The Lebanese American University is an American institution chartered by the Board of Regents of the University of the State of New York and operating in Lebanon.
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Academic Calendar 2005–2006

June 2005

2–7 Registration for Summer Module I 2005 for current students
8 Spring 2005 classes end
9–12 Reading period
9–14 Registration for Fall 2005 for current students
13–21 Spring 2005 final exams
22 Deadline for intercampus transfer for Summer Module I 2005
25–27 Registration, drop/add for Summer Module I 2005
27 Summer Module I 2005 classes begin
28 Late registration (with late registration fee)
29–July 1 Collection of statements of fees for Summer Module I 2005

July 2005

4 Deadline for payment of Summer Module I 2005 tuition and fees
7 Commencement Exercises, Byblos Campus
9 Commencement Exercises, Beirut Campus
27 Last day for withdrawal from courses for Summer Module I 2005
27–29 Registration, drop/add for Summer Module II 2005
29 Summer Module I 2005 classes end

August 2005

1–2 Summer Module I 2005 final exams
8 Registration, drop/add for Summer Module II 2005
9 Summer Module II 2005 classes begin
10–12 Late registration (with late registration fee)
10–12 Collection of statements of fees for Summer Module II 2005
15 Holiday, St. Mary’s Assumption
16 Deadline for payment of Summer Module II 2005 tuition and fees

September 2005

7 Last day for withdrawal from courses for Summer Module II 2005
9 Summer Module II 2005 classes end
12–13 Final exams, Summer Module II 2005
21–22 Orientation Program for new students
23 Deadline for intercampus transfer for Fall 2005
23–27 Advising period for new students
26–28 New student registration for Fall 2005
28 Registration for returnees who reactivated files for Fall 2005
29 Fall 2005 classes begin
29–Oct. 3 Late registration (with late registration fees) and drop/add for Fall 2005

October 2005

1 University Faculty meeting
4–10 Collection of statements of fees for Fall 2005
13 Deadline for payment of Fall 2005 tuition and fees
NOVEMBER 2005
3–5      * Holiday, Al-Fitr
22      Holiday, Independence Day
29      Deadline for Incomplete grades (from Spring and Summer 2005)

DECEMBER 2005
23, 8 p.m.  Winter vacation begins (Christmas and New Year)

JANUARY 2006
2, 8 a.m.    Classes resume
6      Holiday, Armenian Christmas
9–11      * Holiday, Al-Adha
16–20    Advising
20      Last day for withdrawal from courses for Fall 2005
21–26    Registration for Spring 2006 for current students
26      Fall 2005 classes end
27–29    Reading days (Note: Saturday 28: exam day, Monday 30: holiday)
28–Feb. 7    Fall 2005 final exams
30      * Holiday, Hijra New Year

FEBRUARY 2006
8      Holiday, Ashoura
9      Holiday, St. Maroun’s Day
10–13  Orientation for new students
13–15  Advising for new students
14–16  New student registration for Spring 2006
16    Registration for returnees who reactivated files for Spring 2006
17    Spring 2006 classes begin
17–21  Late registration (with late registration fees) and drop/add for Spring 2006
22–28  Collection of statements of fees for Spring 2006

MARCH 2006
3      Deadline for payment of Spring 2006 tuition and fees

APRIL 2006
10      * Holiday, Prophet’s Birthday
13      A Monday schedule of courses will be applied
13, 8 p.m.  Western Easter vacation begins
18, 8 a.m.    Classes resume
19      Deadline for makeup of Incomplete grades (from Fall 2005)
20, 8 p.m.  Eastern Easter vacation begins
25, 8 a.m.    Classes resume

MAY 2006
1      Holiday, Labor Day
2      A Monday schedule of courses will be applied
6      Holiday, Martyrs’ Day
16–24  Payment of deposit for Fall 2006
18–24  Advising
24  Deadline for intercampus transfer for Summer Module I 2006
26–30  Registration for current students for Summer Module I 2006
31–June 2  Registration for current students for Summer Module II 2006

**JUNE 2006**
2  Last day for withdrawal from courses for Spring 2006
3–8  Registration for current students Fall 2006
8  Spring 2006 classes end
9–11  Reading period
12–20  Spring 2006 final exams
21  Orientation for new students
22–23  Advising
23–25  Registration for new students for Summer Module I 2006
23  Registration for returnees who have reactivated files for Summer Module I 2006
26  Summer Module I 2006 classes begin
26–27  Late registration (with late registration fee) and drop/add (Summer Module I 2006)
28–30  Collection of statements of fees for Summer Module I 2006

**JULY 2006**
4  Deadline for payment of Summer Module I 2006 tuition and fees
6  Commencement Exercises, Byblos Campus
8  Commencement Exercises, Beirut Campus
26  Last day for withdrawal from courses for Summer Module I 2006
28  Summer Module I 2006 classes end
29–30  Reading period
31–Aug. 1  Summer Module I 2006 final exams

**AUGUST 2006**
2  Orientation and advising for new students
Deadline for intercampus transfer for Summer Module II 2006
3  Registration for new students for Summer Module II 2006
Registration for returnees with reactivated files for Summer Module II 2006
4  Summer Module II 2006 classes begin
Late registration with late fees and drop/add for Summer Module II 2006
7–9  Collection of statements of fees for Summer Module II 2006
12  Deadline for payment of Summer Module II 2006 tuition and fees
15  Holiday, St. Mary’s Assumption

**SEPTEMBER 2006**
6  Last day for withdrawal from courses for Summer Module II 2006
8  Summer Module II 2006 classes end
9–10  Reading period
11–12  Summer Module II final exams

* Tentative dates.
Historical Background

The Lebanese American University (LAU) is an American institution of higher education established by the Presbyterian Church (USA) and chartered in the State of New York, USA, with two campuses, one located in Beirut and the other in Byblos, north of Beirut, and a student population of over 6,000. LAU is a comprehensive institution, mainly undergraduate, but offering master’s degrees in a select number of graduate programs, including business, engineering, and architecture, and a Pharm.D. in pharmacy. LAU firmly believes in the value of a liberal arts education under-girding its excellent professional programs. The University prepares students for responsible living, with full consciousness of the rich heritage and multiple needs of their respective communities and those of the Middle East and beyond. While 82% of LAU students come from Lebanon, 18% come from 65 countries and add an international dimension to the rich and enriching educational, religious, and cultural diversity of Lebanon.

The University’s early days in 1835 find a reminder in an engraved column in Beirut’s city center. “Site of the first edifice built as a school for girls in the Turkish Empire.” In 1924 a two-year program was added to the School, providing a junior college curriculum. In 1927 the American Junior College for Women (AJCW) became a separate institution and was transferred to Ras Beirut. Six years later it was moved to the current location of LAU’s Beirut campus.

In 1948–49, the program of the College was expanded into a university-level Institution under the new name of Beirut College for Women (BCW). In 1950, BCW was granted a provisional Charter by the Board of Regents of the University of the State of New York, with authorization to grant both the Associate in Arts Degree (A.A.) for a two-year course, and the Bachelor of Arts Degree (B.A.). Later, in 1955, the Board of Regents granted the College an Absolute Charter with all its rights and privileges, including the authority to grant the Degrees of Bachelor of Arts and Bachelor of Science (B.A./B.S.) and the Degrees of Associate in Arts (A.A.) and Associate in Sage Hall in the 1930s
Applied Science (A.A.S.). As a recognized university-level liberal arts college, it played a key role in serving the educational, social, and economic needs of the Middle East.

The year 1970 witnessed another milestone in the academic history of the University, when the Lebanese Government officially recognized the College’s Bachelor of Arts and Bachelor of Science Degrees as equivalent to the National License Degree. Having accepted men into some Associate of Arts Programs, the College in 1973 changed its name from Beirut College for Women (BCW) to Beirut University College (BUC). The following academic year, five B.A./B.S. majors were opened to male students, and in October, 1975, men were admitted to all majors offered at the College. In 1978, BUC opened an off-campus program in Louize, Keserwan and a year later another one was opened in the South (in Sidon).

Finally, adding to the College’s constantly evolving programs, in 1985 the Board of Trustees resolved to create new branches at Byblos and Sidon. The Board of Regents then approved an amendment of the Charter to include the two new campuses.

Thanks to the generosity of many committed donors from Lebanon and the region in 1987 the College opened its northern branch in temporary buildings in Amshit. Shortly thereafter, the new Byblos City Company donated to the College a 27-acre lot, located on a hill above Byblos, to build on it the Byblos branch campus. The generous contributions, mainly of Lebanese benefactors, allowed the College to start the first phase of the campus which became operational in the Fall of 1991, then accommodating 1,100 students. In 1994, the Architecture Building was added, in 1995, the Zakhem Engineering Building and the Semaan Bassil Office Building, and in 2000, the Tomeh and Rizk Building.

Benefactors enabled LAU to expand its Beirut campus as well. By the end of 2005, the University will complete two major buildings, one for the Library which will house the Ahmed and Suad Juffali Science and Technical Library, and the other for the Business School. Thanks to a generous gift, the Arts and Science building was renamed the Mohamad Safadi Fine Arts building. The University is currently considering whether to open a specialized branch in Sidon.

In 1991, the Board of Trustees decided to reorganize the institution into a university with three schools, namely Arts and Science, Business Studies, and Engineering and Architecture. In 1994, the Regents approved an amended Charter changing the College to a university and granting it the power to offer professional degrees and master’s degrees, and in 1996 the Lebanese Government recognized its new name and status. In 2000 the Government granted LAU a License to operate a Medical School and a School of Nursing.

In order to make the University a center of research and learning for students and the community at large, several cultural and outreach programs were added. Fourteen institutes were established to provide professionals in Lebanon and the area with advanced training. A Center for Lebanese Heritage was established at the Byblos campus in order to collect and preserve scholarship, artifacts, and artistic works about Lebanon. The Center for Leadership and Civic Responsibility, yet to be established, will provide students and the public with workshops, conferences, courses, and research opportunities to increase awareness of values such as peace, justice, democracy, human rights and ethics.
BOARD LEADERSHIP

BOARD OF TRUSTEES

Mr. Ghassan Saab,
Chairman of the Board of Trustees
Mr. Hanna Ayoub,
Vice Chairman of the Board of Trustees
Mr. Joseph Maroun,
Secretary of the Board of Trustees
Mr. Richard Abdoo
Mr. Al Albert
Mrs. Taline Avakian
Mr. Ronald Cruikshank
Mr. Antoine Frem
Mr. Arthur Gabriel
Mr. William Haddad
Mr. Jamil Iskandar
Mr. Wadih Jordan
Mrs. Suad Husseini Juffali
Mr. Walid Katibah
H.E. Mr. John Kelly
Rev. David Maxwell
Dr. Mary Mikhail
Ms. Maureen Mitchell
Mr. Richard Orfalea
Mr. Todd Petzel
Mr. Fred Rogers
H.E. Mr. Mohamad Safadi
Sheikh Abul Aziz Al Turki
Dr. John T. Wholihan

Emeritus Trustees
Mr. Jose Abizaid
Dr. Amal Kurban
Mr. Wilbert F. Newton

Ex-Officio Members
Dr. George Faris, Chairman
of Board of International Advisors
Rev. Joseph Kassab
Rev. Dr. Victor Makari
Dr. Joseph Jabbra, President
Faculty Representative (Dr. Raed Mohsen and
Dr. Camille Issa)

Responsibilities

General Duties

The BOARD shall be responsible for seeing that the purpose of the University is met organizationally, administratively, educationally, spiritually, socially, financially, that adequate facilities are provided, and that a policy framework is established within which the program of the University can be developed and administered by the staff. The BOARD shall have the following prime functions:

1. Leadership — the BOARD shall utilize its unique position:
   a. To select and support or remove the President of the University;
   b. To ensure that an adequate statement of mission and purpose be established;
   c. To assure that an adequate long range plan for the University is developed; and
   d. To assume personal responsibility for assisting in the fund-raising activities of the University through personal giving, through developing contacts with other donors, and through a willingness to persuade others to become donors.

2. Stewardship — the BOARD shall oversee the performance of the management of the University:
   a. To ensure that the institution utilizes the resources at its disposal to further its mission and purposes; and
   b. To ensure that assets are managed effectively and there are adequate safeguards to protect the future of the University.

3. Audit — the BOARD shall serve in an evaluation capacity in applying external standards to the performance of the Institution.
a. To judge the academic standards of the faculty against the standards for the type of institution to which it belongs utilizing outside specialists as necessary;
b. To evaluate the financial health of the institution through the traditional annual audit and through comparative data from other institutions; and
c. To devise means of assessing the management performance of the administrative staff utilizing outside consultants when necessary or by redefining the annual audit to include management auditing.

**BOARD OF INTERNATIONAL ADVISORS**

Dr. George Faris, Chairman of the Board of International Advisors  
Mr. Rami El Nimer, Vice Chairman of the Board of International Advisors  
Mrs. Youmna Salame, Secretary of the Board of International Advisors  
Mr. Raymond Audi  
Dr. Paul F. Boulos  
Mr. Zuhair Boulos  
Mr. Gilbert Chaghoury  
Dr. Nadim Daouk  
Dr. Boutros Boutros Ghali  
Mr. Hani Harik  
Deputy Bahiya El-Hariri  
Mr. Samer Khoury  
Mr. Elia Mouannes  
Rev. George Mourad  
Mr. Charles Muller  
Mr. Akram Saab  
Mr. Omar Sawaf  
Mr. Philip Stolzfus  
Mr. Jacob H. Yahiyayan

**Overview**

The Board of International Advisors shall act as an advisor to the BOARD and the Executive Committee of the BOARD on policies of the University. The Board of International Advisors serves an important and integral function in the life of the University. The Board of International Advisors will be comprised of individuals of distinction who will bring their considerable talents, experience and wisdom to assist in furthering the mission of the University.

The Board of International Advisors is charged with enhancing the visibility and reputation of the University. It shall serve as a critical resource and will provide in an advisory capacity input and guidance to the BOARD, the President and senior management on matters relating, but not confined to:

1. Academic Programming, particularly cross-border and jointly sponsored academic programs;
2. Development, particularly the identification of new sources of giving;
3. Alumni Relations;
4. Community Relations; and
5. Recruitment.
LAU Mission

Lebanese American University is committed to academic excellence, student-centeredness, the advancement of scholarship, the education of the whole person, and the formation of students as future leaders in a diverse world.

LAU Values

In both planning for its future as well as conducting its ongoing daily activities, LAU seeks to act in a manner that is guided by a deep-rooted sense of shared ethical values and aspirations. Built upon this foundation, Lebanese American University:

- Draws its fundamental inspiration from the devotion of its Presbyterian Founders to always seek the Truth, respect human dignity, promote gender equality, and be inclusive;
- Provides educational opportunities as one university with multiple campuses, each with distinctive gifts and attributes;
- Commits to academic and service excellence throughout the institution;
- Demonstrates dignity and respect for and from the Board, faculty, staff and students in word and in deed;
- Celebrates the accomplishments and contributions of all members of the LAU community;
- Succeeds because its people take pride of ownership and are held accountable for their actions;
- Works together as an extended family community that reflects the highest ethical and moral standards;
- Enables individuals to find their own spiritual and personal fulfillment while ever sensitive to the changing global village in which they live;
- Promotes social connectedness of the students to the country of Lebanon; and encourages their commitment to social justice and democracy.

LAU Vision

The Vision of Lebanese American University is driven by its mission and values. The Vision for LAU will be carried out through:

- Providing access to a superior education for diverse undergraduate and graduate students and lifelong learners;
- Attracting and retaining distinguished faculty who excel in teaching, research and community service;
- Enrolling and retaining academically qualified and diverse students;
- Embracing liberal arts in all curricula;
- Creating opportunities for rigorous research and the dissemination of knowledge;
- Developing a close-knit community that excels academically, is intellectually stimulating, and is religiously, ethnically and so-
cio-economically diverse;
• Attracting and retaining a highly qualified staff committed to excellence in service;
• Fostering collaboration across the University in teaching, learning, research and service;
• Providing a state-of-the-art infrastructure and support services that will enrich the student, faculty and staff experience;
• Developing world citizens with a deep sense of civic engagement;
• Promoting the values of peace, democracy and justice.

A. ACADEMIC FREEDOM:

Academic freedom is essential to the free search for truth and its free expression. Freedom in teaching is fundamental for the protection of the rights of the faculty member in teaching and of the student in learning. The institutional freedom of the University safeguards the environment in which free scholarships may flourish. Academic freedom imposes distinct responsibilities on the faculty member and on the Institution.

Faculty members are entitled to freedom in the classroom in discussing their subject, but they should be careful not to introduce into their teaching controversial matters, which have no relation to the subject. They may not use their contacts with students or their position as members of the University faculty to insist upon the acceptance of their own personal views. Faculty members should stimulate and guide the student, and the process of learning should be a reciprocal one between faculty member and student.

Faculty members are citizens, members of learned professions, and officers of an educational institution. When they speak or write as citizens, they should be free from institutional control, but their special positions in the community impose special obligations. As learned individuals, they should remember that both their professions and their institution may be judged by their public comments. Hence, their comments should be accurate while exercising appropriate restraints and showing respect for the opinions of others and for the established policy of their institutions at all times. While they may identify themselves with the Institution, they should clearly indicate that they do not speak for the Institution unless specifically commissioned to serve in such capacity.

The University as an institution of learning should be free of outside pressure and control. At the same time, it has an obligation to refrain from any interference in affairs outside its jurisdiction, specifically from any attempt to exercise political influence. In fulfilling this obligation, all those who speak or write in the name of the University should recognize the necessity of exercising tact and restraint.

B. ACADEMIC ROLE:

With regard to the academic role, the policy of the University shall be to:

1. Offer academic programs that serve the educational and occupational needs of the Middle East with due regard to programs offered in other institutions of higher education in Lebanon.
2. Co-operate with other institutions of higher education in the area to ensure that these needs are adequately met.

3. Provide students with opportunities to develop such personality traits as independence, resourcefulness, self-confidence and leadership.

4. Offer graduate programs in those fields in which it has successful record and/or where need is manifest.

5. Offer the Bachelor of Arts and Bachelor of Science Degrees with the License equivalence by requiring of all Lebanese applicants the Lebanese Baccalaureate (or its equivalence); non-Lebanese student applicants will normally enter into four-year programs for the same degrees.

6. Offer two-year community college programs leading to the Associate in Applied Science and Associate in Arts degrees and one-year certificate programs for applicants presenting a high school diploma or the equivalent.

7. Provide students with opportunities to develop the full range of their capabilities through experiences generally more abundantly available for them in a small academic community.

8. Offer undergraduate programs which include the following:

   A. A core of interdisciplinary courses as a foundation for a liberal education.

   B. A range of 36-42 semester credit hours of required course work for a major in a certain discipline in the School of Arts and Sciences.

   C. An internship in the major field (when feasible) in which students demonstrate their ability to apply creatively their theoretical knowledge to concrete problems outside of the classroom.

   D. An integrative experience in which students demonstrate their ability to relate their major field to other disciplines.

9. Offer professional degrees and career oriented programs when the need is demonstrated.

10. Establish strong ties and cooperative programs with institutions outside Lebanon so as to give LAU high international visibility and enable the Institution to provide wider services to its public.

11. Establish “Summer Institutes” designed to provide condensed education in specific topics so as to ensure LAU’s regional and international prominence in these topics.

12. Gradually increase the emphasis on research (especially on applied research) as an element that will improve the teaching and learning process while maintaining that the University’s primary educational priority is given to effective teaching and that the research component comes in to support the teaching process.

13. Establish a Center for Strategic Development to act as the University’s consulting arm to the community on the one hand and the vehicle of sponsored research on the other.

14. Offer a continuing education program that meets the needs of the University graduates who want to update their academic knowledge, the needs of mature individuals who desire to have college level education but did not have the chance to do so at an earlier time, and the needs of the social and business communities that may require specially tailored courses to meet their specific requirements.

C. EDUCATIONAL STANDARDS

1. Academic Rules and Procedures shall be developed by the Faculty through the Curriculum Council for the guidance of the academic community of the University. These rules and procedures shall be readily available to students, faculty and staff and shall be reprinted (as appropriate) in full or in condensed form in the University Catalog, Student Handbook and Faculty Handbook.

2. Graduation Requirements: Requirements for graduation with a Master’s
Degree, Bachelor’s Degree or an Associate Degree shall be in accordance with the requirements established by the Board of Regents of the University of the State of New York and/or the Lebanese Government.

a. **Master’s Degree:** A minimum of 24 semester credit hours with a minimum grade point average of 3.0 in all courses taken leading to a Master’s Degree and a thesis of original work which may be replaced by 6 credit hours of course work are required for graduation with a Master’s Degree.

b. **Master’s of Business Administration Degree:** A minimum of 39 semester credit hours with a minimum GPA of 3.0 in all courses leading to the degree and a thesis of original work which may be replaced by six credit hours of course work are required for graduation with an MBA Degree.

c. **Bachelor’s Degree:** A minimum of 122 semester credit hours for those entering as freshmen and 92 credit hours for those entering as sophomores are required for graduation with a Bachelor’s degree. Such credit shall be with a minimum cumulative grade point average of 2.0 and a minimum grade point average of 2.0 of all courses taken in this major.

d. **Associate of Arts and Associate in Applied Science:** A minimum of 62 credit hours are required for an A.A. or an A.A.S. Degree. Such credit shall be with a minimum cumulative grade point average of 2.0 and a minimum grade point average of 2.0 of all courses taken in the major (the science courses being the major courses in the General Sciences option and the Liberal Arts option being without a major).

e. **Bachelor of Architecture:** A minimum of 206 semester credit hours shall be required for a Bachelor of Architecture Degree. Such credit shall be with a minimum cumulative grade point average of 2.0 and a minimum grade point average of 2.0 in all Architecture courses.

f. **Bachelor of Engineering:** A minimum of 180 semester credit hours shall be required for a Bachelor of Engineering. Such credit shall be with a minimum cumulative grade point average of 2.0 and a minimum grade point average of 2.0 in all Engineering courses.

3. **Internal Evaluation procedures** shall be established to review annually the teaching competence of all faculty members by the students, by the faculty through the appropriate bodies, and by the Division Chairs and the Deans.

4. **External Evaluation procedures** shall be established to review annually the academic program of the University. The Board of Trustees through its Academic Affairs Committee shall conduct an annual audit of the academic standards of the University. A systematic testing program of incoming sophomores and graduating seniors shall be routinely utilized to judge the teaching effectiveness of the faculty and the learning efficiency of the students against the standards of other comparable institutions in Lebanon and in other countries. Graduate students enrolled in the M.B.A. program are required to take the GMAT exam.

**D. ACADEMIC SERVICE:**

1. **Academic Records** shall be established to reflect accurately the academic achievement of students, the duties and academic accomplishments of the faculty and the key academic information needed to judge the academic standards of the institution utilizing the commonly accepted approaches in higher education.
2. *Liberal Resources* shall be made available to support adequately the academic offerings of the University. The library budget shall normally be from 5 to 10% of the educational budget of the University (the direct educational costs plus the pro rata share of both general and administrative expense and campus services or plant operation and maintenance expense).

3. *Learning Laboratory* facilities shall be established to augment the traditional classroom teaching methods and to utilize the latest educational technological aids to teaching and shall include programmed learning, language laboratory equipment, reading laboratory equipment, films, records, audio tapes, video tapes, computers and the related auxiliary equipment.

4. *Information Center* facilities shall be for the general use of all students to encourage individual experimentation and to assist in defraying the costs of typing papers and thesis.

**E. FACULTY DUTIES:**

The prime duty of the Faculty shall be to serve the students entrusted to them by giving them the best educational experience possible within the constraints of the financial resources available. In accordance with the By-Laws of the University, the Faculty shall be responsible to the Board of Trustees through the Deans, the Vice President for Academic Affairs and the President, for the academic standards and programs of the University and shall take the steps necessary to assure good standards through the use of, and comparison, with generally accepted international standards. The Faculty shall assume responsibility for keeping itself abreast of the latest educational developments throughout the world and shall develop innovative teaching and learning programs designed to contribute the educational leadership in the Middle East.

To carry out these duties each full time faculty member shall enter into a contract with the University in accordance with its personnel policies. Such contracts shall be for 36 weeks or equivalent extending from late September to end of June (one 40 hour week = one semester hour equivalent). The equivalents in terms of weeks of service shall be as follows:

1. **Expected equivalents (from late September to end of June)**
   
   a. Teaching duty 24–30  
   b. Committee duty and academic advising 6–0  
   c. Professional development 6
   
   **Total Annual Weeks/Equivalent 36**

2. **Optional equivalents**
   
   a. Vacation and holidays 6  
   b. Professional development and/or summer teaching 10
   
   **Total Annual Weeks/Equivalent 52**

Faculty members who are involved in research may ask for released time equivalent to one course per semester.

All faculty members are encouraged to use the 10 to 16 weeks per year advantageously for their professional advancement, which is deemed necessary for promotions and sabbatical leaves.
Academic Program

The Lebanese American University is a dynamic and innovative multi-campus university engaged in higher education in a constantly changing world. To maintain a curriculum attuned to the needs of the Middle East and modern world, the university's administration feels obligated to swiftly implement any changes promoting greater effectiveness in the academic program. LAU, therefore, reserves the right to change any aspect of its program or policies and procedures described in this catalogue, to carry out its educational goals effectively.

LAU is dedicated to the search for truth through a curriculum providing a variety of intellectual experiences and a stimulating academic community responsive to the region’s educational and social needs.

All students must complete a general educational curriculum (see “General University Requirements” on p. 48) in the liberal arts aimed at introducing them to interrelationships among several disciplines. These courses help students gain a broader understanding of humanity through the social sciences, fine arts, humanities, natural sciences and languages.

The areas of concentration are detailed in the section entitled “Major Fields of Study.” Students wishing to pursue an individualized course of study may design programs in consultation with their faculty advisors. The programs will be recorded at the Registrar’s Office as part of their graduation requirements.

Most students have required internship programs linked to their major fields of study or to interdisciplinary studies, enabling them to relate their courses to actual experiences in their chosen fields. Moreover, students are required to take a Senior Study course involving a research paper or project. To stimulate students to be adventurous in their quest for knowledge, academic regulations allow them to take one elective a semester for a Credit or No-Credit grade. A passed Credit grade counts towards graduation but does not confer points for a student’s Grade Point Average.

Dean of Students Tarek Na'was (Beirut) joins “Say No To Drugs” campaign.
The Lebanese American University offers several major fields of study in addition to area programs or individualized interdisciplinary study programs leading to the following degrees:

**MAJOR FIELDS OF STUDY**

**SCHOOL OF ARTS AND SCIENCES**

**Associate Degrees:**
- Associate in Arts (A.A.) in Liberal Arts.

**Bachelor’s Degrees:**
- Bachelor of Science (B.S.) in: Biology, Chemistry, Computer Science, Graphic Design, Mathematics Education, Science Education.

**Master’s Degrees:**
- Master of Arts (M.A.) in: Comparative Literature, Education, International Affairs.
- Master of Science (M.S.) in: Computer Science, Molecular Biology.

**SCHOOL OF BUSINESS**

**Associate Degrees:**

**Bachelor’s Degrees:**
- Bachelor of Science (B.S.) in Business Studies, Economics, Hospitality & Tourism Management.

**Master’s Degrees:**
- Master of Business Administration (M.B.A.)
- Executive Master of Business Administration (E.M.B.A.)

**SCHOOL OF ENGINEERING AND ARCHITECTURE**

**Associate Degree:**
- Associate in Applied Science (A.A.S.) in: Interior Design

**Bachelor’s Degrees:**
- Bachelor of Architecture (B.Arch.)
- Bachelor of Arts (B.A.) in: Interior Architecture
- Bachelor of Engineering (B.E.): Civil, Computer, Electrical, Industrial, Mechanical.
- Bachelor of Science (B.S.) in Interior Design

**SCHOOL OF PHARMACY**

**Bachelor’s Degree:**
- Bachelor of Science in Pharmacy

**Doctorate Degree:**
- Doctor of Pharmacy (Pharm.D.)

**SPECIAL PROGRAMS**

- Excelsior College Degree*
- Certificate Programs*
- Diplomas*
- Language Skills Programs: Intensive English, Special Arabic

*(See “Special Programs” on p. 29)*
SUPPORTING FACILITIES AND PROGRAMS

LIBRARIES

The mission of LAU libraries is to provide services and resources that answer and support the educational, informational, and research needs of the academic community.

LAU libraries are in the process of implementing a library portal, which allows our faculty and students to access resources on any topic in any format available in one search. This will include the library catalog, as well as other catalogs, online databases and internet services.

The Riyad Nassar Library

The Beirut Campus Library was established in 1934 when the institution (then American Junior College for Women) moved to its permanent campus in Ras Beirut. As part of many efforts made to provide reliable services to the college community, thousands of materials were added to its collection. As the college grew, the library’s location in Sage Hall’s third floor quickly turned inadequate. The need for more space was met through the construction of an entire upper storey in Irwin Hall in the 1960s, which was named in honor of Dr. William Stoltzfus, president of the college 1937–1958. In the 1990s, academic growth called for expansion again. In 1997 the library moved to spacious premises in the Learning Resources Center Building. The library moved again in the Summer of 2005 to its final destination, i.e. the Riyad Nassar Library in honor of LAU’s president from 1982 to 2004.

The new library holds approximately 208,000 books and information records plus 950 current periodical titles and 70 databases that provide millions of full-text articles and bibliographic citations. The Document Delivery Service provides information records not available at LAU and not accessible in any other source in Lebanon to all its students and faculty through agreements with other libraries and research centers abroad.

The Riyad Nassar Library has a few special collections that merit highlighting. A set of 5,500 books and documents on women, corresponding to the Institute for Women’s Studies in the Arab World, is available for use by any researcher or student interested in Arab women’s issues and feminism issues in general.

The Children’s Library is the largest and oldest of its kind in Lebanon, with more than 11,300 books in English and Arabic. This collection is also available for research in education, children’s literature, and at certain intervals it is made available to children in the community.

The Practice Teaching collection, with approximately 4,887 books and educational kits, is another resource of use to education majors.

A new set is in the works, namely the “Islamic Art and Architecture” collection, to be used by researchers and students majoring in art, design, architecture and cultural studies. This will be coupled with periodic displays of Islamic artifacts that were donated to and kept in the library.

The 8,000-square-meter Riyad Nassar Library entailed a construction cost of $8.5 million. It can house 300,000 books. It offers 114 computers for users, open stacks, conference and study rooms, as well as areas for special needs, pre-class projection, audiovisuals and graduate study.

Learning Laboratories

Modern learning laboratories, which play an important role in the learning process, are located on the Beirut and Byblos campuses. Students use programmed texts, cassettes, filmstrips, etc., for the development of different skills and increased effectiveness in basic learning tools. Laboratory sessions reinforce listening, speaking, reading, writing, and study skills. Computer Assisted Language Learning (CALL) tools are offered to support learners’ work. In addition, self-access facilities are available through WebCT, an online learning tool. In this environment, learners can find a selection of many references and materials to help them in their academic English learning. Materials and links are continuously updated.

Audio-Visual Center

The Audio-Visual Center, located at the

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Learning Resources Center on the Beirut campus, is the office that allocates audio-visual equipment for use in classes, lectures, conferences, etc.

Mimeographing Office
This office provides almost 90% of the photocopying needs of the faculty and staff. Lamination and simple binding are also provided.

Byblos
The Byblos Library was established in 1987 in Amchit and moved to the Byblos Campus in 1991 where it occupies the second floor of the Science Building.

The library houses the bulk of more than 80,000 volumes and over 750 periodicals subscriptions, both current and retrospective, as well as housing a rapidly expanding collection of media materials. They encompass all academic disciplines as well as advanced research. Disciplines that are comprehensively represented are related but not limited to Arts, Architecture, Business, Management, Computer Science, Education, Engineering, Humanities, International Relations, and Pharmacy.

The above-mentioned numbers of books and journals were greatly enhanced by subscribing to 39 electronic resources that are either of general nature or are highly specialized. These resources offer our students millions of articles on any subject of interest or any major offered at the university. Moreover, the LAU libraries have established in January 2002 along with other academic libraries, American University of Beirut (AUB), Notre-Dame University (NDU), and the University of Balamand, the first formal consortium of academic libraries in Lebanon.

The library offers a wide range of services and benefits to its users, such as orientation programs, tours, bibliographic instructions, workshops, interlibrary loans and document delivery services.

It also provides equipment and technical expertise for multimedia instruction in the classrooms through its AV Center.

The library will move in 2006–2007 to a new six-floor building. It will be called Gibran Khalil Gibran Library and will be built in compliance with “American Design Libraries.” It will have state-of-the-art information technology plus additional functions and services that will be enjoyed by both our university community and within certain restrictions by the community at large.

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COMPUTER FACILITIES

Beirut

Academic Computer Center
The academic computer center operates a variety of computer related services, in addition to sophisticated, state-of-the-art computing facilities aimed at providing students and faculty members with a great academic experience.

With over 130 workstations, undergraduate and graduate students are able to gain access to a variety of operating systems such as Linux distributions, BSD, Windows OS, and Sun Solaris. Students are also well exposed to software under different operating system platforms. Software varies from desktop applications to research oriented ones. Internet and electronic facilities are available on all computer stations to serve students, faculty, and staff.

The Academic Computer Center is managed by a series of high performance scalable IBM
Blade servers. The Blade servers provide students with user accounts, development tools, database services, and a wide spectrum of applications that create a unique pool of cutting edge development environments.

A research laboratory was inaugurated to serve our graduate program 24 hours a day/7 days a week with Sun workstations and a 20-node Beowulf Cluster used for research and advanced computing, a multimedia lab, and a Silicon Graphics Indigo workstation.

With an ever changing technological world, the need for constant improvements and upgrades is at the top of the center’s priorities. Future additions include a 32-node Beowulf cluster aimed at high performance computing, in addition to a future set of HPC, computer, network, and service-related improvements.

Business Computer Center

The Business Computer Center, located in Nicol Hall, contains 43 PCs distributed as follows:

- 21 HP Vectra Pentium IV
- 1 HP Vectra Pentium IV supervisor workstation
- 1 IBM Server
- 20 IBM Pentium IV

This center is used by Business students to develop skills on professional business software applications. This is achieved through computer assignments given to students in various courses in the fields of accounting, finance, statistics, economics, research, management, management information systems, etc.

Graphic Design Computer Lab

The Graphic Design computer lab (Nicol Hall) is equipped to support the Graphic Design program, which features intensive instruction in electronic media design and illustration. Two separate labs are available to better manage and support all the program requirements. They house 20 networked Macintosh G4s; four scanners, CD and DVD recorders and three digital cameras. In addition we have 15 eMacs, five G5s and nine printers. Printers vary from normal inkjet to color laser printer. One Encad Novajet 850 plotter supports complex production of computer graphics files. The center is used for classes and is also open for free practice or assignments outside class hours.

Newsroom

At the LAU Newsroom (Nicol Hall), journalism students sharpen their writing, editing and layout skills in a computerized setting. The facility is used for classes and for free practice outside class hours. The Newsroom is equipped with 22 Macintosh computers (G3 and Performa). Peripherals include two Postscript laser printers, an Apple Laserwriter 8500 Postscript printer, an Epson Stylus 1520 A2 Postscript color printer. The newsroom is equipped with appropriate IT services.

Byblos

In Byblos, computing facilities are distributed in five locations across the campus, most of the workstations feature multiple operating systems allowing students to work on the latest Microsoft OS or UNIX/Linux-based counterpart. In addition, Macintosh machines are available for graphic design students. Students get to choose a campus-wide username and password allowing them to login on any workstation in any computer lab. Computers can be found in the following places:

1. A general computer center, with 60 PCs in the general area and a Computer Science and Engineering Room, with 15 PCs and eight nodes cluster for High Computing projects.
2. A computerized classroom, with 31 PCs and projection facilities.
3. An Architecture computer laboratory, with 25 PCs, network plotters and projection facilities.
4. A Mac Design lab, with 25 Mac stations and projection facilities.
5. Several Engineering labs, with 145 computers.

All labs are equipped with network printers, scanners, and storage devices (CD writers, Zip
SUPPORTING FACILITIES AND PROGRAMS

Drives). Servers are also campus-wide distributed as follows:

- 6 domain controllers
- 2 printing and anti-virus servers
- 4 file servers
- 3 application servers
- 2 database servers

Software applications installations vary from office applications to task-oriented engineering or architecture tools in addition to specialized applications related to courses requirements such as Java, .Net, C#, Oracle, J++, Forte, Architectural Desktop, 3D Studio, Arcview, Robot, I-deas, Mathematica, Primavera, MS Project, Visio, Photoshop and Illustrator, MatLab, SAS, etc.

Also, unlimited broadband internet access is provided in all computing facilities throughout the campus. These labs open weekdays from 8 a.m. to 9 p.m., and Saturdays from 10 a.m. to 6 p.m. Extended working hours are also customary during exam periods.

BIOLOGY AND CHEMISTRY LABS

The Biology laboratories are modern and up to date. These labs, which serve for undergraduate and graduate teaching and research, are equipped with sophisticated instrumentation supporting all disciplines of biology, with emphasis on the field of contemporary molecular biology. The main equipment includes pulse-field gel electrophoresis, an nucleic acid (DNA) sequencer, research fluorescent inverted microscopes, ultracentrifuges, microbial identification systems (Biolog; FTIR), diverse advanced incubators including CO2 incubators, different types of electrophoresis setups, UV-Visible spectrophotometers, Membrane Fermentor and Cell culture bioreactors, assorted water, air and soil pollution analyzing systems, cold room and deep freeze facilities (-80º C), a hybridization oven and thermal cyclers, Real time PCR system, autoclaves, teaching microscopes and assorted field equipment for environmental studies. The labs, which serve Biology majors as well as Pharmacy students, are fully equipped with audiovisual systems including video-microscopy for continuous demonstration and experimental purposes. Annexed to the Biology labs are storage facilities, industrial microbiology fermentation equipment as well as a 5,000-liter capacity, fully automated reactor for treatment of industrial liquid wastes.

The Chemistry laboratories are adequately equipped with state-of-the-art instrumentation for teaching practical courses to Chemistry majors as well as giving service courses to Biology and Pharmacy students. The major instruments include advanced system for teaching and research such as FTIR, FT 300 Mhz NMR, UV-Visible spectrophotometer, fluorometers, GC-Mass spectrometer, HPLC units, GC analyzers, Nitrogen liquifiers, freeze drying setups and others.

ENGINEERING AND ARCHITECTURE LABS AND SHOPS

The School of Engineering and Architecture is committed to providing hands-on measurements and experimentation as a viable component of the educational programs. In this regard, the instructional laboratories are continuously receiving considerable attention. In addition to providing specific instructional functions, all engineering laboratories provide a common set of computing services which include a unified username/password giving them access to a private, secure account where students work on their various projects and assignments as well as browse the internet using LAU’s broadband connection. In addition, all labs are equipped with fast network printers to accommodate the students’ requirements.

The Architecture and Design Shop provides support to the architecture and design programs. The facilities are composed of the woodshop and the metal shop, as well as the model-making laser cutter shop. The location of the shop in the architecture building and its proximity to the studios ensures that students execute all their models at school, and benefit from the convenience and support of these facilities in realizing their work.

Orientation sessions on operation and safety rules are required before allowing students to use the shop.
The Civil Engineering Materials Testing Laboratory is equipped with a 400-ton Forney hydraulic testing rig, a high precision displacement controlled Instron testing frame, a full soil testing laboratory including automated direct shear boxes, triaxial cells, permeability cells, and a full SHARP asphalt concrete testing laboratory, in addition to a reflected light high precision microscope facility.

The GPS and topography laboratory is equipped with mobile stations and the only continuous monitoring GPS station in Lebanon, the LAUG station which is part of the UNAVCO consortium in the U.S. and the International GPS Service (IGS).

The water and environmental laboratory is equipped with sampling devices and quality analysis of water/wastewater, jar tests, stream gauging, top of the line point and depth sediment samplers, bed load samplers, fluorometers, UV-visible spectrophotometers, colorimeters, peristaltic pumps, gas meters, centrifuges, incubators, and furnaces, in addition to mobile environmental monitoring stations for air pollution field measurements.

The Micro-Computer Laboratory is a general engineering area where students from all engineering majors gather to work on their assignments and projects or simply browse the internet. It is composed of high-end workstations, dual booting Microsoft Windows and Red Hat Linux operating systems. Most of the general engineering applications as well as office productivity software are centralized in this area. This lab opens at 8 a.m. and closes at 8 p.m. During rush periods, the lab is open late and sometimes overnight.

The Digital Design Laboratory is the home of all microprocessor design and reconfigurable computing courses. Students taking microprocessor programming courses come in with real life, step-by-step processor programming. They learn to program, at the assembly level, all types of devices and appliances: a small video game, a digital clock and stopwatch, etc. In addition, FPGA-based hardware boards are used for rapid prototyping. Students use hardware languages such as VHDL to design more complex digital circuits such as pipelined simple processors, VGA controllers, and neural networks, and execute them on the FPGA platforms.

The Linux Programming Laboratory is targeted towards the Linux operating system environment. Linux and UNIX have always been the best platforms in terms of reliability and many reputable companies use UNIX servers for their core network services. Courses such as Operating Systems, Networks and other advanced topics courses use extensively this lab.

The Advanced Networking Laboratory features the latest networking devices from Cisco Systems. It places students in direct contact with advanced LAN and WAN devices, performing various real-life operations, including simulated router traffic, problem troubleshooting, and company-wide configurations.

The Communication Systems Laboratory introduces students to different analog and digital communication systems using educational modulation and demodulation boards. The data acquisition for the associated experiments is done using MATLAB/SIMULINK, which provide a display of various signals in time and frequency domain.

The Control Systems Laboratory introduces students to the implementation of PID-controllers and two-step controllers to first order delay as well as third order delay systems using educational PID boards and DC servo boards. Experiments and analysis use industrial standard oscilloscopes and data-acquisition boards interfaced via SIMULINK/MATLAB.

The Advanced Technology Laboratory features different technologies, such as Microwave and various types of antennas with design and testing package for test reception, radiation pattern, and various other parameters on the airwaves; a high-end GPS station with differential base station (DGPS) used for various field experiments; a 6 DOF Robot manipulator section used in various automated applications; a 6 DOF Inertial Measurement Unit used in aerospace applications. In addition, this lab features a variety of state-of-the-art software to be used for analysis and design of telecommunication systems.

The Instrumentation and Electronics Laboratory features the practical and technical aspects of electric and electronic circuitry. The student learns how to design and analyze basic and advanced circuits through the usage of state-of-the-
art digital equipment such as oscilloscopes, function generators, and multimeters.

The Electromechanics and Power Laboratory features test benches for testing three phase circuits, single and three phase transformers, AC machines both synchronous and induction, and DC machines. A model of a transmission line is also available for simulating power line capability and compensation. A power electronics test bench can simulate AC/DC, DC/AC, DC/DC conversions using thyristors, GTOs and MOSFETs.

The Fluid Mechanics Laboratory is equipped with adequate facilities and equipment to allow students to understand the behavior of fluids. It includes several means for measuring different fluid properties, fluid flow, fluid friction, calibration of weirs, orifices, pumps, turbines, hydraulic jumps, forces on gates, hydraulic benches, flow regimes identification, in addition to a five-meter-long open channel with proper controls and mechanisms.

The Heat Transfer Laboratory features a series of equipment on which various experiments can be performed to demonstrate the three basic modes of heat transfer; conduction (linear and radial), convection (steady and unsteady state) and radiation heat transfer. The lab also includes a heat exchanger unit where several types of heat exchangers, such as shell and tube, concentric tube, plate and jacketed vessel heat exchangers, can be studied. Instrumentation is provided to allow the evaluation of the processes occurring in each heat exchanger.

The Machine Dynamics Laboratory has a range of equipment designed to meet the needs of students who are required to understand the basic principles of machines. The lab includes a whirling of shafts apparatus, a cam analysis machine, a balancing of reciprocating masses apparatus, in addition to a vibration apparatus where experiments can be performed on pendulums, springs and rotors, covering free and forced vibration, damping, and torsional oscillations.

The HVAC Laboratory consists of an air conditioning laboratory unit, which allows the processes governing air conditioning to be demonstrated. It also allows students to investigate the measurement and calculation of all the thermodynamic processes involved in the heating, cooling, humidification and dehumidification of air, as well as the mixing of two air streams.

The Mechanical Engineering Materials Testing Laboratory features a servo-hydraulic testing system where a wide variety of tests can be performed ranging from simple tension/compression tests, to fracture mechanics, mechanical fatigue and high rate testing. The system includes a console with controlling software, which allows the tests to be programmed and controlled, and the data to be acquired and processed. This lab also includes a Brinell test machine to measure the hardness of metals.

The ICE Laboratory features a petrol engine and a diesel engine. Both engines can be connected to a dynamometer and control unit. The engines and control unit are equipped with the instrumentation required to allow students to monitor and measure the different parameters required to analyze the operation of the engine, such as RPM, torque, inlet and exhaust temperatures, inlet air flow rate and fuel flow rate. In addition, the lab includes a sectioned, electrically operated, four-cylinder engine, which allows students to observe the operation of the engine’s internal parts.

The Manufacturing Laboratory features a CNC vertical milling machine and a CNC lathe. The lab is equipped with twenty computers networked to the machines in a classroom environment. This setup allows the students to build, analyze and then manufacture a modeled part.

PHARMACY LABS

The Pharmacy Research lab is designed to allow faculty and Pharm.D. candidates to conduct their research projects. Instruments in the lab include the HPLC systems which are equipped with a variety of detectors (absorbance, PDA, electrochemical, fluorescence, conductivity, refractive index) enabling their use for a variety of applications. In addition, the lab is also equipped with a freeze dryer, incubators and a centrifuge apparatus.

The Pharmaceutical Analysis lab is designed to familiarize pharmacy students with different techniques used in pharmaceutical analysis. These
techniques include those used in pharmaceutical industry such as spectroscopic, chromatographic, enzymatic and biotechnology methods. For this purpose, the lab is equipped with an HPLC, a GC, a dissolution apparatus, an FT-IR spectrophotometer, an ELISA, an electrophoresis, a microplate reader and a PCR.

The NMR and GC-MS lab is mainly used by faculty and contains a 300 MHz NMR spectrometer suitable to run different 1D and 2D NMR (homo and heteronuclear) experiments. There are two GC-MS system, one of which is equipped with a purge and trap system. The GM-MS systems are used to separate and identify volatile compounds in plants and biological fluids.

In the Compounding Laboratory students learn the fundamental techniques used for the extemporaneous preparation of dosage forms, as part of the requirements of Dosage Forms I and Dosage Forms II courses. The laboratory deals with the formulation, preparation, handling and evaluation of pharmaceutical products.

The lab includes the preparation of drug product using traditional approaches (mortar and pestle, spatula and slab) as well as modern technology. Basic equipments include water bath, hot plate, magnetic stirrer, oven, electronic balance and vortex. More sophisticated equipments (optical microscope, sieve shaker, planetary mixer, homogenizer, fluidized-bed dryer, tablet press, hardness tester (also measures the thickness and diameter of the tablet), friabilator and disintegration apparatus) are also available.

The Pharmacy Dispensing Laboratory supports course instruction on the proper techniques and skills required to safely and accurately distribute drug products to patients. Emphasis is on computerized patient record keeping, patient counseling, finding errors, and omission in prescriptions, communication with other health care providers and patients. Thus, the dispensing laboratory is designed to mimic a community pharmacy. It includes shelved medications, storage cabinets, counseling area desks, auxiliary medication labels, personal computers, a printer, a bar code reader, and pharmacy textbooks.

THE NURSERY SCHOOL

A modern nursery school with a curriculum based on the latest in child development and early childhood research. The importance of these early years has been well documented. The school’s program addresses the needs of children between the ages of two-and-a-half and five, and concerns itself with the total development of the child. The medium of education is play based on the fact that a child learns more by doing than by observing and listening. The teachers are all university graduates with a ratio of one adult to ten children. The facilities include observation booths, making it possible for parents, visiting teachers and students to observe without disturbing the children.

COOPERATIVE LEARNING CENTER

While cooperative learning is widely practiced in the classroom, LAU has recently opened a special center aiming to encourage academically deficient students to work more effectively, with the assistance of their academically excelling peers. The center, which functions on the Beirut and Byblos campuses, is administered by students under the supervision of faculty advisors. Among other advantages, the cooperative learning method:
• gives students a chance to improve their academic performance by trying alternative methods of studying;
• promotes cooperation between students;
• gives students the opportunity to reinforce their knowledge and improve their teaching and communication skills by sharing what they have learned;
• provides students who run the Center with managerial experience and a sense of responsibility.

At the Center, students identify the courses in which they usually have difficulties and offer review sessions in these courses. The center also provides study resources such as sample exam questions, solved problems, computer media, audio-visual materials and reference books. It also organizes workshops periodically to train the students who will be in charge of coaching others.
Developing a culture of lifelong learning for all has become an international purpose. The mission of the Continuing Education Program (CEP) is to provide innovative learning opportunities to obtain academic and technical training, which may lead to the advancement of employment status, the improvement of performance on a current job and the enhancement of the quality of life without enrolling in the regular university programs.

Its importance is in providing adult learners with a program that is regularly adjusted to social changes and marketplace development with flexible schedules, contents and presentation. This program is an attractive and convenient means for personal and professional growth.

**REMEDIAL COURSES**

Remedial courses help students who do not meet the university's admissions requirements. Through these courses students can improve their skills in English, mathematics, physics, chemistry, biology and humanities. They also acquire study skills that will be of use to them throughout their university studies.

**BUSINESS COURSES**

These courses are convenient to people who are forced to look for alternatives when it comes to finding a job in a congested market or who decide on midlife career changes. Those who are ambitious may find a competitive edge through further education at the CEP. Courses offered are: Elementary Business Principles, Accounting, Marketing, Management, Human Resource Management, and Principles of Economics. Business courses are offered three hours per week for 12 weeks.

**COMPUTER COURSES**

Introductory as well as advanced level computer usage courses are offered three hours per week for 12 weeks. Topics emphasize on business application software (word processing, spreadsheet and data base management), hardware concepts and software integration.

