed faculty committee. The natural, environmental, socio-cultural, and legal constraints, together with the specific requirements of the project, will form the basis for developing the landscape design. **Prerequisite:** LDEM 228.

LDEM 242 Final Year Project: Landscape Implementation and Management 6 cr.
Having finalized the landscape design in the previous term, the last term focuses on developing technical and implementation drawings and a management plan. Working on their individual projects, the students have the opportunity to integrate the knowledge and skills gained in the previous years into a comprehensive landscape design proposal. **Prerequisite:** LDEM 241.

LDEM 245 Irrigation Methods for Landscape Designs 3 cr.
A course that acquaints students with the design and production of economical irrigation systems that keep landscapes green while conserving water.

LDEM 246 Landscape Design III 6 cr.
This studio continues the emphasis on landscape design development with a focus on design details, building materials and construction, landscape furniture, plant selection and their role in articulating the landscape design. Landscape specifications, bills of quantities, and costing are also introduced. **Prerequisite:** LDEM 216.

LDEM 250 Computer-Aided Design 2.3 3 cr.
An introduction to computer-aided landscape design and analysis. Students are provided with software tools for landscape drafting that can be applied in landscape design projects. **Prerequisite:** LDEM 202.

LDEM 251 GIS 2.3 3 cr.
The goal of this class 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 understanding, describing, and predicting the land-use and land-cover. The course will necessarily move between social and ecological processes and applications of the models. Students completing the course will be able 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 263 Landscape Appreciation 3.0 3 cr.
This course introduces the students to specific landscapes of Lebanon and teaches their reading through analyzing the interrelationship between natural conditions and human settlement and land use over time. Field trips are included in the course. Frequently.

LDEM 265 Landscape Management 2.3 3 cr.
This course is designed to help students develop field expertise and practical skills by building on knowledge acquired in previous science courses (plant biology, landscape horticulture and soils in the landscape,) and learn implementation and management actions essential in landscaping.

LDEM 290 Professional Practice 3.0 3 cr.
This course discusses the professional practice of the landscape architecture profession. It introduces basic issues in the practice and the profession of landscape design, challenging the students to critically examine professional, political, commercial, and other problems in current practice. **Prerequisite:** ENGL 203 and junior standing.

LDEM 291 Surveying and Base Plan Development 2.3 3 cr.
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 295 Landscape Seminar 1 cr.
Current issues in landscape design and ecosystem management.

LDEM 296 Landscape Seminar 1 cr.
Current issues in landscape design and ecosystem management.
Core Courses for the BS Degree in Landscape Design and Eco-Management offered by the AGSC Department

LDEM 215 Introduction to Landscape Pests 2.3 3 cr.
The fundamentals, biology, and ecology of landscape insects, mites, plant pathogens, and weeds.

LDEM 227 Applied Plant Protection in Landscape 2.3 3 cr.
The diagnosis of landscape pests including diseases, insects, mites, and weeds of major importance, and applied measures for their prevention and control in urban and natural environments.

Elective Courses for the BS Degree in Landscape Design and Eco-Management offered by LDEM department

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 260 - Contemporary Issues in Landscape Architecture 3 cr.
The course Contemporary Issues in Landscape addresses recent trends in the profession to cover the multitude of approaches, to broaden the students’ knowledge in theory, to encourage their critical and analytical abilities, to encourage thinking in systems and to understand landscape as a cultural expression. The course discusses works of recent interventions by Landscape Architects in different parts of the world and sets them in relationship to their cultural, natural and socio-economic context. At the same time students are asked to critically evaluate the current open space situation in Beirut and discuss ideas and approaches towards the latter.

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 facility 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, developing portfolios of interior landscape designs for proper installation of drainage and irrigation.

LDEM 270 Ornamental Plants for Dry Landscapes 2 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.
### E. Curriculum for the BS Degree in Food Science and Management

#### Food Science I

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A minimum of 97 credits are required for graduation.

- Dependent on Arabic Placement Test.
- Agricultural Sciences (AGSC) Courses
- Nutrition and Food Sciences (NFSC) Courses
- AUB Requirements
- A&S Courses
- Business Courses

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- Elements of Food Engineering
- Current Topics in Food Science and Nutrition
- Projects in Nutrition and Food Science
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. Course offered in fall and spring.

**NFSC 261 Introductory Biochemistry 3.0**  
3 cr.  
Chemistry of biological compounds, their enzymatic degradation, and intermediary metabolism. Course offered in fall and spring.  
Prerequisite: CHEM 208.