Computer graphics courses are tailored for those who wish to keep abreast of new technology. Courses offered are Web Page Design Using Front-Page, Photoshop and Illustrator, Animation Using Flash, Web Page Design and Visual Interdev and QuarkXpress. Once students complete all five courses, they are able to design an interactive web page using different software applications. A certificate is issued upon completion of each course. Classes are given four hours per week for five weeks.

**CERTIFICATE PROGRAMS**

Candidates with high school-level education may enroll in one of our certificate programs.

The *Pre-School Training Program* is designed to prepare students for employment and career advancement in the field of childhood education. The aim of the program is to provide students with sufficient knowledge and practical skills to be able to plan and implement developmentally appropriate programs for children from 2 to 6 in various types of child care settings. Through this one-year/three-semester program trainees update their teaching methods and earn a certificate.

The *Development of Secretarial Skills Program* was launched in 1997–1998. Students enrolling in this program take courses in business, computer usage, office management, behavioral skills, and English correspondence. The program spans one academic year and confers a certificate in secretarial skills.

**SPECIAL ARABIC COURSES**

Ideal for foreigners whose job demands the use of Arabic, be it classical or colloquial. Tailored Arabic classes go along tutorial instruction, giving the student the advantage of choice. These courses aim at teaching proficiency in the four language skills: speaking, reading, writing and listening.
ART COURSES

The CEP offers art courses usually taken for personal satisfaction. They encompass painting, drawing, photography, pottery, jewelry craftsmanship, home decoration and guitar appreciation. Classes are given three hours per week for 12 weeks.

PHYSICAL EDUCATION COURSES

LAU’s indoor swimming pool answers the need of many schools where swimming is a required sport for the French Baccalaureate. Other physical education courses, such as tennis and stretching are also popular.

NONCREDIT COURSES FOR SUSPENDED STUDENTS

LAU introduced in the Fall 1998 semester a program to help suspended students. It consists of four noncredit courses that students may take during the span of their suspension period from university. The courses offered, through the CEP, are: Stress and Time Management, Academic Survival Skills, Communication Skills, Logic and Methods of Reasoning. They are graded on a Pass/Fail basis.

OFF-CAMPUS PROGRAM

An off-campus English program was launched in Nabatieh, South Lebanon, to prepare students for the English Entrance Exam. The CEP is ready to offer similar services in other distant areas to save their residents housing and commuting expenses, hoping to encourage them to pursue higher education.

SUMMER CAMP

The CEP offers a two-session (July and August) Summer Camp for children ages 6 to 12. The camp consists of a combination of an existing, well-rounded program and a talented, creative and experienced staff that provide an extraordinary summer experience for children. Children are exposed to the regular day camp and participate in various activities including cooking, basketball, tennis, music, drama, gymnastics, wushu, art, swimming, storytelling and board games.

A “Little Business Leaders” program teaches children ages 9–12 how to start a business, manage budgets and integrate their creative skills into the entrepreneurial world. The program includes four hours per week of business education in addition to other activities encompassing drama, art, swimming, tennis, wushu, basketball, cooking, chess and water polo.

SUMMER INSTITUTE FOR INTENSIVE ARABIC LANGUAGE AND CULTURE

The Summer Institute for Intensive Arabic Language and Culture (SINARC) program at the Lebanese American University’s Beirut campus offers four levels of intensive courses in Arabic language and culture: Elementary, Upper Elementary, Intermediate, and Advanced. Each level provides a total of 20 hours per week of intensive classroom instruction, which includes five hours per week of Lebanese Dialect. An intensive, eight-credit course in Lebanese Dialect is also offered (with sufficient enrollment). The program starts the last week of June and ends the first week of August.

Formal instruction in Arabic language is enriched by immersion in an authentic cultural context. Cultural activities include weekly lectures on topics related to Arab and Lebanese politics, history, society, and culture, as well as excursions to historic, touristic and cultural sites in Beirut and throughout Lebanon.
**BEIRUT**

The atmosphere in which the university students live and work plays a vital part in their education. The hillside campus in a residential area of Ras Beirut provides the necessary climate for a well-planned academic life.

The Beirut main campus land area is 18,400 square meters. Nine buildings surround the central campus green which is beautifully landscaped with Mediterranean trees and foliage. The Beirut campus has been significantly enlarged with the addition of a 24,000-square-meter building complex inaugurated in 2005. This complex houses the School of Business and the Riyad F. Nassar Library.

**BYBLOS**

In the spring of 1987, LAU was given a 113,000-square-meter plot of land in Blat, overlooking Byblos city. The campus has grown to become the seat for four schools: Arts and Sciences, Business, Engineering and Architecture, and, Pharmacy. An additional 52,000-square-meter plot to house two dormitories was purchased later to make the total area of the campus about 165,000 square meters. Seven buildings have already been completed.

The envisaged construction in Byblos (43,100 square meters) is scheduled to be finished by October 2006. This includes 15,000 square meters for the Gibran Khalil Gibran Library, 4,600 square meters for the Frem Civic Center and 18,000 square meters for an underground parking for 700 cars.

**Student Life**

**STUDENT LIFE POLICY**

Since its foundation, LAU has contributed to the total development to its students. As stated in the Student Life Policy, the University “seeks to develop socially involved students, who can and will act responsibly in relation to themselves, to others, to their country and to the world community.” These aims have been pursued through the Guidance Office, Student and campus life Council and student clubs.

**GUIDANCE OFFICE SERVICES**

At the Guidance Office, we care about the students’ overall experience at LAU. We believe in treating every student as a professional in training. We strive to provide high quality services. We also provide tailor-made assistance that caters for academic growth, personal interaction and focused attention.

1. **New Student Orientation**

Through collaborative efforts between the Division of Student Services, The Guidance Office and various school departments, LAU Orientation
provides a two-day program that acquaints students with university resources and informs them about university rules and procedures. Essential information helps student sail smoothly through their journey.

The goals of Orientation are to:
• develop and coordinate programs that support academic success, personal and social development,
• provide students with information about services, support systems, and
• address the issues and concerns facing new students.

2. Counseling Services
Confidential and professional counseling is one of the major functions of the Guidance Office. The importance of this service is to support LAU students with a wide range of personal, relationship, career, and educational concerns. This mechanism provides students with alternatives in coping effectively with stress, anxiety, indecision, anger, depression, lack of attentiveness and relationships issues as well as identifying goals for change, and determining the most appropriate adjustment processes. Speaking with a qualified LAU counselor simplifies concerns and situations and explores new ways of dealing with them. The Guidance Office Counselors maintain an open door policy.

3. Academic Advising Services
The Academic Advisor at the Guidance Office serves students by counseling them through academic difficulties, probationary status and all concerns regarding academic issues. The Academic Advisor presents students with alternative courses of action based on their capabilities, and interests in order to readjust their goals whenever needed. The Academic advisor builds relationships of trust, maintains confidentiality and provides constructive solutions to problematic issues.

Thus, the Academic Advisor is available for individual consultation during office hours and if need be by appointment to:
• Provide accurate information regarding policies, procedures and regulations, educational options, core and major; requirements, curricular offerings, registration procedures and deadlines;
• Maintain precise and complete advising records;
• Refer students to available resources, programs, and support services when needed;
• Assist students in understanding the purposes, opportunities and challenges of higher education;
• Aid students in planning an educational program consistent with their interests, abilities and talents;
• Monitor the student’s progress toward academic goals and
• Guide students in planning appropriate steps to correct academic difficulties.

4. Career Guidance Services
The mission of the Career Guidance services is to provide guidance and resources to undergraduate and graduate students for their life-long career development. The Career Counselor encourages students to explore career options, develop effective career and life planning skills, create a job plan, identify career goals, and learn the skills to successfully find a profession. Therefore, a recommended course of action is discussed based on the expressed objectives of the student. The Career Counselor will work with the student to:
• Clarify academic and career interests
• Recognize connections between the student major and career options
• Identify resources to research employers
• Discover job search strategies
• Acknowledge skills and strengths
• Write effective resumes and employer letters
• Prepare and practice for interviews
• Evaluate job offers from potential employers
• Learn to negotiate salaries
• Determine a course of action to meet career objectives

A major event hosted by the Career Guidance services is an annual Career Fair in which local and international companies participate in recruiting LAU students, offering them full-time, part-time and in some case internship opportunities.
5. Health Services

LAU Guidance Office Health Service provides preliminary health care, health education and health counseling to its students, faculty and staff. An experienced nurse is accessible and responsive to the complex medical needs of the LAU students. The nurse is available by phone or on a drop-in basis five days per week. Every student has a medical insurance plan designed to help meet financial difficulties arising from illness or accident.

6. Athletics Department

LAU Athletics programs reflect the interests of our students, the community, making it a worthwhile experience for our student-athletes, teaching them the meaning of integrity and ethical conduct, the basic principles of competition, sportsmanship, fair play, and the principle of equitable opportunity for all students. The Athletics programs produce a source of enthusiasm, loyalty, team building and enhance the spirit of true sportsmanship.

The Athletics Department’s primary purpose is to promote the personal growth and physical well-being of LAU athletes, to guide them to become in life the best they can be. If there is one concept that drives us, it is our dedication to winning in the broadest possible sense. We compete to win — as individuals, as team members, and as representatives of LAU. We clearly understand that the success of any one person is always the result of dedicated effort on the part of many people. So, while we are quick to recognize individual performance, we are even quicker to celebrate achievements of the team.

The Athletics Department has a strong dedication to the personal development of our student athletes, integrity and excellence in our programs, teamwork, and determination to play a leadership role nationally and internationally, making LAU athletes a success story.

7. Student Representation

In cooperation with the Student and Campus Life Council, the Guidance Office plans, organizes and oversees yearly student elections to enhance the educational experience and quality of life of LAU students. Its main concern is for ten students to be elected to act as the representatives of undergraduates in all issues affecting them through representation on the following councils and committees: Financial aid, student and campus life, library, yearbook, cafeteria and campus services.

8. Extra-Curricular Activities

A vital part of LAU experience will be what students are able to learn outside the classroom. LAU has a diversity of clubs that are organized through the Guidance Office which help them get involved on campus. Depending on the interests, a student may share and meet others through the existing clubs, such as Cinema, Music, Astronomy, Economics, First Aid, Human Rights, and International Affairs. Faculty advisors oversee these clubs and work with students to organize activities. Formation of a new club is also allowed by satisfying the clubs requirements. The application is presented to the Guidance Office, which presents it to the Student and Campus Life Council for approval.

9. Student Honor Society

To become a member of the Student Honor Society, an LAU student must achieve a cumulative GPA of 3.5 and above in 24 credits. A yearly ceremony is held to honor those students by awarding them with certificates and pins. For further recognition of high academic achievement and excellence, students with the highest GPA in each school receive a financial award.
Candidates for admission may apply to any of the two campuses (Beirut or Byblos), by sending an application to the campus they choose to join. Applicants may apply to LAU as regular or special; as Freshman, Sophomore or transfer; for the Fall semester, the Spring Semester or the Summer terms.

Application forms are available at the Admissions Offices and can be mailed to applicants upon request. They can also be downloaded from the LAU website (http://www.lau.edu.lb).

**REQUIREMENTS FOR ADMISSION**

Applicants must submit the following items:

a. An application form.
b. School record: The school grades of the last three years should be sent in a signed and sealed envelope directly to the Admissions Office. The grades of the last year or semester should be sent as soon as they become available.
c. Official scores of the TOEFL, and/or SAT exams if taken.
d. Transfer applicants must submit an official transcript of grades and a catalog from the college or university attended. Undeclared transcripts cannot be accepted after enrolment.
e. Photocopy of the applicant’s identity card or passport.
f. Two recent passport-size color photos.
g. A non-refundable fee of L.L. 60,000 for those residing in Lebanon or U.S.$60 for those residing outside Lebanon.
h. The official secondary school certificate as soon as it becomes available.

N.B.: Accepted or rejected applicants may not reclaim any of the above documents.

Applicants who choose to sit for the TOEFL should sit for the international test. Institutional TOEFL is not accepted at LAU.

When registering for the TOEFL, SAT I, or SAT II, please use LAU’s code, 2595.

LAU offers three sets of examinations through its Testing Services Office:

- The English Entrance Exam (EEE)
- The Freshman Exam (FE)
- The Sophomore Exam (SE)

**PLACEMENT EXAMS**

a. Applicants to the Sophomore class must sit for the Sophomore Exam (SE).
b. Applicants to the Freshman class must sit for the Freshman Exam (FE) or SAT I and SAT II.
c. The Freshman and the Sophomore exams are administered at LAU and may be repeated at an interval of three months.
d. Subjects taken in the Sophomore Exam are as follows:
   1. General Science: Math, Physics and Chemistry
   2. Life Science: Math and two of the following subject matters: Physics, Chemistry, or Biology
   3. Humanities: Math, General Science, and Philosophy

e. Subjects taken in the Freshman Exams are as follows: Math, Social Sciences and one of the following subject matters: Physics, Chemistry and Biology.

Applicants will be evaluated by the University Admissions Council and final acceptance will be based on each applicant’s qualifications and availability of places.

**ENGLISH PROFICIENCY REQUIREMENT**

Since English is the language of instruction at LAU, applicants must demonstrate proficiency in
the English language. This may be determined in one of the following ways:

a. Passing LAU’s English Entrance Examination (EEE) with a minimum score of 500. This exam may be repeated at intervals of one month.

b. Achieving a minimum score of 193 (computer-based) on the Test of English as a Foreign Language (TOEFL) or 525 in the paper-based TOEFL.

c. Achieving a minimum score of 6.5 on the International English Language Testing System (IELTS).

Applicants with EEE scores between 500 and 549 and/or 193 and 230 in TOEFL (computer-based) or 525 and 573 (paper-based) will have to register for ENG009 Remedial English, a three non-credit course (three hours of instruction weekly, with no credits counted after completion of the course).

Applicants with EEE scores in the range of 550-599, or TOEFL scores of 233-260 (computer-based) or 577-625 (paper-based) will be exempted from ENG009 Remedial English, a three non-credit course.

Applicants with EEE scores in the range of 600-649, or TOEFL scores of 263-297 (computer-based) or 627-673 (paper-based) will be exempted from ENG009 Remedial English and ENG101 English I.

Applicants with EEE scores above 650, or TOEFL scores above 297 (computer-based) or 673 (paper-based) will be exempted from ENG009 Remedial English, ENG101 English I, and ENG102 English II.

ADMISSION TO THE SOPHOMORE CLASS

Applicants who might qualify for admission to the Sophomore class are:

a. Holders of the Lebanese Baccalaureate. There are four types of Lebanese Baccalaureate: General Science, Life Science, Sociology & Economics, and Humanities.

b. Holders of the Technical Baccalaureate. These applicants may only choose programs in the same area of specialization as that of their technical degree.


d. Applicants who have successfully completed two years of the Canadian CEGEP Program.

e. Applicants coming from the British system who have completed a minimum of five subjects at the Ordinary Level in addition to two subjects at the Advanced Level or four Advanced Supplementary subjects (AS) excluding languages.

N.B.: Applicants coming from Arab countries and holding the Official Tawjihi may choose not to take the SE. In this case they will be accepted in the Freshman class.

Applicants who have a permission from the Equivalence Committee of the Lebanese Ministry of Education to pursue their education in a foreign program are automatically exempted from Arabic requirements.

ADMISSION TO THE FRESHMAN CLASS

Applicants who might qualify for admission to the Freshman class are:


b. Applicants coming from the British system and having completed a minimum of five subjects at the Ordinary Level and one subject at the Advanced Level or two Advanced Supplementary Level subjects (AS) excluding languages.

c. Applicants who have successfully completed one year of the Canadian CEGEP program.

d. Holders of the International Baccalaureate certificate from outside Lebanon.
Holders of a GCE certificate with only O-level subjects do not qualify for admission.

**Admission of Lebanese Applicants to the Freshman Class**

Lebanese applicants to the Freshman class must obtain prior to registration a permission from the Equivalence Committee of the Lebanese Ministry of Education stating that the student is allowed to enroll in a foreign program. To obtain this permission the applicant must show evidence of having studied outside Lebanon for at least two years at the intermediate and secondary level or three years at the elementary level. The applicant should also sit for the SAT I and SAT II exams prior to enrollment in the Freshman class.

The Equivalence Committee specifies a minimum score of 2750 for Freshman Arts and 2850 for Freshman Science for the six subjects of SAT I, and SAT II combined.

The subjects in SAT II required for applicants to Freshman Science are:
- Mathematics 2C
- Two sciences from Biology, Chemistry, or Physics

The subjects of SAT II Exams for applicants to Freshman Arts are:
- Mathematics I or IC
- Any two subjects can be chosen from the SAT II subject tests.

**TRANSFER FROM OTHER UNIVERSITIES**

a. Students coming from recognized institutions of higher education and who have met LAU’s admission requirements prior to their admission to the institution they are transferring from, may apply for admission to LAU.

b. Students who have successfully completed 12 credits will be accepted without any placement exams. Students who have successfully completed less than 12 credits have to sit for a placement exam (FE or SE) depending on the class they have completed at school.

c. Transfer applicants must submit official transcripts of records as well as course catalogs from the previous colleges or universities they have attended along with the application for admission.

d. Evaluation of credits is usually made before the time of registration. The School concerned and the Registrar’s Office determine the acceptability of courses for transfer credits.

e. Transfer students coming from a recognized institution of higher education where English is the language of instruction are not required to take the EEE or TOEFL. If they had not taken any transferable English course in their former institution, these students are given the option of either taking ENG009 Remedial English or sitting for an English placement test. Transfer students coming from a recognized institution of higher education where English is not the language of instruction are required to take the EEE or the TOEFL.

**ADMISSION TO PROFESSIONAL SCHOOLS FOR A SECOND DEGREE**

Applicants with a bachelor’s degree may apply to a professional school by filling out an application for admission in the Admissions Office. Applicants for the second degree must complete all the requirements of the school in which they intend to enroll.

**VALIDITY OF ACCEPTANCE FOR ADMISSION**

Admission is only valid for one academic year. If a student is admitted for a certain semester and for some reason does not register then, a “Reactivation Application” is needed. Reactivation applications are available at the Admissions Offices free of charge.

**SPECIAL PROGRAMS**

**Excelsior College Degree**

This program is designed by LAU and the Board of Regents of the University of the State of New York for students who cannot secure an equivalence for the Baccalaureate Degree from
the Lebanese Ministry of Education. They may apply to the Freshman class and upon completion of an Associate degree they may pursue a Bachelor’s Degree in Liberal Arts, a B.S. degree in General Business, or a B.S. degree in Computer Science. Courses taken at LAU are evaluated by program officers in New York. Degrees are issued by Excelsior College, not by LAU.

Non-Degree and Special Students
Non-degree and special students are those who are eligible for admission and choose to take courses for credit without working towards a degree. Non-degree students may petition for a degree status.

Teaching Diploma
Applicants to the Teaching Diploma must have completed the requirements for the bachelor’s degree. Applicants graduating from recognized institutions of higher education where English is not the language of instruction are required to pass the English Entrance Exam (EEE), or TOEFL.

Certificate Program:
LAU offers one-year certificate programs in Graphic Design, Computer Science, Fine Arts, and Interior Design. Applicants should be eligible for admission to apply to the certificate program.

ACADEMIC RULES AND PROCEDURES FOR UNDERGRADUATE PROGRAMS

PURPOSE:
To define the academic rules of the Lebanese American University and to state the procedures involved in the implementation of these rules.

PROCEDURE:
It shall be the responsibility of the University Curriculum Council to study suggested changes to the Academic Rules and Procedures and to submit its recommendations to the University Executive Council for final approval.

It shall be the responsibility of the Admissions Offices and the University Admissions Council to see that the admission regulations are properly administered.

It shall be the responsibility of the Registrar’s Offices to implement these academic rules and procedures and observe the rules herein.

It shall be the responsibility of the Guidance Offices to give general guidance to students in conformity with their job descriptions.

It shall be the responsibility of every student to study and observe the rules herein.

I. TRANSFER AND CHANGE OF MAJOR:

A. Transferring from one LAU Campus to Another:
Students who intend to transfer from one LAU campus to another may do so provided they declare their intention by filling out a transfer form by the specified deadlines. Once they transfer, they must register for at least two consecutive regular semesters in the new campus before they are allowed to transfer back.
B. Transferring from the Associate to Bachelor Program or vice versa:

Students may request to transfer from the Bachelor program to the Associate program or vice-versa. Such requests are handled by the Registrar’s Office. Courses common to both programs and courses needed as electives will be counted towards graduation.

C. Changing Major:

1. A student may petition the school concerned for changing major at any time. The admission conditions and his/her academic performance at LAU will be taken into consideration. Acceptance in the new major is also conditional on availability of places.

2. Students wishing to change major will have the option of dropping off the grades of three courses taken at LAU belonging to the requirements of the old major but not of the new major. These courses cannot be reinstated, repeated, or transferred from other institutions. This could be applied if students have not taken advantage of three Repeats (where only the higher grade counts in the GPA. See VIII-C, Repeat Rule). If, however, they have taken advantage of the three Repeats, then they forfeit their right to a new “second chance.” If not, they may drop off the grades of courses in the old major so that the total sum of Repeats and Drops will not exceed three. In addition, where a drop of a grade is effected because of a change of major, the grades that may be dropped are only Fs or Ds. Students who change major and choose to benefit from this rule cannot return to their old major. This rule applies for changes of major within a school or when a student transfers from one school to another.

D. Intensive English Regulations:

1. To promote students from Intensive English to regular English courses, the following criteria should be used:

   a. ENG003 students must pass the course with a final grade of C or above, or the Intensive English Comprehensive Examination with a grade of C or above, or score 500 or above on the EEE, or the equivalent in TOEFL.

b. ENG002 students must either pass the Intensive English Comprehensive Examination with a grade of C or above, or score 500 or above on the EEE, or the equivalent in TOEFL.

2. Students in ENG002 and ENG003 may take one course for credit each semester in addition to a physical education course.

E. English Placement:

1. Entering Freshmen and Sophomores with a score between 500 and 549 on the EEE, or its equivalent in TOEFL, must take ENG009 Remedial English (zero credit), ENG101 English I (three credits), and ENG102 English II (three credits) before taking the Sophomore-level English courses.

2. Entering Freshmen and Sophomores with a score between 550 and 599 on the EEE, or its equivalent in TOEFL, must take six credits of English (ENG101 English I and ENG102 English II) before taking the Sophomore-level English courses.

3. Entering Freshmen and Sophomores with a score between 600 and 649 on the EEE, or its equivalent in TOEFL, must take three credits of English (ENG102 English II) before taking the Sophomore-level English courses.

4. Entering Freshmen and Sophomores with a score of 650 or higher on the EEE, or its equivalent in TOEFL, can take Sophomore-level English courses directly.

5. Students passing ENG003 Intensive English III with an average of C or above or the Intensive English Comprehensive Examination with a grade of C or above are required to take ENG009 Remedial English, ENG101 English I, and ENG102 English II.

F. Physical Education Regulation:

Students may accumulate up to two credits of physical education besides PED101 Basic Health. Beyond this, physical education credits will not count towards graduation.
II. REGISTRATION RULES:

A. Registration:
1. Registration at the assigned dates is required of all students in accordance with posted procedures and regulations. Late registration is subject to a late registration fee. Intensive English students, transferring students, cross-registering students, students returning after one or more semesters of absence are exempted from the late registration fee.
2. Students are not allowed to register after the Late Registration Period.
3. In order to register for a course, students must complete all the prerequisite(s) for that course.
4. No student may enroll in a course if he/she has an Incomplete grade in its prerequisite.

B. Student Course load:
1. A minimum full-time load in a regular term is 12 credits. A maximum load of 18 credits is allowed or as specified by professional schools.
2. Students with a cumulative GPA of 3.00 and above are allowed to carry up to a maximum of 21 credits upon the approval of the advisor.
3. Students who have two or more incomplete grades from a previous semester are not recommended to carry more than 13 credits.
4. Students within one semester of graduation may register for a maximum of 21 credits.
5. The maximum course load per summer module is seven credits.
6. In regular semesters, the Academic School Council may approve registering more credits in special cases.

C. Registration for Pass/Not Pass Courses:
1. Students may choose to take free elective courses (Sophomore level and above) outside the university requirements and major requirements on a P/NP basis.
2. Courses taken on a P/NP basis will not count in the GPA, but the credit hours completed will be counted towards graduation.
3. Students are not allowed to take more than one course per semester on P/NP basis.

D. Tutorial Courses:
Students may apply to the Academic School Council for a tutorial normally during their last two years before graduation provided:
1. they are in good academic standing;
2. the course is not an applied course;
3. the course is not offered on a regular basis during that particular semester;
4. the student will not exceed three courses on a tutorial basis during his/her undergraduate education.

In the event where a course is a prerequisite to move to the next professional year, the school may, at its own discretion, offer a course on a tutorial basis.

E. Course Changes After Registration:
Changes in registration are permitted subject to the following provisions:
1. To add or drop a course or change a section, the student must process the proper form through his/her advisor. In no case may a course be added or a change of section be made or the type of registration for a course (P/NP, audit, tutorial, etc.) be changed after the end of the Drop/Add period.
2. If a student drops a course officially within the Drop/Add period, no grade is recorded for that course. Students who officially withdraw after the late registration period will receive a W. No course may be dropped after the end of the 14th week of the Fall and Spring semesters and after the 23rd day of classes of a Summer module. Students who do not withdraw officially from a course after the late registration period will receive a grade of F.
3. All schedule changes may entail fee adjustments that need to be cleared by the Business Office. Changes decreasing the tuition obligation will entitle the student to a refund according to the terms in the University Refund Policy.
4. Course substitutions in the major courses may be made under special circumstances before final registration for the course upon the
recommendation of the Department/Division concerned and the approval of the Academic School Council. Substitution of university requirements need the approval of the Curriculum Council.

F. Cross-Registration:

1. Cross-Registering Between LAU Campuses:
   Cross registration for a course is allowed in Fall and Spring semesters only if the course is not offered at the campus where the student belongs, and in cases of conflict.
   Cross-registration for tutorials is not allowed.
   Students with permission to cross-register from one LAU campus to another are subject to the following condition: at least 50 percent of the semester credits must be taken at the student’s campus of origin. This condition applies for regular semesters only (Fall and Spring). In Summer modules, students can cross-register for as many credits as they wish within the limit allowed by the student course load regulation.

2. Cross-Registration to Other Universities in Lebanon:
   Cross-registration to another university in Lebanon will be allowed only if a course in the last semester of study is needed for graduation and the course is not offered on any LAU campus.
   Furthermore,
   1. A cross-registered course will not be allowed for a repeat.
   2. The course will be treated as a transfer course.
   3. An agreement should exist between LAU and the university where the course is to be taken before allowing for cross-registration. The student will pay at LAU and the Business Office will settle the charges with the other university.

Procedure:

a. Fill out the Cross-Registration Form and a Regular Registration Form and have them approved by your advisor and the Division/Department chair.

b. Secure the signature of the Business Office and the Registrar’s Office at LAU and take it to the registrar at the other institution.

c. Return the proper copy to the LAU Registrar’s Office after completing registration at the other institution and securing authorized signature in the space provided. No credit will be given for a course taken at another institution unless you follow the above procedure.

3. Cross-Registration to Universities Outside Lebanon:
   1. Prior approval of the Academic Council of the school is needed in order for the course to be transferred.
   2. It is the duty of the student to provide the Academic Council of the school with the catalogue, course description and syllabus of the course.
   3. The course should not be a repeat.
   4. The course should not be within the last 30 credits needed for graduation.
   5. The course will be considered a transfer course.

G. Refund Policy:
   Students who drop courses during or before the Drop/Add period will be refunded fully. Dropped courses after the Drop/Add period will not be refunded and a W grade will be recorded.

III. WITHDRAWAL FROM THE UNIVERSITY:
   If for any reason it becomes necessary for students to withdraw from the university, they must fill out the withdrawal form and process it through their advisors. Students withdrawing from the university after the late registration period and before the withdrawal deadline (the end of the 14th week of the Fall and Spring Semesters and before the last two teaching days of a Summer module) will receive Ws for all the courses in progress.
   After the lapse of at least one whole semester (Fall or Spring), students are required to reactivate their files at the Registrar’s Office.
IV. CLASSIFICATION OF STUDENTS AND ACADEMIC LOAD

Students are classified as full-time students when they enroll in 12 credits and above while they are considered part-time students when they enroll in less than 12 credits per semester.

A. Degree Students:
Degree students are classified as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Credit Hours Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman (1st year)</td>
<td>0–29</td>
</tr>
<tr>
<td>Sophomore (2nd year)</td>
<td>30–59</td>
</tr>
<tr>
<td>Junior (3rd year)</td>
<td>60–89</td>
</tr>
<tr>
<td>Senior (4th year)</td>
<td>90–119</td>
</tr>
<tr>
<td>5th year</td>
<td>120–159</td>
</tr>
<tr>
<td>6th year</td>
<td>160 and above</td>
</tr>
</tbody>
</table>

B. Special Students:
Students taking courses for credit but not working towards a degree are classified as special students.

C. Auditing Courses:
LAU and non-LAU students may audit courses; however, they should secure the consent of the instructor and the Division/Department chairperson prior to registration. Students auditing a course will not receive credit for it, but they will be charged full tuition fees.

V. ATTENDANCE REGULATIONS AND MAKEUP POLICY:

A. Attendance Regulations:
Students are held responsible for all material presented in the classroom even during their absence. Makeup work and exams, if any, will be according to the rules spelled out in the course syllabus. In any semester or term students can miss no more than the equivalent of five weeks of instructions in any course and still receive credit for that course. However, instructors have the right to impose specific attendance regulations in their courses provided that the above-stated limit of absences is not exceeded and the minimum number of absences allowed is no fewer than the equivalent of two weeks of classroom instruction. Such specific attendance regulation should be mentioned in the syllabi. Instructors are to inform their Departments/Divisions and the Guidance Office of any prolonged unexplained absence. The number of absences in Summer modules is prorated.

B. Makeup Policy:
All lost sessions are to be made up. When the lost days (resulting from suspension of classes for any reason) in a regular semester number up to 10, they are to be made up as follows:

- Three days to be made up at the discretion of each faculty member.
- Seven days to be scheduled by decision of the University Executive Council in consultation with the faculty.

The ten-day period is seen as the period beyond which no make-up can be considered and credit loss becomes inevitable. Alternately, the semester may be extended and students will have to bear any additional expenses resulting from such an extension.

C. Class Time:
If the instructor is late to class, students are expected to wait 15 minutes before leaving.

VI. CLASSROOM SCHEDULING AND CLASS SIZE:

Classrooms are assigned by the Registrar’s Office. Instructors wishing to make classroom changes must first clear such changes with the Registrar’s Office.

When determining class size, an addition of 10 percent will be used to take care of attrition according to the following procedure:

Lecture courses: 40 students
Language and Seminar courses: 25 students
Studio, Lab, Internship, and Physical Education courses: 20 students
VII. TESTS AND EXAMINATIONS:

A. Regulations and Procedures:

1. Final course examinations are held at the end of each semester and summer modules. Final examinations should not count for more than 40 percent of the final grade. At least two tests and/or graded projects should account for the remaining percentage of the grade.

2. If a student absents himself/herself from a final examination, a grade of F will be given for that examination. If within one week the student produces an excuse which is acceptable to the instructor and/or the Division/Department concerned, then the student will be given a makeup final examination. If an excuse is presented after the lapse of a week and within one month, the student may petition the school concerned to be allowed to sit for an examination and to have the final grade adjusted accordingly.

3. Any incomplete work must be made up at a time planned with the instructor but not later than the eighth week of the following semester (Fall or Spring) in which the student is enrolled at the university. Otherwise, the I is changed to an F (or NP). It is the responsibility of the student to contact the instructor to make arrangements for the completion of the incomplete work. In the case of Senior Study and Internship courses as well as final year projects, the incomplete work must be completed not later than one full year after the end of the semester or module in which the I was received.

4. In case of illness or major emergency leading to absence from an announced examination, a student must notify within a week the Guidance Office and the instructor/division/department concerned.

5. Final examinations will not be scheduled on dates outside the stated examination period. In case of a major emergency, a student may request an early final exam. Such a request needs the approval of the instructor of the course and the Division/Department chairperson.

6. No more than three final exams will be scheduled per day for every student. In case a student has more than three scheduled final exams in the same day, the student may ask the instructor of the highest course number to reschedule his/her final exam.

7. When there are final examination conflicts between an LAU class and a class at another institution, the student involved must resolve the conflict with the instructors concerned in advance.

8. When there are final examination conflicts among LAU courses, students must inform the Registrar’s Office by the deadline indicated on the examination schedule.

9. Students may review their final examination paper in the instructor’s office (or the Division/Department chairperson’s office in case of the absence of the instructor concerned). Final examination papers will be retained by the instructor or the Division/Department chairperson for one semester.

10. Some of the above rules (namely 1, 5, and 9) may not apply to design, studio, project, seminar, and research type courses. In such cases, school-specific regulations may apply as specified in the course syllabus and approved by the Academic School Council.

B. Code of Conduct During Examinations:

Students are expected to follow the highest ethical code of conduct during all the examinations.

VIII. SCHOLASTIC STANDING:

A. Grading System:

The university grading system uses a series of letters to which are assigned grade quality points. The Grade Point Average (GPA) is calculated according to a procedure outlined in the following section. No pluses or minuses should be given or recorded.
Grade A: Represents work of excellent quality. It is valued at four quality points for each credit hour.

Grade B: Represents work of good quality. It is valued at three quality points for each credit hour.

Grade C: Represents satisfactory achievement. It is valued at two quality points for each credit.

Grade D: Represents the minimum passing grade and is indicative of poor performance. It is valued at one quality point for each credit hour.

Grade F: Represents unsatisfactory performance in the course. It has zero quality points.

Grade P: Represents passing performance in a course taken on a Pass/No Pass basis. The credits, if any, will be added to the number of credits passed but will not be included in the GPA. It has no quality points.

Grade NP: Represents failing performance in courses taken on a Pass/No Pass basis. No credits will be added to the student's record, nor will the GPA be affected. It has no quality points.

Grade U: Represents a course taken on an auditing basis. It has no quality points and the credits will not be added to the passed credits.

Grade W: Represents official withdrawal from a course after the late registration period and before the end of the 14th week of the Fall and Spring semesters and after the 23rd day of classes of the Summer modules. It has no quality points. A withdrawal form must be properly processed.

Grade I: Represents incomplete work and is given when some essential requirements have delayed because of factors beyond the student’s control: excused absence, illness, etc. Students are not entitled to an I grade unless they have fulfilled at least two-thirds of the course requirements with a passing average.

If a course is marked I, all requirements must be made up at a time planned with the instructor but not later than the eighth week of the following semester (Fall or Spring) in which the student is enrolled at the university. Otherwise, the I is changed to an F (or NP).

In the case of Senior Study and Internship courses, the incomplete work must be completed not later than one full year after the end of the semester or module in which the I was received.

In no case may such work be made up after a lapse of one year from the end of the semester or module in which the I was received.

B. Grade Point Average:

The Grade Point Average is the ratio of the number of points gained to the number of credit hours attempted. As stated above, an A counts for four points for each credit hour carried; a B counts for three points; a C for two points; a D for one.

Example of semester GPA computation:

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade</th>
<th>Cr.</th>
<th>x Points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARA201 Arabic</td>
<td>B</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>BIO101 Biology</td>
<td>A</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>ENG102 English</td>
<td>D</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>CST201 Cultu. Studies</td>
<td>F</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PED101 Bas. Health</td>
<td>C</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

The semester GPA for the five courses would be:

Semester GPA = Total semester quality points/Total semester credit hours attempted = 30/14 = 2.14

Courses in which grades P, NP, U, W and I have been given are not counted in computing the GPA.

C. Repeating Courses:
1. Students are advised to repeat a course in
which they received an F or a D. Students will receive credit once for the course. A student may have up to three repeats and have the higher grade count in the GPA. All repeated courses beyond this number will have all grades taken counted in the GPA. Students wishing to change major will have the option of dropping off the grades of three courses taken at LAU belonging to the core and/or emphasis requirements of the old major and not of the new major. This could be applied if students have not taken advantage of three Repeats. If, however, they have taken advantage of the three Repeats, then they forfeit their right to a new “second chance.” If not, they drop off the grades of courses in the old major so that the total sum of Repeats and Drops will not exceed three.

2. A W grade in a repeated course would not be considered among the three allowed repeats.
3. If repeated, transferred courses will be deleted from the credits given on transfer basis. In that case, the courses will not appear as repeated courses.

4. If a course is repeated at another institution and transferred to the record of the student, the grade and credits of the LAU course will be included in the GPA calculations. The 3-Repeat rule does not apply in such case.

**D. Grades and Progress Reports:**

1. All semester grades must be turned in to the Registrar’s Office not later than 72 hours after the particular final examination is given.
2. Final grades will not be changed except in the case of an instructor’s mistake. A change of grade will not be allowed after the lapse of one semester. The corrected grade should be processed using the Change of Grade form.
3. The Registrar’s Office will provide the Guidance Office and the student’s advisor with copies of grade reports each semester. Academic advising and counseling are the responsibilities of the faculty advisors.
4. Progress reports on weak students are to be submitted to the Guidance Office and the faculty advisor by the eighth week of the semester.

**E. Requirements for Degrees:**

Degrees are awarded three times a year: at the end of the Fall semester (February 28), at the end of the Spring semester (June 30), and at the end of the Summer (September 30).

Students expecting to graduate must apply for graduation at the Registrar’s Office by the deadlines specified by the office.

1. Requirements for the Associate degrees:
   a. A minimum of 62 credits, the last 30 credits of which must be completed at LAU.
   b. Fulfillment of all required courses in a designated curriculum leading to the A.A. or A.A.S. degree.
   c. A cumulative GPA of 2.00.
   d. A GPA of 2.00 in the major courses taken at the university, except for the Liberal Art program.
   e. Students who completed course requirements for graduation but who have not acquired a minimum cumulative GPA of 2.00 and/or a minimum GPA of 2.00 in the major courses, are allowed to enroll for a maximum of 15 credits in courses numbered 200 or 300 or above to be completed in no more than one calendar year after the completion of the credits required for the A.A./A.A.S. degree. Any such student who fails to graduate at the end of that year will be dismissed from LAU.

2. Requirements for the Certificate Program:
   a. A minimum of 30 credits completed in a designated program.
   b. A cumulative GPA of 2.00 in all courses attempted in the Certificate Program.

3. Requirements for the Bachelor degrees:
   a. In accordance with Lebanese Government regulations, Lebanese students entering Sophomore must complete 92 credits (excluding freshman-level and remedial courses) in no fewer than six semesters. A minimum of 122 credits is required of students entering as Freshmen.
b. Lebanese students entering as Freshmen must complete at least 92 credits in non-freshman courses after obtaining the Lebanese Baccalaureate or its equivalence in no fewer than six semesters.

c. An LAU student with a bachelor’s degree may work for another bachelor’s degree provided he/she completes a minimum of 30 additional credits including all requirements for the new degree. A non LAU graduate may work for another bachelor’s degree provided he/she completes all requirements for the new major, a residency of at least two semesters and at least 30 credits. Special rules may apply to professional schools.

d. Students who hold a bachelor’s degree may earn an Associate degree in another major by completing the requirements for that major.

e. A minimum of 36 credits in a major, plus any additional requirement set by the Division/Department are required.

f. A cumulative GPA of 2.00 in the major courses is required.

g. A cumulative GPA of 2.00 must be achieved in the courses required for the Teaching Diploma. The Teaching Diploma is granted upon the completion of 21 credits beyond a B.S. or B.A. degree and upon the fulfillment of Government requirements. Education courses counted in granting a Minor in Education may be counted towards the T.D. only if not counted towards the bachelor’s degree. Not more than 6 of the 21 credits may be transferred from other institutions.

h. A cumulative GPA of 2.00 is required in all courses taken at the university. Transfer students will be given credit for all transferable courses, but only the courses taken at LAU will be counted in their GPA.

i. A minimum completion of the last 30 credits at LAU.

j. A minimum completion of 50 percent of the major courses for transfer students.

k. Students expecting to graduate are required to apply for clearance one semester prior to graduation date according to the deadlines set by the Registrar’s Office.

l. Individual Schools may require further conditions for graduation. These conditions must be approved by the University Curriculum Council and the University Executive Council.

m. Students who completed course requirements for graduation but who have not acquired a minimum cumulative GPA of 2.00 and or a minimum GPA of 2.00 in the major courses, are allowed to enroll for a maximum of 21 credits to be completed in no more than one calendar year starting immediately following the completion of the required credits. Of these 21 credits, only courses numbered 300 and above will be considered in the CGPA or GPA computation. If taken for the first time, courses numbered 200 and above will count. For the Associate degree, similar students are allowed to enroll for a maximum of 15 credits in courses numbered 200 or 300 or above to be completed in no more than one calendar year after the completion of the credits required for the A.A./A.A.S. degree. Any such student who fails to graduate at the end of that year will be dismissed from LAU.

F. Academic Recognition:

1. If students have completed at least 12 credit hours in a semester (not including summer), with a GPA in the range of 3.20 and 3.49, they are placed on the Honor List. If their GPA is in the range of 3.50 and 4.00, they are placed on the Distinguished List. The above applies provided they have no incomplete grades, nor is their cumulative GPA below 2.00.

2. Degrees are awarded with Honors, Distinction, and High Distinction with a cumulative GPA in the range of 3.20–3.49, 3.50–3.79, and 3.80–4.00, respectively.

G. Academic Probation:

Students are placed on probation when their work has dropped below satisfactory level at any time irrespective of Incomplete grades, or withdrawals.

Students taking Intensive English courses are not subject to normal probation rules. Students may not stay in Intensive English courses more
than a total of two semesters and one summer, after which they leave the university. They can come back only after passing the EEE or TOEFL.

A student on probation is advised to repeat courses in which he/she received an F or a D as soon as possible and may not carry more than 13 credits in a semester.

A student is placed on probation under one or more of the following conditions:

1. Students will not be placed on probation until they have attempted a cumulative of 20 credits or more.
2. If at the end of any academic term a student does not achieve a minimum cumulative GPA of 2.00 in all work done at the university, he/she will be placed on probation.
3. If after completing 12 credits in his/her major, a student’s average in the major courses is less than 2.00, he/she will be placed on Divisional/Departmental probation and will be advised to change majors.

IX. ACADEMIC SUSPENSION:

A. Students on academic probation will be suspended if they fail to remove the probation in two consecutive semesters of enrollment at LAU (summers excluded) regardless of Incompletes and semester withdrawal.
B. Students with two consecutive academic probations will not be suspended at the end of any semester in which they achieve total semester quality points of 26.4 even though the cumulative GPA is below 2.00. Such students will not be allowed to register until their grades are out and all Incompletes are removed.
C. Students who may petition for a one semester grace period are those who lack 12 or fewer credit hours to graduate and whose GPAs for graduation are within possible reach in that one semester of grace. Such students who are given this chance and do not complete all requirements for graduation will be suspended.
D. Students who can avoid suspension upon changing major may do so at any time.

X. READMISSION AFTER SUSPENSION:

A student suspended for academic deficiencies must petition the Admissions Council for readmission. The petition is submitted at the Registrar’s Office. The application form is submitted at the Admissions Office. The regular application fee will be charged. Readmission is not automatic. Each case will be studied on its own merit. If during the student’s absence from LAU, he/she attended another college or university, he/she has to submit a transcript of grades from that college or university.

If a student is readmitted after suspension, he/she will be placed on probation and will be given two semesters (excluding summers) to remove the probation.

Suspended LAU students may not receive credit for any academic work done during the absence period if such work has not been declared prior to enrollment or re-enrollment.

Students who dropped for academic deficiencies may petition the University Admissions Council for readmission if at least one of the following conditions is met:

A. The student has spent at least one semester at another institution of higher learning and completed 12 credits with an average of C or above.
B. The student has spent one full calendar year outside LAU.
C. The work experience of the suspended student (in the interim period between first suspension and possible readmission) is at least one year.
D. The student takes special courses at the Continuing Education Program with a cumulative C average.

LAU students suspended from a professional school may be readmitted to the same major. Suspended students who have a GPA of less than 1.20 will not be readmitted. Students who have been suspended twice will not be readmitted. However, a double-suspension LAU student may apply for reentry after three years of academic work in another university or
seven years of work experience. Each case will be studied individually.

XI. DISCIPLINARY ACTION:

A. Cheating on tests, plagiarism, and disrupting classes and examinations are serious offenses subject to disciplinary action by the Academic School Council concerned. Acts of theft, falsification of university documents or signatures or any improper behavior on the campus are also subject to disciplinary action by the Campus and Student Life Council.

B. Students caught cheating on an exam receive a grade of zero on the exam in their first cheating attempt in the course and receive a warning. Students caught cheating for the second time in the same course receive a grade of F in the course and a second warning. A grade of zero on an exam resulting from cheating must be counted in the student’s course grade. The zero cannot be dropped in computing the final grade in case the instructor has a policy of allowing students to drop their worst exam grade.

C. A system of disciplinary warnings and citations (one citation equals ½ warning) has been established. A student may receive two disciplinary warnings and is automatically suspended from the university on the third warning (or sixth citation). He or she may not apply for readmission before the passage of one year.

D. A disciplinary warning will be removed after two academic years of good behavior provided the student has been a full-time student during the two-year period.

E. Undergraduate students who have accumulated up to one or two warnings during their years of study may either be denied admission to graduate studies or may carry the warnings with them to graduate work, unless admission to graduate work is subsequent to full-time employment for at least two years following completion of a Bachelor program (in which case warnings may be removed upon submission of required documents).

F. Letters of warning will be sent by the Guidance Office to the student, parents or guardians, advisor and the financially sponsoring foundation or agency. Copies will be kept at the Guidance Office and the Registrar’s Office.

G. Any student subject to disciplinary action may appeal his or her case to the body that issued the warning or citation through a petition within two weeks.

XII. APPEALS:

Due to extenuating circumstances a student may submit a petition to the proper council appealing the implementation of any of the rules and regulations contained herein.

If the decision entered by the council is adverse, and he/she believes that he/she may be subjected to hardship because of such a decision, an appeal may be submitted by the student to the University Executive Council for a final determination on the matter.
**1. REQUIREMENTS FOR ADMISSION TO THE GRADUATE PROGRAMS**

Admission to one of the graduate programs at the Lebanese American University is granted only on a selective basis to students who have demonstrated distinct academic ability and motivation by meeting at least the minimum requirements described below. Meeting these requirements, however, is not a guarantee of admission, because of limited space and facilities.

### 1.1. Admission Procedure

Application forms and other relevant admission information may be obtained by writing to the Office of Admissions, Lebanese American University, P.O. Box 13-5053, Chouran Beirut: 1102 2801, Lebanon, or P.O. Box 36, Byblos, Lebanon.

A. Each applicant must fill out two copies of the application form and return them to the Office of Admissions of either the Beirut or Byblos Campus, together with a non-refundable application fee.

B. Each applicant must request that official transcripts or official academic credentials from all colleges or universities attended be sent directly to the concerned Office of Admissions. Failure to declare attendance in other institutions could cause invalidation of admission and any credits or degrees earned.

C. Application forms must be accompanied or followed by:

1. A certified photocopy of the applicant’s identity card or passport
2. A photocopy of all educational and professional certificates
3. Two identical passport-size photographs of the applicant
4. Recommendations from two professors or others who are familiar with the academic record of the applicant
5. Recommendations from employers listed in the applicant’s form (if applicable).

D. The application forms and all necessary material should reach the Office of Admissions no later than the announced deadlines on the application form.

E. An interview with the Graduate Admissions Committee of the school concerned may at times be required. Applicants are requested to arrange for this interview with the school concerned.

F. Admission is valid for one calendar year from the date of acceptance. However, applicants who do not enroll during the first semester after they are admitted must reactivate their application. They will be admitted during the second semester on availability basis.

Whether an applicant is accepted or not, all documents submitted with the application for admission become the property of LAU and cannot be returned.

### 1.2. Minimum requirements for Admission

#### 1.2.1. Bachelor’s Degree

Applicants for admission must have a bachelor’s degree from an accredited college or university, with a minimum grade point average (GPA) equivalent to 2.75 (on a 4-point scale) and 2.75 in the major courses in the major to be pursued. Applicants with cumulative GPA of less than 2.75, but with at least five years of relevant professional experience and/or high GPA in the major field of study applied to may also be considered for admission. If the bachelor’s degree is not in the field to be pursued, the applicant may be admitted as a “Special” as described below in sections 1.2.4 and 1.2.5 irrespective of his/her GPA.

#### 1.2.2. Fluency in English

Applicants are required to be fluent in Eng-
lish as demonstrated either by graduation from a college or university in which the language of instruction is English or by a score of 550 or higher in the English Entrance Exam (or a score higher or equal to 575 paper-based TOEFL, 233 computer-based TOEFL). Students from a college or university in which the language of instruction is not English and who score between 500 and 549 in the English Entrance Exam (or between 525 and 574 in the paper-based TOEFL; 193 to 230 computer-based TOEFL) can retake the English Entrance Exam or the TOEFL exam or enroll in an English course within their first year of graduate studies at LAU or sit for an English comprehension exam administered by the concerned department and the English Department.

Applicants who do not meet the above requirements after the lapse of one year will be placed in the appropriate English program, but will not be allowed to register in graduate courses. Applicants from recognized universities where the language of instruction is English may have the fluency in English tests waived.

1.2.3. Special Graduate
An applicant may be accepted as special graduate and be required to take remedial/prerequisite courses in the major if the bachelor’s degree is not in the field pursued but his/her cumulative GPA is not lower than 2.75. Such students must complete all course requirements specified by the relevant academic program with a minimum GPA of 2.75 before they are considered bona fide students in the master’s program.

1.2.4. Special Undergraduate
If the bachelor’s degree is not in the field pursued and the cumulative GPA is less than 2.75, but equal to or greater than 2.5/4.0, 74/100 or 11/20, a student may be accepted as a special undergraduate. He/she will be reconsidered for admission into the master’s program after the completion of a number of courses specified by the division/department or school with a minimum cumulative GPA of 3.0.

1.2.5. Probationary Admission
Graduate Admissions Committees may feel that some applicants not meeting all of the requirements for acceptance could be issued a probationary acceptance to the master’s program.

Applicants accepted on probationary basis must complete their first four courses without repeats and receive a cumulative GPA of 3.0.

1.2.6. Non-Degree Candidates
An applicant with an undergraduate degree who is not pursuing a degree program may apply for non-degree status provided he/she meets all the admission requirements.

1.3. Special Admission Conditions to Some Programs
Applicants to Comparative Literature must have a bachelor’s degree in a field of literary studies, or have earned a bachelor’s degree in another discipline with at least 18 credits of course work in literature from an accredited university. A minimum score of 600 in the TOEFL and a GPA of 3.00 (on a 4-point scale) in literature and 2.75 in all other subjects are required. A brief statement of purpose written in English as well as two essays on a literary subject, one of which is written in English and the other in the candidate’s second language should be submitted when applying.

Applicants to the Executive MBA must have a bachelor’s degree from an accredited university and at least six years of professional experience.

Students wishing to study Doctor of Pharmacy should have the Bachelor of Pharmacy degree. All applicants are subject to a personal interview by the School’s Admissions Committee.

1.4. GMAT Requirement
Applicants accepted in the MBA program must take the GMAT before the completion of 18 credits of graduate courses at LAU.

2. REGISTRATION

2.1. Registration
Registration is required of all students in accordance with posted procedures and regulations. Late registration requires payment of an
additional late registration fee. Students will not be permitted to register after the late registration period.

2.2. Advising
Upon registration, each student will be assigned an academic advisor who will assist him/her in planning an appropriate course of study. At a later date, students choosing to undertake a Project or a Thesis will be assigned a research advisor.

2.3. Course Load
The minimum course load for a full-time student is nine credit hours per semester. Graduate students with a full or part-time employment are advised to take a reduced load. Students on graduate assistantships shall take a minimum of six credits and a maximum of 9 credits per semester, not counting credit hours for thesis, project or research topics. Graduate Assistants may take up to 12 credits in their last term of studies (current practice).

2.4. Cross-Registration
A student may be granted permission to cross-register at another institution, if a course needed for the student’s graduation is not offered at the university. Any graduate student registered at LAU may take no more than one such course.

2.5. Tutorials
To meet degree requirements, a student may take no more than one course on a tutorial basis during the student’s graduate program. A student may register for a tutorial course only with the prior consent of the course instructor and the approval of the school concerned.

2.6. Auditing
Only candidates who have satisfied all the admission requirements may audit graduate courses. Auditing will only be permitted when places are available. Audited courses will not, however, be counted for graduation.

2.7. Program Changes
Any change from one graduate degree to another requires re-admission.

2.8. Attendance Regulations
Regular attendance is required of all graduate students. No credit will be given to a student who misses more than one-third of class hours for any reason. A grade of “F” will be recorded unless the student follows the official withdrawal procedure.

2.9. Course Changes after Registration
Course changes after registration are permitted subject to the following provisions:

1. To add or drop a course, the student must obtain “change of schedule” form from the Registrar’s Office, and must secure the signature of the advisor concerned, the Business Office, and the Registrar’s Office. Change of schedule may be made during the drop and add period.

2. If a student drops any course(s) before or during the late registration period, then no grade will be recorded. If a student withdraws officially after the late registration period but before withdrawal deadline of the semester, a grade of W will be recorded. If a student cannot meet attendance or other requirements and fails to withdraw officially during the specified period, a grade of F will be recorded.

3. All course changes which increase the tuition obligation of the students will be noted by the Business Office, and the added fee will be collected before the change is finalized; changes decreasing the tuition obligation will be subject to the Refund Policy.

3. ACADEMIC RULES AND PROCEDURES

3.1. Grading System
The grading system uses a series of letters, which are assigned grade quality points as follows:

A indicates work of excellent quality (4 points per credit hour)
B indicates work of good quality (3 points per credit hour)
C indicates work of unsatisfactory quality (2 points per credit hour)
D indicates work of poor quality (1 point per credit hour)
F indicates work of unacceptable quality (0 point per credit hour)
I indicates that essential requirements have been delayed due to factors beyond the student’s control. These requirements must be met and another grade issued no later than one year after the completion of the semesters for which I was recorded. Failure to make up the incomplete work within the specified grace period will result in a grade of F.
W indicates official withdrawal from a course after the late registration period.
P indicates that a student has successfully passed the oral examination of the Thesis/Project course.
NP indicates that the student has failed to pass the oral examination of the Thesis/Project course.

3.2. Academic Standing
A graduate student is considered to be in good academic standing if he/she maintains a cumulative GPA of 3.00 on all course-work undertaken while in the graduate program.

3.3. Academic Probation and Dismissal
1. After the completion of nine credit hours, students will be placed on probation if their cumulative grade point average is below 3.00. Students who complete nine additional credit hours (excluding repeat courses) and fail to achieve a cumulative grade point average of 3.00 will be dismissed from the program.
2. Students failing to maintain a cumulative GPA of 3.00, even after removing an earlier probation, will also be dismissed from the program.
3. Any student who has at any time two repeats and more than two grades of C or lower will also be dismissed from the program.
4. Any student who has more than one F will also be dismissed from the program.

3.4. Transfer of Credits
A maximum of six graduate credits for programs where 30 credits are required for graduation may be transferred from another institution or between LAU graduate programs. A maximum of six graduate credits taken as an undergraduate at LAU in the student’s last year over and above the total number of credits required for graduation may be transferred. Transferred credits apply only to courses with a grade of B or above. Transferred credits should not have been used for another degree required for admission to the graduate program in which a student is enrolled. A request for transfer of credits shall be filed at the Registrar’s Office, during the student’s first semester of residence. The petition shall be reviewed by an ad-hoc committee chosen by the School or Department/Division, and the decision communicated to the Registrar’s Office and the Graduate student concerned.

3.5. Course Substitution
Up to six credits of courses may be substituted for an equal number of credits, if the substituted courses are at a level equivalent to the courses for which substitution is requested. A petition for approval of such substitution shall be submitted to the UGC upon the recommendation of the School concerned. The decision of the council shall be communicated in writing to the Registrar’s Office.

3.6. Repetition of Courses
1. During the course of study in any of the graduate programs, a student can repeat a maximum of two graduate courses in which a grade of B or less have been earned. In such a case, only in the first repeated course the higher grade will be counted in the determination of the grade point average.
2. Students will not be allowed to withdraw from a course more than once. The second withdrawal from a course will be recorded as F.

3.7. Refund Policy
Contracts with faculty members and provisions for education and residence are made by
the university in advance for the entire year. Accordingly, if a student withdraws for justifiable reasons after reserving courses, then the refund of tuition and housing fee will be according to the following percentages:

1. Drop during or before the Drop/Add period: 100% of fees
2. Drop after the Drop/Add period: No refund

3.8. Withdrawal from the University

Students who wish to withdraw from the university, either temporarily or permanently, must fill out the appropriate form at the Registrar’s Office, and secure the signature of the advisor, the Business Office and the Registrar’s Office. Students who withdraw from the university after the late registration period and before the withdrawal deadline (five class days before the end of the semester), will receive W’s for all the courses in progress.

3.9. Petitions

Students may request exemptions or alterations to published rules, by submitting to the University Graduate Studies Council an official petition form (available at the Registrar’s Office), explaining the basis of the request.

3.10. Thesis and Project

3.10.1. Registration

The registration for thesis (or project) will allow students to retain their status with the University for two years (three semesters excluding Summer) with no additional thesis (project) tuition fees provided the student re-registers every term. Past that date, students allowed to have thesis (project) extension, will be required to register for a residence fee (0 quality point, 50% of one graduate credit) if they are not taking other courses in order to retain their student status.

3.10.2. Guidelines

A. Students shall select a thesis/project advisor, and in consultation with the advisor, a graduate Advisory Committee to guide the student’s work and advise on the program.

B. In addition to the advisor, the Thesis Committee shall be made of a minimum of two members, and the Project Committee of one member or more. The majority of the thesis committee members must be full-time LAU faculty members of the graduate program concerned. The advisor, who should be a full-time LAU faculty member, shall chair the committee. The names of the members of the committee shall be formally communicated in writing to the School or Division/Department chiefly concerned and approved by the Dean of Graduate Studies/Dean of School concerned.

C. Students can register for the thesis/project at any time after the first semester subject to the consent of their thesis/project advisor. All work on thesis or project must be completed in two years or less. Registration is of two-year duration for the thesis and three semesters (excluding Summer) for the project.

D. In consultation with their committee, students must choose a topic for their thesis/project as soon as they register for their thesis/project.

E. The members of the committee shall be kept informed of the progress of the Thesis/Project by meeting with their designated graduate students at least once a year.

F. The thesis shall be based on original research work carried out in the basic and/or applied field of study. The project shall be based on extensive and critical literature review and/or on studies dealing with the application of certain techniques or tools.

G. Students must successfully defend their Thesis/Project proposal before the members of their Thesis/Project Advisory Committees as soon as they are ready. The Office of Graduate Studies or Dean of School concerned shall receive a copy of the proposal and be informed of the defense date one week in advance. The results of the Proposal Defense along with any specific instructions shall then be communicated by the student’s advisor to the Office of the Dean of Graduate Studies/Dean of School concerned and the gradu-
ate student concerned on the Thesis Proposal Form (Annex I). The form shall be certified by all members of the Committee and approved by the Dean of Graduate Studies/Dean of School concerned.

H. The grade for a thesis/project can be Pass, or No Pass (P or NP). The grade does not contribute to the GPA.

I. Where permitted, students can petition before their defense/demonstration to the academic unit to change registration from thesis to project and vice versa.

1. Students changing from project to thesis option will be required to pay only for the extra credits, provided the student remains with the same thesis advisor and follows the same topic. The change shall be made at least one semester before graduation, and shall carry the approval of the UGC.

2. Students changing from a thesis to project will not normally be refunded for the difference in credits. The change shall be made at least one semester before graduation, and shall carry the approval of the UGC.

Students changing from a thesis/project to a course are required to pay for the substituted course.

3.10.3. Conflict of Interest

The Faculty shall not serve on the Thesis/Project Advisory Committee or be the advisor of a student that either is a family member or a business partner.

In such cases, where the academic circumstances require that a faculty member serves on the Thesis/Project Advisory Committee or be the Thesis/Project Advisor of a student that either is a family member or a business partner, the Faculty shall secure the prior written approval of the Dean of Graduate Studies/Dean of School concerned.

3.11. Procedures for Oral Defense of Thesis and Project

3.11.1. Thesis Defense:

1. The student shall submit his/her thesis to the Thesis Committee members and the Dean of Graduate Studies/Dean of School concerned at least two weeks before the defense date.

2. For oral defense of the thesis, the candidate is required to give a public presentation. This will be followed by a meeting with the Thesis Committee for the final defense.

3. The date of the public presentation will be advertised in a University publication and on campus by the concerned School or Division/Department two weeks in advance.

4. The result of the Defense is reported on the Thesis Defense Form (Annex II). The form is preliminarily signed by the advisor and all members of the committee. The form specifies corrections and changes to Thesis requested by the committee. The student shall deliver the corrected/changed Thesis to advisor within a period to be specified by the committee that shall not exceed one term. The advisor is responsible for verifying correction/changes done before re-signing the Thesis Defense Form. The form is then submitted to Dean of Graduate Studies/Dean of School concerned for final signature before sending it to the registrar.

3.11.2. Project:

Each school/department/division will set its own guidelines for project defense. The Project the school/department/division concerned.

3.11.3. Time Limit

Candidates must complete all requirements for a Master’s degree, including accepted transferred credits, within six years of the end of the first semester in which they registered in the Graduate Studies. Courses that exceed this time limit must be revalidated for one time only or re-taken as decided upon by the concerned graduate program.
To revalidate a course, the student, along with the faculty advisor, must prepare a revalidation plan that must be reviewed and approved by the School Academic Council and recommended to the University Graduate Council for final approval. Once the plan has been completed, the Dean of the Graduate Studies/Dean of School concerned must be notified in writing.

Students may not revalidate courses with a grade of C or lower, or courses taken at other institutions.

4. GRADUATION REQUIREMENTS

A. A completion of a minimum of 30 semester credit hours is required of all graduating students. However, the school concerned will decide upon the requirements of each graduate program.

B. A minimum cumulative GPA of 3.00 with no more than two repeats and two grades of C or lower.

C. Graduate students cannot use courses with grades less than C toward graduation.

D. Graduate students must complete all requirements within the allowed University time limit as indicated in section 3.11.3.

E. Candidates who expect to graduate shall apply for graduation one semester before the set date. They shall fill out the appropriate form at the Registrar’s Office. Candidates for graduation will be officially notified of any requirements that they have not completed.

5. PREPARATION AND SUBMISSION OF THESIS/PROJECT

Thesis/project shall be written as specified in the “Thesis/Project Writing Guidelines” available at the Office of Graduate Studies or the School Dean. However, individual schools may have their own required Thesis/Project format as approved by the UGC. At least 15 days prior to the date on which the candidate expects to graduate, the candidate must provide the Office of Graduate Studies or School Dean with two (signed) original copies of the final version of the completed thesis/project. The completed version shall contain as a first page a completed and signed Thesis Approval Form (Annex III). The signed copies shall be delivered to the concerned Campus library. Upon receipt of these copies the librarian shall fill and sign the library clearance form (Annex IV) and send it to the registrar for initiation of graduation procedures. For further information on thesis/project preparations and binding fees, please contact the Office of Graduate Studies, Deanship concerned, or the University Library.

6. GRADUATE ASSISTANTSHIP

Graduate assistantships, which are available in the forms of graduate teaching, and research assistantships provide direct financial support to those outstanding students who can provide valuable and necessary services to the university and at the same time strengthen the quality of the students’ educational experiences. Only students unconditionally admitted to a graduate program and carrying a minimum course load of six credit-hours in a regular semester, or three credit-hours in summer sessions, may hold such appointments. Graduate students interested in applying for graduate assistantships shall complete a graduate assistantship application at the school to which they have been admitted.

To renew a graduate assistantship, a student must be in good academic standing, and must have performed assigned duties satisfactorily in the preceding semesters as determined by the respective schools.

Graduate assistants are not entitled to the benefits granted to University Faculty and Staff members according to the personnel policy. Besides, the tuition waiver does not cover repeated courses.
### General University Requirements

The general university requirements are a balanced set of courses in general education for students pursuing bachelor's degrees. Some courses are for freshmen and are not required of entering sophomores. Transfer students must fulfill the course requirements on every level unless they receive credits for similar courses completed at their former institution.

#### Freshman Arts Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHL101</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>ENG101</td>
<td>English I</td>
<td>3</td>
</tr>
<tr>
<td>ARA101</td>
<td>Arabic Essay Reading and Writing I</td>
<td>3</td>
</tr>
<tr>
<td>ART101</td>
<td>Introduction to Music and Art</td>
<td>3</td>
</tr>
<tr>
<td>ENG102</td>
<td>English II</td>
<td>3</td>
</tr>
<tr>
<td>ARA102</td>
<td>Arabic Essay Reading and Writing II</td>
<td>3</td>
</tr>
</tbody>
</table>

Any two of the following science courses (8 credits) or one of the following and one math course (7 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO101</td>
<td>Introduction to Biological Science</td>
<td>4</td>
</tr>
<tr>
<td>PHY101</td>
<td>Introduction to Physical Science</td>
<td>4</td>
</tr>
<tr>
<td>BIO201</td>
<td>Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO202</td>
<td>Biology II</td>
<td>4</td>
</tr>
<tr>
<td>CHM101</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>PHY111</td>
<td>Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHY201</td>
<td>Electricity and Magnetism</td>
<td>4</td>
</tr>
</tbody>
</table>

——— Electives ........................................ 4 or 5

**Total Freshman Arts Credits ............... 30**

#### Freshman Science Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM101</td>
<td>General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>MTH101</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>PHL101</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>ENG101</td>
<td>English I</td>
<td>3</td>
</tr>
<tr>
<td>ARA101</td>
<td>Arabic Essay Reading and Writing I</td>
<td>3</td>
</tr>
<tr>
<td>MTH102</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>PHY111</td>
<td>Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>ART101</td>
<td>Introduction to Music and Art</td>
<td>3</td>
</tr>
<tr>
<td>ENG102</td>
<td>English II</td>
<td>3</td>
</tr>
<tr>
<td>ARA102</td>
<td>Arabic Essay Reading and Writing II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Freshman Science Credits ............. 32**

#### Upper Level Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA202</td>
<td>Applied Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MTH111</td>
<td>Basic Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PED101</td>
<td>Basic Health</td>
<td>1</td>
</tr>
<tr>
<td>PED —</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>CSC201</td>
<td>Computer Literacy</td>
<td>1</td>
</tr>
<tr>
<td>CST201</td>
<td>Cultural Studies I</td>
<td>3</td>
</tr>
<tr>
<td>CST202</td>
<td>Cultural Studies II</td>
<td>3</td>
</tr>
<tr>
<td>CST301</td>
<td>Cultural Studies III</td>
<td>3</td>
</tr>
<tr>
<td>ENG202</td>
<td>Sophomore Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>ENG203</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>ARA201</td>
<td>Appreciation of Arabic Literature</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose any three Social Science courses .......... 9

**Notes:**

1. Entering A.A./A.A.S. students with scores between 500 and 549 on the EEE, or its equivalent on the TOEFL, must take nine credits: ENG009 Remedial English (valued at three non-credit), ENG101 English I (worth three credits) and ENG102 English II (worth three credits).

2. Entering A.A./A.A.S. students with scores between 550 and 599 on the EEE, or its equivalent on the TOEFL, must take six credits: ENG101 English I (worth three credits) and ENG102 English II (worth three credits).

3. Entering A.A./A.A.S. students with scores of 600 and above on the EEE, or its equivalent on the TOEFL, must take six credits: ENG102 English II (worth three credits) and ENG202 Sophomore Rhetoric or ENG203 Fundamentals of Oral Communication.

4. Non-Arabic speaking students must fulfill their Arabic requirements by taking courses from the following selection: SAR105 Colloquial Arabic I, SAR106 Colloquial Arabic II, SAR111 Standard Arabic I, SAR112 Standard Arabic II, SAR221 Developmental Arabic, or any courses related to the Middle East.

5. A requirement only for some of the academic programs.

6. Not counted towards graduation for students who are required to take higher-level Computer Science courses.
Numbers Preceding Course Titles
The course prefix is a three-letter designator for an academic discipline, subject matter and/or sub-category of knowledge. The first digit next to the abbreviation (course prefix) represents the level of the course: 1 for freshman, 2 for sophomore, 3 for junior, 4 for senior, 5 for the fifth year in engineering and pharmacy, 6 for the sixth year in pharmacy and 7 or 8 for the graduate level. The next two digits represent the sequence number of the course.

The following is a list of divisions/discipline areas available at LAU:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC</td>
<td>Accounting</td>
</tr>
<tr>
<td>ARA</td>
<td>Arabic</td>
</tr>
<tr>
<td>ARC</td>
<td>Architecture</td>
</tr>
<tr>
<td>ART</td>
<td>Fine Arts</td>
</tr>
<tr>
<td>BCH</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>BIO</td>
<td>Biology</td>
</tr>
<tr>
<td>BUS</td>
<td>General Business</td>
</tr>
<tr>
<td>CHM</td>
<td>Chemistry</td>
</tr>
<tr>
<td>CIE</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>COE</td>
<td>Computer Engineering</td>
</tr>
<tr>
<td>COM</td>
<td>Communication Arts</td>
</tr>
<tr>
<td>CSC</td>
<td>Computer Science</td>
</tr>
<tr>
<td>CST</td>
<td>Cultural Studies</td>
</tr>
<tr>
<td>DES</td>
<td>Interior Design</td>
</tr>
<tr>
<td>ECO</td>
<td>Economics</td>
</tr>
<tr>
<td>EDU</td>
<td>Education</td>
</tr>
<tr>
<td>ELE</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>ENG</td>
<td>English</td>
</tr>
<tr>
<td>ENV</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>FEB</td>
<td>Family and Entrepreneurial Business</td>
</tr>
<tr>
<td>FIN</td>
<td>Finance</td>
</tr>
<tr>
<td>GNE</td>
<td>General Engineering</td>
</tr>
<tr>
<td>GRA</td>
<td>Graphic Design</td>
</tr>
<tr>
<td>HOM</td>
<td>Hospitality Management</td>
</tr>
<tr>
<td>HST</td>
<td>History</td>
</tr>
<tr>
<td>IBS</td>
<td>International Business</td>
</tr>
<tr>
<td>INA</td>
<td>International Affairs</td>
</tr>
<tr>
<td>INE</td>
<td>Industrial Engineering</td>
</tr>
<tr>
<td>INF</td>
<td>Information Science</td>
</tr>
<tr>
<td>MEE</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>MGT</td>
<td>Management</td>
</tr>
<tr>
<td>MIS</td>
<td>Management Information Systems</td>
</tr>
<tr>
<td>MKT</td>
<td>Marketing</td>
</tr>
<tr>
<td>MTH</td>
<td>Mathematics</td>
</tr>
<tr>
<td>MUS</td>
<td>Music</td>
</tr>
<tr>
<td>NUT</td>
<td>Nutrition</td>
</tr>
<tr>
<td>OFM</td>
<td>Office Management</td>
</tr>
<tr>
<td>PED</td>
<td>Physical Education</td>
</tr>
<tr>
<td>PHA</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>PHL</td>
<td>Philosophy</td>
</tr>
<tr>
<td>PHO</td>
<td>Photography</td>
</tr>
<tr>
<td>PHY</td>
<td>Physics</td>
</tr>
<tr>
<td>PJE</td>
<td>Peace and Justice Education</td>
</tr>
<tr>
<td>PKG</td>
<td>Packaging</td>
</tr>
<tr>
<td>POL</td>
<td>Political Science</td>
</tr>
<tr>
<td>PSY</td>
<td>Psychology</td>
</tr>
<tr>
<td>REL</td>
<td>Religion</td>
</tr>
<tr>
<td>SAR</td>
<td>Special Arabic</td>
</tr>
<tr>
<td>SOC</td>
<td>Sociology</td>
</tr>
<tr>
<td>STA</td>
<td>Statistics</td>
</tr>
<tr>
<td>WOS</td>
<td>Women’s Studies</td>
</tr>
</tbody>
</table>

Numbers Following Course Titles
Under “Course Descriptions,” most course titles are followed by a numbering system that provides further information, as follows: The first number indicates lecture and discussion hours given each week; the second number indicates laboratory hours per week; the third number indicates credit hours counted toward graduation upon completion of the course.

Example:

BIO806 Research Method II [1-6, 3 cr.] …

The course above entails one hour of class discussion and six hours of laboratory work per week. Upon completion, the course adds three credits to the student’s record.
The School of Arts & Sciences

The School of Arts and Sciences is home to LAU’s oldest programs, which are the core of the university’s liberal arts tradition. As the school diversified its curricula, its body of full-time faculty members and students grew. Now it offers numerous programs ranging from Fine Arts to Computer Science, and degrees ranging from Associate to Master’s.

Graduates from the School of Arts and Sciences are sought by employers in the corporate world, advertising agencies, the mass media, educational institutions of all levels, interior design houses, the public administration sector, science-related organizations and high-tech operations, to name a few.
DEANS:
Aghacy, S., Ph.D., Beirut;
Hashwa, F., Ph.D., Byblos;

ASSISTANT DEANS:
Ghosn, I., Ph.D.
Haraty, R. Ph.D.

CHAIRS:
Bacha, N., Ph.D.; Byblos; Humanities Division
Tabar, P., Ph.D.; Beirut; Education and Social Sciences Division
Bogharian, K., Ph.D.; Beirut; Natural Sciences Division
Mansour, N., Ph.D.; Beirut; Computer Science and Mathematics
Harmanani, H., Ph.D.; Byblos; Computer Science and Mathematics Division
Daher, C., Ph.D.; Byblos; Natural Sciences Division
Knio, M., Ph.D.; Beirut; Communication Arts Division
Harmoush, L., Ph.D.; Beirut; Humanities Division
Mubarak, W., Ph.D.; Byblos; Social Science Division and Education

FACULTY:
Abdallah, F., Ph.D.;
Abdo, A., Ph.D.;
Abdo, H., Ph.D.;
Alagha, J., Ph.D.;
El Abed, Z., M.A.;
Abou Teen, S., M.A.
Abu-Fadil, M., M.A.;
Abu Khzam, F. Ph.D.;
Acra, U., M.A.;
Aercke, K., Ph.D.;
Aghacy, S., Ph.D.;
Assaf, N. M.F.A.;
Azar, D., Ph.D.;
Bacha, N., Ph.D.;
Bahous, R., Ed.D.;
Baroudy, G., Ph.D.;
Baroudi, S., Ph.D.;
Bazzi, T., Ph.D.;
Behmardi, V., Ph.D.;
Bogharian, K., Ph.D.;
Chamoun, C., M.F.A.;
Dabagli, L., B.A.;
Daher, C., Ph.D.;
Darwish, O., M.A.;
Diab, N., M.A.;
Fallaha, N., M.F.A.;
Farjallah, T., M.A.;
Fouladkar, A., M.A.;
Gabrielian, S., M.F.A.;
Garabedian, S., M.S.Ed.;
Ghosn, I., Ph.D.;
Ghorayeb, A., Ph.D.;
Gupta, J., Ph.D.;
Habre, P., M.A.;
Habre, S., Ph.D.;
Hage Mufti, N., M.A.;
Hajjar, B., M.A.;
Hajjar, J., Ph.D.;
Hamdan, M., Ph.D.;
Hammoud, H., Ph.D.;
Haraty, N., M.A.;
Haraty, R., Ph.D.;
Harmanani, H., Ph.D.;
Harmoush, L., Ph.D.;
Hashwa, F., Ph.D.;
Houri, A., Ph.D.;
Hussari, I., Ph.D.;
Jabbour, M., M.F.A.;
Jabbour, R., Ph.D.;
Jabbar, J., Ph.D.;
Jeha Milki, M., Ph.D.;
Kabbani, A., Ph.D.;
Kaloyeros, L., M.S.;
Khachan, V., Ph.D.;
Khalaf, R., Ph.D.;
Khalifeh, J.F., License,
Khalifeh, J.T., M.S.;
Khoury, R., Ph.D.;
Khoury, T., M.F.A.;
Khoury, T., Ph.D.;
Knio, M., Ph.D.;
Korfali, S., Ph.D.;
Lahoud, B., M.A.;
Maalouf, M., M.A.;
Maalouf, R., Ph.D.;
Maalouf, R, M.DES., R.C.A.;
Malek, H., Ph.D.;
Mansour, N., Ph.D.;
Marroum, M., Ph.D.;
Mohsen, R., Ph.D.;
Mouawad, R., Ph.D.;
Moujaes, J., B.E.;
Moujaes, S., Ph.D.;
Musallam, A., Ph.D.;
Musallam, M., M.A.;
Moubarak, W., Ph.D.;
Naaman, A., M.A.;
Nabani, M., Ed.D.;
Najm, G., M.S.;
Nasrallah, T., M.A.;
Nawas, T., Ph.D.;
Nimah, L., Ph.D.;
Nour, Ch., Ph.D.;
Obeid, S., M.S.;
Oueini, A., Ph.D.;
Osta Zein, I., Ph.D.;
Pempejian, G., B.A.;
Perry, M., Ph.D.;
Prescott-Decie, B., M.A.;
Rizk, S., Ph.D.;
Rowayheb, M., Ph.D.;
Salman, N., B.A.;
Samia, E., M.A.;
Sarouphim, K., Ph.D.;
Seigneure, K., Ph.D.;
Semaan, M., Ph.D.;
Sensenig, D., Ph.D.;
Shahine, M., M.A.;
Sharafeddine, S., Ph.D.;
Taan, Y., M.S.;
Tabar, P., Ph.D.;
Takchi, J., Ph.D.;
Tokajjian, S., Ph.D.;
Touraj, R., Ph.D.;
Traboulsi, F., Ph.D.;
Zaatari Vasilenko, L., E.D.D.;
El Zein, H., Ed.D.;
Zeitouni, L., Ph.D.
### ASSOCIATE DEGREE PROGRAMS

#### A.A. in Liberal Arts

This program is for students who wish to continue for a B.A. or B.S. degree by providing a basic mix of subjects at the Freshman and Sophomore levels. The program also allows students to explore their interests and abilities before selecting a major course of study in the Liberal Arts. Students must complete 64 or 65 credits in this program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARA101</td>
<td>Arabic Essay Reading &amp; Writing I</td>
<td>3</td>
</tr>
<tr>
<td>ARA102</td>
<td>Arabic Essay Reading &amp; Writing II</td>
<td>3</td>
</tr>
<tr>
<td>ARA201</td>
<td>Appreciation of Arabic Literature</td>
<td>3</td>
</tr>
<tr>
<td>ART101</td>
<td>Introduction to Music &amp; Art</td>
<td>3</td>
</tr>
<tr>
<td>CST201</td>
<td>Cultural Studies I</td>
<td>3</td>
</tr>
<tr>
<td>CST202</td>
<td>Cultural Studies II</td>
<td>3</td>
</tr>
<tr>
<td>ENG101</td>
<td>English II</td>
<td>3</td>
</tr>
<tr>
<td>ENG102</td>
<td>English III</td>
<td>3</td>
</tr>
<tr>
<td>ENG203</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG202</td>
<td>Sophomore Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>STA202</td>
<td>Applied Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or MTH111</td>
<td>Basic Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>PED —</td>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>PED101</td>
<td>Basic Health</td>
<td>1</td>
</tr>
<tr>
<td>PHL101</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>——— Electives</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>INF201</td>
<td>Learning Resources Techniques</td>
<td>1</td>
</tr>
</tbody>
</table>

**Choose:**
- Any two science courses .................................. 8
- One lab science and one math course ................. 7

Choose three of the following:
- HUD202 Psychology of the Young Child .............. 3
- POL201 Introduction to Political Science .......... 3
- PSY201 Introduction to Psychology                | 3
- SOC201 Introduction to Sociology                | 3
- ECO201 Microeconomics                           | 3
- or ECO202 Macroeconomics                        | 3

**Total Credits** ............................................. 64 or 65

#### A.A.S. in Communication Media

The A.A.S. in Communication Media program introduces students to the theory and practice of mass media and drama. The courses consider the growing importance of communication media and their applications in the news industry, public relations, business as well as the arts and professions. Aiming higher for a B.A., students may choose to focus on journalism, radio/TV/film or the theater.

**1. Core requirements** ....................................... 18

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHO211</td>
<td>Photography I</td>
<td>3</td>
</tr>
<tr>
<td>ART101</td>
<td>Introduction to Music &amp; Art</td>
<td>3</td>
</tr>
<tr>
<td>GRA231</td>
<td>Design Studio I A</td>
<td>3</td>
</tr>
<tr>
<td>COM222</td>
<td>Introduction to Radio/TV/Film</td>
<td>3</td>
</tr>
<tr>
<td>COM211</td>
<td>Introduction to Mass Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM242</td>
<td>Introduction to the Art of Theater</td>
<td>3</td>
</tr>
</tbody>
</table>

**2. Emphasis requirements:**

**Journalism** .................................................. 15

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM212</td>
<td>Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>COM213</td>
<td>Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>COM214</td>
<td>News Writing &amp; Reporting</td>
<td>3</td>
</tr>
<tr>
<td>COM215</td>
<td>Photojournalism</td>
<td>3</td>
</tr>
<tr>
<td>COM325</td>
<td>Feature and Magazine Writing</td>
<td>3</td>
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</table>

**Radio/TV/Film** .................................................. 15

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM215</td>
<td>Photojournalism</td>
<td>3</td>
</tr>
<tr>
<td>COM235</td>
<td>Television Production I</td>
<td>3</td>
</tr>
<tr>
<td>COM236</td>
<td>Radio Production I</td>
<td>3</td>
</tr>
<tr>
<td>COM225</td>
<td>The Art of Film</td>
<td>3</td>
</tr>
<tr>
<td>COM326</td>
<td>Script Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Theater** ..................................................... 15

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM241</td>
<td>Introduction to Acting</td>
<td>3</td>
</tr>
<tr>
<td>COM244</td>
<td>Introduction to Technical Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>COM338</td>
<td>Oral Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>COM345</td>
<td>Modern Drama</td>
<td>3</td>
</tr>
<tr>
<td>COM337</td>
<td>Creative Dramatics</td>
<td>3</td>
</tr>
</tbody>
</table>
### A.A.S. in Computer Science

This program is intended to prepare students for careers in information technology. The curriculum includes the concepts and principles of computer programming, software development, practical experience on the computer in addition to exposure to the Business field. Students are required to take courses in business management, accounting and economics for a total of 70 credits (28 credits for the general university requirements and 42 credits for the major).

<table>
<thead>
<tr>
<th>Major requirements</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC201 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACC202 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS201 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CSC241 Introduction to Computing</td>
<td>3</td>
</tr>
<tr>
<td>CSC243 Introduction to Object Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC245 Objects and Data Abstraction</td>
<td>3</td>
</tr>
<tr>
<td>CSC331 Business Data Communication</td>
<td>3</td>
</tr>
<tr>
<td>CSC372 Database Analysis, Design, and Management</td>
<td>3</td>
</tr>
<tr>
<td>ECO201 Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECO202 Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>MGT201 Introduction to Management</td>
<td>3</td>
</tr>
<tr>
<td>MTH111 Basic Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MTH207 Discrete Structures I</td>
<td>3</td>
</tr>
<tr>
<td>STA202 Applied Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

### A.A.S. in General Science

This program targets students planning to continue their education in such fields as biology, chemistry, physics, medicine and pharmacy. It also serves the needs of those planning to work as technicians in chemical and allied industries. Students must complete 69 credits (30 credits for the major and 39 credits for the general university and other requirements).

| CHM101 General Chemistry | 4 |
| MTH101 Calculus I | 3 |
| MTH102 Calculus II | 3 |
| PHY111 Mechanics | 4 |

### BACHELOR OF ARTS DEGREE PROGRAMS

#### Communication Arts

The explosion of mass communications systems and fast-paced technological advances serve as a backdrop for LAU’s Communication Arts program. The university is a trailblazer in the teaching of mass communication and drama. Its curriculum and facilities are geared to staying abreast of developments in those fields.

The program strikes a balance between carefully crafted theoretical and practical courses in the three emphasis areas: journalism, radio/TV/
film and theater. It offers the proper blending of intellectual, cultural and technical components needed to create well-rounded dramatists, reporters, broadcasters and movie makers.

Students learn to write, edit, lay out and design publications in computer-equipped journalism newsrooms. Radio and TV studios provide cutting-edge computer animation capabilities, and, three first-class theaters offer various dramatic experiences. Seniors are required to undergo internships in their respective emphasis areas before graduating.

Students majoring in Communication Arts must complete, besides the general university requirements, 42 credits of major courses, which are split into core and emphasis requirements as follows.

**Core requirements** .................................. 21

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM211 Introduction to Mass Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM212 Media and Society</td>
<td>3</td>
</tr>
<tr>
<td>COM216 Media Law and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>COM222 Introduction to Radio/TV/Film</td>
<td>3</td>
</tr>
<tr>
<td>COM225 The Art of Film</td>
<td>3</td>
</tr>
<tr>
<td>COM242 Introduction to the Art of Theater</td>
<td>3</td>
</tr>
<tr>
<td>COM499 Internship/Senior Study</td>
<td>3</td>
</tr>
</tbody>
</table>

**Emphasis requirements** .......................... 21

**Journalism**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM213 Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>COM214 News Writing and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>COM217 International Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM219 Media in the Middle East and Lebanon</td>
<td>3</td>
</tr>
<tr>
<td>COM325 Feature and Magazine Writing</td>
<td>3</td>
</tr>
<tr>
<td>COM327 Journalism Workshop</td>
<td>3</td>
</tr>
<tr>
<td>COM431 Advanced Reporting, Editing &amp; Production</td>
<td>3</td>
</tr>
</tbody>
</table>

**Radio/TV/Film**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM227 Film Making</td>
<td>3</td>
</tr>
<tr>
<td>COM229 History and Theory of Film</td>
<td>3</td>
</tr>
<tr>
<td>COM235 Television Production I</td>
<td>3</td>
</tr>
<tr>
<td>COM236 Radio Production I</td>
<td>3</td>
</tr>
<tr>
<td>COM326 Script Writing</td>
<td>3</td>
</tr>
<tr>
<td>COM335 Television Production II</td>
<td>3</td>
</tr>
<tr>
<td>COM342 Play Production I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Theater**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM241 Introduction to Acting</td>
<td>3</td>
</tr>
<tr>
<td>COM244 Introduction to Technical Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>COM247 Theater in Performance</td>
<td>3</td>
</tr>
<tr>
<td>COM326 Script Writing</td>
<td>3</td>
</tr>
<tr>
<td>COM342 Play Production I</td>
<td>3</td>
</tr>
<tr>
<td>COM345 Modern Drama</td>
<td>3</td>
</tr>
<tr>
<td>COM442 Play Production II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Education**

- Early Childhood Education
- Elementary Education
- Math Education (see page 63)
- Science Education (see page 63)

The Early Childhood Education program prepares students to:

- Plan and administer all aspects of early childhood programs
- Teach young students basic motor and cognitive skills through art, music, creative dramatics and other techniques
- Use carefully planned teaching strategies based on children’s developmental stages.

The Elementary Education program prepares students to:

- Teach children reading, language arts, mathematics, science, social studies, art, drama, music and physical education
- Employ teaching strategies, which stimulate children’s thinking and challenge them to learn
- Use the latest instructional tools and techniques to make your teaching more effective.

All programs of study include three areas:

- Core requirements which include general education courses
- Emphasis requirements which include courses in the content area—English, Arabic, social studies, math and science, drama, etc.—and Methods courses—teaching of social studies, art education, etc.
- Practicum and methodology
# Requirements for a B.A. in Education

## General University Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU201 Fundamentals of Education</td>
<td>3</td>
</tr>
<tr>
<td>EDU301 School Counseling</td>
<td>3</td>
</tr>
<tr>
<td>EDU321 Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>EDU331 Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDU332 Educational Measurement</td>
<td>3</td>
</tr>
<tr>
<td>EDU319 Teaching Reading</td>
<td>3</td>
</tr>
<tr>
<td>PSY422 Psychology of Learning</td>
<td>3</td>
</tr>
<tr>
<td>EDU499 Senior Study</td>
<td>3</td>
</tr>
<tr>
<td>COM337 Creative Dramatics</td>
<td>3</td>
</tr>
<tr>
<td>EDU414 Methods and Materials in ECE*</td>
<td>3</td>
</tr>
<tr>
<td>ART333 Art Education</td>
<td>3</td>
</tr>
<tr>
<td>MUS301 Music</td>
<td>3</td>
</tr>
<tr>
<td>EDU312 TEFL</td>
<td>3</td>
</tr>
<tr>
<td>EDU314 Teaching of Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>EDU313 Teaching of Science and Math</td>
<td>3</td>
</tr>
<tr>
<td>EDU202 Observation and Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>EDU419 Internship</td>
<td>3</td>
</tr>
<tr>
<td>EDU420 Practice Teaching, Early Childhood Education</td>
<td>6</td>
</tr>
<tr>
<td>EDU421 Practice Teaching, Elementary Childhood Education</td>
<td>6</td>
</tr>
<tr>
<td>EDU422 Practice Teaching, Elementary Math and Science</td>
<td>6</td>
</tr>
<tr>
<td>EDU205 Safety and Health</td>
<td>3</td>
</tr>
<tr>
<td>EDU213 Introduction to Language</td>
<td>3</td>
</tr>
<tr>
<td>Other subject matter area courses</td>
<td>6</td>
</tr>
<tr>
<td>Choose 12 credits from one or two subject matter areas.</td>
<td></td>
</tr>
</tbody>
</table>

## English

The English major prepares students for a career in fields that demand clear writing and expression in fluent English, the presentation of logical arguments, and the critical evaluation of the opinions of others. Besides education, these fields include business, pre-law, communication, journalism, advertising, technical and creative writing, and translation. Students with diverse interests are welcome.

The English major offers a balanced core curriculum and two emphases: Literature and Language. The core curriculum consists of 12 literature, language, and education courses (36 credits). Of these 12 courses, six (18 credits) are designated. The student chooses the remaining six in any combination from the offerings in Literature and Education, according to his/her interest.

The Literature emphasis attracts students who enjoy reading, sharing their insights, and writing about their views. They learn about themselves and others, become more sophisticated readers, and develop skills for both employment and personal enrichment. Students learn to read closely and thoughtfully; grasp the artistic, affective, and social power of literature; and deepen their understanding of themselves and the world. The curriculum addresses the fundamental issues, questions, and problems of the discipline; it does not privilege literary history per se.

Most students pursuing the Language emphasis prepare to teach English in intermediate and secondary schools. Core and emphasis requirements are intended to offer experience with classic and contemporary English literature, grammar, language history and theory, reading, writing, and translation. Because intermediate and secondary English teachers work with their students in all areas of English, it is important for future teachers to be exposed to as many facets of the discipline as possible.

Regardless of their chosen emphasis, English majors can obtain a Teaching Diploma by taking six designated Education courses (18 credits), including EDU418 Practice Teaching. If the student chooses any from these six Education courses in order to satisfy part of the core curriculum re-
requirement, he/she must take the equivalent number of courses/credits in any field to be awarded the Teaching Diploma.

Non-majors can obtain an English Literature minor by taking any six Literature courses (18 credits). The minor is mentioned separately on the B.A. diploma.

General University Requirements .................. 34

Major Core Requirements .................. 36
EDU201 Fundamentals of Education .......... 3
EDU312 Teaching of English as a Foreign Language. 3
ENG211 Survey of English Literature I .......... 3
ENG212 Survey of English Literature II .......... 3
ENG213 Introduction to Language .......... 3
ENG311 Literature and Society .......... 3
And choose any six Literature, Language and/or Education courses .......... 18

Literature Emphasis .................. 18
Choose five additional Literature courses .......... 15
ENG499 Senior Study .......... 3

Language Emphasis .................. 18
ENG214 Modern English Grammar ........ 3
ENG319 History of the English Language .......... 3
EDU319 Teaching Reading .......... 3
ENG321 Creative Writing .......... 3
ENG322 Principles of Translation .......... 3
ENG499 Senior Study .......... 3

Electives 4

Note 1: The additional Literature courses on offer are:
ENG312 Poetry ........ 3
ENG313 Forms and Modes ........ 3
ENG314 Shakespeare ........ 3
ENG315 The 20th-Century English & American Novel ........ 3
ENG316 Periods in English Literature ........ 3
ENG317 The Novel Before the 20th Century ........ 3
ENG318 Drama (other than Shakespeare) ........ 3

Note 2: ENG313 Forms & Modes and ENG316 Periods in English Literature are repeatable for credit if the course content is different. Different course content is indicated by the letter following the course number: e.g. ENG313a, ENG313b, etc. Other Literature courses are not repeatable for credit.

Note 3: Students with little or no knowledge of Arabic may substitute a Literature course for ENG322 Principles of Translation.

Fine Arts

The Fine Arts program is designed to help students attain full development as visionaries in both a general arts context and within the framework of art’s history and philosophy. Students are encouraged to create a personal style and critical approach to the solution of individual problems by exploring two- and three-dimensional media and forms. An annual art exhibit is an integral part of the program. By choosing suitable electives, students may prepare themselves for graduate studies or careers in art production, scholarly research, art education, art reporting, graphic and industrial design, book illustration, theater or the management of art enterprises. Students need 46 credits to graduate (37 credits for the major and nine credits for other requirements).

Major Requirements .................. 37
ART201 Fundamental of Design I ........ 3
ART202 Fundamental of Design II ........ 3
ART221 Drawing I (Fundamental Techniques) ........ 3
ART222 Drawing II (Human Figure) ........ 3
ART223 Perspective Drawing ........ 1
ART334 Graphics ........ 3
ART341 Painting I ........ 3
ART342 Painting II ........ 3
ART351 Sculpture I ........ 3
ART352 Sculpture II ........ 3
ART441 Painting III ........ 3
ART442 Painting IV ........ 3
ART499 Senior Study ........ 3

Other Requirements .................. 9
ART331 History of Art I ........ 3
or
DES221 History of Architecture and Furniture ........ 3
ART332 History of Art II ........ 3
ART335 Islamic Art of the Middle East ........ 3
Political Science/International Affairs

The Political Science/International Affairs Program exposes students to the dynamics of international life, its problems and concerns, and broadens the scope of their intellectual curiosity. Vocationally, the program prepares qualified Middle Eastern men and women for their countries’ foreign service, as well as for important posts of an international nature. Methodologically, the program exposes students to the theory and practice of international affairs. Students need 57 credits to graduate (39 credits for the core, 12 credits for the emphasis and 6 credits for other requirements). Students majoring in International Affairs are exempted from taking Social Sciences requirements.

Core Requirements .............................. 39
POL201 Introduction to Political Science ....... 3
POL202 Lebanese Politics and Administration .... 3
POL221 Comparative Governments of Major Powers 3
POL332 Public International Law ............... 3
POL331 International Organization .............. 3
POL431 International Regional Organizations and Agencies 3
POL421 The Middle East in International Affairs ... 3
POL311 Methodology and Political Analysis .... 3
ECO201 Microeconomics .......................... 3
ECO202 Macroeconomics .......................... 3
MGT201 Introduction to Management .......... 3
POL499 Senior Study .............................. 3

And one of the following courses:
POL432 Diplomatic and Consular Service ....... 3
POL433 The UN System & Problems of Development 3
ECO401 International Economics ................. 3

Choose one of the following areas: .......... 12

A. Developmental Studies/International Economics
ECO311 Economic Development ................ 3
ECO321 Monetary Theory and Policy ............ 3
ECO322 Public Finance and Fiscal Policy ....... 3
POL312 Politics of Developing Areas ............ 3

B. Consular & Diplomatic Service/International Economics
ECO321 Monetary Theory and Policy .......... 3
ECO322 Public Finance and Fiscal Policy ........ 3
POL313 Concepts International Relations ....... 3
POL322 Foreign Policy of the Major Powers ..... 3

C. Developmental Studies/Consular & Diplomatic Service
ECO311 Economic Development ................. 3
POL312 Politics of Developing Areas ............ 3
POL313 Concepts International Relations ....... 3
POL322 Foreign Policy of the Major Powers ..... 3

Political Science

The Political Science Program is designed to deepen students’ understanding of how different political systems operate, the role of political ideas in shaping human history and influencing politics, and the workings of the international system.

Political science graduates can work in the fields of government, journalism, public relations and applied research. Students majoring in Political Science should take general university requirements, all courses in the major, and the three courses listed under “other requirements.” They need 51 credits for the major (42 credits for the major and nine credits for the other requirements).

Major Requirements ......................... 42
POL201 Introduction to Political Science ....... 3
POL221 Comparative Governments of Major Powers 3
POL312 Politics of Developing Areas ............ 3
POL321 American Government and Politics .... 3
POL313 Concepts of International Relations .... 3
POL322 Foreign Policy of Major Powers ....... 3
POL331 International Organization ............... 3
POL323 Middle East Governments and Politics ... 3
POL421 The Middle East in International Affairs ... 3
POL211 History of Political Thought I .......... 3
POL212 History of Political Thought II .......... 3
POL311 Methodology and Political Analysis .... 3
POL332 Public International Law ................. 3
POL499 Senior Study .............................. 3
Other Requirements .............................................. 9
POL202  Lebanese Politics and Administration .................. 3
ECO202  Macroeconomics ........................................ 3
HST311  European History Since 1914 .......................... 3

Psychology

The major offers students a solid background in psychological theories and research, enabling them to pursue higher studies in one of the sub-specialties, such as educational, social, or clinical psychology. Students who wish to pursue a career in psychology after graduation can seek employment in a variety of sectors, such as teaching, guidance and counseling in schools, or working with children and youth organizations. Students must complete 39 credits in core requirements, 25 credits in general university requirements, and 28 credits in free electives.

PSY201  Introduction to Psychology ............................ 3
PSY202  Child Psychology ....................................... 3
PSY203  Psychology of Youth ................................... 3
PSY204  Social Psychology ...................................... 3
PSY301  Physiological Psychology ............................ 3
PSY311  The Exceptional Child .................................. 3
PSY322  Cognitive Psychology .................................. 3
PSY325  Abnormal Psychology .................................. 3
PSY335  Consumer’s Psychology ............................... 3
PSY421  Theories of Personality ................................. 3
PSY422  Psychology of Learning ............................... 3
PSY498  Topics in Psychology ................................... 3
PSY499  Psychology Senior Study .............................. 3
—  Free electives ............................................. 28

Social Work

Students majoring in Social Work must complete 39 credits. The program aims at acquainting students with principles in the social sciences and humanities as well as basic skills in interpersonal and intergroup communication. Students are helped understand and critically analyze current and past social policies, with a focus on their social and economic dynamics. The program prepares students for graduate study or for careers in social work, based on local and regional market demand.

Required Social Work courses
PSY201  Introduction to Psychology ............................ 3
PSY204  Social Psychology ....................................... 3
PSY311  The Exceptional Child .................................. 3
SOC201  Introduction to Sociology .............................. 3
SOC210  Introduction to Social Work ........................... 3
SOC311  Social Problems ........................................ 3
SOC313  Family and Child Welfare ............................. 3
SOC321  Sociology of the Arab World .......................... 3
SOC402  Social Work Intervention I ............................ 3
SOC403  Social Work Intervention II ............................ 3
SOC404  Social Work Practicum I ............................... 3
SOC405  Social Work Practicum II ............................... 3
SOC499  Social Work Senior Study ............................. 3

Special electives in Psychology and Sociology
PSY202  Child Psychology ....................................... 3
POL201  Introduction to Political Science ........................ 3
POL231  Introduction to Human Rights .......................... 3

The Teaching of Arabic as a Foreign Language (TAFL)

Students in this program need 45 credits of major courses plus 18 credits for the Teaching Diploma to graduate.

Major Requirements ............................................. 45
PSY203  Psychology of Youth .................................. 3
PSY422  Psychology of Learning ............................... 3
EDU202  Observation and Curriculum .......................... 3
EDU319  Teaching Reading ...................................... 3
EDU321  Children’s Literature ................................... 3
EDU321  Children’s Literature ................................... 3
EDU419  Internship .............................................. 3
COM337  Creative Dramatics ..................................... 3
EDU499  Senior Study ............................................ 3
ARA — Arabic Language and Literature Courses ........... 15

Requirements for a Teaching Diploma .......................... 21
EDU201  Fundamentals of Education ........................... 3
EDU301  School Counseling ..................................... 3
EDU311  The Teaching of Arabic as a Foreign Language ............................................ 3
EDU331  Educational Technology ................................ 3
Teaching Diploma

The program provides two options:
• Teaching Diploma at the Elementary Level
• Teaching Diploma at the Intermediate and Secondary Levels

The Teaching Diploma consists of 18 credits to be taken over and above a bachelor’s degree requirements. These 21 credits may be taken in combination with the bachelor’s major courses or as a post-B.A./B.S. program in one academic year.