**NFSC 265 Food Chemistry 3.0**  
3 cr.  
Chemical composition, physical and sensory properties of foods.  
Prerequisite: CHEM 208.

**NFSC 267 Food Analysis 1.3**  
2 cr.  
Laboratory methods for chemical analysis of nutrients and chemicals in food products.  
Prerequisites: CHEM 205, CHEM 209; Pre- or co-requisite: NFSC 265. Course offered in 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.  
Technology and processing of foods; includes processing food products in the Pilot Plant.  
Prerequisites: NFSC 265, ND III or FSM III.

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

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

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

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

**NFSC 299 Projects in Nutrition and Food Sciences**  
2 cr.  
Directed study. Tutorial.  
Prerequisite: ND III or FSM III.
### F. Curriculum for the BS Degree in Nutrition and Dietetics

#### Nutrition I

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**Total** 15  
**Total** 15

#### Nutrition II

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**Total** 17  
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**Total** 16  
**Total** 16

A minimum of 96 credits are required for graduation.

- Dependent on Arabic Placement Test.
- Agricultural Sciences (AGSC) Courses
- Nutrition and Food Sciences (NFSC) Courses
- AUB Requirements
- A&S Courses
- Business Courses
- Medical Courses
G. Curriculum for the BS Degree in Nutrition and Dietetics-Coordinated Program

The first three years of the program are similar to those of the Nutrition and Dietetics program. In addition, the fourth year includes the below courses:

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<td><strong>Second Semester</strong></td>
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<td>NFSC 284 B Seminar in Clinical Dietetics</td>
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<td>NFSC 298 S Dietetic Practicum (not billed)</td>
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1 A minimum of 129 credits are required for graduation.

Core Courses for the BS Degree in Nutrition and Dietetics offered by the NFSC department:

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

- **NFSC 222 Community Nutrition 3.0**
  An introduction to key concepts and current topics in community nutrition. 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, and NFSC 285.

- **NFSC 240 Nutritional Status Assessment 1.3**
  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 co-requisite: NFSC 274.

- **NFSC 261 Introductory Biochemistry 3.0**
  Chemistry of biological compounds, their enzymatic degradation and intermediary metabolism. Prerequisite: CHEM 208. Course offered in fall and spring.

- **NFSC 265 Food Chemistry 3.0**
  Chemical composition, physical and sensory properties of foods. Prerequisite: CHEM 208.

- **NFSC 267 Food Analysis 1.3**
  Laboratory methods for chemical analysis of nutrients and chemicals in food products. Prerequisites: CHEM 205, CHEM 209; Pre- or co-requisite: NFSC 265. Course offered in 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**
  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 285 Nutrition in the Life Cycle 2.3**
  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**
  Technology and processing of foods; includes processing food products in the Pilot Plant. Prerequisites: NFSC 265, ND III or FSM III.

- **NFSC 289 Food Processing Laboratory 0.3**
  Laboratory exercises in the Pilot Plant in food preservation, preparation and processing. Co-requisites: NFSC 287, ND III or FSM III.

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

- **NFSC 292 Medical Nutrition Therapy I 3.0**
  Examines selected metabolic diseases, HIV, and cancer by covering their etiology, metabolic pathways, and the importance of medical nutrition therapy. Prerequisites: NFSC 240, NFSC 274 and NFSC 285.
NFSC 293 Medical Nutrition Therapy II 3.0  
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 NFSC 285.**

NFSC 294 Medical Nutrition Therapy Laboratory I 0.3  
Self-study modules, case studies, reports, and discussions of NFSC 292 topics. **Co-requisite: NFSC 292. Prerequisite NFSC 285.**

NFSC 295 Medical Nutrition Therapy Laboratory II 0.3  
Self-study modules, case studies, reports, and discussions of NFSC 293 topics. **Co-requisite: NFSC 293.**

NFSC 296 Current Topics in Food Sciences and Nutrition 1 cr.  
Prerequisite: ND III. Course offered in fall and spring.

NFSC 299 Projects in Nutrition and Food Sciences 2 cr.  
Directed study. Tutorial. **Prerequisite: ND III.**

**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 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.

NFSC 284 Seminar in Clinical Dietetics 2 cr.  
This course focuses on developing the 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.

NFSC 298 Dietetic Practicum 28 cr.  
Training for nine months at an affiliated medical facility

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**Elective Courses 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.