Required Courses for Elementary-Level T.D.

EDU201 Fundamentals of Education ................. 3
EDU301 School Counseling ......................... 3
EDU331 Educational Technology .................... 3
EDU332 Educational Measurement .................. 3

Practice Teaching – Elementary:

EDU420 Practice Teaching, Early Childhood Education ................. 6
EDU421 Practice Teaching, Elementary Education: Arts & Social Studies ................. 6
EDU422 Practice Teaching, Elementary Math & Science ......................... 6

One Methods course from the following (as recommended by advisor):

EDU312 TEFL ............................................. 3
EDU313 The Teaching of Science and Math .......... 3
EDU314 The Teaching of Social Studies ............... 3
EDU414 Methods and Materials in ECE* ............... 3
ART333 Art Education ................................ 3

Required Courses for Intermediate- and Secondary-Level T.D.

EDU201 Fundamentals of Education .................... 3
EDU301 School Counseling ............................. 3
EDU310 Computers in Education ....................... 3

Practice Teaching – Secondary:

EDU425 Practice Teaching, Secondary Math Education ................. 6
EDU426 Practice Teaching, Secondary Science Education ......................... 6
EDU427 Practice Teaching, Secondary English Education ......................... 6

One Methods Course from the following (as recommended by advisor):

EDU312 TEFL ............................................. 3
EDU314 The Teaching of Social Studies ............... 3
EDU315 The Teaching of Math – Intermediate and Secondary ......................... 3
EDU316 The Teaching of Science – Intermediate and Secondary ......................... 3
ART333 Art Education ................................ 3

* Required for ECE

BACHELOR OF SCIENCE DEGREE PROGRAMS

Biology

The B.S. in Biology program aims at providing a broad education with special emphasis on Biology (theory and practice). It serves as a pre-medical program and also prepares students for an eventual career in biology-related fields (e.g. pharmaceuticals, assisted reproductive technology, quality control in cosmetic or food processing industries, medical laboratories, environmental field, etc.). It further prepares students for admission to graduate work in the biological sciences at LAU or abroad, the medical sciences, veterinary schools, pharmacy and public health, as well as agricultural sciences.

Biology ....................................................... 38

BIO201 Biology I ...................................... 4
BIO202 Biology II ..................................... 4
BIO211 Microbiology .................................. 4
BCH301 Introduction to Biochemistry ....................... 4
BIO341 Plant Physiology ................................ 4
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO345</td>
<td>Cell and Molecular Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO343</td>
<td>Human Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIO331</td>
<td>Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIO321</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO499</td>
<td>Senior Study</td>
<td>3</td>
</tr>
<tr>
<td>CHM201</td>
<td>Chemical Principles</td>
<td>3</td>
</tr>
<tr>
<td>CHM204</td>
<td>Quantitative Analysis</td>
<td>2</td>
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<tr>
<td>CHM311</td>
<td>Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHM312</td>
<td>Organic Chemistry II</td>
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</tr>
<tr>
<td>CHM202</td>
<td>Analytical Chemistry</td>
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<td>CHM203</td>
<td>Qualitative Analysis</td>
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<td>CHM311</td>
<td>Organic Chemistry I</td>
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<td>4</td>
</tr>
<tr>
<td>CHM331</td>
<td>Thermodynamics</td>
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<tr>
<td>CHM332</td>
<td>Quantum Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM333</td>
<td>Chemical Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CHM334</td>
<td>Physical Chemistry Laboratory</td>
<td>2</td>
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<tr>
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<tr>
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<td>Introduction to Modern Physics</td>
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</tr>
</tbody>
</table>

**Chemistry**

Students in this program learn basic chemical facts, principles, theories and laboratory techniques. They are offered greater insight into the philosophy and methodology of science. The program helps them to learn about problems from several viewpoints and determine what information and tools are necessary for a scientific solution. It provides students with sound basic training for professional pursuits in chemistry and related areas of science, such as biology, nursing, medical technology and medicine and prepares them for graduate study.

**Chemistry Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<td>Analytical Chemistry</td>
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<td>CHM331</td>
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<td>CHM332</td>
<td>Quantum Chemistry</td>
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**Mathematics & Computer Requirements**

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<td>CSC 242</td>
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**Physics Requirements**

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<tr>
<td>PHY321</td>
<td>Introduction to Modern Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Computer Science**

The Computer Science curriculum prepares students for participation in this rapidly changing area of technology with job options as programmers, database administrators, network engineers and administrators, systems analysts, or as software engineers. It also prepares them for pursuing further graduate studies. The program offers students a broad basic core of knowledge required in today's information society, in addition to specialized knowledge of subjects, such as networking, object-oriented programming, architecture, and artificial intelligence. The program also features a specialized topics course that may be taken more than once for credit to allow students to gain even more in-depth knowledge in a computer science area.

Such diversity is the key to a sound computer science education. The total credits required in the major are 60 (42 credits for computer science—30 credits of core requirements and 12 of electives—and 15 credits for mathematics).

**Core Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
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<tr>
<td>CSC245</td>
<td>Objects and Data Abstraction</td>
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</table>
CSC310 Algorithms and Data Structures .......... 3
CSC320 Computer Organization ................. 3
CSC323 Digital Systems Design ................. 3
CSC326 Operating Systems ................. 3
CSC375 Database Management Systems .......... 3
CSC430 Computer Networks ......................... 3
CSC490 Software Engineering ................. 3
CSC499 Capstone Project ......................... 3

Electives—choose four ......................... 12
CSC440 Object Oriented Programming .......... 3
CSC445 Programming Languages ................. 3
CSC420 Computer Architecture ................. 3
CSC435 Computer Security ......................... 3
CSC460 Artificial Intelligence ......................... 3
CSC449 Parallel Programming ......................... 3
CSC450 Computer Graphics ......................... 3
CSC475 Advanced Topics in Databases ................. 3
CSC498 Topics in Computer Science (may be repeated) ......................... 3

Mathematics ........................................ 12
MTH201 Calculus III ......................... 3
MTH207 Discrete Structures I ................. 3
MTH305 Probability and Statistics .......... 3
MTH307 Discrete Structures II ................. 3

Mathematics Electives ......................... 3
MTH301 Linear Algebra ......................... 3
MTH303 Numerical Methods ................. 3
MTH304 Differential Equations ................. 3
MTH306 Non-Linear Dynamics and Chaos ....... 3
MTH309 Graph Theory ......................... 3
MTH498 Topics in Mathematics (may be repeated) ......................... 3

Graphic Design

Graphic designers translate ideas to a defined audience through the use of words and images in printed, environmental and electronic presentations of information. This translation includes the expression of messages that inform, persuade and incite individuals and audiences to action.

The graphic designer’s realm of expertise includes: the design of all printed matter, such as logos, posters, information graphics, packaging, publications, complex visual identity systems; the design of environmental signage systems; and the design of electronic media such as multimedia presentations, websites, information systems, and animation.

The creative skills of the graphic designer are employed and applied across the spectrum of communication, providing information, publicity, promotion, and persuasion in many fields including commerce, industry, public services, education, the media, publishing, leisure, tourism and the arts.

General University Requirements ......................... 33
Graphic Design Core Requirements ................. 30
Foundation Year Requirements ......................... 32

Graphic Design Core Requirements ......................... 30
ART222 Drawing II ......................... 3
GRA351 Graphic Design I ......................... 3
GRA301 Intermediate Computer Graphics ................. 3
GRA432 Visual Perception ......................... 3
GRA352 Graphic Design II ......................... 3
GRA342 Art of Illustration ......................... 3
GRA302 Advanced Computer Graphics ................. 3
MKT201 Introduction to Marketing ................. 3
ART332/431 History of Art or Modern Art ................. 3
GRA—GRA Elective ......................... 3

Foundation Year Requirements ......................... 32
GRA231 Design Studio I-A. ......................... 3
GRA232 Design Studio I-B ......................... 3
GRA241 Technical Graphics I ......................... 2
GRA271 History of Design ......................... 2
ART221 Drawing I ......................... 3
GRA233 Design Studio II-A ......................... 3
GRA234 Design Studio II-B ......................... 3
MKT261 Introduction to Design ......................... 2
GRA240 Sketching ......................... 2
ART251 Introduction to Computer Graphics ................. 2
PHO211 Photography ......................... 3
ART—Art Elective ......................... 3

Other Requirements ......................... 21
ART221 Drawing I ......................... 3
ART222 Drawing II ......................... 3
ART332 History of Art II ......................... 3
or
ART431 Modern Art ......................... 3
PHO211 Photography Elective ................. 3

62
Graphic design electives ................................ at least 6
ART— Fine Arts Studio Elective ......................... 3-6
ART— Art History Electives ............................ 3-6
COM— Communication Arts Elective ................ 3-6
PHO— Photography Elective ............................ 3
GRA341 Art of Calligraphy ............................... 3

Graphic design emphasis:

1. Digital Design Emphasis
GRA481 Animation Concepts ............................ 3
GRA482 Motion Design ................................... 3
GRA484 Web Design ....................................... 3
GRA486 Advanced Interactive Design ................ 3
GRA487 3D Animation Techniques .................... 3
GRA499 Digital Media/Senior Study ................. 3
GRA490 Graphic Design Internship ................... 1

2. Print Design Emphasis
GRA312 Printing Variables .............................. 3
GRA451 Graphic Design III ................................ 3
GRA411 Advanced Typography ......................... 3
GRA462 Graphic Design Seminar ....................... 3
GRA452 Graphic Design IV ................................ 3
GRA490 Graphic Design Internship ................... 1
GRA455 Advertising Design ............................. 3

Mathematics Education

Teacher certification program in Mathematics and Science Education are offered (in conjunction with the Education Program) to prepare students for teaching Mathematics or Science at the secondary level. The total credits required are 52 (25 credits for mathematics, 21 credits for the Teaching Diploma and six credits for other requirements). The Teaching Diploma consists of 18 credits to be taken over and above bachelor’s degree requirements.

Mathematics ................................................. 25
MTH201 Calculus III ....................................... 3
MTH207 Discrete Structures I ............................ 3
MTH301 Linear Algebra .................................. 3
MTH302 Geometry ........................................ 3
MTH303 Numerical Methods ............................ 3
MTH305 Probability and Statistics .................... 3
MTH311 Abstract Algebra ................................ 3
MTH499 Mathematics Senior Study ................ 3

Education .................................................... 21
EDU201 Fundamentals of Education .................. 3
EDU202 Observation and Curriculum ................ 3
EDU310 Computers in Education ...................... 3
EDU315 The Teaching of Mathematics in Intermediate and Secondary Schools .......... 3
EDU332 Educational Measurement .................... 3
EDU425 Practice Teaching—Secondary Math Education .................................................. 6

Computer Science ......................................... 6
CSC241 Introduction to Computing .................... 3
CSC243 Introduction to Object Oriented Programming ......................................................... 3

Science Education

The Science Education major gives students basic knowledge in biology, chemistry and education. It fosters a reverence for life in all its forms and creates a desire in students to study the world around them. It provides them with techniques to conduct scientific studies and to teach science at the secondary school level. The Teaching Diploma consists of 18 credits to be taken over and above bachelor’s degree requirements.

Biology ....................................................... 22
BIO201 Biology I ........................................... 4
BIO202 Biology II .......................................... 4
BIO321 Genetics .......................................... 3
BIO343 Human Anatomy and Physiology .......... 4
BIO345 Cell and Molecular Biology .................. 4
BIO499 Senior Study .................................... 3

Chemistry ..................................................... 21
CHM201 Chemical Principles .......................... 3
CHM202 Analytical Chemistry ......................... 3
CHM203 Qualitative Analysis ........................... 2
CHM204 Quantitative Analysis ......................... 2
CHM311 Organic Chemistry I .......................... 4
CHM312 Organic Chemistry II .......................... 4
CHM499 Senior Study .................................... 3
Physics .................................................. 14
PHY111 Mechanics ................................. 4
PHY201 Electricity and Magnetism .......... 4
MEE241 Dynamics ............................... 3
PHY321 Introduction to Modern Physics .. 3

Education ............................................. 18
EDU201 Fundamentals of Education ...... 3
EDU301 School Counseling .................... 3
EDU310 Computers in Education .......... 3
EDU332 Educational Measurement .......... 3
EDU316 The Teaching of Science in Secondary Schools ......................... 3
EDU426 Practice Teaching – Secondary Science Education .................. 3

Other Requirements ............................. 6
CSC241 Introduction to Computing .......... 3
or
CSC242 Introduction to Computer Programming ........ 3
STA202 Applied Statistics ..................... 3
or
PHA205 Biostatistics ............................ 3

MASTER OF ARTS DEGREE PROGRAMS

Comparative Literature

Comparative literature is the critical study of texts in two or more languages. Practitioners most often describe their work as the interdisciplinary study of literature and other cultural productions across national, ethnic and linguistic boundaries. Periods, genres, themes, movements, and cross-cultural influences are among the objects of study. Comparatists draw their methods from the literary tradition as well as from other fields of the humanities and the sciences.

The mission of the Program in Comparative Literature at LAU is to provide instruction and to conduct research in literature, cultural criticism and translation with special attention to Lebanon and the Middle East. The aim is to explore the role of culture in a multiethnic, globalizing world.

Advanced training is offered in three areas of study:

- Literature and other cultural productions. Students will achieve broad intercultural competence in genre, period and theme.
- Theoretical frameworks. Students will explore a range of literary and cultural theories and demonstrate significant mastery of one or two.
- Research methods and written and oral expression. Students will work with experienced researchers in a variety of media and receive advanced training in written and oral communication.

Graduates of the M.A. Program in Comparative Literature can pursue several career options:

- Enter a Ph.D. program in literature or comparative studies
- Obtain advanced standing in secondary school teaching
- Work as literary translators
- Work as specialists in literature and culture for the press, in publishing, in diplomacy or in business

Graduate students in Comparative Literature complete 33 credit hours of coursework in three areas:

A. Eighteen credits of core courses:
CLT801 Methodologies of Comparative Literature ........... 3
CLT803 Literary Theory I .............................. 3
CLT804 Literary Theory II ............................ 3
CLT820 Period ........................................... 3
CLT830 Themes .......................................... 3
CLT840 Genre ........................................... 3

B. Nine credits of coursework in one of the following:
- A national literature and culture
- A non-literature cognate (graduate-level courses in a field of interest such as anthropology, film, history, music, philosophy, psychology, etc.)
- Literary translation

C. A written comprehensive exam and a six-credit Master’s thesis
Certificate in Literary Translation

In addition to the Master's degree, the Program in Comparative Literature offers a Certificate in Literary Translation. Requirements include three credits of coursework in addition to the translation option as well as an original translation project.

Education

The educational sector in Lebanon is witnessing an active movement of reform. The development of new curricula has raised debates and elicited questions about professional practices and development. The education reforms have also brought about new and redefined jobs. The program provides knowledge, practical training, continuous updating on technological developments and challenging opportunities for those interested in working in school settings, educational institutions, community centers, educational research and development. The program’s various specialty areas provide students with the opportunity to become qualified coordinators, supervisors, officers for teacher development, curriculum specialists, school administrators.

Requirements

A student may choose one of two tracks: General Professional Development or a Specialist Area. In total, students have to accumulate 30 credits at the Master’s level. The program comprises four blocks:

I. Core Education Courses ......................... 12
  EDU802  Curriculum Design ..................... 3
  EDU803  Methods of Educational Research ...... 3
  EDU806  Advanced Educational Psychology ...... 3
  EDU805  Educational Technology ................. 3
  or
  EDU872  Special Education ........................ 3

II. Electives ........................................... 3
One of the following courses:
  EDU812  Literacies across the Curriculum ....... 3
  EDU814  Comparative Education ................. 3
  EDU873  Psychoeducational Assessment ......... 3
  EDU874  Behavior Modification Techniques ...... 3
  EDU888  Topics in Education .................... 3
  EDU8 — Any non-required education course .......

III.
A. General Professional Development ........ ....... 9
Choose any three education courses at the graduate level

B. Emphasis
Choose one emphasis

  Emphasis 1: Math Education ..................... 9
  EDU822  Trends and Issues in Math Education 3
  EDU823  Technology in Math Education ......... 3
  EDU825  Mathematical Language, Representations
           and Modeling ............................... 3

  Emphasis 2: TESOL ................................. 9
  EDU852  Trends and Issues in TESOL ............ 3
  EDU853  Sociolinguistics and Social Context of
           Language .................................... 3
  EDU857  Discourse and Materials Development .. 3

  Emphasis 3: Educational Management ............. 9
  EDU832  Leading and Managing Schools/Educational
           Institutions ............................... 3
  EDU833  Issues and Trends in Educational
           Management ............................... 3
  EDU837  Practicum in Educational Management .. 3

  Emphasis 4: Early and Middle Childhood ......... 9
  EDU842  Trends and Issues in Early and Middle
           Childhood Education ...................... 3
  EDU843  Pedagogy in Early and Middle Childhood
           Education ................................... 3
  EDU855  Multilingualism in Education ........... 3

  Emphasis 5: School Counseling .................... 9
  EDU883  Counseling Theories and Techniques .... 3
  EDU885  Counseling Children and Adolescents in
           School Setting ............................ 3
  EDU887  Counseling Practicum .................... 3

  Emphasis 6: Special Education .................... 9
  EDU875  Dyslexia and Reading Difficulties ...... 3
Students may choose one of the following two options:

**Option 1:**
EDU898 Project in Education (3 credits) + one elective (3 credits), or,

**Option 2:**
EDU899 Thesis in Education (6 credits)

**International Affairs**

A new world order has been engendering challenges, opening vistas and prospects for the generations of young men and women with international affairs interests, concerns and orientations. The LAU graduate program in International Affairs is designed to cover the various dimensions of the discipline and cope with its real-life applicability.

For those who take the M.A. as a terminal degree, targets are upper-grade positions in government bureaucracies and international organizations, institutions and agencies. The targets include positions in private international organizations and multinational corporations. To Ph.D. seekers and aspirants, on the other hand, the program provides the necessary theoretical-methodological tools essential for high-level intellectual pursuits.

**MASTER OF SCIENCE DEGREE PROGRAMS**

**Computer Science**

The graduate program is intended to develop the students’ abilities, vocationally and academically. Graduates are prepared for graduate studies as well as for industry. The M.S. program offers a sufficient level of breadth that guarantees a general knowledge in major areas of Computer Science. These areas, listed below, were chosen carefully to span the four major Computer Science areas. The M.S. program also offers a sufficient level of depth that allows students some degree of specialization. As such, students will have the background needed to pursue higher education and be able to conduct research. The graduate curriculum also provides good practical experience by allowing students to choose from a variety of applied and implementation-oriented courses.

The graduate curriculum requires one core course which is fundamental to the study of computer science. Students, however, will have three additional courses, one from each area. The four concentration areas are:

- Algorithms, Theory and Computational Science
- Systems
- Hardware and Networks
- Software Engineering

The remaining courses may be chosen from any of the four areas without restrictions. The graduate program also offers an advanced “Topics” course that may be taken more than once to allow students to gain even more in-depth knowledge in a Computer Science area. This course may be repeated for credits more than once.
Requirements

Students need 30 credits for the major (12 credits for the core—one course from each area, three credits for Project or six for Thesis—and 12 or 15 for the electives). These credits are distributed as follows:

I. Core requirements ................................. 12

Four three-credit courses: one from each of the four areas listed below. CSC711 Design and Analysis of Algorithms is mandatory from the first area.

II. Project or thesis option ................. 3 or 6
CSC798 Project Option ..................... 3
CSC799 Thesis Option ...................... 6

III. Electives from four concentration areas ......................... 15 or 12

A. Algorithms, Theory and Computational Science
CSC711 Design and Analysis of Algorithms . 3
CSC712 Automata Theory and Formal Languages . 3
CSC713 Bioinformatics .................. 3
CSC714 Heuristic Optimization .......... 3
CSC715 Machine Learning .............. 3
CSC716 Cryptography and Data Security 3

B. Systems
CSC721 Transaction Processing Systems 3
CSC722 Distributed Systems ........... 3
CSC723 Knowledge-Based Systems .... 3
CSC724 Data Mining .................. 3
CSC725 System Simulation .......... 3
CSC726 Compilers .................... 3

C. Hardware and Networks
CSC731 High Performance Computer Architecture . 3
CSC732 ULSI Testing .................. 3
CSC733 Embedded Systems ............ 3
CSC734 Advanced Computer Networks . 3
CSC735 Mobile Computing and Networks . 3
CSC736 Networks Security .......... 3

D. Software Engineering
CSC791 Advanced Software Engineering . 3
CSC792 Object-Oriented Software Engineering . 3
CSC793 Software Testing and Analysis .... 3
CSC794 Software Quality Assurance .... 3
CSC795 Safety-Critical Systems ...... 3
CSC796 Human–Computer Interaction .. 3

CSC788 Advanced Topics in Computer Science (in any of the four concentration areas) may be repeated.

Molecular Biology

This decade’s overwhelming developments and advances in medicine, biotechnology and the environment are mostly due to recent achievements and breakthroughs in the field of molecular biology. Molecular Biology systems (biotechnology) are employed in environmental studies and remediation on polluted ecosystems and have direct application in the fields of applied and industrial microbiology, pharmaceuticals, food technology, immune diagnosis and gene therapy.

While LAU’s current B.S. in Biology gives students basic knowledge and tools for biological investigation, the graduate program goes a step further by providing the necessary background, knowledge and training to deal with the challenges of the future in biological and medically-related disciplines.

The master’s degree program aims to provide Lebanon with qualified specialists trained in modern molecular, cellular, genetic, microbiological, nutritional and ecological fields—which will be increasingly in demand in the Middle East.

LAU has a capable faculty and top facilities in Beirut and Byblos. The labs, equipped with ultra modern instrumentation for teaching and research, are among the best in the country.

The M.S. in Molecular Biology curriculum comprises the following requirements:

I. Core graduate courses ....................... 12
II. Elective graduate courses ................. 12
III. Thesis .................................. 6
Total ...................................... 30
I. M.S. Core Courses
<table>
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<tr>
<td>BIO806</td>
<td>Research Methods II</td>
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</tr>
<tr>
<td>BIO822</td>
<td>Advanced Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO841</td>
<td>Molecular Physiology</td>
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<tr>
<td><strong>Total</strong></td>
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II. M.S. Elective Courses
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<tbody>
<tr>
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<tr>
<td>BIO825</td>
<td>Diagnostic Microbiology and Immunology</td>
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<td>BIO826</td>
<td>Advanced Cell Biology</td>
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<td>BIO828</td>
<td>Biotechnology and Gene Diagnostics</td>
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<td>BIO829</td>
<td>Endocrinology and Metabolism</td>
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<td>BIO834</td>
<td>Environmental Health and Toxicology</td>
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<td>BIO838</td>
<td>Environmental and Marine Microbiology</td>
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<tr>
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III. Thesis
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Special Topics in Biology
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ARABIC STUDIES

ARA101 & 102 Essay Reading and Writing [3-0, 3 cr.] This course concentrates on essay reading and writing. It includes a thorough study of the essay, its development and its various types. Readings illustrating different types of essays will be used for literary analysis and written exercises in précis and essay writing. This course will include: a) a systematic review of grammar rules and their application, b) some training in speech, discussion and interpretive reading.

ARA201 Appreciation of Arabic Literature [3-0, 3 cr.] The theoretical part of this course deals with essential characteristics of literature as well as literary themes, schools, and genres. The practical part includes intensive analyses of selected excerpts illustrating important literary forms and trends.

ARA301 Advanced Arabic Grammar [3-0, 3 cr.] This course covers fundamental principles of the Arabic language and deals with grammatical and syntactic mistakes commonly made by students in writing. It includes written exercises. Prerequisite: ARA201 Appreciation of Arabic Literature.

ARA302 Arabic Rhetoric [3-0, 3 cr.] This course includes the main forms of rhetoric and their application in ancient and modern poetry and prose. It includes written exercises in rhetorical and literary analysis. Prerequisite: ARA201 Appreciation of Arabic Literature.

ARA321 Creative Writing [3-0, 3 cr.] This course aims at training the students to write correctly in Arabic in several styles, especially those proper to literature and the mass media. Prerequisite: ARA201 Appreciation of Arabic Literature.

ARA322 Principles of Translation [3-0, 3 cr.] Principles of translation. Translation from English into Arabic and vice versa. Prerequisite: ARA201 Appreciation of Arabic Literature.

ARA332 Ancient Arabic Literature [3-0, 3 cr.] Representative authors of pre-Islamic, Omayyad and Abbasid periods are studied. Extracts from their main works in poetry and prose are read and analyzed. Pre-requisite: ARA201 Appreciation of Arabic Literature.

ARA333 New Trends in Modern Literature [3-0, 3 cr.] This course studies the intellectual background of modern and contemporary Arabic prose and poetry, analyzing chosen texts by leading authors. Prerequisite: ARA201 Appreciation of Arabic Literature.

ARA341 Modern Arabic Novel & Short Story [3-0, 3 cr.] This course traces the origin of fiction in ancient Arabic Literature and the development of the modern Arabic novel and short story in the 20th century. Works by representative authors are analyzed. Prerequisite: ARA201 Appreciation of Arabic Literature.

ARA342 Arabic Drama [3-0, 3 cr.] An introduction to the principles of dramatic art, its evolution from classicism to romanticism and modern trends, as well as its development in the Arab world in the 19th and 20th Centuries through the study of representative authors in the field. Prerequisite: ARA201 Appreciation of Arabic Literature.

BIOCHEMISTRY

BCH301 Biochemistry [4-0, 4 cr.] The study of modern biochemistry concepts in the regulation of the metabolism of carbohydrates, lipids, proteins and nucleic acids. Enzymes and coenzymes will also be discussed. Prerequisite: BIO201 Biology I.

BIOLOGY (UNDERGRADUATE)

BIO101 Introduction to Biological Science [3-3, 4 cr.] General Biology for arts students. A simplified presentation of basic biological concepts,
with emphasis on human biology. (Arts students may choose the BIO201-202 bi-semester sequential course following approval of the advisor and the course’s instructor.)

**BIO201 General Biology I** [3-3, 4 cr.] A study of the chemical and cellular organization of life, the transfer of energy through living systems, the transfer and expression of genetic information, an introduction to classification and a detailed study of the animal kingdom with particular emphasis on the study of the different organ systems.

**BIO202 General Biology II** [3-3, 4 cr.] A brief study of Kingdom Prokaryotae and viruses, Kingdom Protista, Kindom Fungi and a detailed study of Kingdom Plantae with particular emphasis on gymnosperms and angiosperms, all within the context of diversity of life as shaped by evolutionary changes and ecological influences. Prerequisite: BIO201 General Biology I.

**BIO211 Microbiology** [3-3, 4 cr.] Basic biology of bacteria, fungi, algae, protozoa, and viruses, with emphasis on microbial metabolism, genetics, pathogenicity and pathogenesis. Principles of immunobiology. Prerequisite: BIO201 General Biology I.

**BIO321 Genetics** [3-0, 3 cr.] A study of factors governing heredity and variation in plants and animals on the classical and modern levels, with an emphasis on molecular and microbial genetics and an introduction to recombinant DNA technology. Principles of immunobiology. Prerequisite: BIO201 General Biology I.

**BIO341 Plant Physiology** [3-3, 4 cr.] The study of fundamental processes underlying survival, growth, development and normal functions of plants with special emphasis on photosynthesis, respiration, mineral nutrition, water absorption and transpiration, translocation of solutes, hormonal control and development. Prerequisites: BIO202 General Biology II and CHM312 Organic Chemistry II.

**BIO343 Human Anatomy and Physiology** [3-3, 4 cr.] An anatomical and physiological approach to the study of the cardiovascular, nervous, endocrine, muscular respiratory, excretory, digestive and reproductive systems, with emphasis on homeostasis. Prerequisite: BIO201 General Biology I.

**BIO345 Cell and Molecular Biology** [3-3, 4 cr.] An integration of the approaches of cytology, biochemistry, genetics and physiology to provide a comprehensive understanding of the operation of cells as units of structure and function in living organisms. Prerequisites: BIO202 Biology II, BIO343 Human Anatomy and Physiology and CHM312 Organic Chemistry II or consent of instructor.

**BIO401 Developmental Biology** [3-3, 4 cr.] The study of developmental processes and principles operating during embryogenesis from gamete formation to morphological and biochemical differentiation of various organ systems. Prerequisites: BCH301 Introduction to Biochemistry and BIO201 General Biology.

**BIO499 Senior Study** [3-3, 3 cr.] A course designed to teach research methods, including a survey of literature on a problem in biology, a laboratory investigation of some phase of it, and, its presentation in a paper. Prerequisite: senior standing.

**BIOLOGY (GRADUATE)**

**BIO805 Research Method I** [1-6, 3 cr.] This course introduces students to a variety of advanced laboratory and field techniques employed in the basic and applied biological research. Part of this course includes seminar presentations by the students.

**BIO806 Research Method II** [1-6, 3 cr.] It involves the use of biological networks for retrieval of
information and for interactive studies. It deals with sampling techniques, handling of specimens, experimental procedures, data keeping, processing, analysis and scientific publications.

**BIO820 Applied and Industrial Microbiology** [2-3, 3 cr.] The course deals with industrial microorganisms and their applications in the industrial process for large scale production of antibiotics, vitamins, aminoacids, enzymes and organic acids. It also deals with microbial bioconversions and production of food from microorganisms, sewage and wastewater microbiology as well as applications of genetically engineered microorganisms to obtain novel products.

**BIO822 Advanced Molecular Biology** [3-0, 3 cr.] The course emphasizes principles and information, which form the contemporary basis for molecular biology. The following subjects are covered: Prokaryotic molecular genetics, RNA and DNA biosynthesis, protein biosynthesis, DNA recombination, regulation of gene expression, eukaryotic molecular genetics, RNA and DNA viruses, oncogenes, attenuation, global control, signal transduction, two-component regulatory systems.

**BIO825 Diagnostic Microbiology and Immunology** [2-3, 3 cr.] Biochemical, serological and automated methods used in the laboratory diagnosis of infectious diseases. The laboratory part of the course allows for better understanding through application. Topics include: monoclonal antibody production, detection of fluorescent antibodies, enzyme-linked immunosorbent assay, radioimmunoassay, gas-liquid chromatography, high performance liquid chromatography, mass spectrometry, time-resolved immunofluorescence, nucleic acid probes in clinical diagnostics, and diagnostic virology and parasitology.

**BIO826 Advanced Cell Biology** [3-0, 3 cr.] Molecular analysis of eucaryotic cells, including cell structure, receptors, cell-cell interactions, cytoskeleton, growth, differentiation, transformation, flow of genetic information, cell regulation, signaling, apoptosis, oncogenesis, development and causes of cancer. It deals with organization of the genome and genetic rearrangements, protein sorting, distribution, secretion and endocytosis as well as the origins of cellular life.

**BIO828 Biotechnology and Gene Diagnostics** [3-0, 3 cr.] Deals with the fundamental biotechnological aspects and principles of gene manipulation currently employed in research on animal, plant and microbial cells. It discusses molecular cloning, plasmids and bacteriophages as cloning vectors, expression of mammalian genes in bacteria, growth of animal and human embryonic stem cells and the production of mammalian metabolites and vaccines by genetically engineered microorganisms. The course emphasizes molecular techniques used in the diagnosis of diseases. Techniques covered include: cell and tissue culturing, recombinant DNA and other analytical procedures such as gene cloning, gene transfer, DNA sequencing, 16S rRNA/DNA sequencing, restriction mapping, use of monoclonal antibodies, DNA hybridization using natural and synthetic gene probes, immunoblot procedures, and karyotyping.

**BIO829 Endocrinology and Metabolism** [3-0, 3 cr.] The study of biochemical messengers, integrators and coordinators of general developmental and physiological processes with stress on metabolic mechanisms. It deals with biosynthesis, secretion, mechanisms of action and bioactivities of the hormones, as well as diagnostic technologies.

**BIO834 Environmental Health and Toxicology** [3-0, 3 cr.] An introduction to the methodology of practical control of environmental factors that affect disease, disorders and health. It deals with physical environmental stresses and relates to biological factors and vectors. An overall view of the general principles of toxicology: environmental contamination, pollution, their routes and pathways.

**BIO838 Environmental and Marine Microbiology** [3-0, 3 cr.] Microbial evolution, microbial interaction with animals and plants in aquatic and terrestrial environments, impact of abiotic factors and environmental extremes on microorganisms,
microbial communities and ecosystems, microorganisms in natural habitats, biogeochemical cycling of elements, biodegradability testing and monitoring of biomediation of xenobiotic pollutants and biotechnological aspects of biodeterioration control.

**BIO841 Molecular Physiology** [3-0, 3 cr.] An in-depth consideration and theoretical analysis of the physiological aspects of body organization, regulation, integration, maintenance and continuity; with special emphasis on modern application of knowledge in the domain of physiology as related to the normal and upset homeostasis.

**BIO881 Special Topics in Biology** [3-0, 3 cr.] Selected recent and contemporary advances in the various applied fields of the biological sciences and affiliated disciplines.

**BIO899 Thesis** [6 cr.] As the M.S. in Molecular Biology is considered a research degree, candidates must present a thesis that should contain original contributions to knowledge. The main purposes of a master’s thesis are to demonstrate the student’s ability to make independent use of information and training and to furnish objective evidence of constructive powers in a chosen field. The thesis must show familiarity with previous work in the field and must demonstrate ability to carry out research and organize results. The thesis must be expressed in good, literate style.

**CHEMISTRY**

**CHM101 General Chemistry** [3-3, 4 cr.] An introduction to atomic structure, chemical bonding, gases, stoichiometry, chemical kinetics and electro-chemistry.

**CHM201 Chemical Principles** [3-0, 3 cr.] Atomic structure, chemical bonding, stoichiometry, mass spectrum, properties of gases, basic thermodynamics, kinetic theory, solids and liquids; solutions; ionic and chemical equilibrium in aqueous solutions. Prerequisite: CHM101 General Chemistry or equivalent.

**CHM202 Analytical Chemistry** [3-0, 3 cr.] An introduction to the principles and methods of quantitative analysis of acid-base titration, complexometric methods of analysis. Precipitation methods, potentiometric methods, solvent extraction, chromatography and polarography, spectroscopic analytical methods, and atomic elemental analysis. Prerequisite: CHM201 Chemical Principles.

**CHM203 Qualitative Analysis** [0-4, 2 cr.] Introductory experimental chemistry emphasizing properties of gases, colligative properties and qualitative analysis.

**CHM204 Quantitative Analysis** [0-4, 2 cr.] Introductory experimental chemistry emphasizing properties of gases, colligative properties and qualitative analysis.

**CHM311 Organic Chemistry I** [3-3, 4 cr.] Introduction to the basic concepts of organic chemistry with an emphasis on the relation between structure and properties. Chemistry of aliphatic hydrocarbons, alcohols, ethers and stereochemistry. (Laboratory emphasizes manipulation of functional groups and synthetic schemes.) Prerequisite: CHM201 Chemical Principles.

**CHM312 Organic Chemistry II** [3-3, 4 cr.] A comprehensive study of the chemistry of aromatic compounds, carboxylic acids, phenols, amines, diazonium salts, carbanions, heterocycles, carbohydrates and an introduction to the application of spectroscopic methods in organic chemistry. (Laboratory emphasizes manipulation of functional groups and synthetic schemes.) Prerequisite: CHM311 Organic Chemistry I.

**CHM331 Thermodynamics** [3-0, 3 cr.] The three laws of thermodynamics and their application to chemical systems. Prerequisites: MTH201 Calculus III, CHM201 Chemical Principles.

**CHM332 Quantum Chemistry** [3-0, 3 cr.] Quantum theory, postulates, Schrödinger equation of hydrogen, H+2 and H2 .... Atomic and molecular orbitals Huckel approximation, Atomic and
molecular spectra. Prerequisites: CHM201 Chemical Principles and MTH201 Calculus III.

CHM333 Chemical Dynamics [3-0, 3 cr.] Kinetic theory of gases, rate laws, mechanism, Bodenstein approximation, fast reactions, photochemistry, ion transport, reaction rate theories, statistical thermodynamics. Prerequisites: CHM201 Chemical Principles and MTH201 Calculus III.

CHM334 Physical Chemistry Laboratory [0-4, 2 cr.] Principles and experimental techniques in thermochemistry, kinetic and electrochemistry. Prerequisites: CHM333 Chemical Dynamics or concurrently.

CHM401 Instrumental Chemical Analysis [1-4, 3 cr.] An introduction to modern physical-chemical methods of analysis with theoretical concepts of instrumentation and applications, including emission and absorption spectroscopy, nuclear magnetic resonance spectroscopy and chromatography. Prerequisites: CHM202 Analytical Chemistry, CHM204 Chemical Analysis.

CHM411 Identification of Organic Compounds [1-4, 3 cr.] A theoretical and practical study of the separation and identification of organic compounds by wet techniques and spectroscopic methods. Prerequisite: CHM312 Organic Chemistry II.

CHM421 Inorganic Chemistry I [3-0, 3 cr.] A study of hydrogen-like orbitals, multielectron atoms, ionic bonding and crystals, covalent bonding, electronegativity scales, hybridization, Bent rule, symmetry point groups, symmetry adapted orbitals, Berry pseudo-rotation, fluxional molecules, acids and bases, chemistry of the main group elements and oxidation reduction reactions. Prerequisite: CHM201 Chemical Principles, CHM332 Thermodynamics or concurrently.

CHM422 Inorganic Chemistry II [3-0, 3 cr.] Chemistry of coordination compounds and organometallic compounds. Prerequisites: CHM421 Inorganic Chemistry I.

CHM499 Senior Study [3-0, 3 cr.] A course designed to teach research methods. It includes work on a short, novel research topic and the presentation of the findings in a research paper. Prerequisite: Senior standing.

COMMUNICATION ARTS

COM211 Introduction to Mass Communication [3-0, 3 cr.] The development, process, principles and effects of print, PR, advertising, radio, TV, film, satellite and computer-assisted communication. Prerequisite: ENG102 English II. Can be taken concurrently.

COM212 Media and Society [3-0, 3 cr.] An introduction to the social responsibilities of the mass communicator in Lebanon, the Middle East and the world. An examination of the mass media in terms of the social, political and economic forces which influence and shape them. Prerequisite: ENG102 English II. Can be taken concurrently.

COM213 Public Relations [3-0, 3 cr.] Principles of public relations, PR ethics, corporate social responsibility, public affairs, promotional campaigns, media relations. Prerequisite: COM211 Introduction to Mass Communication.

COM214 News Writing and Reporting [3-0, 3 cr.] This course covers principles of news gathering, writing and judgment for all the media: newspapers, magazines, wire services (news agencies), radio, TV. Study of news sources, fieldwork/assignments, research and interview techniques and editing. Writing assignments on the substance and styles of reporting. Prerequisite: COM211 Introduction to Mass Communication.

COM215 Photojournalism [3-0, 3 cr.] Conventional photography and video/computer aspects of gathering and processing pictorial material for the print media and television. Practical experience through laboratory and field exercises in creating and handling such material. Prerequisite: none (PHO211 Photography I or COM235 Television Production I would be helpful).
COM216 Media Law & Ethics [3-0, 3 cr.] Principles and case studies in mass media laws and regulations. Ethical and professional concerns, governmental regulations and commercial pressures. Prerequisite: COM211 Introduction to Mass Communication or COM212 Media and Society.


COM218 Arabic News Writing and Reporting [3-0, 3 cr.] Principles of news gathering and writing for the Arabic-language media. Different styles of writing for news agencies, newspapers, magazines, radio, TV, editorials. Prerequisite: ARA201 Appreciation of Arabic Literature.

COM219 Media in the Middle East & Lebanon [3-0, 3 cr.] A review of the mass media in the Middle East and Lebanon. Comparative analysis of various systems — private and government-controlled media — and influence of new technologies on traditional societies. Prerequisite: COM211 Introduction to Mass Communication and COM212 Media & Society.

COM222 Introduction to Radio/TV/Film [3-0, 3 cr.] A study of the basic techniques of radio, TV and film from their beginnings to the present. Familiarization with equipment and basic production procedures will be stressed.

COM225 The Art of Film [3-0, 3 cr.] The study of the formal and esthetic fundamentals of the film medium. Viewing and analysis of important films in the development of this art. Prerequisite: ENG102 English II.

COM227 Film Making [3-0, 3 cr.] Principles and techniques of motion picture film production. Under the guidance of the instructor, the students will plan, write, direct and produce individual film projects. Prerequisite: COM225 The Art of Film.

COM229 History and Theory of Film [3-0, 3 cr.] Study of the development of film from its beginnings. Prerequisite: COM225 The Art of Film.

COM235 Television Production I [3-0, 3 cr.] The theory and practice of television, including basic program types, studio procedures and production problems (studio and on-location). Prerequisite: COM222 Introduction to Radio/TV/Film.

COM236 Radio Production I [3-0, 3 cr.] Radio production as a means of communication and influence. Basic principles and production techniques. Prerequisite: COM222 Introduction to Radio/TV/Film.

COM238 Drama Workshop [1-3, 3 cr.] Various aspects of theatrical activities including building, scenery, properties, lighting, costumes, design, construction, etc.

COM239 Communication Graphics [3-0, 3 cr.] The principles of graphic design and visual communication through the use of computers. Prerequisite: ART201 Fundamentals of Design (2-D), consent of instructor.

COM241 Introduction to Acting [3-0, 3 cr.] An introduction to the actor’s technique and performer’s skills, exploring the elements necessary to begin training as an actor. Focus on physical and vocal exercises, improvisations, scene study.

COM242 Introduction to the Art of Theater [3-0, 3 cr.] Introduction to the theater from its ancient origins to the present: history, production, design, acting, direction, etc. Prerequisite: ENG101 English I. Can be taken concurrently.

COM243 Advanced Acting Techniques [3-0, 3 cr.] Advanced scene study. Includes multiple scenes to clarify character development throughout a single script. Prerequisite: COM241 Introduction to Acting.
COM244 Introduction to Technical Stagecraft [3-0, 3 cr.] Introduction to the visual aspects of theater production, including a survey of the principles and practices of theater organization and management, scene design and stage mechanics. Prerequisite: ENG102 English II or consent of instructor.

COM247 Theater in Performance [3-0, 3 cr.] Credit may be earned by play production participation in major roles as an actor or in major positions as a technician under the direction of faculty members. Prerequisite: ENG102 English II or consent of instructor.

COM249 Theater in Lebanon & the Arab World [3-0, 3 cr.] An overview of the history of theater in Lebanon and the Arab World from Maroun Naccache to the present. A study of selected Arabic plays in text and performance. The emergence of theater companies and the development of theater organizations and festivals. Prerequisite: COM242 Introduction to the Art of Theater.

COM325 Feature and Magazine Writing [3-0, 3 cr.] Basics of writing feature articles for newspapers, magazines, news agencies, syndicates, newsletters and specialized publications. Interviewing and research methods. Prerequisite: COM214 News Writing & Reporting.

COM326 Script Writing [3-0, 3 cr.] Principles and techniques of writing radio, TV and film scripts. Prerequisite: Senior standing.

COM327 Journalism Workshop [3-0, 3 cr.] Intensive, computer-assisted, writing-oriented course in a laboratory setting. Re-writing wire service copy into straight news, magazine articles, editorials and features. Production of three issues of a student newspaper. Prerequisite: COM214 News Writing & Reporting.

COM328 Performance for TV & Film [3-0, 3 cr.] Application of the principles of acting in performing for TV and film. Exercises in announcing, interviewing, hosting TV programs, performing in commercials and acting in dramatic TV programs and films.

COM335 TV Production II [3-0, 3 cr.] Advanced TV production techniques in the studio and on location. Emphasis on planning and directing documentary, news, public affairs and dramatic programs. Prerequisite: COM235 TV Production I.

COM337 Creative Dramatics [3-0, 3 cr.] A study of the principles and methods of developing original dramatizations with children. Observation of children’s classes in creative dramatics is included. Prerequisite: ENG102 English II.

COM338 Oral Interpretation [3-0, 3 cr.] The recreation of prose, poetry and drama through oral readings. Emphasis on the principles and vocal techniques of reading aloud for an audience. Prerequisite: Junior standing.

COM342 Play Production I [3-0, 3 cr.] Principles and techniques of producing a theatrical play. Exercises in staging selected scenes. A study of the structure and presentation of a one-act play. Prerequisites: COM244 Introduction to Technical Stagecraft and COM241 Introduction to Acting.

COM345 Modern Drama [3-0, 3 cr.] The development of the contemporary theater from Ibsen to the present, as studied in selected European and American plays. Prerequisite: COM242 Introduction to the Art of Theater or consent of instructor.

COM351 Desktop Publishing [3-0, 3 cr.] Theory and exercises in editing, transferring and merging text, graphics and photographs. Use of computer programs to create, design and print various types of publications. Prerequisite: knowledge of computer operations and consent of instructor.

COM424 Digital Images [3-0, 3 cr.] A survey of all aspects of digital technology, such as multimedia, 2-D, 3-D animation, etc. Prerequisites: Senior standing and consent of instructor.
COM425 Editing [3-0, 3 cr.] Use of computer technology to edit video footage in creating documentary and dramatic TV programs. Prerequisites: COM335 TV Production II and consent of instructor.

COM426 Computer Animation [3-0, 3 cr.] An introduction to 2-D effects on Alias software. Prerequisites: Senior standing and instructor’s consent.

COM427 Corporate Video/Film Production [3-0, 3 cr.] Theory and production practices in creating and producing video/film documentary programs for use in business, industry, government and education.

COM431 Advanced Reporting, Editing and Production [3-0, 3 cr.] Advanced reporting techniques on politics, business and economic news, investigative journalism, source digging and research skills, copy and wire editing, editorial judgment, deadline writing, production, layout and design. Prerequisite: COM214 News Writing & Reporting and COM327 Journalism Workshop.

COM442 Play Production II [3-0, 3 cr.] A study of the structure of the three-act play. Presentation of a full-length play. Prerequisite: COM342 Play Production I.

COM488 Topics in Radio/TV/Film [3-0, 3 cr.] Theoretical aspects of selected topics in Radio/TV/Film. Course maybe repeated under different topics each semester. Students may take it more than once, any additional registration to the core considered as an elective. Prerequisite: Consent of advisor or actor is required.

COM499 Internship/Senior Study [3-0, 3 cr.] Professional communication work in an off-campus setting appropriate to the student’s emphasis program, providing experience not available in the curriculum. Students may work for print or broadcast (radio/TV) media as well as in the theater or in film. A student must produce a senior study research paper under his/her instructor’s supervision based on the work experience and maintain a log of activities at his/her employer’s. Prerequisite: Senior standing, approval of instructor.

COMPARATIVE LITERATURE (CORE CURRICULUM)

CLT801 Methodologies of Comparative Literature [3 cr.] Introduces fundamental concepts and approaches of comparative practice. Its objective is to expose students to key debates in literary and cultural studies today and provide an overview of some methods currently used in the profession.

CLT803 Literary Theory I [3 cr.] Examines theories of literature and representation from classical Greece and Rome, the Medieval Mediterranean and the European Renaissance. It is organized according to major questions that have traditionally generated debate and that continue to resonate in contemporary literary and cultural studies.

CLT804 Literary Theory II [3 cr.] Examines theories of literature and representation from the Enlightenment to the present. The course is designed to provide an intellectual background for current theoretical debates in the profession.

CLT820 Periods [3 cr.] Explores the fundamental critical concepts relating to period through the close attention to primary texts supplemented with theoretical readings. The aim of the course is to kindle awareness and interests in the historicity of literature.

CLT830 Themes [3 cr.] Explores particular themes through the close attention to primary texts supplemented with theoretical readings. A broadly construed course, “Themes” is designed to allow the instructor and students an opportunity to explore thematic interests in some depth.

CLT840 Genre [3 cr.] Explores the fundamental critical concepts relating to genre through the close attention to primary texts supplemented with theoretical readings. Rather than attempting to provide a synoptic view of the range of
generic forms, the course is conceived with a priority on flexibility so as to respond to the needs and interests of the instructor and students alike.

CLT880 Graduate Seminar in Comparative Literature
[3 cr.] Examines selected topics in comparative literature. Repeatable for up to nine credits, if course content is different.

CLT899 Thesis [6 cr.] Consists of a 40–50 page comparative study written in consultation with the student’s M.A. faculty committee.

COMPARATIVE LITERATURE
(TRANSLATION OPTION)

CLT811 Translation Workshop [3 cr.] Gives students practical experience in the art and craft of translation, primarily focusing on the translation of literary works.

CLT814 History and Theory of Translation [3 cr.]
Gives students a historical overview of theories and approaches to translation. Translation is studied within the larger comparative/world literature context, providing a window onto both the art of translation and its influence on the development of world literature.

CLT870 Topics in Translation Studies [3 cr.]
Exposes students to the growing field of translation studies by focusing on a specific topic or literary work within the field.

COMPUTER SCIENCE
(UNDERGRADUATE)

CSC201 Computer Literacy [1-0, 1 cr.]
The course is required of all students who, otherwise, are not required to take any computer science course. The topics covered include: introduction to computer hardware and software, basic operation of a computer system, data processing, introduction to programming languages, and computer applications.

CSC241 Introduction to Computing [3-0, 3 cr.] This course provides a breadth first coverage where students would acquire a holistic understanding of computing and an appreciation for technology’s impact on society. Topics include binary values and number systems; data representation; gates and circuits; computing components; problem solving and algorithm design; low-level and high-level programming languages; abstract data types and algorithms; operating systems; file systems and directories; information systems; artificial intelligence; simulation and other applications; computer networks; the world wide web; and limitations of computing.

CSC242 Introduction to Computer Programming
[3-0, 3 cr.] Students are introduced to methods of solving business data processing problems through the use of structured programming techniques in writing computer programs. Concepts include various methods of organizing and processing files, interactive and batch data entry, and logical manipulation of data, as well as on-line and printed output. Computer programs will be created, enhanced and maintained as part of a typical large business data processing system.

CSC243 Introduction to Object Oriented Programming
[3-0, 3 cr.] Introduces the fundamental concepts of programming from an object-oriented perspective. Topics include introduction to the object-oriented paradigm: abstraction, objects, classes, methods, parameter passing; encapsulation, inheritance, polymorphism; fundamental programming constructs: variables, types, expressions, and assignment; simple I/O; conditional and iterative control structures; structured decomposition; fundamental data structures: primitive types, arrays, strings and string processing; implementation strategies for algorithms; debugging strategies; and the concept and properties of algorithms.

CSC245 Objects and Data Abstraction [3-0, 3 cr.]
Review of object-oriented design and basic algorithm design; problem solving in the object-oriented paradigm; application of algorithm design techniques to a medium-sized project, with an emphasis on formal methods of testing; basic a-
algorithmic analysis; time and space tradeoffs in algorithms; recursion; fundamental computing algorithms: hash tables, binary search trees, representations of graphs, depth- and breadth-first traversals, shortest-path algorithms, transitive closure, minimum spanning tree, topological sort; fundamental data structures: pointers and references, linked structures, implementation strategies for stacks, queues, and hash tables; implementation strategies for graphs and trees. Prerequisite: CSC243 Introduction to Object Oriented Programming.

CSC310 Algorithms and Data Structures [3-0, 3 cr.] Introduces formal techniques to support the design and analysis of algorithms focusing on proof techniques; asymptotic analysis of upper and average complexity bounds; best, average, and worst case behaviors; big-O, little-o, Ω, and Θ notation; recurrence relations; fundamental algorithmic strategies: brute-force, greedy, divide-and-conquer, backtracking, branch-and-bound, heuristics, pattern matching and string/text algorithms; numerical approximation; fundamental data structures: implementation strategies for graphs and trees; performance issues for data structures; graph and tree algorithms. Prerequisites: CSC201 Calculus III, CSC207 Discrete Structures I and CSC245 Objects and Data Abstraction.

CSC320 Computer Organization [3-0, 3 cr.] Introduces the concept of computers and information systems by presenting the process of computation as a hierarchy of virtual machines. Topics include register-level description of computer execution; functional organization of a computer; data representation; the elements of machine and assembly-language programming; the role and function of programming languages and their associated libraries; applications including description of the functionality of the relevant software; human-computer interaction. Prerequisite: CSC243 Introduction to Object Oriented Programming.

CSC323 Digital Systems Design [3-0, 3 cr.] Introduces students to the organization and architecture of computer systems. Topics include fundamental building blocks of digital logic (logic gates, flip-flops, counters, registers); programmable logic devices; logic expressions, minimization, sum of product forms; register transfer notation; finite state machines; physical considerations; data representation; numeric data representation and number bases; representation of nonnumeric data; digital circuit modeling; HDL (VHDL, Verilog); simulation of digital circuit models; synthesis of digital circuits from HDL models; hierarchical and modular design of digital systems: simple data paths and hardwired control unit realization; introduction to embedded systems. Prerequisite: CSC243 Introduction to Object Oriented Programming.

CSC326 Operating Systems [3-0, 3 cr.] Introduces the fundamentals of operating systems design and implementation. Topics include operating system components; design of application programming interfaces; device organization; interrupts; concurrent execution; states and state diagrams; dispatching and context switching; interrupt handling in a concurrent environment; mutual exclusion problem; deadlock detection and prevention; models and mechanisms (semaphores, monitors, condition variables, rendezvous); preemptive and non-preemptive scheduling; processes and threads; page placement and replacement policies; working sets and thrashing; caching; fundamental concepts of file systems; memory-mapped files; special-purpose file systems; naming, searching, and access; backup strategies. Prerequisites: CSC245 Objects and Data Abstraction and CSC320 Computer Organization.

CSC331 Business Data Communication [3-0, 3 cr.] The course presents the fundamental concepts of data communications, networking, distributed applications, and network management and security; it relates specifically to the business environment and business management. The course up-to-date coverage of key issues for the business student—high-speed networks, asynchronous transfer mode (ATM) and TCP/IP, and the use of the Internet, intranets, and extranets support
business objectives. Prerequisite: CSC242 Introduction to Computer Programming.

CSC332 Web Design and Development [3-0, 3 cr.] This course introduces students to the World Wide Web. Topics include the Internet; overview of network standards and protocols; circuit switching vs. packet switching; Web technologies and support tools for web site creation; multimedia data technologies; scripting languages; simple Java applets; human-computer interaction aspects of web-page design; graphical user interface design; security issues and firewalls; issues regarding the use of intellectual property on the web. Prerequisite: CSC242 Introduction to Computer Programming.

CSC372 Database Analysis, Design, and Management [3-0, 3 cr.] The theory of a Database Management System (DBMS) will be examined within the context of its utilization in an information system application. The primary focus will be on relational databases. Concepts will include design, optimization, and implementation. Security and data integrity in centralized and distributed systems are issues that will be addressed. SQL will be employed as a vehicle during the development of applications. Prerequisite: CSC242 Introduction to Computer Programming.

CSC375 Database Management Systems [3-0, 3 cr.] Introduction to the fundamental concepts and techniques of database systems. Topics include database architecture; data independence; data modeling; physical and relational database design; functional dependency; normal forms; query languages; query optimization; database security, and transaction processing. Prerequisite: CSC310 Algorithms and Data Structures.

CSC392 Information Systems Analysis and Design [3-0, 3 cr.] This course discusses the System Development Life Cycle (SDLC) from problem detection to a post-implementation evaluation of the chosen solution. Students analyze case studies and design an actual business system in response to a problem in the local business community. A Computer-Aided System Engineering (CASE) toolkit is used in class and for assignments giving students practical experience using structure design technology to solve business data processing problems. Prerequisite: CSC242 Introduction to Computer Programming.

CSC398 Selected Topics in Computer Science [3 cr.] Maybe repeated for credits. Subtitle required.

CSC420 Computer Architecture [3-0, 3 cr.] This course deals with the architecture of computers with an emphasis on the architecture of general purpose computers using modern concepts such as pipeline design, memory hierarchies, IO systems, and parallel processing. The course tackles advanced computer architecture concepts: pipelining and pipelined processors, instruction level parallelism, VLSI architectures, superscalar architectures, code scheduling for ILP processors, storage systems and RAID, memory systems, multiprocessing and cache coherency problem; parallel processing. Prerequisite: CSC323 Digital Systems Design.

CSC430 Computer Networks [3-0, 3 cr.] Introduces the structure, implementation, and theoretical underpinnings of computer networks. Topics include network standards; the ISO 7-layer reference model and its instantiation in TCP/IP; circuit switching and packet switching; streams and datagrams; physical layer networking concepts; data link layer concepts; internetworking and routing; transport layer services; nature of the client-server relationship; web protocols; building web applications; protocols at the application layer; database-driven web sites; remote procedure calls; lightweight distributed objects; the role of middleware; support tools; security issues in distributed object systems; enterprise-wide web-based applications; security issues and firewalls; wireless and mobile computing; mobile Internet protocol; emerging technologies. Prerequisite: CSC326 Operating Systems.

CSC435 Computer Security [3-0, 3 cr.] Introduction to computer security, including developing an understanding of security engineering; cryptography; mechanisms to protect private com-
communication over public network; and techniques to protect networked computer systems. The course also considers the technical, operational, and managerial issues of computer systems and system security in an operational environment in addition to threats including schemes for breaking security, and techniques for detecting and preventing security violations. Emphasis will be on instituting safeguards, examining the different types of security systems, and applying the appropriate level of security for the perceived risk. Hands-on experience is part of the class. Prerequisite: CSC326 Operating Systems.

CSC440 Object Oriented Programming [3-0, 3 cr.] Introduces the fundamental concepts of programming from an object-oriented perspective including history of computing; overview of programming languages and the compilation process; classes and objects; syntax of class definitions and message passing; subclassing and inheritance; control structures and algorithms; properties of algorithms; implementation strategies; collection classes and iteration protocols; using APIs; class libraries; packages for graphics and GUI applications; fundamental design concepts and principles; object-oriented analysis and design; design for reuse; software engineering issues; processes; requirements; design and testing. Prerequisite: CSC245 Objects and Data Abstraction.

CSC445 Programming Languages [3-0, 3 cr.] Introduction to programming language concepts, including data types, variable binding, parameter passage techniques, scoping, block structure, activation records, run-time stacks, objects, garbage collection, typing, exception handling, and concurrency; historical background; examination of the major programming paradigms: imperative, functional, object-oriented, and logic. Prerequisite: CSC245 Objects and Data Abstraction.

CSC449 Parallel Programming [3-0, 3 cr.] Techniques and methods for parallel programming; models of parallel machines and programs, efficiency and complexity of parallel algorithms; paradigms of parallel programming and corresponding extensions to sequential programming languages; overview of parallel languages, coordination languages and models; programming on networks of workstations; basic parallel algorithms: elementary computation, matrix multiplication, and sorting. Prerequisite: CSC310 Algorithms and Data Structures.

CSC450 Computer Graphics [3-0, 3 cr.] Introduction to computer graphics algorithms; programming methods; and applications; focus on fundamentals of two- and three-dimensional raster graphics; scan-conversion; clipping; geometric transformations; computational geometry; computer-human interfaces; animation; and visual realism. Prerequisite: CSC310 Algorithms and Data Structures.

CSC460: Artificial Intelligence [3-0, 3 cr.] Survey of knowledge-based artificial intelligence. Topics include: history; definition; philosophical foundations; search techniques; game playing; propositional logic; predicate logic; knowledge representation; planning; natural-language processing; and agents. Prerequisites: MTH307 Discrete Structures II and CSC310 Algorithms and Data Structures.

CSC475 Advanced Topics in Databases [3-0, 3 cr.] This course provides an overview of advanced topics in databases including Internet-based database application development; multi-tier application architecture; CGI, servlets; Java Server pages; JDBC; and SQLJ. Introduction to advanced database applications: object-oriented databases; object-relational databases; active databases; deductive databases. The Extensible Markup Language as a data model; document type definitions; XPath; XSLT and XQuery. Introduction to query processing: query compiler, strategy selector, query optimization, and query evaluation. Transaction processing: concurrency control and recovery; database tuning; security and authorization; distributed databases. Prerequisite: CSC375 Database Management Systems.

CSC480 Social and Professional Issues in Computing [3-0, 3 cr.] The course covers the social impact,
implications and effects of computers on society, and the responsibilities of computer professionals in directing the emerging technology. Topics include history of computing; legal and ethical responsibilities of professionals; risks to the public; Internet censorship; industrial intelligence gathering; intellectual property issues and software copyrights; environmental concerns; medical and biotechnology ethics; hacking; professional liability; “malware” and viruses; hacking; whistle blowing; privacy; data security; and universal accessibility. Course includes literate business writing, oral presentations, debates, job hunting and interviewing, professional etiquette, critical thinking, and peer reviewing.

**CSC490 Software Engineering** [3-0, 3 cr.] Introduces computer scientists to a range of topics integral to the design, implementation, and testing of a medium-scale software. Topics include event-driven programming and human-computer interaction; human performance models; introduction to usability testing; API programming; class browsers and related tools; building a simple graphical user interface; software lifecycle and process models and metrics; software requirements and specifications; object-oriented analysis and design; software validation and testing: black-box and white-box testing techniques; unit, integration, validation, and system testing; writing test cases; inspections; legacy systems; software project management; team management; project scheduling; software measurement and estimation techniques; risk analysis; software quality assurance. Prerequisites: CSC310 Algorithms and Data Structures and CSC375 Database Management Systems.

**CSC498 Topics in Computer Science** [3-0, 3 cr.] Selected topics in computer science. Subtitle required. May be repeated for credits.

**CSC499 Capstone Project** [3 cr.] A standalone project course that allows students to integrate the many concepts and skills they have learned. Course requires the design, implementation, and oral presentation of a complete significant team project. Prerequisite: CSC490 Software Engineering.

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**COMPUTER SCIENCE (GRADUATE)**

**CSC711 Design and Analysis of Algorithms** [3-0, 3 cr.] Time and space complexity of algorithms. Models of computation, techniques for efficient algorithm design, effect of data structure choice on efficiency of an algorithm. Divide and conquer techniques, greedy methods, dynamic programming, amortized analysis, graph and network algorithms. NP-completeness. Selected advanced algorithms.

**CSC712 Automata Theory and Formal Languages** [3-0, 3 cr.] Finite Automata and regular expressions, context-free grammars, pushdown Automata, properties of context-free languages, Turing machines, undecidability, computational complexity, P and NP problems.

**CSC713 Introduction to Bioinformatics** [3-0, 3 cr.] Problems related to biochemistry and/or medicine are solved using computer science tools. Topics include fundamental algorithmic methods in computational molecular biology and bioinformatics such as protein sequence analysis, pairwise and multiple alignment, probabilistic models, phylogenetic analysis, folding and structure prediction, biological structures (protein structures, RNA structures, etc.) and information that could be derived from them. The course is research-based; students are required to read papers and articles, compare different techniques used to solve problems and suggest alternatives.

**CSC714 Heuristic Optimization** [3-0, 3 cr.] This course will cover basic heuristic optimization techniques in computing. This course describes a variety of heuristic search methods including serial simulated annealing, Tâbù search, genetic algorithms, ant algorithms, derandomized evolution strategy, and random walk. Algorithms will be described in serial as well as in parallel fashion. Students can select application projects from a range of application areas. The advantages and disadvantages of heuristic search methods for both serial and parallel computation are discussed in comparison to other optimization algorithms.
CSC715 Machine Learning [3-0, 3 cr.] The course provides an overview of popular algorithms in machine learning. Topics include supervised learning, linear and polynomial regression, classification algorithms, gradient descent, unsupervised learning, instance-based learning, neural networks, genetic algorithms and boosting. The course requires some knowledge of artificial intelligence and good programming skills. The theoretical aspects of the algorithms will be studied and assignments will be given to test their applicability.

CSC716 Cryptography and Data Security [3-0, 3 cr.] Advanced survey of modern topics on theory, foundations, and applications of modern cryptography. One-way functions, pseudo-randomness, encryption, authentication, public-key cryptosystems, notions of security. The course also covers zero-knowledge proofs, multi-party cryptographic protocols, and practical applications.

CSC721 Transaction Processing Systems [3-0, 3 cr.] The course covers the theoretical foundations underlying commitment protocols that form the basis of transaction processing techniques. Transaction Processing systems have lots of moving parts — client-side forms, web servers, mid-tier application servers, and back-end databases. Although these components are distributed across multiple processes, these processes share state and use specialized communication protocols and synchronization techniques. This course explains how these systems are constructed. Topics include the transaction abstraction, application servers, transactional communications, persistent queuing and workflow, software fault tolerance, concurrency control algorithms, database recovery algorithms, distributed transactions, two-phase commit, and data replication.

CSC722 Distributed Systems [3-0, 3 cr.] Introduction to distributed systems, distributed system models, network architecture and protocols, interprocess communication, client-server models, group communication, TCP sockets, remote procedure calls, distributed objects and remote invocation, distributed file systems, file service architecture, name services, directory and discovery services, distributed synchronization and coordination, and distributed multimedia systems.

CSC723 Knowledge-Based Systems [3-0, 3 cr.] Knowledge representation, search techniques, logical reasoning, language understanding. Introduction to the methodology of design and implementation of expert systems. Emphasis on techniques for representing and organizing domain and control knowledge as opposed to the theory and implementation of inference engines.

CSC724 Data Mining [3-0, 3 cr.] Fundamental techniques and applications for mining databases. Topics include related concepts from machine learning, information retrieval and statistics, techniques and algorithms for classification, clustering, and association rules; spatial, temporal, and multimedia mining; web models; techniques and algorithms for mining the web based on its structure, content, and usage; scalable and distributed data mining algorithms.

CSC725 System Simulation [3-0, 3 cr.] This course covers model construction and simulation applied to problems taken from such diverse fields as economics, social science, communication networks and computer systems. It includes programming in simulation languages such as SIMSCRIPT, SIMULA or GPSS. Students will be able to analyze a problem and determine whether simulation techniques could be used to solve it. Students are also required to develop a viable model of the system, program and execute a computer simulation of the model, and finally analyze the results of the simulation.

CSC726 Compilers [3-0, 3 cr.] Design and implementation of compilers for high-level languages. Topics include lexical and syntactic analysis, parsing techniques, top-down and bottom-up recognizers for context-free grammars, LR(k) parsers, error recovery, semantic analysis, storage allocation for block structured languages, symbol table management, optimization, code gen-
eration, run time system design, implementation issues related to programming language design. A programming project is required.

CSC731 High Performance Computer Architecture [3-0, 3 cr.] Concepts and examples of advanced computer systems, especially scaleable parallel computers. Topics include memory-system design, advanced processor design techniques, pipelined, vector, shared-memory, and distributed-memory computer systems, parallel algorithms, software and architectural issues for efficient parallel processing.

CSC732 ULSI Testing [3-0, 3 cr.] This course covers the problems of testing of Ultra Large Scale Integrated Circuits (ULSI), the design of circuits for testability, the design of built-in self-testing circuits, and the use of the IEEE Boundary Scan Standards. Topics include introduction to the testing process, fault modeling and detection, logic and fault simulation, testability measures, test generation for combinational circuits, test generation for sequential circuits, design for testability, built-in self-test, delay testing, current testing, ATPG-based logic synthesis, system test and core-based design, and testing a system-on-a-chip (SOC).

CSC733 Embedded Systems [3-0, 3 cr.] This course introduces methodologies for the systematic design of embedded systems including processors, DSP, memory, and software. Topics include hardware and software aspects of embedded processor architectures, along with operating system fundamentals, system specification, architecture modeling, component partitioning, estimation metrics, hardware software co-design, and diagnostics, system interfacing basics; communication strategies; sensors and actuators; mobile and wireless technology. Projects use pre-designed hardware and software components. Design case studies in wireless, multimedia, and/or networking domains.


CSC735 Mobile Computing and Networks [3-0, 3 cr.] This course deals with practical and theoretical issues in mobile computing. Topics include mobile addressing, user mobility, limiting factors in addition to coping with constantly changing connection bandwidth in a mobile environment. The course also includes developing client-server applications in mobile and wireless environments, information dissemination models such as client-proxy-server model, and performance analysis and evaluation of applications for mobile and wireless networks.

CSC736 Networks Security [3-0, 3 cr.] Network security is an important aspect of security. Topics include Static packet filter, stateful firewall, proxy firewall, IDS, VPN Device, DMZs and screened subnets, networks defense components, internal network security, host hardening, configuration management, audit, human factors, and security policies. The course also covers cryptographic protocols, privacy and anonymity. Case studies.

CSC791 Advanced Software Engineering [3-0, 3 cr.] Techniques for the construction of reliable and cost-effective large-scale software. Topics include process models, requirements analysis and specification, design methods and principles, testing methodologies, software maintenance, software metrics, and software management and quality. Students will explore in depth current research work on a topic of their choice.

CSC792 Object-Oriented Software Engineering [3-0, 3 cr.] This course introduces key concepts in object-oriented programming and software engineering. Topics covered include data abstraction
and encapsulation, polymorphism, object-oriented analysis and design methods, object-oriented programming, templates, design patterns, an introduction to UML, documentation, debugging, metrics, formal specification, user-interfaces, concurrent and distributed objects, process and project management issues.

**CSC793 Software Testing and Analysis** [3-0, 3 cr.] Survey of testing and analysis methods. Introduction to advance topics in area as well as traditional production methods. Topics include inspections and reviews, formal analysis, verification and validation standards, non-statistical testing, statistical testing and reliability models, coverage methods, testing and analysis tools, and organization management and planning. Methods special to special development approaches such as object-oriented testing will also be described.

**CSC794 Software Quality Assurance** [3-0, 3 cr.] This course is about devising an appropriate software quality system for application domains ranging from embedded systems to e-commerce, choosing and apply appropriate quality control practices and procedures, conducting effective inspections, reviews and audits, define the roles of an effective quality assurance group, using external certifications to significantly enhance existing practices, implementing a comprehensive system of metrics and reports, and organization management and planning. Methods special to special development approaches such as object-oriented testing will also be described.

**CSC795 Safety-Critical Systems** [3-0, 3 cr.] Introduction to the principles of system safety, including risk, basic terminology, and the main types of hazard and safety assessment techniques. The course also provides an introduction to legal issues, management of safety critical projects, and human factors involved in the design of critical systems.

**CSC796 Human-Computer Interaction** [3-0, 3 cr.] The course provides a comprehensive introduction to the principles and techniques of human-computer interaction and user interface design, with a focus on highly usable software, user and task modeling, user centered design, evaluation of user interfaces, detailed discussion of many user interface design issues such as use of coding techniques (color, icons, sound, etc.), screen and web page design, feedback and error messages, internationalization of user interfaces, response time, accessibility to the disabled, user interfaces for different types of devices, voice user interfaces, etc. This course requires students to implement user interfaces.

**CSC888 Research Topics in Computer Science** [3 cr.] Selected topics in Computer Science. Subtitle required. May be repeated for credits more than once.

**CSC898 Project** [3 cr.] Development of a substantial software system. Complete and professional documentation is required, including verification and performance analysis.

**CSC899 Thesis** [6 cr.] Independent investigation of a topic of interest with some degree of originality, or new application of a new technology with substantial effort.

**CULTURAL STUDIES**

**CST201 Cultural Studies I** [3-0, 3 cr.] Traces the major developments in the global human experience from the birth of civilization through the Middle Ages. Source material is drawn from the humanities, the fine arts, the social sciences and the natural sciences, and is organized thematically around key topics. Prerequisite: ENG101 English I.

**CST202 Cultural Studies II** [3-0, 3 cr.] Traces the major developments in the global human experience from the 14th through the 18th centuries. Source material is drawn from the humanities, the fine arts, the social sciences and the natural sciences, and is organized thematically around key topics. Prerequisite: CST201 Cultural Studies I.

**CST301 Cultural Studies III** [3-0, 3 cr.] Traces the major developments in the global human experi-
ence during the 19th and 20th centuries. Source material is drawn from the humanities, the fine arts, the social sciences and the natural sciences, and is organized thematically around key topics. Prerequisite: CST202 Cultural Studies II.

**EDUCATION (UNDERGRADUATE)**

**EDU201 Fundamentals of Education** [3-0, 3 cr.] An introduction to the teaching profession providing a comprehensive examination of the historical, philosophical, and social foundations of education as well as significant contemporary educational issues.

**EDU202 Observation and Curriculum** [1-2, 3 cr.] The integration of the study of curriculum development in early childhood and elementary school settings with field experiences. Emphasis is on strategies and techniques for observing and recording behavior in elementary and early childhood settings where the student teacher spends 60 semester hours.

**EDU205 Safety and Health** [3-0, 3 cr.] A review of health/safety practices recommended for childcare, including information on common diseases, health problems, and safety issues.

**EDU211 Mathematics for Elementary Teachers** [3-0, 3 cr.] Comprehensive review of the mathematics needed by teachers, and the mathematics taught at the elementary level (grades 1 through 6). Insightful understanding of mathematical concepts, nature and stages of development of mathematical knowledge, impact of new technologies (calculators and computers) on the elementary mathematics curricula, critical thinking and problem solving strategies, etc., with emphasis on the new topics in the elementary mathematics curricula.

**EDU212 Science for Elementary Teachers** [3-0, 3 cr.] Comprehensive review of the sciences taught at the elementary level (grades 1 through 6). Insightful understanding of scientific concepts, the learning cycle of development of scientific knowledge, scientific method of investigation and inquiry, experimentation and laboratory skills, critical thinking and problem solving strategies, etc., with emphasis on the new topics in elementary science curricula.

**EDU301 School Counseling** [3-0, 3 cr.] A study of the principles of the theory and practice of guidance and counseling. Emphasis is on intervention techniques that assist educators in dealing with a range of educational and vocational issues and concerns at school.

**EDU303 Language Arts** [3-0, 3 cr.] A training course designed to give students practice in the effective use of classroom English and extend their language teaching skills and techniques, with special emphasis on the Communicative approach.

**EDU305 Applied Phonology** [3-0, 3 cr.] Deals with phonetics and phonemics, phonological analysis including segmental (consonant and vowel) as well as supra-segmental — stress, intonations, juncture, pause, and rhythm — features, comparative analysis, and native language interference in second language learning. Includes examples from a wide variety of languages with special emphasis on the sound systems of English and Arabic. Develops basic skills in comparative phonological analysis.

**EDU310 Computers in Education** This course is designed to provide prospective teachers with broad knowledge and practical activities on the various instructional applications of computers. Topics include general knowledge about computers and their educational uses. Simple computer programming as means to enhance students’ higher-order thinking. Evaluation, selection, and integration of educational software in teaching and learning various subjects. Use of the Web resources in teaching and learning. Overview of the new Lebanese Informatics curriculum. Computer as a management tool.

**EDU311 The Teaching of Arabic as a Foreign Language** [3-0, 3 cr.] A study of the problems and methods of teaching Arabic as a foreign lan-
guage based on the findings of modern linguistic science. The course deals with all aspects of Arabic teaching (pronunciation, vocabulary, grammar, reading, writing and testing). It handles curricular matters and prepares students for their practice teaching experience. Prerequisite: ENG213 Introduction to Language, or consent of instructor.

**EDU312 The Teaching of English as a Foreign Language** [3-0, 3 cr.] A study of the methods and principles of teaching English as a foreign language based on the findings of modern linguistics. The course deals with all aspects of English teaching: basic language skills, sub skills, literature and cultural orientation. Prerequisite: ENG213 Introduction to Language.

**EDU313 The Teaching of Science and Mathematics (Elementary)** [3-0, 3 cr.] A study of methods and materials used in science and mathematics in elementary education. Senior standing.

**EDU314 The Teaching of Social Studies** [3-0, 3 cr.] This course is designed to equip students with the knowledge and tools necessary to teach social studies across all grade levels. These competencies include planning, implementing, and evaluating the social studies curriculum, in addition to content and process skills. Special emphasis is given to values and character education to reflect the objectives set forth by the new Lebanese curriculum.

**EDU315 The Teaching of Mathematics in Secondary Schools** [3-0, 3 cr.] A study of objectives, concepts and classroom procedures in secondary education with emphasis on selection, preparation and use of teaching materials including lesson plans and multimedia aids. Senior standing.

**EDU316 The Teaching of Science in Secondary Schools** [3-0, 3 cr.] A study of objectives, problems and procedures appropriate for the secondary school with emphasis on preparing plans, use of demonstrations, experiments, science curriculum projects and reference materials. Pre-requisites: EDU201 Fundamentals of Education and junior standing.

**EDU319 Teaching Reading** [3-0, 3 cr.] A study of modern trends and issues in the teaching of reading as applied to English with emphasis on practical work to acquaint students with the processes of reading and improve their competency in these skills.

**EDU321 Children’s Literature** [3-0, 3 cr.] An exploration of the various types of children’s literature. It aims at developing critical analysis of the purposes, strategies for teaching and evaluation of literature for children.

**EDU331 Educational Technology** [3-0, 3 cr.] A study of interrelated uses of instructional materials and techniques in education at both the primary and secondary levels. The course is designed to prepare prospective teachers to serve society in the present technological era.

**EDU332 Educational Measurement** [3-0, 3 cr.] A critical examination of the basic principles and techniques of testing and evaluation in the total education process and the use of modern software for basic statistical techniques needed for the analysis of tests. The focus is on the preparation, use, and analysis of various school tests.

**EDU414 Methods and Materials in ECE** [3-0, 3 cr.] An examination of the processes of planning appropriate learning environment, materials and experiences that meet the developmental needs of students or groups of children in a classroom setting.

**EDU419 Internship** [1-2, 3 cr.] A lab field experience course introducing concept problems and skills common to prospective teachers. Students spend 60 semester hours assisting the cooperating teacher in classroom activities, including supervising and monitoring class work, assisting in classroom management, substitute teaching and preparing various educational materials in their area of emphasis.
EDU420 Practice Teaching—Early Childhood Education [1-2, 3 cr.] A field-based practicum in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. Continuous evaluation is provided by the supervisor and cooperating teacher to enhance the student teacher’s professional growth. It requires a minimum of 40 hours of practice in the area of emphasis.

EDU421 Practice Teaching—Elementary Education: Language, Arts and Social Studies [1-2, 3 cr.] A field-based practicum in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. Continuous evaluation is provided by the supervisor and cooperating teacher to enhance the student teacher’s professional growth. It requires a minimum of 40 hours of practice in the area of emphasis.

EDU422 Practice Teaching—Elementary Math and Science [1-2, 3 cr.] A field-based practicum in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. Continuous evaluation is provided by the supervisor and cooperating teacher to enhance the student teacher’s professional growth. It requires a minimum of 40 hours of practice in the area of emphasis. Senior standing.

EDU425 Practice Teaching—Secondary Math Education [1-2, 3 cr.] Thirty hours of practice teaching at the intermediate and secondary levels preceded by 10 hours of observation in the class or classes to be taught. Includes one seminar per week and conference periods with supervisors. Senior standing.

EDU426 Practice Teaching—Secondary Science Education [1-2, 3 cr.] Thirty hours of practice teaching at the intermediate and secondary levels preceded by 10 hours of observation in the class or classes to be taught. Includes one seminar per week and conference periods with supervisors. Prerequisites: one methods course and senior standing.

EDU427 Practice Teaching—Secondary English Education [1-2, 3 cr.] Thirty hours of practice teaching at the intermediate and secondary levels preceded by 10 hours of observation in the class or classes to be taught. Includes one seminar per week and conference periods with supervisors. Prerequisites: one methods course and senior standing.

EDU499 Senior Study [1-2, 3 cr.] Independent scholarly work on a topic chosen by the student and related to his/her emphasis of study.

EDUCATION (GRADUATE)

EDU802 Curriculum Design The aim of the course is to review the history of curriculum development, analyze current curricular issues—including the impact of new technological advancement on curricula—and develop a comprehensive curriculum design. Students will learn to critically evaluate curricula in terms of structural elements, tools, and assumptions regarding subject matter and learning.

EDU803 Methods of Educational Research This course develops the essential concepts and skills of educational research. It is intended to provide a structured, supportive hands-on environment for learning these skills, and it involves designing a research project for a small-scale study. Automated data acquisition and analysis tools will be used; ethical considerations in educational research will be addressed. The course also enables students to critically interpret and evaluate research by analyzing various research methods used in educational publications.

EDU806 Advanced Educational Psychology This course is designed to aid the educators in predicting, understanding and controlling the fundamental principles of learning and human development as they apply in educational settings. It also provides an in-depth overview of the theoretical frameworks of development theorists. The course critically examines research in human development and psychology and its impli-
cations to schooling, learning processes, teaching techniques, and other educational issues.

EDU805 Educational Technology This course focuses on the theoretical bases of the design and production of teaching and learning materials, using various technologies and stressing on the Information and Communication Technology (ICT) tools. Students will experience the changes in educational settings fostered by these tools (Internet, webquest, distance learning, video conferencing, etc.). Communication theory and research are combined with design principles to guide students in creating audio-visual materials for teaching.

EDU872 Special Education This course takes an in-depth look at the learning, social, and behavior characteristics of students with learning difficulties, particularly learning disabilities, and focuses on the current practices and intervention programs in the field of special education to help this population.

EDU812 Literacies across the Curriculum This course examines contemporary theories of teaching, classroom practices of literacy processes, and authentic literacy assessment methodology. Students will be involved in examining a diverse range of views regarding literacy and literacy education and in constructing a coherent conceptual basis for their own practice as literacy educators in school contexts. It tackles different types of literacies including reading, writing, information, computer, math, and science literacies.

EDU814 Comparative Education The course examines education in its sociocultural contexts as it reflects and influences social, economic, and political life nationally and globally. It offers a framework of analysis and comparison of educational systems by examining issues of access, equity, quality, and efficiency.

EDU873 Psychoeducational Assessment This course examines assessment procedures, techniques and instruments used in screening and evaluating psychological, cognitive abilities and achievement of students with learning disorders. It combines lectures and hands-on sessions and acquaints students with various formal and informal assessment materials. Attention will be given to ethical issues in testing.

EDU874 Behavior Modification Techniques This course focuses on the principles and applications of behavior theory as they apply to classroom setting. The main objective of this course is to equip students with tools that will allow them to design and execute educational plans, tailored specifically to fulfill the needs of each individual student in the classroom. The course is geared toward the managing of day-to-day problems as they arise in the school setting. Limitations of the behavioral model are also addressed.

EDU888 Topics in Education Deals with current issues and concerns in education. Alternatively taught by various faculty to cover a wide range of specialty areas.

EDU822 Trends & Issues in Math Education The aim of this course is to discuss issues pertaining to the design and development of school mathematics, its teaching and its learning. The main issues to consider relate to the nature of math, its philosophical, historical, epistemological, societal, and cognitive bases. The course includes review of research and critical evaluation of math curricula, aiming at identifying, comparing and contrasting major trends of mathematics education.

EDU823 Technology in Math Education This course investigates the effects of new technologies on school mathematics and its teaching/learning. It has theoretical and practical components, aiming at: reviewing research and major theories about technology mediation in math teaching/learning, as well as laboratory sessions for training students in using software for teaching math, designing relevant class situations, and developing appropriate math curriculum materials integrating suitable technology. Technologies considered include: Different types of calcula-
tors (simple, scientific and graphic), computer software (e.g. dynamic geometry, spreadsheets as math learning tools, computer algebra systems, and math education websites).

**EDU825 Mathematical Language, Representations, and Modeling** This course aims at an epistemological and didactical study of mathematical representations and symbolic systems, across the mathematical disciplines. It helps students develop situations where mathematical communication and shifts among the different symbolic systems (from natural language to diagrams, tables, figures, graphs, drawings, etc.) contribute to the construction of knowledge and the understanding of concepts. The course includes review of research on related processes, such as problem solving, modeling, representations, proof, logic, and mathematical reasoning.

**EDU862 Trends & Issues in Science Education** The course emphasizes the importance of science education and its contribution to the needs of students in a modern society. The course provides an overview and analysis of the recent issues and trends in science education reform. Topics include elements of history of science education, minimum requirements for a science literate citizen, theories of science education, and how to evaluate methods, materials, curriculum or reform projects in science education.

**EDU863 Technology in Science Education** The course provides students with an introduction to technology concepts as applied in science education. They are shown how to find technology appropriate to solving educational problems in science education and how to evaluate such technology. Among the technologies that may be examined are computer-assisted instruction (CAI), scientific and graphic calculators, CD-ROM, multimedia, laboratory probeware, simulations, and the Internet.

**EDU832 Leading & Managing Schools/ Education Institutions** The major topics in this course are leadership versus management, decision-making, team management, responding to the external community, and school mission and values. Students will learn about managing the curriculum, reviewing/assessing student learning, and managing & allocating resources.

**EDU833 Trends & Issues in Educational Management** This course leads students through trends and issues such as school effectiveness and school improvement, culture and ethos, evaluation/inspection, and induction. Issues in managing staff development and relations with stakeholders will also be explored.

**EDU837 Practicum in Educational Management** The course is part seminar and part practicum. The practical component provides exposure to planning, organizing, and managing departments, schools and other educational institutions such as technical institutions, colleges and universities under the supervision of the course instructor and the cooperating practitioner. The seminar component focuses on instructional supervision and personnel management. Special attention is given to research in the field.

**EDU842 Trends & Issues in Early and Middle Childhood Education** This course exposes students to the development and changes taking place in the field of early and middle childhood education. It also involves a critical evaluation of existing programs. Topics may include recent developments in early and middle childhood education thought such as integrated and interdisciplinary curricula, global education, and teaching models.

**EDU843 Pedagogy in Early and Middle Childhood Education** This course examines the theoretical foundation of teaching styles and concentrates on planning and developing relevant teaching strategies. Students will develop knowledge on theory and research on teaching students’ thought processes, effective teacher behavior, and classroom set up models.

**EDU855 Multilingualism in Education** This course explores both theoretical and practical issues in multilingual education. Topics include patterns
of bilingual and multilingual language acquisition, consequences of bilingualism for cognitive development, mother tongue attrition, and development of second language academic literacy. The course examines recent research and its implications for K–6 classroom instruction and takes a critical look at the nature of language proficiency and its assessment as it applies to young children.

EDU852 Trends & Issues in TESOL This course will cover major theoretical and research developments in the learning of other languages. It will investigate the relevance and application of this work in the language classroom. Modern tools for language teaching and learning will be an essential part of the course (websites, Internet search, language lab facilities, etc.)

EDU853 Sociolinguistics & Social Context of Language This course will look at the importance of context in language use across issues such as social identity, gender, social class and ethnicity. This course treats the manifold relationships between language and society, which relate closely to other aspects of language study, such as discourse, pragmatics, and culture and has good connections with sociology, anthropology, social psychology, and education. These relationships and connections make sociolinguistics an interesting field for language teachers to study and apply to their professional understanding and pedagogic practice.

EDU857 Discourse and Materials Development The course discusses how language teachers may incorporate pragmatic and discourse awareness in their teaching to implement a communicative approach in their respective classrooms and thus enhance the teaching of traditional areas of linguistic knowledge as well as the teaching of language processing skills. This should eventually lead to materials development for the language classroom.

EDU875 Dyslexia and Reading Difficulties This umbrella course focuses on reading difficulties, the main challenge that LD students face, and sheds particular light on the most common of reading disorders: dyslexia. Students will also be required to work closely with dyslexic children as part of course objectives to gain more practical knowledge about dyslexia.

EDU876 Teaching Students with LD in the Regular Classroom This course investigates the foundations of effective teaching for students with learning difficulties, proposes learning-teaching approaches and materials that are effective in educating learning-disabled and mild mentally retarded students in the areas of reading, spelling, and math.

EDU877 Special Education Practicum This course deals with the applied aspect of the program. Students will be asked to complete an internship in a school that caters to students with learning difficulties. Students will first learn the basics of mainstreaming students, planning Individualized Educational Plans, modifying the curriculum, developing instructional materials and teaching learning disabled and delayed students one-on-one and in groups using a variety of tailor-made remedial strategies, to help them reach their instructional objectives.

EDU883 Counseling Theories and Techniques This course emphasizes counseling and consultation theories and presents philosophical underpinnings of theories of personality and those incorporated into counseling practice. Overview of the field with emphasis on understanding the nature of counseling and the counselor’s role in school setting. Basics of interviewing skills, and counseling assessment techniques are presented; counseling special needs students, and relevant ethical issues are discussed.

EDU885 Counseling Children and Adolescents in School Setting This course examination of models of therapeutic interventions from infancy to adolescence. Students become familiar with ways of adapting appropriate interventions within the local culture e.g., play therapy and token economy with children and the use of cognitive and emotional therapies with adolescents. In addition,
this course will examine basic developmental issues from infancy to adolescence that undergird counseling practice. Typical psychosocial tasks are explored with special consideration for counseling in school context.

EDU887 Counseling Practicum A semester of supervised counseling practice in school setting is consistent with the student’s professional goals. This pre-professional experience allows students to implement counseling strategies while receiving structured, intensive feedback about their strengths and weaknesses. Students will meet with LAU faculty for weekly seminar classes throughout the practicum.

EDU898 Project in Education [3 cr.] Deals with current issues and concerns in education. Alternatively taught by various faculty to cover a wide range of specialty areas.

EDU899 Thesis in Education [6 cr.]

ENGLISH (INTENSIVE)

ENG001 Intensive English 1 [12-2, 0 cr.] A non-credit elementary level English course aimed at providing basic skills in speaking, listening, reading and writing. Emphasis is placed on mechanical skills and correct sentence structure. An integrated approach is used in teaching all skills with laboratory support. Prerequisite: EEE 350-399 or equivalent.

• To pass from ENG001 to ENG002: A minimum grade of D is required or an EEE score between 400–449 or equivalent.
• To pass from ENG001 to ENG003: A minimum grade of C is required or an EEE score between 450–499 is required.
• To pass from ENG001 to ENG009: A minimum grade of B is required and a minimum grade of C on the Intensive English Comprehensive Exam or a minimum EEE score of 500 or its equivalent.

ENG002 Intensive English II [12-2, 0 cr.] A non-credit intermediate level English course aimed at consolidating previously learned skills and expanding into new areas using controlled texts, programmed materials and situational activities. Emphasis is placed on speaking, listening, reading and writing according to an integrated content-based approach with laboratory support. Prerequisite: EEE 400–449 or equivalent.

• To pass from ENG002 to ENG003: A minimum grade of D is required or an EEE score between 450–499 or its equivalent.
• To pass from ENG002 to ENG009: A minimum grade of D is required and a minimum grade of C on the Intensive English Comprehensive Exam or a minimum EEE score of 500 or its equivalent.

ENG003 Intensive English III [12-2, 0 cr.] A non-credit advanced level English course aimed at bridging the gap between Intensive English and English 009 academic English proficiency. Emphasis is placed on listening, speaking, reading and writing according to an integrated content-based approach with laboratory support. Prerequisite: EEE 450–499 or equivalent.

• To pass from ENG003 to ENG009: A minimum grade of C is required or a minimum grade of C on the Intensive English Comprehensive Exam or a minimum EEE score of 500 or its equivalent.

Notes:

1. Students registered in Intensive English II and III may also register for one or two university courses (a maximum of 3–4 credits) that require minimal English as specified by the Intensive English Program and upon the consent of the Intensive English advisor and the student’s advisor in the major.

2. Students who pass from Intensive English into university English are placed in the university English courses according to their EEE scores or equivalent. Intensive English students who have passed LAU Intensive English and do not have an EEE or equivalent score before entering the university will be placed into ENG009.
ENGLISH (GENERAL UNIVERSITY REQUIREMENTS)

ENG009 Remedial English [3-0, 0 cr.] A course designed to develop effective reading and writing skills. Emphasis is placed on the paragraph and the essay formats. Basic grammar and mechanical skills are revisited. Laboratory sessions reinforce listening, speaking and study skills. Academic style and task-based work are stressed. Co-requisite: INF201 Learning Resources Techniques. Prerequisite: EEE score 500–549 or equivalent.

ENG101 English I [3-0, 3 cr.] A course designed to reinforce effective and critical reading and writing skills with emphasis on summarizing, paraphrasing, citing sources, and study skills. Academic style and task based work are focused on throughout. Prerequisite: ENG009 or EEE score between 550 and 599 or its equivalent.

ENG102 English II [3-0, 3 cr.] A course designed to develop advanced reading and writing skills associated with academic work. Emphasis is on analytical and critical reading of texts as well as on writing in a variety of modes. Students develop a research paper, learn to formulate researchable questions; locate appropriate resources in the library, the community and the electronic media; organize their findings; develop the manuscript and cite the sources following academic conventions. Prerequisite: ENG101 English I or EEE score between 550 and 599 or its equivalent.

ENG202 Sophomore Rhetoric [3-0, 3 cr.] A course for practice in reading and writing, both formal and creative; in critical analysis, evaluation, formulation and presentation of verbal and written opinions based on the best possible evidence; and in the methods of formal argumentation. Prerequisite: ENG102 English II or EEE score 600–649 or its equivalent.

ENG203 Fundamentals of Oral Communication [3-0, 3 cr.] A course on the fundamentals of oral communication along with practice in platform speaking in expository and persuasion. Emphasis is placed on the use of correct and effective language and organizational skills in preparing, delivering, and evaluating different types of oral presentations. Prerequisite: ENG102 English II or EEE score 650 and above or its equivalent.

ENGLISH (MAJOR)

ENG211 Survey of English Literature I [3-0, 3 cr.] Selected readings of English literature from its beginnings through the mid-17th century. Prerequisite: ENG102 English II.

ENG212 Survey of English Literature II [3-0, 3 cr.] Selected readings of English literature from the Restoration period through the present. Prerequisite: ENG102 English II.

ENG213 Introduction to Language [3-0, 3 cr.] A survey of the theoretical bases of language study emphasizing theories of language origins and development. Topics include semantics, syntax, pragmatics, writing systems, dialects, phonology, and the contrast between communication, true language, and artificial language.

ENG214 Modern English Grammar [3-0, 3 cr.] A study of the teaching of grammar in relation to current developments in theoretical, pedagogic, and descriptive grammars. Major grammatical structures will also be considered.

ENG311 Literature & Society [3-0, 3 cr.] A study of literature created in interaction with the other arts, disciplines and sciences, or in relation to specific historical, social or cultural situations. Prerequisite: ENG102 English II.

ENG312 Poetry [3-0, 3 cr.] Critical study of poetry in English, including techniques of analysis and the problems of interpretation. Prerequisite: ENG102 English II.

ENG313 Forms & Modes [3-0, 3 cr.] In-depth study of the nature and substance of a specific literary form or mode, such as satire, romance, (auto) biography, the gothic, the essay, literature of resistance, etc. Repeatable for credit by English
majors if course content is different. Prerequisite: ENG102 English II.

ENG314 Shakespeare [3-0, 3 cr.] Critical study of selected works by Shakespeare. Can include the sonnets and the long poems, as well as a selection of the plays. Prerequisite: ENG102 English II.

ENG315 The 20th-Century English & American Novel [3-0, 3 cr.] Critical study of selected novels written in 20th-century Britain and North America. Prerequisite: ENG102 English II.

ENG316 Periods in English Literature [3-0, 3 cr.] Critical study of selected texts from a specific, period in English literature. Repeatable for credit by English majors if course content is different. Prerequisite: ENG102 English II.

ENG317 The Novel Before the 20th Century [3-0, 3 cr.] Critical study of the development of the novel in English, from its beginnings in the 17th century until the modern period. Prerequisite: ENG102 English II.

ENG318 Drama [3-0, 3 cr.] Critical study of the dramatic tradition in English literature from a literary point of view. Includes consideration of the history of drama and its functions in society, and of the problems of genre classification. Prerequisite: ENG102 English II.

ENG319 History of the English Language [3-0, 3 cr.] A study of the history and development of the English language from its origins to the present, including: the historical context of the development of the language. Prerequisite: ENG102 English II.

ENG320 Reading [3-0, 3 cr.] A study of modern trends and issues in the teaching of reading as applied to English, emphasizing work to acquaint students with the processes of reading and to improve their competencies in these skills.

ENG321 Creative Writing [3-0, 3 cr.] Students learn to develop the imaginative faculty. Genres explored may include fiction, poetry, and the essay. Creativity, criticism, and revision are emphasized. Prerequisite: ENG102 English II.

ENG322 Principles of Translation [3-0, 3 cr.] This course presents the principles of translation and trains students to translate from English into Arabic and vice versa. Prerequisites: ARA201 Appreciation of Arabic Literature and ENG102 English II.

ENG332 Advanced Translation [3-0, 3 cr.] An advanced course that trains students to translate (from English into Arabic and vice versa) texts from various disciplines with special emphasis on literature. Prerequisite: ENG322 Principles of Translation.

ENG499 Senior Study [3-0, 3 cr.] An in-depth, individual project involving personal research under close faculty supervision, culminating in a substantial critical paper on a subject relevant to English literature. Prerequisites: senior standing and consent of instructor.

ENVIRONMENTAL SCIENCE

ENV201 Man and His Environment [3-0, 3 cr.] An introduction to the environmental problems and challenges facing mankind. Global problems will be directly related to issues facing the regional and local environment. The course covers environmental problems and their causes, ecosystems and how they work, deforestation, loss of biodiversity, species extinction, air pollution, global warming, ozone depletion, solid waste disposal, renewable energy technologies and applications to alleviate environmental problems. Case studies will be presented and potential solutions will be attempted. The course also includes field trips.

FINE ARTS

ART101 Introduction to Music and Art [3-0, 3 cr.] A course in music and art appreciation introducing students to techniques, outstanding examples, and representative works of the various peri-
ods, with a look at the interrelationship between them.

**GRA 231 Design Studio I A** [0-6, 3 cr.] A studio course investigating the basic elements and principles of the visual arts in two-dimensional media and form.

**GRA 232 Design Studio I B** [0-6, 3 cr.] A studio course investigating the basic elements and principles of the visual arts in three-dimensional media and form. Prerequisite: GRA231 Design Studio I A or consent of instructor.

**ART211 Ceramics I** [0-4, 3 cr.] An introductory course to the primary techniques of hand-made pottery, its maintenance and finish. Understanding, preparation, and maintenance of clay through its various stages, the relation of design, functional and otherwise, to the medium.

**ART212 Ceramics II** [0-4, 3 cr.] A focus on wheel-made pottery, stressing the relation of good functional design to useful wheel-made objects, by offering basic shapes of such pottery. Pre-requisite: ART211 Ceramics I.

**ART221 Drawing I** [0-6, 3 cr.] A study of basic drawing techniques in various media with regard to landscape, still life and the human figure.

**ART222 Drawing II** [0-6, 3 cr.] Concentrated study of the human figure, emphasizing analysis and the synthesis of visual experience. Pre-requisite: ART221 Drawing I.

**ART223 Perspective Drawing** [1 cr.] A practical studio course which investigates and applies the laws of linear perspective in the rendering of three-dimensional objects and scenes on two-dimensional surfaces. To be taken concurrently with ART221 Drawing I.

**ART331 History of Art I** [3-0, 3 cr.] A survey of visual art in the ancient Oriental, Classical and Medieval periods.

**ART332 History of Art II** [3-0, 3 cr.] A survey of visual art in the Renaissance, Baroque and Modern periods.

**ART333 Art Education** [1-4, 3 cr.] A survey of principles, materials, techniques, and resources for teaching art to children. Emphasis is on the extensive variety of art media suitable for young children such as clay, paint, collage, and drawing.

**ART334 Graphics** [0-6, 3 cr.] A studio course investigating the basic printing processes of intaglio, planography and relief. Prerequisite: ART201 Fundamentals of Design I (2-D) or ART221 Drawing I.

**ART335 Islamic Art of the Middle East** [3-0, 3 cr.] A course designed to stimulate a deeper understanding of Islamic Art of the Middle East by unfolding its cultural origins.

**ART341 Painting I** [0-6, 3 cr.] Introduction to painting procedure. The course includes detailed studies from still life, landscape and the human figure. Prerequisites: ART201 Fundamentals of Design I (2-D), ART221 Drawing I, or consent of instructor.

**ART342 Painting II** [0-6, 3 cr.] A studio course that looks into a variety of approaches to space interpretation on a two dimensional plane. Prerequisite: ART341 Painting I or consent of instructor.

**ART351 Sculpture I** [0-6, 3 cr.] A course facilitating the realization of three-dimensional form by modeling, carving and casting meaningful subjects.

**ART352 Sculpture II** [0-6, 3 cr.] An advanced course that provides for greater proficiency in creation of three-dimensional form. Special emphasis on the production of free standing and relief sculpture for specific sites. Prerequisite: ART351 Sculpture I or consent of instructor.

**ART431 Modern Art** [3-0, 3 cr.] A comprehensive examination of stylistic developments in visu-
al art from the advent of Impressionism to the present.

ART441 Painting III [0-6, 3 cr.] A studio course developing in students a greater awareness of the elements of art’s expressive potential in the creation of various moods. Prerequisite: ART342 Painting II or consent of instructor.

ART442 Painting IV [0-6, 3 cr.] A studio course developing skills in the use of various painting materials and techniques. A stepping stone to different media. Prerequisite: ART441 Painting III or consent of instructor.

ART499 Senior Study [0-6, 3 cr.] A senior course providing for independent initiation and execution of art projects, allowing for greater depth and research in the development of a personal idiom.

GRAPHIC DESIGN

Major Courses

GRA351 Graphic Design I [1-4, 3 cr.] This course is an introduction to the visual elements, principles, problem solving methodology, and techniques of graphic design. Students develop a proficiency in the knowledge and application of the elements of design including color, typography, composition, and visual conventions for two-dimensional solutions. Study of methods to produce comprehensive layouts, including single- and multi-page layouts in two-dimensional space, for graphic design problems. Creative ideas are encouraged through research and practical applications. Printing processes are introduced. Prerequisites: GRA251 Introduction to Computer Graphics and GRA233 Design Studio IIA. Co-requisite: ENG102 English II.

GRA352 Graphic Design II [1-4, 3 cr.] This course is an introduction to the generation and solution of three-dimensional graphic design problems. It explores visual language, compositional principles, problem solving methodology and production in graphic design. The student is introduced to the dimensional requirements faced by those sophisticated graphics for print and for the web. Advanced Adobe Illustrator, the industry-standard illustration program for print, multimedia, and online graphics. Emphasis will be on QuarkXpress, powerful electronic publishing software that renders the publishing process easier, faster and more creative. Using this software, students will be able to design and output to press any kind of publication; from a simple black-and white business card to a multicolor magazine layout. The course is divided into individual lessons that provide step-by-step instructions for creating and experimenting specific projects. The division of the course is based on demo presentations, exercises, projects, discussions and critiques. Prerequisites: GRA251 Introduction to Computer Graphics and GRA233 Design Studio IIA.

GRA341 Art of Calligraphy [1-4, 3 cr.] (Elective course) This course is designed to train the student to respect and delight in the skills of calligraphy. Studio projects will include research into calligraphy’s history use and its development into creative motive art forms. The use of proportions to enhance legibility, and to communicate a feeling, a thought or an attitude with superb control and infinite sensitivity. Prerequisites: GRA251 Introduction to Computer Graphics and GRA233 Design Studio IIA.

GRA432 Visual Perception [1-4, 3 cr.] A comprehensive examination of the development of visual language in relation to human visual perception. It includes the investigation of symbolic representation from abstract to realistic symbols and how human biological and psychological processes influence the way humans interpret and create visual artifacts. Prerequisites: GRA271 History of Design and ENG202 Sophomore Rhetoric.

GRA352 Graphic Design II [1-4, 3 cr.] This course is an introduction to the generation and solution of three-dimensional graphic design problems. It explores visual language, compositional principles, problem solving methodology and production in graphic design. The student is introduced to the dimensional requirements faced by those
communicators who choose to work in the areas of three-dimensional design with an emphasis on package design. Projects may include a range of graphic design problems from the design of a package to the extension of companies’ identities into campaigns, promotions and exhibits. Prerequisites: GRA301 Intermediate Computer Graphics and GRA351 Graphic Design I.

GRA342 Art of Illustration [1-4, 3 cr.] This course is designed to give students a working knowledge of the tools and concepts involved in illustrative drawing and design. Students apply various techniques in this practical course including the study of the history of illustration, research and personal development towards the perfecting of original artwork for specific projects set by the instructor. Development of a personal style of illustration will be encouraged. Prerequisites: ART222 Drawing II and GRA351 Graphic Design I.

GRA431 History of Graphic Design [1-4, 3 cr.] A comprehensive survey of the history of graphic design from the development of writing systems to proliferation of digital technology. Co-requisite: ENG102 English II.

GRA302 Advanced Computer Graphics [1-4, 3 cr.] This course is a continuation of instruction in computer graphics. In-depth instruction on the generation and manipulation of images and typography using digital media on Macintosh computer hardware and software. The course includes a compilation of several animations designed by the students. Prerequisite: GRA352 Graphic Design II.

GRA312 Printing Variables [1-4, 3 cr.] This course is an introduction to printing processes and the printing industry including: concepts, elements, principles, and techniques of printing; and basic experiences in the preparation of graphic design methods, processes of printing industry and prepress procedures through lectures, assignments and field trips. The course includes a hands-on project executed at the printing press. Prerequisite: GRA352 Graphic Design II.

GRA451 Graphic Design III [1-4, 3 cr.] This advanced level studio course is an in-depth exploration and application of a variety of two- and three-dimensional media in the creation of an original identity mark to the application of the mark driven identity to a variety of media. The development of the visual identity program includes documentation of its applications through the formation of design standards. Creative ideas are encouraged through research and practical applications. These applications may include a variety of printed, electronic and three-dimensional media. Prerequisite: GRA352 Graphic Design II. Co-requisites: GRA411 Advanced Typography and CST202 Cultural Studies II.

GRA411 Advanced Typography [1-4, 3 cr.] This studio course is a continuation of the applications of typography as an expressive and functional vehicle. Students build upon vocabulary they have already learned in GRA212 Introduction to Typography by mastering a series of typographic visual problems. The students are introduced to a variety of typographic models and techniques. Emphasis is placed upon the development of an understanding of typographic values, and the concurrent development of typographic design style. Students will analyze and sequence, and hierarchy in the completion of graphic design projects for print and/or digital media. The course includes a project on Arabic type design, an attempt to modernize the Arabic script. Co-requisite: GRA451 Graphic Design III.

GRA462 Graphic Design Seminar [1-4, 3 cr.] This course serves as an in-depth seminar on subjects of current interest in graphic design. This seminar is a comprehensive studio course including lectures, demonstrations and assignments. Prerequisite: CST202 Cultural Studies II.

GRA452 Graphic Design IV [1-4, 3 cr.] This course is the final studio course in the graphic design program and serves as a bridge to independent problem solving and professional experience. The course includes the in-depth exploration of a specific area of graphic design through a final project, as well as discussions of current and
relevant business and legal issues found in the workplace. In addition, this course prepares advanced graphic design students for the profession of graphic design through their production of an effective portfolio, self-promotion and identity system. This course includes a series of juries and critique sessions attended by professional designers to share comments and ideas on the students' projects. Prerequisite: GRA451 Graphic Design III. Co-requisite: CST302 Cultural Studies III.

**GRA490 Graphic Design Internship [1 cr.]** This course is an exploration of “real world” scenarios and business in the field of graphic design. The student under the guidance of a supervisor in a professional environment will become acquainted with procedures and methods in the field of graphic design. Valuable work experience and credit is gained in translating graphic design concepts into professional assignments. Prerequisite: GRA352 Graphic Design II.

**GRA455 Advertising Design [1-4, 3 cr.]** This course is about investigating the relationship between creativity and sales. The students will learn how the art director and copywriter conceptualize the advertising campaign using creative, intelligent and persuasive skills. The course involves hosting professionals to lecture about working in the field. Emphasis is on developing new directions in advertising through conceptual thinking methods. Students will learn the principles of advertising design and layout to create advertising concepts via text and image. Prerequisite: GRA352 Graphic Design II.

**GRA345 Silk Screen and Binding [1-4, 3 cr.]** Silk-screen, one of the most versatile and widely used methods of printmaking, will be fully explored in this studio class through demonstrations and self-initiated projects. Images can be made using hand-drawn separations, photographic film, digital separations and Xeroxed images. Traditional methods of screen-making such as hand-cut stencils and separations in paper, hand-drawn screens with litho crayons, pen and litho opaque; computer- and photo-generated imagery. Various bookbinding techniques will be demonstrated, including Japanese binding, accordion folding and signature binding. This course will cover the process from concept all the way to finished and bound multiple bookmaking. Silkscreen is made for multiple prints and it is natural continuation to have the ability to make a book to place all these prints in. Prerequisites: GRA251 Introduction to Computer Graphics and GRA233 Design Studio II.

**GRA481 Animation Concepts [1-4, 3 cr.]** This course exposes students to narrative and representational strategies in animation, both traditional and experimental. It is an extensive research into the meanings and potentials of time-based media, and the different representational techniques and/or environments for animation. Co-requisite: GRA302 Advanced Computer Graphics.

**GRA482 Motion Design [1-4, 3 cr.]** This course introduces students to concepts and applications of design in motion. It focuses on time-based work that combines type, images, sound and video, and exposes students to the critical and the methodological procedures of motion design. Co-requisite: GRA302 Advanced Computer Graphics.

**GRA484 Web Design [1-4, 3 cr.]** The course is an introduction to web design and applications. It is an extensive exposition of the different aspects of the Internet structures and content. It provides students with the ability to build, design and develop a website from scratch. Co-requisite: GRA302 Advanced Computer Graphics.

**GRA486 Advanced Interactive Design [1-4, 3 cr.]** This course exposes students to thorough and elaborate interactive concepts and techniques for games and short applications. It is an extensive investigation in the interface, the mechanism, the controls, and the aims of interactive work. Co-requisite: GRA302 Advanced Computer Graphics.

**HISTORY**

**HST201 Survey of Arab History [3-0, 3 cr.]** Examines the political and cultural history of the
Arabs from Pre-Islamic Arabia, with special emphasis on Middle Eastern history from the Ottoman Conquest in the 16th century to the present.

**HST210 Phoenician Culture [3-0, 3 cr.]** Introduces the culture of the Phoenicians, its development in both ancient Phoenicia and the Mediterranean basin, its interaction with the ancient world, and the growing eclecticism of that interaction. The course encompasses a number of cultural aspects: an introduction to the Phoenician alphabetical system and its role in the history of human civilization, appreciation of Phoenician art and the analysis of its cultural content, and a general survey of the economic, religious, and philosophical elements of Phoenician culture.

**HST311 European History since 1914 [3-0, 3 cr.]** Discusses the major themes in the history of 20th century Europe. The starting date is the outbreak of World War I. The course emphasizes the intellectual, social, and economic trends and the structural changes whose impact continues to the present. The dwarfing of Europe and the reaction of Africa and Asia to European hegemony, the emergence of the super powers, the impact of the Communist theory and Soviet example and the recent developments in Russia and Eastern Europe will be analyzed. Intellectual, scientific and artistic trends will be surveyed.

**HST312 Europe & the Middle East in the 19th & 20th Centuries [3-0, 3 cr.]** Examines the ties between Europe and the Middle East in the 19th and 20th centuries focusing on the reaction, of Middle Eastern society to European intervention and influence. Prerequisite: HST201 Survey of Arab History or HST311 European History since 1914 or consent of instructor.

**HST313 Revolution in Modern History [3-0, 3 cr.]** Examines the causes and nature of revolution in the Modern Age and includes detailed study of the most significant revolutionary movements. Prerequisite: HST201 Survey of Arab History or HST311 European History since 1914 or consent of instructor.

**HST321 History of Lebanon [3-0, 3 cr.]** Studies the modern history of Lebanon starting from Fakhr El Din al Ma’ni in the 17th century to the aftermath of the 1975 civil war, highlighting the developments leading to the emergence of Greater Lebanon, the French Mandate and social, economic and political developments since independence.

**HST325 The Rise & Development of Islam [3-0, 3 cr.]** Surveys pre-Islamic Arabia, the advent of Islam and its principal tenets, focusing on the Omayyads and Abbassids and their cultural achievements as well as their impact upon civilization.

**INFORMATION SCIENCE**

**INF201 Learning Resources Techniques [1-0, 1 cr.]** Introduction to the efficient use of library resources and techniques aimed at enabling students to do better research projects, papers and reports. The library becomes an active educational support to the curriculum. A required course to be taken in the student’s first semester at the university.

**INTERNATIONAL AFFAIRS (GRADUATE)**

**INA811 Theories of International Relations [3-0, 3 cr.]** The course examines the main theoretical approaches to the study of international relations; it involves a comprehension of each theory, its critique and its usefulness as a tool of analysis.

**INA812 Foreign Policy Analysis [3-0, 3 cr.]** A seminar examining various factors influencing foreign policy-making, including: the setting of the state in the international system; the nature of the political system; the socioeconomic environment; the personalities, beliefs, perceptions and attitudes of decision-makers.

**INA813 Topics in International Relations [3-0, 3 cr.]** An analysis of salient political issues and concepts in international relations (with the selection left to the professor).
INA814 Topics in Middle East International Relations [3-0, 3 cr.] An in-depth study of contemporary Middle Eastern issues involving review of intra-regional ties against a backdrop of indigenous regional factors and the impact of international actors’ policies on the area.

INA815 Topics in International Organizations [3-0, 3 cr.] A seminar with case studies on how international actors behave under the institutional restraints of the United Nations. The cases include: collective security, disarmament, peaceful settlement, peace-keeping, social and technical cooperation, and, international trade and finance management to promote economic development.

INA821 Diplomacy and Bargaining [3-0, 3 cr.] A seminar focusing on the art and techniques of political bargaining. After theories of bargaining are surveyed, actual negotiations between states are studied and simulated to inject diplomacy with a dose of realism.

INA831 International Political Economy [3-0, 3 cr.] The seminar examines the basis of the international political economy and analyzes interactions between economic and political factors on the international levels. Discussion issues include: international finance, international trade and the role of governmental and non-governmental international organizations.

INA841 Private International Law [3-0, 3 cr.] Subjects include: The “classification” to identify legal cases; the application of foreign law in national courts; resolution of laws’ contradictions; conflict of nationalities; issues related to capacity, marriage, contracts, etc.

INA842 Topics of International Law [3-0, 3 cr.] A seminar on various topics in international law geared to prevailing conditions and interests like: the individual in international law; international criminal law; extradition; recognition of states, governments and belligerent communities.

INA851 International Conflict and Conflict Resolution [3-0, 3 cr.] A seminar aimed at defending conflict in the international arena and enumerating its various causes; applying general concepts of conflict to concentrate situations; describing and criticizing various perspectives on conflict resolution.

INA899 Thesis [6 cr.] An original and extensive research project under the supervision of an advisor, defended before a committee.

MATHEMATICS

MTH101 Calculus I [3-0, 3 cr.] An intuitive approach to the techniques of calculus and analytic geometry. Topics include functions; graphs; exponential functions; inverse functions and logarithm; trigonometric functions and their inverses; limits and continuity: rates of change and limits, continuity, tangent lines; derivatives: derivative of a function, the derivative as a rate of change, derivatives of products, quotient and trigonometric functions, the chain rule implicit differentiation; applications of derivatives: extreme values of functions, the mean value theorem, differential equations, the shape of a graph, linearization and differentials.

MTH102 Calculus II [3-0, 3 cr.] Integration: indefinite integrals, differential equations and modeling, integral rules, integration by substitution, estimating with finite sums, Riemann sums and definite integrals, the mean value and fundamental theorems, substitution in definite integrals; applications of Integrals: areas between curves, lengths of plane curves; transcendental functions and differential equations: logarithms, exponential functions, derivatives of inverse, trigonometric functions; integrals, first order separable differential equations, linear first order differential equations; vectors in space: Cartesian coordinates and vectors in space; dot and cross products; lines and planes in space; conics: ellipse, hyperbola, parabola. Prerequisite: MTH101 Calculus I.

MTH111 Basic Mathematics [3-0, 3 cr.] A survey course that covers a variety of basic mathematical topics. The course provides a background in
numeration systems, logic, set theory, relations and functions, linear programming, quantitative reasoning and probability.

**MTH201 Calculus III** [3-0, 3 cr.] Hyperbolic functions and inverse hyperbolic functions; applications of integrals: volumes by slicing and rotation about an axis, modeling volume using cylindrical shells and washers, and moments and centers of mass; integration techniques: basic integration, formulas, integration by parts, partial fractions, trigonometric substitutions, and improper integrals; infinite series: limits of sequences of numbers, subsequences, bounded sequences, integral test, comparison tests, ratio and root tests, alternating series, absolute and conditional convergence, power series, Taylor and MacLaurin series, and applications of power series; polar functions, and polar coordinates; calculus of polar curves; introduction to multivariable functions: functions of several variables, and partial derivatives; multiple integrals: double integrals, areas, moments and centers of mass, and double integrals in polar form. Prerequisite: MTH102 Calculus II.

**MTH206 Calculus IV** [3-0, 3 cr.] Vectors and motion in space: Cartesian coordinates and vectors in space, dot and cross, products, lines and planes, cylinders and quadric surfaces, vector-valued functions and space curves, arc length and the unit tangent vector $T$, $TNB$ Frame; tangential and normal components of $a(t)$; multivariable functions and their derivatives: functions of several variables, limits and continuity in higher dimensions, partial derivatives, multiple integrals: triple integrals in rectangular coordinates, masses and moments in three dimensions, triple integrals in cylindrical and spherical coordinates, and substitution in multiple integrals; integration in vector fields: line integrals, potential functions and conservative vector fields, Green’s Theorem, and surface integrals. Fourier Series: periodic functions, Fourier integrals, Fourier Transforms, and half range functions. Prerequisite: MTH201 Calculus III.

**MTH207 Discrete Structures I** [3-0, 3 cr.] Foundations of discrete mathematics as they apply to computer science: introduction to logic and proofs; functions; relations; sets; pigeonhole principle; cardinality and countability; Boolean algebra; de Morgan’s laws; logical connectives; truth tables; normal forms; validity; digital logic: Logic gates, flip-flops, counters; circuit minimization; elementary number theory; properties of primes; greatest common divisors and least common multiples; Euclid’s algorithm; modular arithmetic; the Chinese Remainder Theorem; counting arguments; permutations and combinations; binomial coefficients.

**MTH301 Linear Algebra** [3-0, 3 cr.] An introductory course in linear algebra where students are exposed for the first time to a balance of computation, theory, and applications. Topics include: systems of linear equations; vector spaces; linear dependence; bases; linear transformations; matrices; determinants, eigenvalues and eigenvectors. Prerequisite: MTH201 Calculus III.

**MTH302 Geometry** [3-0, 3 cr.] This course presents an investigation of the axiomatic foundations of modern geometry. More specifically, Euclidean geometry is discussed in detail. Less emphasis will also be placed on spherical and/or hyperbolic geometries. Prerequisite: Junior standing.

**MTH303 Numerical Methods** [3-0, 3 cr.] This course compares and contrasts various numerical analysis techniques in addition to error definition; stability; machine precision concepts; inexactness of computational approximations; design; code; test; and debug programs that implement numerical methods; floating-point arithmetic; errors; stability; convergence; Taylor’s series; iterative solutions for finding roots (Newton’s Method); curve fitting; function approximation; numerical differentiation and integration; explicit and implicit methods; differ-
ential equations (Euler’s Method); linear algebra and finite differences. Prerequisite: MTH201 Calculus III.

**MTH304 Differential Equations** [3-0, 3 cr.] First order ordinary differential equations and applications; linear higher order differential equations and applications; systems of linear differential equations; series of differential equations and solutions; and Laplace transforms. Prerequisite: MTH201 Calculus III.

**MTH305 Probability and Statistics** [3-0, 3 cr.] This course covers essentially the distribution theory, estimation and tests of statistical hypotheses. More specifically, the topics of this course include: Random variables, conditional probability, independence, expectation, standard discrete and continuous distributions, regression and correlation, point and interval estimation. Also included are illustrations from various fields. Prerequisite: MTH201 Calculus III.

**MTH306 Non-Linear Dynamics and Chaos** [3-0, 3 cr.] Iteration; fixed and periodic points; graphical analysis of iteration; stable and unstable orbits; attracting and repelling periodic points; iterations of a quadratic family; Julia sets; Mandelbrot sets; fractals; and chaos. Prerequisite: MTH201 Calculus III.

**MTH307 Discrete Structures II** [3-0, 3 cr.] Predicate logic and universal and existential quantification; limitations of predicate logic; recurrence relations; elementary solution techniques; graphs and trees; proof techniques; spanning trees; matrices; computational complexity and order analysis; elementary computability; definition of the P and NP classes; simple demonstration of the halting problem; discrete probability. Prerequisite: MTH207 Discrete Structures I.

**MTH309 Graph Theory** [3-0, 3 cr.] Fundamental concepts and methods of graph theory and its applications in various areas of computing. Topics include graphs as models; representation of graphs; trees; distances; matching; connectivity; flows in networks; graph colorings; Hamiltonian cycles; traveling salesman problem; planarity. Prerequisite: MTH201 Calculus III.

**MTH311 Algebra** [3-0, 3 cr.] The algebra of sets; definition and basic properties of groups, rings and fields; divisibility theorems for integers and polynomials. Prerequisite: MTH206 Calculus IV.

**MTH498 Topics in Mathematics** [3-0, 3 cr.] Selected topics in computer science. Subtitle required. May be repeated for credits.

**MTH499 Senior Study** [3-0, 3 cr.] Prerequisite: Senior standing.

**MUSIC**

**MUS201 Fundamentals of Music** [0-3, 3 cr.] Basic principles of note values, clef-reading rhythms, scales, writing on the music staff, sight-singing and dictation. Practical experience through playing of the recorder.

**MUS202 Chorale** [0-3, 1 cr.] Experience in singing both sacred and secular music of all periods. Three rehearsals per week. Public performances on and off-campus. Up to three credits may be earned in three separate semesters. Admission by audition. Offered every semester.

**MUS301 Music Education** [3-1, 3 cr.] The development of the basic skills required for teaching music at the elementary school, including singing, moving to rhythm, hearing tonal relations, understanding notation and using accompanying instruments.

**MUS311 Survey of Western Music** [0-3, 3 cr.] Survey of the development of Western music from ancient times through the Baroque, Classical and Romantic periods to the 20th Century and contemporary forms of musical expression. CDs and tapes illustrate the forms and styles characteristics of periods and composers. Emphasis on the place and influence of music as a part of general culture.
MUS312 Survey of Middle Eastern Music [0-3, 3 cr.] Survey of the historical sources and development of the underlying principles, forms, modes and rhythms of Middle Eastern music. CDs and tapes, and, when possible, live vocal or instrumental performances illustrate important styles, modes, and instrumentation. Music is studied in the context of general Middle Eastern culture.

NUTRITION

NUT201 Fundamentals of Human Nutrition [3-0, 3 cr.] An introduction to human nutrition and its relation to health. The essentials of an adequate diet, sources of nutrients and how to meet nutritional needs of various age groups are included.

PHILOSOPHY AND RELIGION

PHL101 Introduction to Philosophy [3-0, 3 cr.] Introduces the major issues and outlooks in ancient, modern and contemporary philosophy.

PHL301 Ethics [3-0, 3 cr.] Studies the presuppositions and principles of various ethical systems, past and present.

PHL311 Philosophy of Religion [3-0, 3 cr.] Surveys various past and present religious doctrines.

PHL322 Existentialism in Literature [3-0, 3 cr.] Explores the principles of existentialism and their embodiment in selected poems, novels and plays.

PHL321 Philosophy of Art [3-0, 3 cr.] Examines the principles and rules of creativity in art. The course considers aesthetic theories of various philosophers and creators, both ancient and modern.

REL312 Interpretation of Religious Literature [3-0, 3 cr.] Studies various methods of interpreting religious texts, literary forms and symbols. Attention is given to the principles and exegetical methods of interpreting the New Testament and the Koran.

REL411 Myth & Ritual [3-0, 3 cr.] Studies the historical, philosophical, theological, and aesthetic aspects of myths and rituals. Special attention is given to the content and meaning of myth and ritual in the Greco-Roman, Christian, and Muslim traditions.

REL412 History of Religious Thought in the Middle East [3-0, 3 cr.] Introduces the thinkers and major problems key to the historical formulation and articulation of Middle Eastern Christianity and Islam.

REL413 Representatives of Christian Thought in the Modern Period [3-0, 3 cr.] Critically studies the works of some modern Christian thinkers.

REL414 Representatives of Islamic Thought in the Modern Period [3-0, 3 cr.] Critically studies the works of some modern Muslim thinkers.

PHOTOGRAPHY

PHO211 Photography I [2-3, 3 cr.] Introduction to basic photographic methods. Applied study in pictorial composition and darkroom procedures in relation to advertising.

PHO212 Photography II [2-3, 3 cr.] Examines the use of still photography as a means of documenting contemporary society; application of the medium to visual analysis and presentation of that society. Prerequisite: PHO211 Photography I.

PHYSICAL EDUCATION

PED101 Basic Health [0-1, 1 cr.] Basic knowledge of general health and fitness, first aid, nutrition, mental health, disease, drugs, tobacco and sex education.

PED111 Beginning Swimming [0-2, 1 cr.] Introduction to the basic strokes in swimming (freestyle, breaststroke, backstroke and butterfly). Basic safety skills, elementary forms of rescue, and artificial respiration.
PED118 Beginning Table Tennis [0-2, 1 cr.] Theory, practice, rules knowledge, and basic stroke techniques and skills (forehand, backhand, serve, etc.).

PED121 Beginning Tennis [0-2, 1 cr.] Theory, practice, rules knowledge, and basic stroke techniques and skills (forehand, backhand, serve, etc.).

PED131 Modern Dance [0-2, 1 cr.] Emphasis on individual creativity.

PED132 Folk Dance [0-2, 1 cr.] Development of coordination and grace, rhythmic awareness and emphasis on international understanding.

PED151 Basketball [0-2, 1 cr.] Theory, practice, rules knowledge, and development of the different skills in basketball (passing, shooting, dribbling, teamwork and game strategies).

PED161 Volleyball [0-2, 1 cr.] Theory, practice, rules knowledge, and development of the different skills in volleyball (overhead and underarm passing, spiking, serving, digging, blocking, etc.).

PED171 Taekwondo [0-2, 1 cr.] A modern martial art originating in Korea, it is characterized by its fast, high, and spinning kicks. Teaches discipline, self-control, and, most importantly, self-defense. It is the “art of unarmed combat.”

PED191 Physical Fitness [0-2, 1 cr.] A basic introduction to fitness including anatomical and physiological considerations, and the latest research relating to fitness. To encourage students to adopt healthy lifestyles and to engage in stretching, flexibility and light weights training programs.

PHYSICS

PHY101 Introduction to Physical Science [3-3, 4 cr.] An introduction to essential concepts of astronomy, physics, chemistry and geology for non-science majors.

PHY111 Mechanics [3-3, 4 cr.] Mechanics and properties of matter, vectors and scalars, linear and circular motion, dynamics of particles, work and power, energy and the conservation theorems, simple harmonic motion, gravitational forces and the properties of solids and fluids, heat and thermodynamics. Prerequisite: MTH102 Calculus II, or concurrently.

PHY201 Electricity and Magnetism [3-3, 4 cr.] Electricity and magnetism, Coulomb’s law, Gauss Theorem, electrical field and potentials, Ampere’s law and magnetic field, electrical current and Ohm’s law, electromagnetic induction, alternating current and electromagnetic wave. Optics including refraction, interference and diffraction. Prerequisite: MTH201 Calculus III.

PHY211 Statics [3-0, 3 cr.] Review of vector algebra, forces, moment and couples, free body diagrams and application to beams, frames, arches, planes, trusses, center of gravity. Friction, Virtual work. Prerequisite: Sophomore standing.

PHY311 Dynamics [3-0, 3 cr.] Kinematics and kinetics of particles, systems of particles, kinetics of rigid bodies. Prerequisites: MTH201 Calculus III and PHY211 Statics.

PHY321 Introduction to Modern Physics [3-0, 3 cr.] An introduction to modern physics including relativity, photoelectric effect, wave nature of particles, atomic and molecular spectra, models of the nucleus, nuclear reactions and elementary particles. Prerequisites: PHY201 Electricity and Magnetism and MTH201 Calculus III.

POLITICAL SCIENCE

POL201 Introduction to Political Science [3-0, 3 cr.] Politics as a social science; basic concepts in political science: power, authority, leadership, decision making, etc., relevant political ideologies, contemporary political systems, their modes and functions.

POL202 Lebanese Politics and Administration [3-0, 3 cr.] A comprehensive survey of the political
system in Lebanon from independence to the present. Detailed coverage of Lebanese administrative and constitutional law. Prerequisite: POL201 Introduction to Political Science.

POL211 History of Political Thought I [3-0, 3 cr.] The course surveys the history of political ideas from the Greeks to the 18th Century. Discussion of political ideas related to the general philosophy of each author’s historical and political background. Readings from original sources. Prerequisite: POL201 Introduction to Political Science.

POL212 History of Political Thought II [3-0, 3 cr.] A follow-up to POL211 History of Political Thought I, covering political ideas from the Renaissance to the present. Readings from original ideas. Prerequisite: POL201 Introduction to Political Science.

POL221 Comparative Governments of the Major Powers [3-0, 3 cr.] The comparative history and developments of governments and new approaches to studying them. The whys and wherefores of various political systems and comparisons between them. Prerequisite: POL201 Introduction to Political Science.

POL231 Introduction to Human Rights [3-0, 3 cr.] The course deals with international human rights policies and the moral and political issues to which they give rise. The course poses questions such as: What are human rights and what reasons are there for thinking that persons have rights? Are some rights more basic than others and what compelling interests, if any, justify their violation?

POL311 Methodology and Political Analysis [3-0, 3 cr.] The scope, methods of techniques of political science and alternative approaches to political science research. The techniques of using materials and mechanics of research. Prerequisite: POL201 Introduction to Political Science.

POL312 Politics of the Developing Areas [3-0, 3 cr.] Thorough study of the functional systems approach to the politics of developing areas. Aspects of political development — participation, leadership, organization, legitimacy and integration — as affected by the analysis of culture and social organization. Focus on the role of developing nations’ military and the phenomena of one-party systems. Prerequisite: POL201 Introduction to Political Science.

POL313 Concepts of International Relations [3-0, 3 cr.] The nature of the international system and states as units of it. Nationalism, the theory and reality of sovereignty, national power and resources, the balance of power, foreign policy and its making. Objectives, and interests of states, diplomacy, propaganda, political warfare, international law, pacific settlement of disputes, international organizations. Case studies, and, individual or collective research by students to substantiate the concepts. Prerequisite: POL201 Introduction to Political Science.

POL321 American Government and Politics [3-0, 3 cr.] The structure and process of the American federal political system. Topics include: the nature of American Democracy; the constitutional framework; political attitudes; socialization and participation, political parties and elections; the Federal decision-making process. Prerequisite: POL201 Introduction to Political Science.

POL322 Foreign Policy of the Major Powers [3-0, 3 cr.] A survey and analysis of the policies of the great powers in the post-cold war period. Changing patterns of ties between the great powers in light of: the USSR’s disintegration; Russia’s revival; the end of the cold war; Japan’s and Germany’s rise as economic giants; China’s economic growth; European integration and U.N.’s revival. Domestic and international influences on great power decision-making, notably security and economic matters. Prerequisite: POL201 Introduction to Political Science.

POL323 Middle East Governments and Politics [3-0, 3 cr.] The course deals with major issues and problems dominating the Middle East’s political systems. Issues covered include: nationalism, religion, ethnicity, classes patronage, democra-
tization, etc. Prerequisite: POL201 Introduction to Political Science.

**POL331 International Organization** [3-0, 3 cr.] Concepts and the evolution of international organization. The structure and the evolution of the United Nations, with emphasis on collective security, pacific settlements of disputes, peacekeeping operations and economic and social developments. Prerequisite: POL201 Introduction to Political Science.

**POL332 Public International Law** [3-0, 3 cr.] The nature of international law sources, international law and municipal law, the international systems legal organization, states (their territory and jurisdiction) as subjects of international law, international treaties and agreements, diplomatic and consular agents, laws of war, neutrality, belligerent occupation and war crimes. Case studies on the law of a nations’ principles. Prerequisite: POL201 Introduction to Political Science.

**POL421 The Middle East in International Affairs** [3-0, 3 cr.] A survey and analysis of Middle East relations in their regional and international context. Relevant regional and international issues with a bearing on the politics of the region’s states are discussed. Prerequisite: POL201 Introduction to Political Science.

**POL431 International Regional Organizations and Agencies** [3-0, 3 cr.] The nature of international organizations, the legal foundations of International Regional Organizations and their relations to their relations to the United Nations, the types of International Regional Organizations, and their varied functions, the political and economic significance of regional organizations, the study of one regional organization in some depth. International agencies, their nature and functions. (Talks given by U.N. personnel when available.) A short research project is required. Prerequisite: POL201 Introduction to Political Science.

**POL432 Diplomatic and Consular Services** [3-0, 3 cr.] The structure, functions and procedures of diplomatic and consular services; recruitment of diplomatic and consular personnel; diplomacy and diplomatic theory; diplomatic privileges and immunities. Field trips to the Lebanese Foreign Ministry and some embassies in Lebanon; diplomats and consuls brief students on functional aspects of diplomatic and consular life. Prerequisite: POL201 Introduction to Political Science.

**POL433 The UN System and Problems of Development** [3-0, 3 cr.] A two-part course focusing on: (a) the process and politics of the United Nations System — secretariat, General Assembly administrative and budgetary coordination, program coordination, Economic and Social Council, field administration, and, program decentralization through the regional economic commissions, and, (b) developmental functions, the role of international agencies in political and economic development, concepts of integration and problems of collaboration with international institutions. Prerequisites: POL201 Introduction to Political Science.

**PSY201 Introduction to Psychology** [3-0, 3 cr.] This course studies the aspects of our life and the basic facts and research methods. The course will give students better understanding of why people think and act the way they do and provides more insight into our own attitudes and reactions.

**PSY202 Child Psychology** [3-0, 3 cr.] This course deals with different aspects of the prenatal period through the middle years of childhood. It concentrates on the psychology, social intellectual and psychological aspects of behavior and the factors that are involved in the process of development.

**PSY203 Psychology of Youth** [3-0, 3 cr.] This course focuses on the changes experienced by
the young people at the various levels: physical, cognitive, emotional, etc. It highlights the effects of the surrounding factors leading to maturity, namely the family, peers, dating and the media. It also covers “obstacles” faced by the adolescent in terms of drugs, and deviance. Prerequisite: PSY201 Introduction to Psychology or PSY202 Child Psychology.

PSY204 Social Psychology [3-0, 3 cr.] This course studies the social influence that society has upon the beliefs and behavior of the individuals. Topics covered include: conformity, propaganda, persuasion, social cognition, attraction, aggression and prejudice. Prerequisite: PSY201 Introduction to Psychology or PSY202 Child Psychology.

PSY301 Physiological Psychology [3-0, 3 cr.] The course aims at providing the student with a survey of the important areas of physiological psychology. Besides having the student understand the basic mechanisms underlying human behavior with emphasis on the functioning of the human brain. Prerequisite: BIO101 Introduction to Biological Science or PSY201 Introduction to Psychology.

PSY311 The Exceptional Child [3-0, 3 cr.] This course introduces students to the field of special education and exceptionality, and to develop an understanding approaches of children and youth with conduct behavior disorder. Besides the impact of culture family and school on exceptionality. Prerequisite: PSY201 Introduction to Psychology or PSY202 Child Psychology.

PSY322 Cognitive Psychology [3-0, 3 cr.] Cognitive psychology seeks to examine the domain of cognition in child development. It is designed to focus upon a broad foundation of cognitive development and the intellectual changes that accompany children’s physical growth. Prerequisite: PSY203 Psychology of Youth.

PSY325 Abnormal Psychology [3-0, 3 cr.] This course studies the concept of abnormality and theories and techniques of how to deal with mental disorder for both children and adolescents. It covers integrative theoretical framework of both psychopathology and therapy. Prerequisite: PSY201 Introduction to Psychology.

PSY335 Consumer’s Psychology [3-0, 3 cr.] This course deals with consumer-oriented marketing and how the consumer makes his choice through decision making. It concentrates on both perceptual processes as well as cognitive and behavioral learning of the consumer.

PSY421 Theories of Personality [3-0, 3 cr.] This course provides comprehensive coverage of the most influential theories of personality. It also examines the interplay of forces that shape the individual’s personality through the course of life. Prerequisite: PSY201 Introduction to Psychology.

PSY422 Psychology of Learning [3-0, 3 cr.] This course provides an analysis of factors in learning through a survey of the major theories of learning. Special emphasis on learning principles and their implications in the teaching process. Prerequisite: PSY201 Introduction to Psychology.

PSY498 Topics in Psychology [3-0, 3 cr.] The course deals with an area of psychology or a topic that is not usually dealt within the other psychology offerings. It is aimed at helping students understand and evaluate relative concepts in human development. Prerequisite: PSY203 Psychology of Youth or EDU201 Fundamentals of Education or SOC201 Introduction to Sociology.

PSY499 Senior Study [3-0, 3 cr.] An independent scholarly work on a topic chosen by the student.

SOCIOLOGY/SOCIAL WORK

SOC201 Introduction to Sociology [3-0, 3 cr.] The course introduces students to the basic concepts and processes governing social relationships as well as scientific approaches dealing with an explaining social phenomena. Various social institutions are examined.
SOC215 Introduction to Gender Studies [3-0, 3 cr.] This course examines what it means to be a man or a woman, from a variety of interdisciplinary perspectives. It will explore the construction of masculinities and femininities in a variety of cultural contexts. Special attention will be given to gender differences and gender inequalities.

SOC301 Introduction to Social Work [3-0, 3 cr.] The course is an introduction to the profession of social work, its basic philosophy, principles and methodologies. Special emphasis is given to the practice of social work in Lebanon.

SOC311 Social Problems [3-0, 3 cr.] This course provides an analysis of the nature causes and types of social problems in modern society, notably in the Middle East. Selected social problems are studied, including various theories on such problems and a critical review of proposed solutions.

SOC313 Family and Child Welfare [3-0, 3 cr.] The course develops in students a knowledge of and concern for child welfare services through parents’ and children’s needs, and acquaints them with existing parents’ and children’s services.

SOC321 Sociology of the Arab World [3-0, 3 cr.] A seminar for students interested in understanding the Arab world’s social structures with emphasis on major institutions and values, viewed from a three-dimensional perspective, namely: habitat, ethnic composition and history.

SOC402 Social Work Intervention I [3-0, 3 cr.] This course emphasis on communication and interviewing skills in social work, building professional relationship, stages of the helping process, need assessment methods and skills.

SOC403 Social Work Intervention II [3-0, 3 cr.] This course examines various interventive roles, methods and techniques: Planning and contracting, identifying alternative interventions, selecting and implementing appropriate courses of action, monitoring, evaluation and termination.

SOC404 Social Work Practicum I [3-0, 3 cr.] In this course students are given field experience to apply specific skills and knowledge of working with individuals and families in different social welfare settings.

SOC405 Social Work Practicum II [3-0, 3 cr.] Emphasis is given to working with groups in different social contexts. Development of professional skills in dealing with different actors in the situation.

SOC499 Senior Study [1-6, 3 cr.] Prerequisite: Senior Standing.

SPECIAL ARABIC

SAR105 Colloquial Arabic I [3-0, 3 cr.] Designed for non-native speakers beginning their study of colloquial Arabic. It moves methodically and progressively, aided by materials based on a comparative linguistic analysis of English and Arabic. The course follows an aural-oral approach. (Only open to students exempted from Arabic.)

SAR106 Colloquial Arabic II [3-0, 3 cr.] Designed to establish mastery of the colloquial Arabic sound system and practical efficiency in the use of colloquial Arabic grammatical structures with an expanded vocabulary. Prerequisite: SAR105 Colloquial Arabic I or equivalent. (Only open to students exempted from Arabic.)

SAR111 Standard Arabic I [3-0, 3 cr.] Designed for non-Arabic speakers beginning their study of standard Arabic. The course teaches elementary reading and writing and establishes basic language skills in the use of the Arabic sound system, a limited vocabulary and basic standard grammatical structures. (Only open to students exempted from Arabic.)

SAR112 Standard Arabic II [3-0, 3 cr.] Designed for non-Arabic speakers of modern standard Arabic on the intermediate level. The course teaches grammatical skills within a slightly expanded vocabulary enabling students to read unvowelled texts. Prerequisite: SAR111 Standard Arabic I
or equivalent. (Only open to students exempted from Arabic.)

SAR221 Developmental Arabic [3-0, 3 cr.] Develops appreciation and improves skills in the reading and writing of various types of prose. Individual attention is given to students’ linguistic and communicative proficiency.

STATISTICS

STA201 Business Statistics [3-0, 3 cr.] Probability, random variable, sampling theory, estimation, hypothesis testing, correlation and regression, time series, and index numbers. No student may receive credit for both STA201 Business Statistics and STA202 Applied Statistics or STA302 Statistics.

STA202 Applied Statistics [3-0, 3 cr.] An introduction to descriptive and inferential statistics, measures of central tendency and description, correlation and regression, estimation probability and hypothesis testing. No student may receive credit for both STA202 Applied Statistics and STA302 Statistics or STA201 Business Statistics.

PHA205 Biostatistics [3-0, 3 cr.] This course introduces statistical design and analysis techniques needed to perform pharmaceutical research and evaluate clinical data. It includes: designing epidemiologic and clinical studies, evaluating diagnostic testing procedures, interpreting the use of statistical data in Medical Literature and using frequently used statistical methods of data analysis. Emphasis on statistical concepts and their application to critical appraisal of clinical and experimental data.


WOMEN’S STUDIES

WOS313 Women in the Arab World: Sociological Perspectives [3-0, 3 cr.] Examines the roles and status of Arab women in relation to various societal factors, including a brief overview of legal rights in the Personal Status Code. Class discussions will analyze changes by identifying determinants and patterns of change. Students are also introduced to basic gender and feminist perspectives on the status of women in Arab societies. Prerequisite: ENG102 English II.

WOS311 Issues and Debates in Feminist Theory [3-0, 3 cr.] Designed to explore major issues and debates in feminist theory. Feminist texts from the Arab world and other cultures are used. The course is interdisciplinary, and will draw materials from literary criticism, sociology, anthropology, political science and literature. Prerequisite: ENG102 English II.

WOS312 Women and Economic Power [3-0, 3 cr.] Aims to explain the economic role played by women at both the household and national levels. The main topics include: the participation of women in the labor force, wage differentials and occupational distribution by gender as well as determinants of women’s active economic participation and their contribution to national development. Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

WOS411 Psychology of Women: A Feminist Perspective [3-0, 3 cr.] Examines modern psychological theory, especially as it applies to women, from a feminist perspective. Topics include the development of sex differences, gender identity and the various notions of “the feminine mind.” Prerequisites: ENG102 English II, and PSY201 Introduction to Psychology or PSY202 Child Psychology.

WOS412 Representations of Women in the Arts and the Media [3-0, 3 cr.] Deals with the media and various art forms such as cinema, music, poetry, art, the novel, etc., from the Arab and other cultures. Representations of women are examined from a historical perspective and patterns are identified as a basis for evaluation of women’s position in society. Prerequisite: ENG102 English II.
THE SCHOOL OF BUSINESS

The School of Business offers a professional education to students by seeking to:

- Develop communication and problem-solving skills within a business framework
- Prepare men and women for responsible management and leadership roles in the community
- Provide highly trained human resources to aid the economy's future commercial, charitable and governmental sectors
- Instill leadership, creativity and integrity necessary to facilitate disciplined economic growth
- Introduce contemporary issues in multi-national management and information management to assist in the successful integration of the local business community into a global setting, and, further the development of English-language business education in the Middle East.
**Faculty**

**DEANS:**
Mikdashi, T., Ph.D.,
Beirut;
Shahin, W., Ph.D.,
Byblos.

**ASSISTANT DEANS:**
Dibeh G., Ph.D.
Finlay, J., Ph.D.

**CHAIRS:**
Dah, A., Ph.D.;
Ladki, S., Ph.D.,
Beirut;
Djoundourian, S.,
Ph.D.;
Raad, E., Ph.D.,
Byblos.

**FACULTY:**
Bou Mosleh, A,
Ph.D.;
Chalhoub, M., Ph.D.;
Dah, A., Ph.D.;
Dibeh, G., Ph.D.;
Djoundourian, S.,
Ph.D.;
Finlay, J., D.B.A.;
Ghattas, R., Ph.D.;
Habib, M., Ph.D.;
Harfouche, A., C.P.A.;
Karkoulian, S., Ph.D.;
Ladki, S., Ph.D.;
Majdalani, M., M.S.,
M.B.A.;
McGill, J., Ph.D.;
Mehanna, R., Ph.D.;
Messara, L., M.B.A.;
Mikdashi, T., Ph.D.;
Naja, H., M.B.A.;
Raad, E., Ph.D.;
Shahin, W., Ph.D.;
Sreih, J., Ph.D.;
Toouma, W., Ph.D.;
Vitale, E., Ph.D.;
Yunis, M., M.S.;
Zacca, J., M.B.A.,
C.P.A.

**Programs**

**ASSOCIATE DEGREE PROGRAMS**

**A.A.S. in Business Management**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC201</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACC202</td>
<td>Principles of Accounting II</td>
<td>3</td>
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<tr>
<td>BUS201</td>
<td>Introduction to Business</td>
<td>3</td>
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<td>BUS202</td>
<td>Business Communication</td>
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<td>BUS203</td>
<td>Business Law</td>
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<tr>
<td>MIS211</td>
<td>Management Information Systems I</td>
<td>3</td>
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<tr>
<td>ECO201</td>
<td>Microeconomics</td>
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<td>ECO202</td>
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<td>MGT202</td>
<td>Personnel Management</td>
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<tr>
<td>MKT201</td>
<td>Introduction to Marketing</td>
<td>3</td>
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<td>MTH205</td>
<td>Business Mathematics</td>
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<td>Total Credits</td>
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</table>

Students must complete 64 credits in this program—33 credits for the major and 31 credits for the general university requirements.

**BACHELOR OF SCIENCE DEGREE PROGRAMS**

**Business**

The major equips students with professional skills in accounting, banking and finance, computer, economics, management and marketing, enabling graduates to find entry-level jobs in the world of business, finance and government. The program also serves as rigorous preparation for graduate study in business administration and other fields. The B.S. degree may be obtained at the Beirut and Byblos campuses in Accounting, Banking and Finance, Computer, Economics, Hospitality Management, Management and Marketing.

**CORE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC201</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACC202</td>
<td>Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS203</td>
<td>Business Law</td>
<td>3</td>
</tr>
<tr>
<td>MIS211</td>
<td>Management Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>ECO201</td>
<td>Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECO202</td>
<td>Macroeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>
Accounting

A total of 51 credits are needed (30 credits for the core and 21 credits for the emphasis), other than the general university requirements, to provide students with skills and knowledge in accounting within a business management context. The major also grounds students in the decision-making process and prepares them for graduate study leading to the M.B.A. or M.S. degree, or for careers in entry-level position in accounting.

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>ACC301</td>
<td>Intermediate Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC302</td>
<td>Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC401</td>
<td>Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC411</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>ACC499</td>
<td>Senior Study – Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Any two of the following Business Electives:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ACC304</td>
<td>Contemporary Issues in Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC310</td>
<td>Accounting Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ACC415</td>
<td>Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC421</td>
<td>International Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC430</td>
<td>Accounting Internship</td>
<td>3</td>
</tr>
<tr>
<td>ECO301</td>
<td>Managerial Economics</td>
<td>3</td>
</tr>
<tr>
<td>MGT301</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BUS301</td>
<td>Intermediate Business Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Banking and Finance

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. The major prepares students for management of private and public institutions’ financial structures. It helps them develop skills in the field of financial analysis as well as managerial skills in the money and commodities markets. It prepares qualified personnel and potential executives for Lebanon’s banking sector and the financial service industry.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECO321</td>
<td>Monetary Theory and Policy</td>
<td>3</td>
</tr>
<tr>
<td>FIN302</td>
<td>Financial Institutions and Markets</td>
<td>3</td>
</tr>
<tr>
<td>FIN311</td>
<td>Banking Operations</td>
<td>3</td>
</tr>
<tr>
<td>FIN411</td>
<td>Security Analysis and Portfolio Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN499</td>
<td>Senior Study – Finance</td>
<td>3</td>
</tr>
<tr>
<td>Any two of the following Business Electives:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>BUS311</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>ECO322</td>
<td>Public Finance and Fiscal Policy</td>
<td>3</td>
</tr>
<tr>
<td>ECO401</td>
<td>International Economics</td>
<td>3</td>
</tr>
<tr>
<td>FIN321</td>
<td>Introduction to Insurance</td>
<td>3</td>
</tr>
<tr>
<td>FIN401</td>
<td>Senior Seminar in Finance</td>
<td>3</td>
</tr>
<tr>
<td>FIN412</td>
<td>Credit Analysis</td>
<td>3</td>
</tr>
<tr>
<td>FIN421</td>
<td>Financial Derivatives</td>
<td>3</td>
</tr>
<tr>
<td>BUS301</td>
<td>Intermediate Business Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Management Information Systems

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. The major offers a curriculum focused on practical applied courses enabling students to enter the work force directly. It emphasizes breadth, skills, problem-solving techniques and basic knowledge. It helps students choose from a variety of career opportunities and prepares them for graduate study in business and related fields.

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CSC242</td>
<td>Introduction to Computer Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CSC232</td>
<td>Business Data Communication</td>
<td>3</td>
</tr>
<tr>
<td>CSC272</td>
<td>Database Analysis, Design and Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS212</td>
<td>Management Information Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MIS499</td>
<td>MIS Senior Study</td>
<td>3</td>
</tr>
<tr>
<td>Any two of the following courses:</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>MIS350</td>
<td>Technology Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS410</td>
<td>Enterprise Wide Business Performance Model</td>
<td>3</td>
</tr>
<tr>
<td>MIS488</td>
<td>Special Topic in e-Business</td>
<td>3</td>
</tr>
<tr>
<td>CSC233</td>
<td>Web Design and Development</td>
<td>3</td>
</tr>
<tr>
<td>CSC292</td>
<td>Information System Analysis &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>CSC298</td>
<td>Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>

Economics

Required: 15

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ECO301</td>
<td>Managerial Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECO321</td>
<td>Monetary Theory and Policy</td>
<td>3</td>
</tr>
<tr>
<td>ECO322</td>
<td>Public Finance and Fiscal Policy</td>
<td>3</td>
</tr>
</tbody>
</table>
Family and Entrepreneurial Business Management

This program caters to students who belong to families already in business and wish to preserve its continuity, maintaining the family’s wealth from generation to generation. The program is also intended for students who wish to start their own businesses, as it encourages entrepreneurship and the building of solid guidelines for future business start-ups.

The courses in this program are designed in such a way that they address the complex workings and challenges of family-owned and family-run businesses. Students will get not only working knowledge of the tools and concepts involved, but they will also develop action plans for their family businesses, manage growth opportunities, and acquire frameworks, analytical skills, techniques and decision making tools that can be used in growing entrepreneurial businesses.

A. Required ................................. 15
FEB301 Entrepreneurial and Small Business Management ................................. 3
FEB304 Family Business Management .............................................. 3
FEB311 Small Business Start-up Lab ............................................. 3
FEB321 Venture Growth Strategies for Entrepreneurs .............................................. 3
MGT499 Management Senior Study ............................................. 3

B. Business electives: Any two of the following ................................. 6
ACC302 Cost Accounting ............................................. 3
MGT301 Organizational behavior ............................................. 3
MGT202 Personnel Management ............................................. 3
MGT441 Human Resource Development ............................................. 3
MKT421 Marketing Research ............................................. 3
BUS301 Intermediate Business Statistics ............................................. 3

International Business

The international business emphasis at LAU gives majors a global perspective on management, finance, marketing, international affairs and economics while providing them with a firm foundation in the fundamentals of the business curriculum. The field aims at preparing students for work in the global marketplace as business professionals who can understand and exploit the dynamics of global business and finance.

A. Required
IBS311 Managing the Multinational Corporation ............................................. 3
IBS321 Global Financial Management ............................................. 3
MKT311 International Marketing ............................................. 3
ECO401 International Economics ............................................. 3
FIN302 Financial Institutions and Markets ............................................. 3
IBS499 Senior Study/Internship ............................................. 3

B. Business electives: One of the following (3 credits)
BUS301 Intermediate Business Statistics ............................................. 3
ECO311 Economic Development ............................................. 3
POL313 Concepts of International Relations ............................................. 3
HOM321 Tourism Economic and Cultural Impact ............................................. 3

Management

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. The major helps students develop skills on how to manage people, material, equipment, information and other resources used in the production of goods and services. It helps them understand the decision-making process in firms. It develops in them an orderly, systematic
way of thinking, and, prepares them for graduate work, or for supervisory positions in areas such as purchasing, inventory control, operations scheduling, operations cost control, etc.

ECO301 Managerial Economics ................. 3
MGT301 Organizational Behavior ................. 3
MGT420 Strategic Planning and Policy Formulation 3
MGT441 Human Resources Development ........ 3
MGT499 Management Senior Study .............. 3
Total credits ...................................... 15
Any two of the following Business electives: ...... 6
ACC302 Cost Accounting .......................... 3
MIS212 Management Information Systems II .... 3
FIN302 Financial Institutions and Markets ...... 3
HOM204 Restaurant Management ................ 3
HOM304 Hotel Operations ........................ 3
MGT202 Personnel Management ................... 3
MKT488 Topics in Marketing ...................... 3
BUS301 Intermediate Business Statistics ........ 3

Marketing

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. The major acquaints students with a full range of skills and knowledge in business management, with a focus on marketing. It instills in students an awareness of the problems of visual design in the world of business and industry. It makes them understand the activities involved in transferring goods and services from producers to consumers and prepares them for graduate studies as well as careers in sales, advertising, public relations, product management, wholesaling, retailing and market research.

MKT301 Promotion Management and Marketing Communication .................... 3
MKT304 Consumer Behavior ...................... 3
MKT311 International Marketing ................. 3
MKT421 Marketing Research ..................... 3
MKT499 Senior Study–Marketing .................. 3
Any two of the following Business Electives ...... 6
ACC302 Cost Accounting .......................... 3

Economics

The B.S. in Economics aims to give students a good grounding in both theoretical and applied economics. Students are prepared to work in business, government and finance, immediately after graduation, or, to pursue graduate studies in economics, business, law, public administration, international relations and related fields. The program consists of up to 36 credit hours in economics courses, plus 15 or 18 credit hours in a chosen track.

The Mathematics track allows students to deepen their knowledge of mathematics in preparation for graduate work in economics or any other quantitatively oriented field such as mathematical finance.

The Political Science track imparts deeper knowledge of political science and international affairs, preparing students for careers in government and international organizations, or for graduate work in international political economy, law, public policy, and international affairs.

The Finance track allows students to immediately take career positions in business and to do graduate work in finance, international finance and banking.

The Management track prepares students for careers in management positions and human resource development, and, prepares them for graduate work in personnel and organizational economics, management information technologies and M.B.A.

Plan of Study

I. Economics – All tracks .......................... 36
ECO201 Microeconomics ......................... 3
ECO202 Macroeconomics ......................... 3
ECO211 Intermediate Macroeconomic Theory and Policy .......................... 3
BUS311 Research Methods ........................ 3
HOM302 Hospitality Purchasing .................. 3
MGT301 Organizational Behavior ................ 3
MKT488 Topics in Marketing ...................... 3
BUS301 Intermediate Business Statistics ........ 3
ECO311 Economic Development 3
ECO321 Monetary Theory and Policy 3
ECO322 Public Finance and Fiscal Policy 3
ECO401 International Economics 3
ECO402 Advanced Topics in Economics 3
ECO499 Senior Study—Economics 3
STA201 Business Statistics 3
BUS301 Intermediate Business Statistics 3

Track I (Finance) 18
ACC201 Accounting I 3
ACC202 Accounting II 3
FIN301 Managerial Finance 3
FIN302 Financial Institutions and Markets 3
FIN311 Banking Operations 3
FIN411 Security Analysis & Portfolio Management 3

Track II (Management) 18
ACC201 Accounting I 3
ACC202 Accounting II 3
MGT201 Introduction to Management 3
MGT301 Organizational behavior 3
MGT302 Management Information Systems I 3
MGT441 Human Resource Development 3
MIS211 Management Information Systems I 3
MIS212 Management Information Systems II 3

Track III (Mathematics) 15
MTH201 Calculus III 3
MTH301 Linear Algebra 3
MTH204 Differential Equations 3
MTH206 Multidimensional Calculus 3

Plus any 3 hours of the following:
CSC231 Linear Programming 3
MTH202 Discrete Mathematics 3
MTH303 Numerical Analysis 3

Track IV (Political Science/International Affairs) 15
POL201 Introduction to Political Science 3
Any 12 hours upper division in Political Science and International Affairs

Hospitality and Tourism Management

The B.S. in Hospitality and Tourism Management prepares students for positions in sales, personnel administration, public relations, auditing, front office management, housekeeping, food and beverage management, meetings and conventions planning, and general management positions. Graduates may serve as managers or directors of hotels, restaurants, catering, food processing, and travel and tourism related industries.

The program consists of 24 credit hours in hospitality management courses plus nine credit hours of tourism management; in addition to the 30 credits business core requirements.

Students are also required to complete 320 hours of applied hands-on training activities to develop their technical skills and apply classroom learning in real-world settings.

Hospitality Management Requirements 24
HOM201 Introduction to RHI 3
HOM204 Restaurant Management 3
HOM302 Hospitality Purchasing 3
HOM304 Hotel Operations 3
HOM306 Quantity Food Production/Catering 3
HOM308 Cost Control in RHI 3
HOM311 Organization and Administration in RHI 3
HOM499 Senior Study—Internship in RHI 3

Tourism Management Requirements 9
HOM211 Introduction to Travel and Tourism 3
HOM321 Tourism Economic and Cultural Impact 3
HOM324 Convention and Service Management 3
HOM488 Seminar in Hospitality and Tourism 3
MASTER OF BUSINESS ADMINISTRATION DEGREE PROGRAM

Since 1981, LAU has prepared men and women for key roles in managerial and professional positions in business and public organizations. In a brief span the School of Business has grown rapidly to become the largest English-language program of its kind in the Middle East by encouraging scientific appreciation of the society in which managers act, with creativity and high moral purposes, and, promoting leadership in the quest for economic and social development.

In offering a Master in Business Administration, LAU draws on substantial and growing experience in undergraduate business education to provide a significant opportunity for advanced education to seekers of a business career.

The university also recognizes that persons with undergraduate degrees in fields other than business (e.g. engineering, agriculture, liberal arts, etc.) may pursue a business education, so the curriculum has been adapted to meet their needs. Moreover, to make the program accessible to those already active in management, provision has been made for part-time students at conveniently scheduled times. Students must complete a total of 39 credits (18 credits for the core and 21 credits for the elective and research requirements).

A. Core Requirements
All candidates for the Master of Business Administration degree must satisfy the following requirements:

BUS811 Business Economics .................................. 3
BUS831 Management Theory ................................. 3
BUS841 Marketing Management .............................. 3
BUS851 Quantitative Methods in Business ............... 3
BUS852 Research Methods in Business .................. 3
BUS861 Financial Management ............................. 3

B. Students can choose to pursue one of the following remaining options for graduation:

- Take seven courses from the following list
- Take six of the following and BUS898 Project in Business
- Take five of the following and BUS899 Thesis in Business

BUS821 Financial Accounting ............................ 3
BUS822 Management Accounting ......................... 3
BUS832 Management Systems ............................ 3
BUS833 Personnel Management and Human Resources Development .................................. 3
BUS834 Project Planning and Management ............... 3
BUS835 Commercial Bank Management .................. 3
BUS836 Modern Portfolio Management .................. 3
BUS837 International Business ............................ 3
BUS839 Organizational Behavior .......................... 3
BUS842 International and Global Marketing ............. 3
BUS863 Financial Derivatives .............................. 3
BUS871 Seminar in Business ............................... 3
(can be taken more than once for credit, with different topics)
BUS872 Business Policy and Planning ................... 3
BUS874 Trends Management ............................... 3
BUS875 Business Strategy and Innovative Management .................................. 3
BUS876 Leadership ........................................... 3
BUS898 Project in Business ................................. 3
BUS899 Thesis in Business ................................. 6
ACCOUNTING

ACC201 Principles of Accounting I [3-0, 3 cr.] This course is an introduction to accounting principles and practices. This course covers measuring, recording, summarizing, reporting and interpreting financial transactions that affect the income statements and balance sheets of service and merchandising organizations. Topics include the accounting cycle, accounting for merchandising transactions, accounting systems and classified financial statements.

ACC202 Principles of Accounting II [3-0, 3 cr.] This course is a continuation of ACC201 Principles of Accounting I with emphasis on basic accounting and managerial issues related to partnerships and corporations. Topics include the organization, operation, and liquidations of partnerships, the organization, operation and financing of corporations, short-term and long-term investments in corporate securities, the statement of cash flow, and financial statement analysis. Prerequisite: ACC201 Principles of Accounting I.

ACC301 Intermediate Accounting [3-0, 3 cr.] Accounting theory and problems emphasizing financial reporting issues and financial statement interrelationships. Intensive study of generally accepted accounting principles and their application. Topics include the historical development and theoretical structure of financial accounting, revenue recognition and income determination, corporate reporting requirements, accounting changes and error analysis. Prerequisite: ACC202 Principles of Accounting II.

ACC302 Cost Accounting [3-0, 3 cr.] This course is an intensive study of concepts and methods used in cost accumulation for financial reporting, planning and control, and managerial decision making. Topics include cost allocation, job, process and direct costing, and, standard cost systems. Prerequisite: ACC202 Principles of Accounting II.

ACC304 Contemporary Issues in Accounting [3-0, 3 cr.] Intensive study of accounting and reporting issues related to elements of assets, liabilities and equities. Topics include accounting for contingencies, troubled debt restructuring, pensions and post-retirement benefits, operating and capital leases. Prerequisite: ACC301 Intermediate Accounting.

ACC310 Accounting Information Systems [3-0, 3 cr.] Deals with how computer-based accounting information systems perform the managerial and financial accounting functions. System development and controls are also covered. Topics include hardware and software considerations, system flowcharting, system controls, and systems for general ledger, working capital and fixed assets. Prerequisite: ACC202 Principles of Accounting II.

ACC401 Advanced Accounting [3-0, 3 cr.] The emphasis of this course is on the application of advanced accounting concepts to specialized business entities such as partnerships, branches, affiliated companies, government entities, and the analysis and solution of problems that arise in the application of these concepts. Topics include accounting for partnerships and branches, consolidated financial statements, segment reporting, reorganization and liquidation. Prerequisite: ACC202 Principles of Accounting II.

ACC411 Auditing [3-0, 3 cr.] This course covers the environment of auditing, and the concepts and methods used by independent auditors in gathering audit evidence and formulating audit opinions. Topics include auditors’ professional responsibilities, audit planning, study and evaluation of internal control, and auditing of transaction and balances. Prerequisite: ACC202 Principles of Accounting II.

ACC415 Tax Accounting [3-0, 3 cr.] Considers principles of taxation and makes a comparative study
between U.S. and Lebanese tax laws. Prerequisite: ACC202 Principles of Accounting II.

**ACC421 International Accounting** [3-0, 3 cr.] This course provides an introduction to international accounting and its role in international business. Topics include development of international accounting, accounting systems in a global environment, international financial reporting issues, accounting for foreign currency transactions and derivatives, international financial analysis, international management accounting, and international taxation. Prerequisite: ACC202 Principles of Accounting II.

**ACC430 Accounting Internship** [3-0, 3 cr.] Students may earn up to three credits by working during their last summer vacation for a period of 16 weeks at an instructor-approved accounting position with a business not owned by a relative of the student. Students are required to write a weekly report about their daily activities. The weekly report forms the basis of supervision and evaluation by the instructor. Prerequisite: Senior standing and instructor’s consent.

**ACC499 Senior Study—Accounting** [3-0, 3 cr.] This course involves case studies, a field project and special topics selected by the instructor. Prerequisite: Senior standing.

**BANKING AND FINANCE**

**FIN301 Managerial Finance** [3-0, 3 cr.] The course is concerned with the firm’s financing and investment decisions. Students learn how financial managers raise funds for their corporations and how they allocate those funds among the assets of the firm. Topics include time value of money, valuation of bonds and stocks, capital budgeting, financial statement analysis, working capital management and long term financing. Prerequisite: ACC202 Principles of Accounting II.

**FIN302 Financial Institutions and Markets** [3-0, 3 cr.] The course is concerned with the expansion process of money, central banking and other financial institutions, types of financial markets and instruments, interest rates. Prerequisite: ACC202 Principles of Accounting II.

**FIN311 Banking Operations** [3-0, 3 cr.] The course is concerned with the management of commercial banks’ operations. It provides students with a description and analysis of those operations. It also investigates the techniques and tools that commercial bank managers apply to perform their job. Topics include structure and internal organization of banks, lending policies, asset and liability management. Prerequisite: FIN301 Managerial Finance and FIN302 Financial Institutions and Markets.

**FIN321 Introduction to Insurance** [3-0, 3 cr.] This course examines the theory of risk management and insurance, the institutional aspects of the insurance industry and decision making tools applicable to the insurance industry. Prerequisite: ACC202 Principles of Accounting II.

**FIN401 Senior Seminar in Finance** [3-0, 3 cr.] The course covers special issues in the field of banking and finance not covered in other courses. Specific topics covered are at the discretion of the instructor. Prerequisite: FIN301 Managerial Finance, FIN302 Financial Institutions and Markets and senior standing.

**FIN411 Security Analysis and Portfolio Management** [3-0, 3 cr.] The course is concerned with the evaluation of financial securities and the formation of efficient portfolios. Models will be developed to determine the value of financial instruments such as stocks and bonds. Portfolio management deals with the combination of securities to maximize returns and minimize risk. Topics include risk and return, diversification, efficient portfolios, efficient markets, interest rate risk, duration. Prerequisites: FIN301 Managerial Finance and FIN302 Financial Institutions and Markets.

**FIN412 Credit Analysis** [3-0, 3 cr.] The course provides students with knowledge and analytic
techniques on the principles of credit risk identification, financial analysis of a firm, and credit decision process, with special attention to banking experience and credit application packages cases. Prerequisites: FIN301 Managerial Finance, FIN302 Financial Institutions and Markets and FIN311 Banking Operations.

**FIN421 Financial Derivatives** [3-0, 3 cr.] This course is concerned with derivative securities and markets. Topics include options, option markets, option strategies, option pricing models, futures, futures markets, futures strategies, futures pricing models, swaps and financial risk management using derivatives. Prerequisite: FIN411 Security Analysis and Portfolio Management.

**FIN499 Senior Study – Finance** [3-0, 3 cr.] The course is concerned with the integration of financial concepts and techniques the students have learned and the application of those concepts and techniques to real world situations. Prerequisites: Senior standing, FIN301 Managerial Finance, FIN302 Financial Institutions and Markets, FIN411 Security Analysis and Portfolio Management or instructor’s consent.

**BUSINESS (GENERAL)**

**BUS201 Introduction to Business** [3-0, 3 cr.] An introductory survey of the business environment. Topics include: basic business functions and their interrelationships, accounting, finance, management, marketing and economics. Open to freshmen and sophomores only.

**BUS202 Business Communication** [3-0, 3 cr.] Development of writing skills applied to various forms of business communication. Prerequisites: ENG101 English II, ENG102 English III.

**BUS203 Business Law** [3-0, 3 cr.] Introduction to legal concepts. Survey of the Lebanese legal system, notably contract laws, commercial papers, personal and real property, agencies, partnerships and corporations, bankruptcies and labor.

**BUS205 Survey of Economics and Marketing** [3-0, 3 cr.] An introduction to the basic principles of
Microeconomics and Marketing. The course addresses the theory of consumer behavior, cost and price determination, the elements of marketing mix, product, pricing, promotion and distribution decisions. (This course is not open to students majoring in Business or to those who have taken either ECO201 Microeconomics or MKT201 Introduction to Marketing).


BUS311 Research Methods [3-0, 3 cr.] Acquaints students with the importance of research in business. Topics include: Research proposal design, data collection, descriptive and statistical analysis. Prerequisite: BUS301 Intermediate Business Statistics.

BUSINESS (GRADUATE)

BUS811 Business Economics [3-0, 3 cr.] Overview of microeconomics from a managerial decision-making standpoint, emphasizing and applying basic concepts to selected problems. Topics include the firm’s behavioral and managerial theories, determination of national income, demand estimation, cost determination, forecasting and government regulation.

BUS821 Financial Accounting [3-0, 3 cr.] Introduction to financial accounting concepts from a managerial viewpoint, emphasizing use of financial information in decision making. Topics include recording economic events, basic accounting concepts, essential accounting standards, interrelationship of financial statement elements, analysis, interpretation and use of internal and external data.

BUS822 Management Accounting [3-0, 3 cr.] A study of cost accounting applications and related techniques to decision-making, emphasizing control and use of internally-generated accounting data. Topics include cost allocation, variance analysis, budgeting and cost control system, responsibility reporting, capital budgeting.

BUS831 Management Theory [3-0, 3 cr.] Introduction to management, organizational behavior and development theories and practices, emphasizing applications in managerial situations. Topics include goal-setting, manpower planning and control, motivational techniques, problem-solving processes.

BUS832 Management Systems [3-0, 3 cr.] Introduces students to recent practices in corporate information management. Combines lectures and case studies and encourages participants to critically analyze the effects information technology has on most businesses and industries. Topics include: E-mail networking, telecommunication practices, EDI, executive information systems, the concept of information resource management.

BUS833 Personnel Management and Human Resources Development [3-0, 3 cr.] A critical look at organizations’ principles, methods and resources. Topics include: strategic human resource management for effective employee training and education within a development plan, corporate training roles, management issues on employment recruiting, testing, selection and placement, job evaluation, wage and salary administration, labor relations and communication, performance evaluation, benefits and services, discipline, motivation and morale, accident prevention and safety.

BUS834 Project Planning and Management [3-0, 3 cr.] An examination of techniques to select, supervise and evaluate projects, emphasizing application of project performance control of methods. Topics include: needs analysis, alternative courses of action, optimum alternatives, project organization, operation and control, project completion and evaluation.

BUS835 Commercial Bank Management [3-0, 3 cr.] The course covers commercial bank managers’ policies and decisions. Analysis includes advanced treatment of asset-liability management, emphasizing risk management issues such as interest rates, liquidity, credit, capital, off-balance
sheet activities. The analysis presents financial engineering techniques in risk management and evaluates bank performance.

BUS836 Modern Portfolio Management [3-0, 3 cr.] The course applies concepts of efficient capital markets, modern portfolio theory and asset pricing models to practical problems of security analysis, portfolio construction, optimization and performance measurement. The analysis considers return and risk characteristics of various financial investment instruments and derivatives including common stocks, bonds, futures, options, forward contracts, swaps, caps, floors and other asset-backed securities.

BUS837 International Business [3-0, 3 cr.] A field survey with emphasis on: the cultural, economic, political and social environments of international business, with a view to global banking, finance and insurance, exporting, importing, the roles of governments and international institutions.

BUS839 Organizational Behavior [3-0, 3 cr.] This course explores human behavior at the individual, group and organizational levels. Issues of leadership and management, conflict resolution, communications, decision-making, power and political behavior, stress and organizational change will be introduced.

BUS841 Marketing Management [3-0, 3 cr.] The course shows students how to manage the marketing process for organizations to optimize resource use and maximize benefits. It focuses on decision-making. Lectures, discussions and projects engage students in learning how best to manage scarce resources.

BUS842 International and Global Marketing [3-0, 3 cr.] This course is designed to provide an appreciation of the critical role that marketing plays in the global economy and the various elements essential to global success. Attention is given to the exogenous global environment and is coupled with an investigation of the significant factors that a firm must consider as it positions itself to enter the international market place.

BUS851 Quantitative Methods in Business [3-0, 3 cr.] Introduction to the application of mathematical techniques in business decision-making, emphasizing practical usage in management situations. Topics include: linear programming, transportation problems, network planning, queuing theory, regression analysis, modeling techniques.

BUS852 Research Methods in Business [3-0, 3 cr.] Examination of research methods applicable to identification, definition and problem resolution in a business environment, emphasizing data collection and analysis techniques. Topics include: problem identification and definition, hypothesis formulation, data collection methodology, statistical validation, research report writing.

BUS861 Financial Management [3-0, 3 cr.] Review of concepts underlying the financing of a business, emphasizing the uses of capitalization and leverage for current operations and future expansion. Topics include: valuation theory, investment theory, financial planning and control, dividend policy and growth, alternative capitalization structures, appraisal of capital projects, mergers and acquisitions.

BUS863 Financial Derivatives [3-0, 3 cr.] The course deals with derivative securities. It will focus on the analysis of options, futures, option and futures markets, option and futures strategies. In addition, it will discuss option and futures pricing models and how derivatives are used in financial risk management.

BUS871 Seminar in Business [3-0, 3 cr.] Examination of current or developing issues in management practices, emphasizing immediacy impact and availability of top level technique resources. Topics may vary and are announced shortly before registration for semesters in which the seminar is offered. The seminar may be taken for credit more than once.
BUS872 Business Policy and Planning [3-0, 3 cr.] Application of policy formulation and implementation concepts, emphasizing the practical use of managerial skills and theoretical frameworks. Topics include: problem identification and definition, organizational goal setting, establishment, performance review and evaluation.

BUS874 Trends Management [3-0, 3 cr.] This course acquaints students with the concept of environmental scanning along with major trends occurring in business. Trends management techniques that measure qualitative and quantitative forces affecting the general and specific environments will be introduced.

BUS875 Business Strategy & Innovative Management [3-0, 3 cr.] The course emphasizes innovation as a source of sustainable competitive advantage and explores the three dimensions of innovation management. Students will go through case analysis, with real life situations drawn from different parts of the world.

BUS876 Leadership [3-0, 3 cr.] This course explores concepts of leadership, theory and practice, and how leadership attributes play a major role in personal and professional development. The course emphasizes the relationship between leadership and organizational performance in a competitive environment.

BUS898 Research Topic in Business [3-0, 3 cr.] Application of research methods to a current topic relevant to business and business education in the Middle East. The thesis must incorporate the student’s hypothesis, test methods, test results and conclusions in a report available to later researchers. In some cases, the faculty may authorize expanded research procedures resulting in high-quality theses.

ECO201 Microeconomics [3-0, 3 cr.] An introductory course dealing with the nature and scope of economics, consumer behavior, theory of the firm, price determination, allocation of resources.

ECO202 Macroeconomics [3-0, 3 cr.] An introductory course dealing with the principles of national income accounting, national income determination, macroeconomics’ objectives and policy instruments, relative effectiveness of fiscal and monetary policies in stabilizing the economy.

ECO211 Intermediate Macroeconomics [3-0, 3 cr.] The course uses the latest theoretical techniques and models in macroeconomics to address the measurement and determination of income, prices, employment, interest rates and aggregate demand and supply. The course also stresses stabilization fiscal and monetary policies under various schools of macroeconomic thinking and the sources of instability in the private economy. Prerequisite: ECO201 Microeconomics, ECO202 Macroeconomics.

ECO301 Managerial Economics [3-0, 3 cr.] The course applies economic concepts to managerial problems. Topics include decision making under conditions of risk and uncertainty, demand analysis and estimation, cost analysis, market structures and their impact on pricing practices. Prerequisites: ECO201 Microeconomics, ECO202 Macroeconomics.

ECO311 Economic Development [3-0, 3 cr.] Theories of economic development. Plans, policies, programs and projects. Building institutional mechanisms to achieve development. Prerequisites: ECO201 Microeconomics, ECO202 Macroeconomics.

ECO321 Monetary Theory and Policy [3-0, 3 cr.] Money and the banking system’s nature and functions. Topical coverage includes interaction between the monetary and real estate sectors, money supply and demand determinants, importance of the money stock in deciding real economic variables, monetary policy and economic stability. Prerequisites: ECO201 Microeconomics, ECO202 Macroeconomics.
ECO322 Public Finance and Fiscal Policy [3-0, 3 cr.]
The course discusses needed government intervention in case of market failure. Topical coverage includes: taxation and public debt as revenue sources and public policy instruments, government expenditure patterns and tax structures, public expenditures to assure government services and as fiscal policy instruments. Prerequisites: ECO201 Microeconomics, ECO202 Macroeconomics.

ECO401 International Economics [3-0, 3 cr.]
Principles of trade and resource allocation among nations. Monetary, foreign exchange and trade restriction problems and programs. Prerequisites: ECO201 Microeconomics, ECO202 Macroeconomics.

ECO402 Advanced Topics in Economics [3-0, 3 cr.]
Selected topics in economic theory. Prerequisite: At least 12 credits in economics courses. May be repeated for credit with instructor’s consent.

ECO499 Senior Study [3-0, 3 cr.]
Case studies, research readings and field projects. A look at recent research topics from a practical standpoint. Prerequisite: Senior standing.

FAMILY AND ENTREPRENEURIAL BUSINESS

FEB301 Entrepreneurship and Small Business Management [3-0, 3 cr.]
This course is designed to address the complex workings of small businesses that are family owned and run. It will give students a working knowledge of the tools and concepts involved in preparing a business plan. Topical coverage includes: foundations of entrepreneurship, forms of ownership and franchising, methods for determining the value of a business, marketing and financial consideration in building a business plan, managing inventory in the small business, quality control and just in time techniques, managing human resources in the family businesses, techniques for enhancing profitability, global aspects of entrepreneurship. Prerequisite: MGT201 Introduction to Management.

FEB304 Family Business Management [3-0, 3 cr.]
This course is designed to address the challenges unique to businesses that are family owned and run. It will help students develop action plans for their family businesses. Topical coverage includes: concepts of corporate governance vs. classical governance, structures of a family business, key elements of a governance structure, family businesses vs. board of directors, securing succession as a key governance measure, handling the control task as a key governance measure, ownership and developmental dimensions, founders and entrepreneurial experience, structures and plans guiding developments. Other topics include: Families as sources of capital, leadership in family businesses, separating family life and work life, how to work with family relations, children in the family business, working with siblings, working with the expected family, divorce/marriage and other complexities affecting the business, dynamics of succession, managing the transition, sibling rivalry, multi-generational issues. Prerequisite: MGT201 Introduction to Management.

FEB311 Small Business Start-Up Laboratory [3-0, 3 cr.]
The objective of this course is to encourage students to start new businesses and to address functional ways of start-ups. It will include topics such as: types of new businesses, new markets and the web, how to start marketing on the web, creating and designing your web page, electronic commerce and the future, how to find new products, how to sell online, evaluation of potential startups, site selection and layout, competitive advantage and marketing research, pricing and credit policies, preparing small businesses to go global. The course will include a laboratory and will end up with a feasibility study or a business plan. Prerequisite: Senior standing, MGT201 Introduction to Management, MKT201 Introduction to Marketing.

FEB321 Venture Growth Strategies for Entrepreneurs [3-0, 3 cr.]
This course is designed to help entrepreneurs manage growth opportunities. It will provide students with a series of frameworks,
analytical skills, techniques and decision making tools that can be used in growing entrepreneurial businesses. The course attempts to combine various innovative pedagogical techniques in developing students’ understanding of growth management in a dynamic environment. Teams of students will be asked to manage companies in their growing phases, making appropriate decisions regarding all the functional aspects of the business through computer simulation. Exercises and presentations are built around the simulation. The course will also include financing options, going public, tapping capital markets. Prerequisites: MGT201 Introduction to Management, FIN201 Managerial Finance.

HOSPITALITY MANAGEMENT

HOM201 Introduction to Restaurant, Hotel, and Institutional (RHI) Administration [3-0, 3 cr.] Introduces students to the history and operation of restaurants, hotels and institutions. The course also examines the various characteristics of hospitality establishments.

HOM204 Restaurant Management [3-0, 3 cr.] Applies the principles of food and beverage management in full-service restaurants—either independent restaurants or those within commercial/non-commercial food service operations. Class lectures introduce administrative concepts that are involved in restaurant management. Dining room setup, table setup, plate placement, carving, flambé, and wine service will be demonstrated in laboratory settings.

HOM211 Introduction to Travel and Tourism [3-0, 3 cr.] A survey of travel and tourism, focus on concepts, terminology, demographics, financial significance and trends. The course will also evaluate the economics, social and political impact of travel and tourism, including market, transportation, media, and destination development.

HOM231 Wine, Spirits and Cigars [1-0, 1 cr.] Studies the appreciation of wine, spirits and cigars. A course designed to learn quality, origin, characteristics, vintage and all other personality that makes a good wine, superior single malt and cigars. One credit, no prerequisite.

HOM233 Management of service industries [1-0, 1 cr.] The course presents specific customer issues and offers an overview of the service industry, history, current status, future trends and emphasizes the unique characteristics and operations of service organizations. One credit, no prerequisite.

HOM235 Franchising in the Hospitality Industry [1-0, 1 cr.] Introduce students to franchising as a mean of business. Emphasize on different aspects of hospitality franchising including history and development, franchisee franchisor relationship, and legal aspects of franchising. One credit, no prerequisite.

HOM237 Management of Tourism Attractions [1-0, 1 cr.] The organization and management of tourist attractions including; museums, national heritages, theme parks, national parks, zoos and other attractions. One credit, no prerequisite.

HOM239 Business Etiquette and Protocol [1-0, 1 cr.] Student will learn the importance of etiquette in business and social settings, common courtesies including in the professional life, personal life, formalities, entertaining and entertainments, international, celebration and ceremonies and other situations. One credit, no prerequisite.

HOM250 Food Preparation I [2-3, 3 cr.] This course introduces students to the principles and fundamentals of basic cutting and cooking techniques, including meat, fish, poultry, vegetables, baking and pastry. Learned concepts and techniques will be demonstrated and practiced in a laboratory kitchen. Three credits, no prerequisite.

HOM251 Food Preparation II [2-3, 3 cr.] Student will gain further knowledge in cooking with special emphasize on stocks, soups, sauces, cooking methods, pastry and chocolate decoration. Food purchasing, grading, identification and la-
beling codes will be introduced. Three credits, prerequisite: Food Preparation I.

HOM254 Baking, Pastry and Chocolate [2-3, 3 cr.] This course introduces students to baking, pastry and chocolate, with special emphasis on yeast bread, shorteners, sweeteners and leaveners, cakes and batters, pastry dough, creams and mousses, glazes and frozen desserts. Three credits, no prerequisite.

HOM302 Hospitality Purchasing [3-0, 3 cr.] Acquaints students with the classifications/functions of the various food markets. Helps students understand the relationship between food specifications and purchasing methods, while enhancing students’ organizational skills in the administration of a successful purchasing department. Involves discussion of concepts such as purchasing methods, negotiations, market evaluations and regulations.

HOM304 Hotel Operations [3-0, 3 cr.] The study of organization, planning, leadership, decision-making and administration of hotels with emphasis on front desk operations. Investigation of the interdependence of the housekeeping engineering, security, guest services food and beverage, marketing, personnel, purchasing, accounting and front desk departments in successful hotel operations. Students will explore computer information systems used in hotel operations.

HOM306 Quantity Food Production/Catering [3-0, 3 cr.] Using the functions of management, this course applies the principles of food production and cafeteria service in quantity for institutions and commercial food service operations. This capstone food and beverage management course brings together food production, cost control, personnel and organizational management while providing students with an opportunity to exercise their ability and creativity in managing a catered event.

HOM308 Cost Control in RHI [3-0, 3 cr.] Analysis of fundamentals and techniques of cost control in food service and hotel management. Management procedures to control costs from purchase through service are studied. Emphasis is placed on strategic planning, budgeting, efficiency, labor management and productivity, energy management, production, service and computers as they relate to controlling costs.

HOM311 Organization and Administration in RHI [3-0, 3 cr.] The study of the organization, management and administration of restaurants, hotels and institutional programs, with emphasis on planning, leadership, and decision making. Investigation of effective communication, laws, regulations and standards as they relate to management. Considers merchandising and promotion restaurants, hotels and institutions. Principles of education and effective teaching methods as they relate to employee training and in-service education are studied. Study of human relations and group dynamics. Emphasis on the use of computers and their applications in organization and management.

HOM321 Tourism Economic and Cultural Impact [3-0, 3 cr.] The role of economic and cultural impact of tourism in development and planning, the nature of and priorities given to tourism and tourism policies at national scales will be explored. This course presents important quantitative methods used by tourism planners, researchers and consultants including a description of their uses and their relationship to other research techniques as well as examples of contemporary applications. It focuses on the tools and practice of tourism analysis and persuasive presentations of information. Topics include descriptive methods for defining and describing tourism, decision-making models for tourist behavior, forecasting models and location analysis models.

HOM324 Convention and Service Management [3-0, 3 cr.] An overview of the convention industry includes meetings, tradeshows, conferences, and incentive travel. The management of convention centers and its relationship with local government is also discussed. The course will focus on the operational management of trade shows including design, construction and risk manage-
ment as applied to project financing, fire protection, customer and workplace safety, and OSHA regulations.

HOM488 Seminar in Hospitality and Tourism [3-0, 3 cr.] This course covers specific timely issues of RHI not covered in detail in the curriculum. This course may be substituted for another RHI course given the consent of the program advisor.

HOM499 Senior Study Internship in RHI. Supervised work-study program in a hotel. Students have to enroll in this course in the summer of their junior year for 15 hours a week over a period of eight weeks. Students are expected to interview for positions in facilities approved by an internship director. Consent of internship director is required.

INTERNATIONAL BUSINESS

IBS311 Managing the Multinational Corporation [3-0, 3 cr.] The course covers the strategies and tactics that international managers use to design, operate, control and implement business activities in the modern world by emphasizing various functions of international business including distribution and logistics, production, global sourcing, export strategies and sales, strategic alliances and international human resources management. The course then covers the coordination of complementary tasks among a diverse number of international units be they branches, subsidiaries, sales offices and shipping points. Prerequisite: MGT201 Introduction to Management, MKT 201 Introduction to Marketing.

IBS321 Global Financial Management [3-0, 3 cr.] The course covers the environment of international financial management, foreign exchange risk management, multinational working capital management, financing foreign operations, special financing vehicles, international banking trends and strategies, corporate strategy and foreign direct investment and the measurement and management of country risk. Prerequisites: FIN301 Managerial Finance.

MANAGEMENT

MGT201 Introduction to Management [3-0, 3 cr.] A study of management principles and concepts, specifically its history and philosophy, processes, decision making, planning, organizing, actuating and controlling.

MGT202 Personnel Management [3-0, 3 cr.] Role of the personnel manager, scope of personnel function in terms of recruitment, selection, placement and remuneration. Emphasis on job design, enrichment, evaluation and the individual’s interaction with the work environment. Prerequisite: BUS201 Introduction to Business or MGT201 Introduction to Management.

MGT301 Organizational Behavior [3-0, 3 cr.] Organizations’ social psychology; individual perception, motivation, learning and communication style; group dynamics as related to problem solving and decision making, leadership style, word structuring and the larger environment. Prerequisite: MGT201 Introduction to Management.

MGT401 Project Management [3-0, 3 cr.] Problems of managing projects on identification, design, appraisal, selection, organization, operations, supervision and control, completion and evaluation. Prerequisites: Senior standing, ACC202 Principles of Accounting II, MGT201 Introduction to Management.

MGT420 Strategic Planning and Policy Formulation [3-0, 3 cr.] The study and understanding of the strategic planning stages necessary to define, analyze, design, formulate and implement the strategy or strategies that an organization follows. The aim of this course is to provide the tools necessary for students to comprehend and act on strategic decision-making. Students will be acquainted with the design of logical stages that define and generate sound business strategies and how to implement these aiming at achieving long-term success for the organization. In addition, this course will emphasize the management skills needed to carry out this practice. Industry
case studies will be used to examine success as well as failure stories of organizations.

MGT441 Human Resources Development [3-0, 3 cr.] Based on the functions of management, this course provides the students with the tools necessary to run contemporary functions applied in human resources development. Having known the classical functions of personnel management, and based on the continuous change of organizations, students will cover the advanced topics in Strategic management of human resources, training and development, performance appraisal management, career planning, technology implementation, and other new happenings in the realm of human resources.

MGT450 Special Topics in Management [3-0, 3 cr.] This course covers management topics not usually included in the curriculum. It offers a detailed understanding of timely issues and applications in the worlds of production and management, both in private as well as in public frameworks. Operations and production management, entrepreneurship and small business management are covered among other topics. This course requires the consent of the program advisor.

MGT499 Senior Study [3-0, 3 cr.] Case studies, research readings and field projects. A look at recent research topics from a practical standpoint. Prerequisite: Senior standing.

MANAGEMENT INFORMATION SYSTEMS

MIS211 Management Information Systems I [3-0, 3 cr.] Problems of managing the information system resource, combining case studies and lectures to facilitate critical thinking on computer acquisition, information systems development and organizational development of end-user computing. Prerequisite: ACC202 Principles of Accounting II.

MIS212 Management Information Systems II [3-0, 3 cr.] Explore on a more advanced level the variety of networking and telecommunication environments applied in business. Applications in database management, decision support, and decision analysis are also covered. Students are exposed to analyze, design, and manage information systems. Prerequisite: BUS211 Management Information Systems.

MIS499 Senior Study in MIS [3-0, 3 cr.] This is a capstone course where students are engaged in projects that are comprehensive in nature. The emphasis will be on utilizing the knowledge and skills acquired throughout the program in designing and implementing solutions to set of given I.S. problems in business, government or other more general settings. Prerequisite: senior standing.

MIS350 Technology Management [3-0, 3 cr.] With the fast changing market dynamics and the accelerated advancements in technology, the manager is faced with increased pressure in identifying and taking advantage of opportunities arising from such changes. This course provides grounding in technology strategy, and tackles the role of technology in the competitive positions of the firm. It covers managerial decision making related to the investment in, adoption of, and the use of technology to maneuver in the market. Emphasis will be placed on managerial aspects and the dimensions of competition such as degrees of technological leadership, specialization, and operational efficiency.

MIS410 Enterprise-Wide Business Performance Modeling [3-0, 3 cr.] This is an integration course in Enterprise-Wide analysis and management that rises concepts and applications from multiple managerial functions. It provides an overall view of the enterprise including structure, procedures, systems, and people, necessary to design, engineer processes and lay the foundations for the planning and implementation of large-scale MIS solutions. Emphasis is placed on the relationship between such solution and business results of the enterprise. The students will learn to perform an in-depth analysis and develop models that connect company strategy with its operational func-
tions and its internal capacity in terms of people, process, and technology.

**MIS488 Special Topics in E-business [3-0, 3 cr.]** (maybe repeated for credits) This course will accommodate a series of topics in e-business with emphasis on the managerial aspects of information systems. The course draws on real life cases from the private and public sectors. It provides the foundations of building a customer-centric solution. The student will have the opportunity to go through all the stages of building and commercializing e-business solution from market trend analysis through user requirements and technological specifications to planning, building, maintaining and managing e-business.

**MARKETING**

**MKT201 Introduction to Marketing** [3-0, 3 cr.] Analyzes the elements of the marketing mix: product, pricing, promotion and distribution decisions. Topical coverage includes the legal and social environments influencing the marketing process.

**MKT301 Promotion Management and Marketing Communication** [3-0, 3 cr.] The course is based on the dynamics of decision making process concerning the promotional blend (mainly advertising and sales promotion) as part of the marketing mix. Topics include promotion budget, budget allocation among different promotional tools, and developing promotional programs. Students explore the issues of compatibility between promotion and the marketing strategy, consumer response to different messages, creativity, and trade response to different promotional tools. Prerequisites: MKT201 Introduction to Marketing.

**MKT304 Consumer Behavior** [3-0, 3 cr.] Customer satisfaction is the core of the marketing concept, and understanding consumers and their behavior is the basis of successful marketing strategies and programs. This course provides an overview of current knowledge about consume behavior. Basic behavioral science and marketing specific techniques used in marketing practice are covered. Prerequisites: MKT201 Introduction to Marketing.

**MKT311 International Marketing** [3-0, 3 cr.] The course offers knowledge from two perspectives. Marketing concepts and applications, in a dynamic environment of globalization. Prerequisite: MKT201 Introduction to Marketing.

**MKT421 Marketing Research** [3-0, 3 cr.] Provides students with analytical tools to collect and analyze market data. Topical coverage includes: principles of scientific research, techniques, methodological problems, organization and management of marketing research. Prerequisites: MKT201 Introduction to Marketing, STA201 Business Statistics and ECO201 Microeconomics, or consent of the division.

**MKT488 Topics in Marketing** [3-0, 3 cr.] The course covers special topics in marketing such as distributional channels and logistics, services marketing and sales management. The course could be taken more than once for credit when topics differ. Prerequisites: MKT201 Introduction to Marketing.

**MKT499 Senior Study** [3-0, 3 cr.] Case studies, research readings and field projects. A look at recent research topics from a practical standpoint. Prerequisite: Senior standing.

**OFFICE MANAGEMENT**

**OFM101 Keypunching I (English)** [0-4, 2 cr.] A course to develop skillful and efficient typing by the touch method.

**OFM102 Keypunching II (English)** [0-4, 2 cr.] A continuation of OFM101 Keypunching I (English). Prerequisite: OFM101 Keypunching I (English).

**OFM111 Keypunching I (Arabic)** [0-4, 2 cr.] A course to develop skillful and efficient typing by the touch method.
OFM112 Keypunching II (Arabic) [0-4, 2 cr.] A continuation of OFM111 Keypunching I (Arabic). Pre-requisite: OFM111 Keypunching I (Arabic).

OFM121 Shorthand I [3-0, 3 cr.] A course to develop the skillful use of Gregg shorthand. Practice in reading, dictation and transcription of textual and other material. Prerequisite: ENG101 English II.

OFM122 Shorthand II [3-0, 3 cr.] A continuation of OFM121 Shorthand I. Prerequisite: OFM121 Shorthand I.

OFM232 Secretarial Procedures [3-0, 3 cr.] Professional duties and procedures common to the secretary. Prerequisites: OFM101 Keypunching I (English), OFM121 Shorthand I.

OFM241 Transcription [3-0, 3 cr.] An integration of adequate English, shorthand and typing skills to produce acceptable shorthand transcripts with reasonable translation speed and a high level of accuracy. Prerequisite: OFM122 Shorthand II.
THE SCHOOL OF ENGINEERING & ARCHITECTURE

The School of Engineering and Architecture offers the following programs:

Engineering—five programs leading to the degrees of:
  Bachelor of Engineering (B.E.) in Civil Engineering
  Bachelor of Engineering (B.E.) in Computer Engineering
  Bachelor of Engineering (B.E.) in Electrical Engineering
  Bachelor of Engineering (B.E.) in Industrial Engineering
  Bachelor of Engineering (B.E.) in Mechanical Engineering.

Architecture and Design—four programs leading to the degrees of:
  Associate in Applied Science (A.A.S.) in Interior Design
  Bachelor of Science (B.S.) in Interior Design
  Bachelor of Arts (B.A.) in Interior Architecture
  Bachelor of Architecture (B.Arch.).

LAU’s engineering and architecture programs are designed to give graduates a rich academic and professional foundation leading to successful careers in today’s global markets. While specific technical components are the central part of each of the programs, courses in the humanities and social sciences prepare students to be well-rounded individuals who can practice their profession with proper concern and attention to environmental, social and economic problems. Furthermore, careful attention is given to the development of the student personality and work habits, stressing on personal skills that are key factors for successful careers. The teaching-learning process is meant to emphasize the development of practical competence, critical thinking, ability and passion for self-learning, as well as the capacity for teamwork, leadership and entrepreneurship.

All Engineering programs require a minimum of four academic years and three summers of studies after the Lebanese Baccalaureate. Architecture program requires a minimum of five academic years and three summers of studies. All programs are accredited by the Lebanese Government and the Board of Regents of the State of New York.
**FACULTY**

**ACTING DEAN:**  
Nasr, G.E., Ph.D.

**ASSISTANT DEAN:**  
Haddad, E., Ph.D.

**CHAIRS:**  
El-Daccache, M., Research Doctorate – Ph.D.

**FACULTY:**  
Chatila, J., Ph.D.
Saab, S., Ph.D.
Zouein, P., Ph.D.

**PROGRAMS**

**ASSOCIATE DEGREE PROGRAM**

**A.A.S. in Interior Design**

The Associate in Applied Science program offers a basic set of design studios in addition to general university courses, included in the foundation year program and a select number of courses and design studios from the second year. This program offers a basic introduction to the field of architecture and interior design and may be completed in a minimum of two academic years (72 credits).

**Major Requirements**

**FIRST YEAR**

**Fall Semester**  
ARA101 Arabic Essay Reading and Writing I  3
ENG101 English I  3
INF201 Learning Resources Techniques  1
DES231 Design Studio I-A  3
DES232 Design Studio I-B  3
DES241 Technical Graphics I  2

**Spring Semester**  
ARA102 Arabic Essay Reading and Writing II  3
ENG102 English II  3

**SECOND YEAR**

**Fall Semester**  
DES271 History of Design  3
DES331 Design Studio III  6
DES341 Technical Graphics II  3
PED — Physical Education  1

**Spring Semester**  
DES251 Introduction to Computer Graphics  3
DES261 Introduction to Design  2
DES332 Design Studio IV  6
CST202 Cultural Studies II  3

**Art Electives:**

ART211 Ceramics I  3
ART212 Ceramics II  3
ART221  Drawing I  ............................................. 3
ART222  Drawing II   ........................................... 3
ART334  Graphics  ............................................. 3
ART341  Painting I  ........................................... 3
ART342  Painting II   ........................................ 3
ART351  Sculpture I    ....................................... 3
ART352  Sculpture II   ........................................ 3
COM225  The Art of Film  .................................... 3
COM241  Introduction to Acting  ................................ 3
COM242  Introduction to the Art of Theater  ................... 3
COM345  Modern Drama  ..................................... 3
MUS201  Fundamentals of Music  ................................ 3
PHO211  Photography I   ..................................... 3
PHO212  Photography II   ..................................... 3

BACHELOR OF SCIENCE DEGREE PROGRAM

Interior Design

The Bachelor of Science in Interior Design offers a general exposure to the practice of interior design by developing the necessary base for practice in the field. Building upon the common foundation year, students are introduced in the second and third year to various design problems of gradually increasing complexity.

This program may be completed in a minimum of three years with two summer terms, with a total of 110 credits (after the freshman year). Students who are interested in following a more comprehensive program for practice as an interior designer/interior architect may continue their studies by adding one additional year and complete the Bachelor of Arts in Interior Architecture. (See section on Bachelor of Arts in Interior Architecture).

Major Requirements

FIRST YEAR

**Fall Semester** .............................................. 13
DES231  Design Studio I-A  .................................. 3
DES232  Design Studio I-B   .................................. 3
DES241  Technical Graphics I   ................................ 2
DES271  History of Design   .................................. 2
ART221  Drawing I  ........................................... 3

Spring Semester ............................................. 14
DES233  Design Studio II-A  ............................... 3
DES234  Design Studio II-B   ................................ 3
DES240  Sketching  ........................................... 2
DES251  Introduction to Computer Graphics  .................. 3
DES261  Introduction to Design  ............................ 2
INF201  Learning Resources Techniques   ................. 1

**Summer Modules I and II** .................................. 10
PHO211  Photography I   ..................................... 3
— Art Elective* .............................................. 3
— General University Requirement**  ......................... 3

SECOND YEAR

**Fall Semester** .............................................. 16
DES331  Design Studio III  ................................... 6
DES351  Computer Graphics I   ................................ 2
DES341  Technical Graphics II  ............................. 3
DES371  History of Architecture I  .......................... 3
DES361  Theory I  ............................................. 2

Spring Semester ............................................. 16
DES332  Design Studio IV  ................................... 6
DES352  Computer Graphics II  .............................. 2
DES342  Technical Graphics III  ............................ 3
DES372  History of Architecture II  ......................... 2
— General University Requirement**  ......................... 3

**Summer Modules I and II** .................................. 10
PED101  Basic Health  ....................................... 1
— General University Requirement**  ......................... 3
— General University Requirement**  ......................... 3
— General University Requirement**  ......................... 3

THIRD YEAR

**Fall Semester** .............................................. 17
DES431  Design Studio V  ..................................... 5
DES421  Design Technology I  .............................. 2
DES401  Interior Design Workshop I  ......................... 1
— Art Elective* .............................................. 3
— General University Requirement**  ......................... 3
— General University Requirement**  ......................... 3

**Spring Semester** ............................................. 14
DES432  Design Studio VI   ................................... 5
DES422  Design Technology II  2
—— General University Requirement**  3
—— General University Requirement**  3
DES402  Interior Design Workshop II  1

*Art Electives:
ART211  Ceramics I  3
ART212  Ceramics II  3
ART222  Drawing II  3
ART334  Graphics  3
ART341  Painting I  3
ART342  Painting II  3
ART351  Sculpture I  3
ART352  Sculpture II  3
COM225  The Art of Film  3
COM241  Introduction to Acting  3
COM242  Introduction to the Art of Theater  3
COM345  Modern Drama  3
MUS201  Fundamentals of Music  3
PHO212  Photography II  3

**General University Requirements:
ARA201  Appreciation of Arabic Literature  3
CST201  Cultural Studies I  3
CST202  Cultural Studies II  3
CST301  Cultural Studies III  3
ENG202  Sophomore Rhetoric  3
ENG203  Fundamentals of Oral Communication  3
STA202  Applied Statistics  3
INF201  Learning Resources Techniques  1
PED101  Basic Health  1
PED — Physical Education  1
—— Social Science Course  3
—— Social Science Course  3

BACHELOR OF ARTS DEGREE PROGRAM

Interior Architecture

This program includes the basic foundation of the interior design program (B.S.), but adds an additional year of specialization that allows students a more comprehensive exposure to the profession of interior designer, in addition to preparing students for potential specialization and graduate studies in areas such as industrial design, historic preservation, furniture design, and other graduate fields of study.

This program also offers a wider exposure to current issues and problems of theoretical and practical nature, complemented by a number of activities such as international studios, workshops, visiting critics and exchanges with architecture and design institutes worldwide.

Students enrolled in the B.A. in Interior Architecture also have the option of adding to their studies by focusing their professional electives in one of the areas of specialization: Islamic Art and Architecture, or Graphic Design.

The total number of credits required for the degree of Bachelor of Arts in Interior Architecture is 139 credits (excluding the Freshman year). The total number of credits for a Bachelor of Arts in Interior Architecture with a Minor in Islamic Art and Architecture or a Minor in Graphic Design is 147 or 151 credits respectively.

This program may be completed in four academic years (after freshman) including summer terms. Students may elect to spread the program over a longer period of time if they choose not to take summer terms.

Students enrolled in the B.S. in Interior Design may apply to this program, and would normally complete its requirements in one additional year of study.

Major Requirements

FIRST YEAR

Fall Semester  13
DES231  Design Studio I-A  3
DES232  Design Studio I-B  3
DES241  Technical Graphics I  2
DES271  History of Design  2
ART221  Drawing I  3

Spring Semester  14
DES233  Design Studio II-A  3
DES234  Design Studio II-B  3
DES240  Sketching  2
DES251  Introduction to Computer Graphics  3
DES261  Introduction to Design  2
INF201  Learning Resources Techniques  1
SECOND YEAR

Fall Semester ........................................ 16
DES331 Design Studio III ............................... 6
DES351 Computer Graphics I ......................... 2
DES341 Technical Graphics II ......................... 3
DES371 History of Architecture I ..................... 3
DES361 Theory I ........................................ 2

Spring Semester ........................................ 15
DES332 Design Studio IV ............................... 6
DES352 Computer Graphics II .......................... 2
DES342 Technical Graphics III ......................... 3
DES372 History of Architecture II ..................... 2
— Art Elective........................................ 3
— General University Requirement** ............... 2

Summer Modules I and II .............................. 10
— Art Elective........................................ 3
PED101 Basic Health .................................. 1
— General University Requirement** ............... 3
— General University Requirement** ............... 3

THIRD YEAR

Fall Semester ........................................ 16
DES431 Design Studio V ................................. 5
DES401 Interior Design Workshop I .................... 1
DES421 Design Technology I ............................ 2
DES523 Environmental Systems I ..................... 3
DES — History and Theory Elective*** ............... 2
— General University Requirement** ............... 3

Spring Semester ........................................ 14
DES432 Design Studio VI ............................... 5
DES402 Interior Design Workshop II ................... 1
DES422 Design Technology II ........................... 2
DES524 Environmental Systems II ..................... 3
— General University Requirement** ............... 3

FOURTH YEAR

Fall Semester ........................................ 13
DES531 Design Studio VII ............................. 5
— Professional Elective**** ........................... 2
— General University Requirement** ............... 3
— General University Requirement** ............... 3

Spring Semester ........................................ 10
DES532 Design Studio VIII ............................. 5
— Professional Elective**** ........................... 2
— General University Requirement** ............... 3

*Art Electives:
ART211 Ceramics I ................................... 3
ART212 Ceramics II ................................... 3
ART222 Drawing II ................................... 3
ART334 Graphics ...................................... 3
ART341 Painting I ..................................... 3
ART342 Painting II .................................... 3
ART351 Sculpture I .................................... 3
ART352 Sculpture II .................................... 3
COM225 The Art of Film ................................ 3
COM241 Introduction to Acting ....................... 3
COM242 Introduction to the Art of Theater .......... 3
COM345 Modern Drama ................................ 3
MUS201 Fundamentals of Music....................... 3
PHO212 Photography II ................................. 3

**General University Requirements:
ARA201 Appreciation of Arabic Literature .......... 3
CST201 Cultural Studies I ............................. 3
CST202 Cultural Studies II ............................ 3
CST301 Cultural Studies III ............................ 3
ENG202 Sophomore Rhetoric ........................... 3
ENG203 Fundamentals of Oral Communication ....... 3
STA202 Applied Statistics .............................. 3
INF201 Learning Resources Techniques ............... 1
PED101 Basic Health .................................. 1
PED — Physical Education ............................. 1
— Social Science Course ............................. 1
— Social Science Course ............................. 3
### History and Theory Electives:

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<th>Course Title</th>
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<td>2</td>
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<tr>
<td>ARC473</td>
<td>Architecture of the Renaissance</td>
<td>2</td>
</tr>
<tr>
<td>DES475</td>
<td>Islamic Architecture in the Age of Empires</td>
<td>2</td>
</tr>
<tr>
<td>DES476</td>
<td>Art and Architecture of the Mamluks</td>
<td>2</td>
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<tr>
<td>DES477</td>
<td>Art and Architecture of the Umayyads</td>
<td>2</td>
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<tr>
<td>DES478</td>
<td>The Decorative Arts of Islam</td>
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### Professional Electives:

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<td>Introduction to Islamic Art</td>
<td>3</td>
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<tr>
<td>ARC376</td>
<td>Intro to Islamic Architecture</td>
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<td>ARC381</td>
<td>Architectural Photography</td>
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<td>ARC405</td>
<td>Design Workshop–IAAD</td>
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<tr>
<td>ARC435</td>
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<td>ARC471</td>
<td>Contemporary Trends</td>
<td>2</td>
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<td>ARC472</td>
<td>Classical Art and Architecture</td>
<td>2</td>
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<td>ARC473</td>
<td>Architecture of the Renaissance</td>
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<td>Islamic Architecture in the Age of Empires</td>
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<td>Art and Architecture of the Mamluks</td>
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<td>ARC477</td>
<td>Art and Architecture of the Umayyads</td>
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<td>ARC478</td>
<td>The Decorative Arts of Islam</td>
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<tr>
<td>ARC483</td>
<td>Regional Architecture II</td>
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<tr>
<td>ARC485</td>
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<tr>
<td>ARC595</td>
<td>International Studio–IAAD</td>
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<tr>
<td>DES373</td>
<td>History of Landscape Design</td>
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<td>DES404</td>
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<tr>
<td>DES484</td>
<td>Furniture Design</td>
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<td>DES585</td>
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<td>DES591</td>
<td>International Studio</td>
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<tr>
<td>DES592</td>
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<tr>
<td>GRA302</td>
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<td>3</td>
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<td>GRA312</td>
<td>Printing Variables</td>
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<td>GRA341</td>
<td>Art of Calligraphy</td>
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<td>History of Graphic Design</td>
<td>3</td>
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<tr>
<td>GRA462</td>
<td>Graphic Design Seminar</td>
<td>3</td>
</tr>
<tr>
<td>GRA472</td>
<td>Digital Media Design</td>
<td>3</td>
</tr>
</tbody>
</table>

### Minor in Islamic Art and Architecture (IAAD)

The Minor within the undergraduate program adds another layer of knowledge to the education of a student, with a focus on a number of electives and additional courses directed towards the investigation of a particular area of interest.

The Minor in Islamic Art and Architecture exposes students of architecture and design to the artistic and architectural heritage of the Islamic world, thus filling a gap in the current educational programs of architects and designers working in the Arab world, as well as offering a number of electives to non-major students who may wish to broaden their knowledge of this important aspect of the culture of the region.

### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC375</td>
<td>Introduction to Islamic Art</td>
<td>3</td>
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<td>ARC376</td>
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<td>ARC405</td>
<td>Design Workshop–IAAD</td>
<td>1</td>
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<tr>
<td>ARC435</td>
<td>Design Studio–IAAD</td>
<td>4</td>
</tr>
<tr>
<td>ARC595</td>
<td>International Studio–IAAD</td>
<td>3</td>
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</table>

Four credits to be selected from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARC475</td>
<td>Islamic Architecture in the Age of Empires</td>
<td>2</td>
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<tr>
<td>ARC476</td>
<td>Art and Architecture of the Mamluks</td>
<td>2</td>
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<tr>
<td>ARC477</td>
<td>Art and Architecture of the Umayyads</td>
<td>2</td>
</tr>
<tr>
<td>ARC478</td>
<td>The Decorative Arts of Islam</td>
<td>2</td>
</tr>
</tbody>
</table>

### Minor in Graphic Design

The Minor in Graphic Design is open to students in the Bachelor of Interior Architecture program to give them additional skills that would allow them to deal with design tasks related to their profession, and involving new media and computer-related graphics.

### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GRA302</td>
<td>Advanced Computer Graphics</td>
<td>3</td>
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<tr>
<td>GRA312</td>
<td>Printing Variables</td>
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<tr>
<td>GRA411</td>
<td>Advanced Typography</td>
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Nine credits to be selected from the following courses:

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<td>GRA431</td>
<td>History of Graphic Design</td>
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<td>Graphic Design Seminar</td>
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<tr>
<td>GRA472</td>
<td>Digital Media Design</td>
<td>3</td>
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</tbody>
</table>
BACHELOR OF ARCHITECTURE
DEGREE PROGRAM

The Architecture curriculum leads to the professional degree of Bachelor of Architecture, which allows its holder to practice the profession of architect in its wide range of applications, or to pursue graduate studies in architecture, urban design, urban planning, landscape design, construction management or other related fields.

The program offered aims at developing a broad base of theoretical knowledge along with the necessary practical skills, in order to bridge the gap often found between “thinking” and “making,” within a comprehensive university education that affirms the essential human values upon which all cultural activities should be ideally based, and to assert the role of the architect as the synthesizer of various aspects affecting the built environment.

This comprehensive approach begins with a common foundation year, in which students are introduced to design as a general field, from which they proceed in their specialization. The program offers a wide exposure to current issues and problems of theoretical and practical nature, complemented by a number of activities such as international studios, workshops, visiting critics and exchanges with architecture and design institutes worldwide.

The total number of credits required for graduation with a B.Arch. degree is 176 credits, which can be completed in a minimum of five academic years (after Freshman) including summer terms.

Major Requirements

FIRST YEAR (Foundation)

Fall Semester ............................................. 13
ARC231 Design Studio I-A ............................ 3
ARC232 Design Studio I-B ............................ 3
ARC241 Technical Graphics I ......................... 2
ARC271 History of Design .............................. 2
ART221 Drawing I ....................................... 3

Spring Semester ......................................... 14
ARC233 Design Studio II-A ......................... 3
ARC234 Design Studio II-B ......................... 3
ARC240 Sketching .............................. 2
ARC251 Introduction to Computer Graphics ........ 3
ARC261 Introduction to Design .................... 2
INF201 Learning Resources Techniques ........ 1

Summer Modules I and II ......................... 9
PHO211 Photography I .............................. 3
—— Art Elective* ........................................ 3
—— General University Requirement** .............. 3

SECOND YEAR

Fall Semester ......................................... 16
ARC331 Design Studio III ............................. 6
ARC351 Computer Graphics I ....................... 2
ARC341 Technical Graphics II ....................... 3
ARC371 History of Architecture I .................... 3
ARC361 Theory I ....................................... 2

Spring Semester ......................................... 15
ARC332 Design Studio IV ............................. 6
ARC352 Computer Graphics II ....................... 2
ARC342 Technical Graphics III ....................... 3
ARC372 History of Architecture II .................... 2
ARC362 Theory II ....................................... 2

Summer Modules I and II ......................... 12
ARC311 Building Systems I ........................... 3
ARC312 Building Systems II ........................... 3
—— General University Requirement** .............. 3
—— General University Requirement** .............. 3

THIRD YEAR

Fall Semester ......................................... 15
ARC431 Design Studio V .............................. 6
ARC421 Building Technology I ....................... 2
ARC411 Building Systems III ......................... 3
PED101 Basic Health ............................... 1
—— General University Requirement** .............. 3

Spring Semester ......................................... 15
ARC432 Design Studio VI .............................. 6
ARC422 Building Technology II ....................... 2
ARC412 Building Systems IV ......................... 3
—— Professional Elective**** ............................. 3
PED — Physical Education ......................... 1
Summer Modules I and II .......................... 10
ARC481 Construction Documents ................. 4
— General University Requirement** .......... 3
— General University Requirement** .......... 3

FOURTH YEAR

Fall Semester ..................................... 16
ARC531 Design Studio VII .......................... 5
ARC501 Design Workshop I ........................ 1
ARC521 Building Technology III ................. 2
ARC523 Environmental Systems I ............... 3
ARC581 Urban Planning I .......................... 3
ARC — History and Theory Elective*** ......... 2

Spring Semester .................................. 15
ARC532 Design Studio VIII ........................ 5
ARC502 Design Workshop II ..................... 1
ARC522 Building Technology IV ................ 2
ARC524 Environmental Systems II ............. 3
ARC561 Seminar ................................. 2
— Professional Elective**** ...................... 2

Summer Modules I and II ........................ 7
ARC538 Internship .................................. 1
— Professional Elective**** ...................... 3
— General University Requirement** .......... 3

FIFTH YEAR

Fall Semester ..................................... 9
ARC631 Design Studio IX ........................... 5
ARC601 Final Project Research ................... 1
ARC584 Building Codes and Laws ............... 1
— Professional Elective**** ...................... 2

Spring Semester .................................. 10
ARC632 Design Studio X ........................... 5
— Professional Elective**** ...................... 2
— General University Requirement** .......... 3

*Art Electives:
ART 211 Ceramics I ................................. 3
ART212 Ceramics II ................................. 3
ART222 Drawing II ................................. 3
ART334 Graphics ................................. 3
ART341 Painting I ................................. 3
ART342 Painting II ................................. 3
ART351 Sculpture I ................................. 3
ART352 Sculpture II ................................. 3
COM225 The Art of Film ............................ 3
COM241 Introduction to Acting ................. 3
COM242 Introduction to the Art of Theater .... 3
COM345 Modern Drama ............................ 3
MUS201 Fundamentals of Music ................. 3
PHO212 Photography II ............................ 3

**General University Requirements:
ARA201 Appreciation of Arabic Literature .... 3
CST201 Cultural Studies I .......................... 3
CST202 Cultural Studies II ....................... 3
CST301 Cultural Studies III ...................... 3
ENG202 Sophomore Rhetoric ...................... 3
ENG203 Fundamentals of Oral Communication.. 3
INF201 Learning Resources Techniques ......... 1
PED101 Basic Health ............................... 1
PED — Physical Education ........................ 1
— Social Science Course ......................... 3
— Social Science Course ......................... 3

***History and Theory Elective:
ARC461 Topics in Architecture Theory ........ 2
ARC471 Contemporary Trends .................... 2
ARC472 Classical Art and Architecture ........ 2
ARC473 Architecture of the Renaissance ...... 2
ARC475 Islamic Architecture in the Age of Empires 2
ARC476 Art and Architecture of the Mamluks .... 2
ARC477 Art and Architecture of the Umayyads .... 2
ARC478 The Decorative Arts of Islam .......... 2

****Professional Electives:
ARC373 History of Landscape Design .......... 2
ARC375 Introduction to Islamic Art ............. 3
ARC376 Introduction to Islamic Architecture ..... 3
ARC381 Architectural Photography ............... 2
ARC405 Design Workshop—IAAD ................ 1
ARC404 Landscape Design Workshop ............ 2
ARC435 Design Studio—IAAD ..................... 4
ARC451 Digital Modeling .......................... 3
ARC452 Computer Animation ..................... 2
ARC453 Programming .............................. 2
ARC461 Topics in Architecture Theory .......... 2
ARC471 Contemporary Trends .................... 2
ARC472 Classical Art and Architecture .......... 2
ARC473 Architecture of the Renaissance ...... 2
ARC475 Islamic Architecture in the Age of Empires 2
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<td>The Decorative Arts of Islam</td>
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<td>ARC482</td>
<td>Regional Architecture I</td>
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<td>ARC483</td>
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<td>ARC484</td>
<td>Regional Urbanism</td>
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<td>ARC551</td>
<td>Computer Graphics Studio</td>
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<td>ARC582</td>
<td>Urban Planning II</td>
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<td>Paper and Paperboard Packaging</td>
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<td>Packaging for Food, Drug and Cosmetics</td>
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<td>Computer Graphics for Packaging</td>
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Required courses:

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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ARC375</td>
<td>Introduction to Islamic Art</td>
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<tr>
<td>ARC376</td>
<td>Introduction to Islamic Architecture</td>
<td>3</td>
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<tr>
<td>ARC405</td>
<td>Design Workshop – IAAD</td>
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</tr>
<tr>
<td>ARC595</td>
<td>International Studio – IAAD</td>
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Four credits to be selected from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<td>Islamic Architecture in the Age of Empires</td>
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<td>ARC476</td>
<td>Art and Architecture of the Mamluks</td>
<td>2</td>
</tr>
<tr>
<td>ARC477</td>
<td>Art and Architecture of the Umayyads</td>
<td>2</td>
</tr>
<tr>
<td>ARC478</td>
<td>The Decorative Arts of Islam</td>
<td>2</td>
</tr>
</tbody>
</table>

Minor in Islamic Art and Architecture (IAAD)

The Minor within the undergraduate program adds another layer of knowledge to the education of a student, with a focus on a number of electives and additional courses directed towards the investigation of a particular area of interest.

The Minor in Islamic Art and Architecture exposes students of architecture and design to the artistic and architectural heritage of the Islamic world, thus filling a gap in the current educational programs of architects and designers working in the Arab world, as well as offering a number of electives to non-major students who may wish to broaden their knowledge of this important aspect of the culture of the region.

**Minor in Computer Graphics**

The Minor in Computer Graphics is open to students in the Bachelor of Architecture program, supplementing their skills in computer aided design programs, with exposure to programming, animation, digital modeling, and digital media in design.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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**BACHELOR OF ENGINEERING DEGREE PROGRAM**

The five undergraduate engineering programs offered by the School are designed to prepare students for engineering careers in design, development, research, and project supervision and management. The goal is to provide students with sufficient technical background, skills, and experience that will enable them to successfully compete in today’s globalized and rapidly changing job markets. Students are also provided with a strong foundation in mathematics, physical sciences and engineering sciences allowing them to undertake advanced graduate studies. Programs
are built and implemented according to the ABET2000 guidelines. Continuous monitoring of “outcomes” is used to improve course contents and pedagogy.

Programs consist of a common pre-engineering part, followed by the professional portion that is specific to every major. In the fourth year, students have the opportunity to gain a greater depth of understanding of specific emphasis areas, to engage in research and in the design of real-life engineering projects.

**Common Engineering Courses**

The common part of the program concentrates on mathematics, physics, chemistry, and general engineering sciences in addition to humanities, social sciences, and other courses that are part of the general university requirements. Common courses listed below amount to a total of 67 credits most of which are usually completed in the first two years. Students may also elect to take these courses over a longer period of time.

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**Civil Engineering**

In a fast changing world the civil engineering department aims at providing its graduates with a solid theoretical background, training in the latest design methods, and proficiency in technological applications. Our graduates go on to pursue varied careers in design, construction, management, and research. The civil engineering department currently offers courses in the fields of structures and materials, water and environment, geotechnical, transportation, and management. We prepare our graduates to work effectively in today’s work environment by being: technically competent, critical/reflective thinkers, and abreast of the latest technical software.

The total number of credits required for graduation is 154. This includes six technical elective courses and seven courses with a separate industry-standard software laboratory. The electives allow the students to choose the emphasis depending on their own interests and current market needs. The software courses enhance the learning experience and improve the marketability of our graduates. A typical schedule over a four year period including summer sessions is listed below. Students may elect to take these courses over a longer period of time.

**Major Requirements**

**FIRST YEAR**

**Fall Semester**

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**Spring Semester**

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Computer Engineering

Students in the computer engineering program develop an in-depth knowledge of digital systems, computers, and software. In addition to the computer engineering core, the program emphasizes topics in communication systems. Courses include subjects in microprocessors, operating systems, computer architecture, database systems, networking, electronics, telecommunications, controls, software engineering, reconfigurable computing, and CAD for VLSI. This provides for a balanced coverage and integration of hardware, software, and communications engineering. Six credits of professional experience are also included in the summer of the third year to give students an opportunity to integrate classroom instruction with practical work experience as a part of their academic program. The broad scope of the program enables the student to pursue many different career paths in the design and use of computing and communication systems. Graduates of the program are prepared for employment in the computer and communication industries or may also select to pursue graduate studies.

The Computer Engineering Program requires the completion of 153 semester hours including the 67 credits of the common pre-engineering program. While the program is credit based, a typical schedule over a four year period including summer sessions is listed below. Students may select to take these courses over a longer period of time.

#### Major Requirements

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<tr>
<td><strong>Fall Semester</strong></td>
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<td>COE201 Computer Proficiency</td>
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<td>GNE333 Engineering Analysis I</td>
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| SUMMER MODULE I | 6 |
| CHM201 Chemical Principles | 3 |
| MTH206 Calculus IV | 3 |

| SUMMER MODULE II | 3 |
| ARA201 Appreciation of Arabic Literature | 3 |

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<tr>
<td>ELE537 Communication Systems</td>
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</table>

| SUMMER MODULE I | 5 |
| ENG203 Fundamentals of Oral Communication | 3 |
| GNE301 Professional Communication | 2 |

| SUMMER MODULE II | 4 |
| GNE331 Probability and Statistics | 3 |
| PED | Physical Education | 1 |

| EXIT REQUIREMENTS | 33 |
|—— Social Science Course | 3 |

| TOTAL CREDITS | 153 |
Electrical Engineering

Electrical engineering is a science-oriented branch of engineering primarily concerned with all phases of development and utilization of electric signals, energy, and intelligence. The study of electrical engineering can be conveniently divided into the academic areas of circuits, electronics, electromagnetics, electric energy systems, communications, control, and computer engineering. Due to the extremely rapid growth and changes relating to the application of electrical engineering principles, the curriculum is designed for concentration on a solid core of basic foundation courses covering all areas of electrical engineering. Six credits of professional experience are also included in the summer of the third year to give students an opportunity to integrate classroom instruction with practical work experience as a part of their academic program.

The Electrical Engineering Program requires the completion of 150 semester hours including the 67 credits of the common pre-engineering program. While the program is credit based, a typical schedule over a four-year period including summer sessions is listed below. Students may select to take these courses over a longer period of time.

FIRST YEAR

Fall Semester: 18 credits
- COE201 Computer Proficiency: 1
- ENG202 Sophomore Rhetoric: 3
- MEE220 Engineering Graphics: 4
- MTH201 Calculus I: 3
- PHY201 Electricity and Magnetism: 4
- CIE200 Statics: 3

Spring Semester: 16 credits
- CHM201 Chemical Principles: 3
- CST201 Cultural Studies I: 3
- ELE201 Electrical Circuits I: 3
- INF201 Learning Resources Techniques: 1
- MTH204 Differential Equations: 3
- MTH206 Calculus IV: 3

TECHNICAL ELECTIVES

- COE314 File Processing: 3
- COE511 Object Oriented Programming: 3
- COE525 Advanced Computer Architecture: 3
- COE527 VLSI: 3
- COE533 Advanced Computer Networks: 3
- COE592 Project II: 3
- COE599 Topics in Computer Engineering: 3
- ELE411 Electromagnetic Fields: 3
- ELE413 Electromagnetic Waves: 3
- ELE502 Electronics II: 3
- ELE544 Feedback Control: 3
- GNE334 Engineering Analysis II: 3
- INE427/429 Project Scheduling/Contracting: 3

Or any other technically related course approved by the department.
Industrial Engineering

LAU is the only university operating in Lebanon that offers an industrial engineering program. Industrial growth has created unusual opportunities for industrial engineers in Lebanon and the region. Automation and the emphasis on increased
productivity coupled with higher complexity in systems engineering are resulting in greater demand for engineering graduates with a broad interdisciplinary background. This program prepares the student for industrial practice in such areas as product design, process design, plant operation, production control, quality control, facilities planning, work system analysis and evaluation, and economic analysis of operational systems. Students are trained to apply engineering principles in solving problems encountered in environments and situations where a quantitative basis for decision-making is needed. Six credits of professional experience are also included in the summer of the third year to give students an opportunity to integrate classroom instruction with practical work experience as a part of their academic program.

The Industrial Engineering Program requires the completion of 151 semester hours including the 67 credits of the common pre-engineering program. While the program is credit based, a typical schedule over a four year period including summer sessions is listed below. Students may select to take these courses over a longer period of time.

Major Requirements

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
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<td>Fall</td>
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<td>ENG202</td>
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<td>MEE220</td>
<td>Engineering Graphics</td>
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<td>MTH201</td>
<td>Calculus III</td>
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<td></td>
<td>CIE200</td>
<td>Statistics</td>
<td>3</td>
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<td>ARA201</td>
<td>Appreciation of Arabic Literature</td>
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<td>CST201</td>
<td>Cultural Studies I</td>
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<td>INF201</td>
<td>Learning Resources Techniques</td>
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<td>MTH204</td>
<td>Differential Equations</td>
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<td>MTH206</td>
<td>Calculus IV</td>
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<td>MEE241</td>
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**SECOND YEAR**

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<td>INE302</td>
<td>Linear Programming</td>
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<td>INE320</td>
<td>Engineering Economy I</td>
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<td>INE340</td>
<td>Advanced Statistics</td>
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<td>Spring</td>
<td>CST202</td>
<td>Cultural Studies II</td>
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<td>ELE305</td>
<td>Introduction to Electrical Engineering</td>
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<td>INE304</td>
<td>Stochastic Processes</td>
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<td>INE306</td>
<td>Decision Analysis</td>
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<td>INE462</td>
<td>Production Processes and Machinery</td>
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<td>INE463</td>
<td>Production Processes and Machinery Lab</td>
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**THIRD YEAR**

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<td>Cultural Studies III</td>
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<td>INE345</td>
<td>Production Control</td>
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<td>INE442</td>
<td>Quality Control I</td>
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<td>INE448</td>
<td>Machine Scheduling</td>
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<td>INE450</td>
<td>Simulation</td>
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<td>Spring</td>
<td>INE407</td>
<td>Network Flow</td>
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<td>INE410</td>
<td>Motion and Time Study</td>
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<td>INE414</td>
<td>Human Factors in Engineering</td>
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<td>INE434</td>
<td>Facilities Planning and Layout</td>
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<td>INE443</td>
<td>Quality Control II</td>
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<td>Summer</td>
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<td>Social Science Course</td>
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FOURTH YEAR

Fall Semester ................................. 15
INE427 Project Scheduling ................. 3
INE444 Inventory Analysis .................. 3
INE591 Project I .............................. 3
—— Technical Elective ....................... 3
—— Technical Elective ....................... 3

Spring Semester .............................. 15
INE436 Materials Handling .................. 3
INE551 Advanced Simulation ............... 4
MEE401 Energy Systems .................... 2
—— Technical Elective ....................... 3
—— Technical Elective ....................... 3

TECHNICAL ELECTIVES
GNE334 Engineering Analysis II ............ 3
INE415 Occupational Safety ............... 2
INE429 Project Contracting ............... 3
INE502 Integer Programming ............... 3
INE504 Nonlinear Optimization ............ 3
INE521 Engineering Economy II .......... 3
INE563 CAD/CAM ......................... 3
INE592 Project II ............................ 3
INE599 Topics in Industrial Engineering ... 3
Or any other technically related course approved by the department.

Mechanical Engineering

The mechanical engineering major offers a broad base for preparing students for a variety of careers in the design and construction of mechanical systems. The production, transformation, transmission and control of thermal and mechanical energy constitute one of the main tracks, which rely on thermodynamics, fluid mechanics and heat transfer. This track leads to applications in internal combustion engines, steam and gas power plants and HVAC. Solid mechanics, kinematics, and dynamics of machinery lead to applications in vibrations control and machine design. The general area of manufacturing that is closely linked to industrial engineering is also covered in the course of study. The program emphasizes the broad spectrum of applications of mechanical engineering, as well as the interaction with other engineering disciplines. Laboratory experimentation and computer simulation are used to train students on the understanding, design and testing of thermal and mechanical systems. Six credits of professional experience are also included in the summer of the third year to give students an opportunity to integrate classroom instruction with practical work experience as a part of their academic program.

The Mechanical Engineering Program requires the completion of 150 semester hours including the 67 credits of the common pre-engineering program. While the program is credit based, a typical schedule over a four-year period including summer sessions is listed below. Students may select to take these courses over a longer period of time.

Major Requirements

FIRST YEAR

Fall Semester ................................. 17
CHM201 Chemical Principles ............... 3
COE201 Computer Proficiency ............. 1
ENG202 Sophomore Rhetoric .............. 3
MEE220 Engineering Graphics ............. 4
GNE333 Engineering Analysis I .......... 3
MEE321 Material Properties and Processes 3

Spring Semester .............................. 16
ARA201 Appreciation of Arabic Literature 3
CST201 Cultural Studies I .................. 3
INF201 Learning Resources Techniques .... 1
MTH204 Differential Equations ............ 3
MTH206 Calculus IV ......................... 3
MEE241 Dynamics ............................ 3

Summer Module I .............................. 6
GNE333 Engineering Analysis I .......... 3
MEE321 Material Properties and Processes 3

Summer Module II ............................. 4
GNE331 Probability and Statistics .......... 3
PED — Physical Education ................. 1
SECOND YEAR

Fall Semester ............................................. 17
COE211 Computer Programming .................... 4
ELE305 Introduction to Electrical Engineering .... 3
MEE201 Thermodynamics ............................. 3
MEE311 Fluid Mechanics ................................ 3
MEE312 Fluid Mechanics Lab. ....................... 1
— Social Science Course ............................... 3

Spring Semester ......................................... 16
MEE290 Instrumentation and Measurements ........ 2
MEE302 Energy Conversion ............................ 3
MEE304 Heat Transfer .................................. 3
MEE305 Heat Transfer Lab. ............................ 1
MEE320 Strength of Material ......................... 3
MEE341 Kinematics and Dynamics of Linkages .... 3
PED101 Basic Health .................................. 1

Summer Module I ........................................... 5
ENG203 Fundamentals of Oral Communication .... 3
GNE301 Professional Communication ............... 2

Summer Module II .......................................... 3
— Social Science Course ............................... 3

THIRD YEAR

Fall Semester ............................................. 17
INE320 Engineering Economy I ...................... 3
INE402 Optimization .................................. 3
MEE405 Refrigeration and Air Conditioning .......... 3
MEE406 Refrigeration and Air Conditioning Lab .... 1
MEE412 Thermofluids .................................. 3
MEE442 Machine Dynamics ............................ 3
MEE443 Machine Dynamics Lab ...................... 1

Spring Semester ........................................... 16
CST202 Cultural Studies II ............................ 3
MEE422 Mechanical Engineering Design .......... 3
MEE432 Production Processes and Machinery ...... 3
MEE433 Production Processes and Machinery Lab .. 1
MEE445 Control Systems ............................. 3
MEE521 Finite Element Methods .................... 3

Summer Module II ......................................... 6
GNE498 Professional Experience .................... 6

FOURTH YEAR

Fall Semester ............................................. 13
MEE407 Internal Combustion Engines ............... 3
MEE408 Internal Combustion Engines Lab .......... 1
MEE591 Project I ....................................... 3
— Technical Elective .................................. 3
— Technical Elective .................................. 3

Spring Semester ........................................... 14
CST301 Cultural Studies III ........................... 3
INE427/INE429 Project Scheduling/Contracting .... 3
MEE490 Energy Audit ................................. 2
— Technical Elective .................................. 3
— Technical Elective .................................. 3

TECHNICAL ELECTIVES
GNE334 Engineering Analysis II .................... 3
INE427/INE429 Project Scheduling/Contracting .... 3
MEE503 Power Plant Engineering .................... 3
MEE505 Solar Systems ................................ 3
MEE513 Gas Turbines .................................. 3
MEE533 CAD/CAM .................................... 3
MEE543 Acoustics and Vibration Control .......... 3
MEE592 Project II ..................................... 3
MEE599 Topics in Mechanical Engineering ......... 3
Or any other technically related course approved by the department.

Packaging Minor (PM)

The Packaging minor at LAU is an interdisciplinary field in which scientific and design principles are applied to analyze, develop and produce packages that inform, communicate, advertise, contain, protect, preserve, and transport a product. The Packaging minor includes the study of products, package materials, materials behavior, structures, methods, machinery and most common types of processes used for package design, production and transportation.

The program is designed to capitalize on theories and skills learned in other disciplines, thereby uniquely preparing students for success as packaging professionals in positions ranging from technical research and development to design, production and sales.
In order to maximize the comprehension of this study field by the student the minor includes laboratory and studio courses to provide the student with hands on experience.

Packaging Minor Requirements

The Packaging minor requires the completion of 18 credits of Packaging courses consisting of 12 required core credits and 6 elective credits.

**Required Core Courses** .................................. 12
PKG/INE570 Introduction to Packaging ............... 3
PKG/INE572 Packaging Dynamics and Permeation . 3
PKG/INE573 Packaging Types and Processes ........ 3
PKG/INE580 Packaging Design ....................... 3

**Elective Courses** ............................................. 6

**Design Electives**
PKG/INE582 Structural Packaging ................. 3
PKG/INE584 Package Branding ..................... 3
PKG/INE586 Computer Graphics for Packaging . 3
PKG/INE588 Packaging Applications ............... 3
PKG/INE589 Special Topic Course in Packaging  
Design .................................................. 3

**Engineering Electives**
PKG/INE574 Paper and Paperboard Packaging . . 3
PKG/INE575 Corrugated Packaging ................. 3
PKG/INE576 Rigid Plastic Packaging ............... 3
PKG/INE577 Packaging for Food, Drug and  
Cosmetics ............................................. 3
PKG/INE578 Food Preservation Packaging .......... 3
PKG/INE579 Special Topic Course in Packaging  
Engineering .......................................... 3

Note:
Students with an engineering or design emphasis are advised to take the two electives in the respective area of emphasis.
INTERIOR ARCHITECTURE/DESIGN

DES231 Design Studio I-A [2-2, 3 cr.] This studio will emphasize visual perception through an initiation into the different modes of representation, and formal analysis of the elements of visual language (line, volume, texture, color, shape) as well as studying the effects of light on forms, which constitutes the basics of two-dimensional studies. Exercises in this module are intended to sharpen and focus the students’ perception of forms, to train the eye and the hand in the process of interpretation and representation of forms.

DES232 Design Studio I-B [2-2, 3 cr.] Study of structural characteristics as foundational to an understanding of the manifestation of different forms, natural or artificial. A variety of concepts and processes will be explored with considerable emphasis placed on learning by making, stressing different forms of plastic modeling from wood to metals, and requiring an active use of the workshop. A shop orientation session will be included in this module as a required introduction to the basic tools and safety procedures for using the wood and metal shop.

DES233 Design Studio II-A [2-2, 3 cr.] This studio will continue the development of visual perception in the two-dimensional field, introducing the principles and techniques of typography, elaborating projects that involve both traditional and digital media. The studio will also address composition, layout, and presentation as a means of conceptual expression and communication in design.

DES234 Design Studio II-B [2-2, 3 cr.] Studies and development of three-dimensional forms through exercises that involve formal and structural analysis, dissection, assembly, and re-configuration. Projects in this studio would be aimed towards the development of plastic skills and techniques in various materials (wood, metals, plastics) while developing the students analytical, artistic and interpretative faculties.
DES240 Sketching [1-2, 2 cr.] A general course on sketching, stressing freehand drawing techniques with pencil, charcoal, as well as the basics of watercolor rendering.

DES241 Technical Graphics I [1-2, 2 cr.] An introduction to the basics of formal representation, with two-dimensional representation of objects through orthographic projections and auxiliary drawings; isometric and axonometric drawings, and the basics of shades and shadows. This studio will also introduce the student to various tools and techniques of technical drawing in pencil and ink.

DES251 Introduction to Computer Graphics [1-3, 3 cr.] An introduction to computer graphics, with the basics of generating and manipulating images using digital media, and covering monochrome patterns, control and mix of colors, raster images, scanning, pixel and vector graphics. The course includes basic exposure to computer platforms as well as the basic softwares mainly used for computer graphics applications (Adobe Illustrator, Photoshop, etc.).

DES261 Introduction to Design [2-0, 2 cr.] An introduction to design in relation to art, photography, film, music, and other cultural manifestations of the 20th century. This course is a creative presentation of the multiple dimensions and aspects of the design field, through a series of lectures, film screenings, art documentaries and other events including guest speakers, to initiate the students into the wider cultural framework of design.

DES271 History of Design [2-0, 2 cr.] Survey of design activity from the 19th century development of the Arts and Crafts movement and the subsequent developments of Art Nouveau and Art Deco, Bauhaus, and the development of international and regional design trends in Italy, Scandinavia, Japan; down to the more recent contemporary trends. This course will explore the various manifestations of these artistic developments in the Applies Arts from spatial design to furniture to various products design, and their relationship to the aesthetic ideas behind these movements.

DES331 Design Studio III [3-6, 6 cr.] This studio builds upon and extends the theoretical knowledge gained in the foundation studios through a concrete application of conceptual and perceptual analysis to problems of small and medium scale in design, and the exploration of the limits and means of developing concepts into architectural form. The studio will emphasize on the development of representational tools in translating ideas into architectural drawings and models, specifically stressing on the importance of drawing as a design tool. Prerequisites: DES231 Design Studio I-A, DES232 Design Studio I-B, DES233 Design Studio II-A, DES234 Design Studio II-B.

DES332 Design Studio IV [3-6, 6 cr.] This studio further elaborates the process of theoretical investigation of space, with the emphasis on the communication of ideas through different representational models and tools. Problems at this stage will continue the study of small to medium scale projects with emphasis on basic principles of spatial design. References and case studies of canonical works in modern design may serve as theoretical background in the continuing development of a theoretical foundation. The elaboration of a complete set of architectural drawings for the final design [plans/sections/elevations] in addition to models will be expected at this stage. Prerequisite: DES331 Design Studio III.

DES341 Technical Graphics II [2-2, 3 cr.] Specific application of technical drawing to architectural plans, sections and elevations, with two-dimensional and three-dimensional representations, axonometric, perspective, shades and shadows applied to two-dimensional, three-dimensional and perspective drawings. Prerequisite: DES241 Technical Graphics I.

DES342 Technical Graphics III [2-2, 3 cr.] Translation of the technical drawings of canonical projects into three-dimensional architectural models with different materials and techniques, and development of the full set of corresponding ar-
chitectural drawings (plans/sections/elevations) at appropriate scales. Prerequisite: DES341 Technical Graphics II.

DES351 Computer Graphics I [1-2, 2 cr.] This course specifically addresses architectural applications in computer graphics, for drafting of architectural plans, sections, elevations, and details. Prerequisite: DES251 Intro. to Computer Graphics.

DES352 Computer Graphics II [1-2, 2 cr.] This course expands on the skills learned to cover new applications for surface and solid modeling, as well as rendering, material library, applications of light, leading to the development of complete project renderings. Prerequisite: DES351 Computer Graphics I.

DES361 Theory I [2-0, 2 cr.] This course introduces major aesthetic theories in the field of design, with an investigation of the relations between these theories and physical space in its aesthetic, social and cultural significance, examining the ideological frameworks behind paradigmatic changes and movements in aesthetics and their effects on the field of design.

DES371 History of Architecture I [2-0, 2 cr.] This course will trace the development of Western architecture from the Greek and Roman period to the Byzantine, Gothic, and Italian Renaissance, Late Renaissance and Baroque, with the analysis of important icons and landmarks in art and architecture, and the principles, technical developments, and ideologies underlying these various movements. The course will also study the importance of cultural ideas and ideals and their relation to the development of aesthetic forms in particular and civilization in general.

DES372 History of Architecture II [2-0, 2 cr.] This course will trace the developments in Architecture from Neo-Classicism, in the 18th and 19th centuries, to the full development of Modern architecture in the 20th century; examining the seminal projects and buildings that characterized these developments and their subsequent transformations in Post-Modernism, Deconstruction and later trends.

DES373 History of Landscape Design [2-0, 2 cr.] Overview of the historical developments of landscape design, with a survey of the ideas, principles and practical considerations behind the major landscape design cases under study, from the classical to the modern period.

DES381 Architectural Photography [1-2, 2 cr.] Advanced photography course emphasizing specific photographic techniques, lighting and composition, dealing with architectural and design subjects. Prerequisite: PHO211 Photography I.

DES401 Interior Design Workshop I [0-2, 1 cr.] An intensive workshop that introduces new theoretical and/or technical themes in support of the design sequence. Prerequisite: DES332 Design Studio IV.

DES402 Interior Design Workshop II [0-2, 1 cr.] An intensive workshop that introduces new theoretical and/or technical themes in support of the design sequence. Prerequisite: DES332 Design Studio IV.

DES404 Landscape Design Workshop [1-2, 2 cr.] Case study and application of an actual landscape design project or competition, to be worked as an intensive workshop project.

DES421 Design Technology I [2-0, 2 cr.] This course gives an overview of the major components of a building (structural systems, envelopes, foundation). It includes a basic survey of various construction methods and techniques used in buildings, from wood construction, to concrete, concrete block, brick, steel and glass, and their different properties.

DES422 Design Technology II [2-0, 2 cr.] Focusing on interior design applications, this course explores different finishing materials and techniques used in interiors, with attention to problems of jointing, relation between different ma-
materials, insulation, finishes, and applications to specific design problems.

DES431 Design Studio V [3-4, 5 cr.] This studio will build upon the theoretical background of the previous studios, addressing more specifically interior design applications of small to medium scale, emphasizing details, materials and finishes in realizing a spatial “idea” in form. References from contemporary design serve as background in the continuing development of a theoretical foundation for design. Prerequisite: DES332 Design Studio IV.

DES432 Design Studio VI [3-4, 5 cr.] This studio will expose the interior design student to the field of historic preservation, with the introduction of the various methodologies and techniques of restoration, through the exploration of a concrete example of historic preservation and restoration of an interior and its adaptive reuse. Prerequisite: DES431 Design Studio V.

DES475 Islamic Architecture in the Age of Empires [2-0, 2 cr.] This course surveys the development of Islamic architecture under the most powerful Islamic empires of the early modern period, namely the Ottomans of Turkey, the Mughals of India, and the Safavids of Iran. It reviews and analyzes a number of paradigmatic architectural examples from these illustrious Islamic dynasties as a way of elucidating how each royal house possessed its unique vision of the world, a vision which ultimately led to the formulation of unique regional styles in architecture. Sacred, commemorative, and secular monuments will be closely examined so as to illustrate how royal Muslim patronage evolved, how it produced structures of unprecedented scale and complexity, and how Islam and modernity began to come to terms. Prerequisite: DES376 Introduction to Islamic Architecture.

DES476 Art and Architecture of the Mamluks [2-0, 2 cr.] This course offers a close examination of the visual art of the Mamluks from the 13th century until the beginning of the 16th century. It will discuss and analyze the distinctive design vocabulary of the Mamluks and trace its stylistic development across time and space. Cities, landmarks, and artifacts will be studied in their cultural, political, socio-economic and aesthetic contexts and evaluated in terms of courtly aspirations and the sources of design inspiration. Furthermore, the course will employ a range of methodologies and will explore a variety of themes including patronage, power, courtly taste, and the role of waqf. Prerequisite: DES375 Introduction to Islamic Art.

DES477 Art and Architecture of the Umayyad [2-0, 2 cr.] This course offers an in-depth investigation of the material heritage of the Umayyad dynasty in Syria in the seventh and eighth centuries. Monuments and artifacts will be examined in terms of their purpose and meaning and will be interpreted in the context of cultural history. Particular attention will be afforded to the issue of the formation of Islamic art and to the discernment of what can be regarded as “Islamic” in the visual art forms of Islam. This will involve exploring cross-cultural dialogues in the Levant in the first century of Islam, and the attempt to blend elements from west and east in the framework of the new faith. Prerequisite: DES376 Introduction to Islamic Architecture.

DES478 The Decorative Arts of Islam (650 – 1650) [2-0, 2 cr.] This course is a survey of the salient examples of decorative arts of Medieval Islam. Arts of the Book, calligraphy, metalwork, ceramics, textiles, ivory, and woodcarving will be explored within their religious, political, and socio-economic context as well as in terms of meaning, function, aesthetics and emerging forms. Particular emphasis will be given to the regional design vocabulary and to the evolution of style, content, and iconography. The course will also investigate the pivotal role of geometry, vegetable ornaments, and epigraphy in Islamic design and the supremacy of color and pattern. Prerequisite: DES375 Introduction to Islamic Art.

DES481 Construction Documents [2-4, 4 cr.] Preparation of a detailed set of working drawings for the execution of an interior design project, be-
gining with the architectural plans with details at appropriate scale, to the electrical, and mechanical plans, furniture plans, finishing and construction details, in addition to a basic overview of design codes applied regionally and internationally. Prerequisite: DES432 Design Studio VI.

**DES484 Furniture Design** [2-0, 2 cr.] Survey of the major changes in the design of furniture from the period of late Renaissance and Rococo to the Styles period of the 18th and 19th centuries, arts and crafts, to Modern and contemporary furniture design. The survey will also cover the different technologies and transformation in design processes.

**DES523 Environmental Systems I** [3-0, 3 cr.] Study and design of plumbing systems, in addition to heating, ventilation and air-conditioning systems with a survey of the different systems and their properties, cost analysis, and environmental factors; including a survey of environmentally sound alternatives (solar energy and heating, insulated walls, alternative materials).

**DES524 Environmental Systems II** [3-0, 3 cr.] This course deals with two subjects: lighting and electrical circuits, and acoustics. The first part addresses the analysis of basic electric circuits with emphasis on energy management, electric ratings and capacity, wiring and lighting systems and different lighting equipment, and methods for building electrical systems. The second part is a survey of basic acoustical systems, theories, acoustic properties of different materials used in buildings and their consequences on noise reduction, as well as study of properties of acoustical spaces such as theaters or concert halls.

**DES531 Design Studio VII** [3-4, 5 cr.] This studio will further address the application of technology in design through creative detailing of spatial design components, interior furniture and other fixtures of design as part of the design process. This studio will focus on the detail as an extension of the theoretical tools of ideation and conceptualization. These investigations through detailing will normally involve a particular attention to construction techniques, and a further development of the knowledge of materials and finishes, down to the design of furniture components. Prerequisite: DES432 Design Studio VI.

**DES532 Design Studio VIII** [3-4, 5 cr.] Synthesizing previously explored aspects of design; this studio will focus on the investigation of important contemporary themes in design. Particular attention will be drawn in this case on the simultaneous development of design through contemporary representational media, while also providing an opportunity for students to propose a personal project based on a critical problematic, which addresses simultaneously the various theoretical and technical aspects of the design, within the parameters set for the final project. Prerequisite: DES531 Design Studio VII.

**DES583 Internship** [0-1, 1 cr.] Introduction to professional practice, with introductory lectures that outline the basics of job search, application, and practical training, to be followed by a documented practical experience (200 work hours) in a professional firm approved by the department.

**DES585 Professional Practice** [2-0, 2 cr.] This course will introduce the business aspects of the design practice through the exploration of the financial, legal and managerial aspects, contract negotiations, marketing design services and managing client/contractor relationships, with an introduction to economic and management principles of design projects, financing, cost-estimate and budgeting.

**DES591 International Studio** [1-4, 3 cr.] Study abroad of specific interior design and architectural works, supported by a preparatory series of lectures/presentations on the subject of study. Students would be required to analyze and document specific works and study their relationship the urban history and culture of the area, to be documented and presented in a portfolio. Prerequisite: DES432 Design Studio VI.

**DES592 International Workshop** [1-2, 3 cr.] Workshop abroad at a host school, revolving around
specific and intensive interior design projects. Prerequisite: DES432 Design Studio VI.

**ARCHITECTURE**

**ARC231 Design Studio I-A** [2-2, 3 cr.] This studio will emphasize visual perception through an initiation into the different modes of representation, and formal analysis of the elements of visual language (line, volume, texture, color, shape) as well as studying the effects of light on forms, which constitutes the basics of two-dimensional studies. Exercises in this module are intended to sharpen and focus the students’ perception of forms, to train the eye and the hand in the process of interpretation and representation of forms.

**ARC232 Design Studio I-B** [2-2, 3 cr.] Study of structural characteristics as foundational to an understanding of the manifestation of different forms, natural or artificial. A variety of concepts and processes will be explored with considerable emphasis placed on learning by making, stressing different forms of plastic modeling from wood to metals, and requiring an active use of the workshop. A shop orientation session will be included in this module as a required introduction to the basic tools and safety procedures for using the wood and metal shop.

**ARC233 Design Studio II-A** [2-2, 3 cr.] This studio will continue the development of visual perception in the two-dimensional field, introducing the principles and techniques of typography, elaborating projects that involve both traditional and digital media. The studio will also address composition, layout, and presentation as a means of conceptual expression and communication in design.

**ARC234 Design Studio II-B** [2-2, 3 cr.] Studies and development of three-dimensional forms through exercises that involve formal and structural analysis, dissection, assembly, and re-configuration. Projects in this studio would be aimed towards the development of plastic skills and techniques in various materials (wood, metals, plastics) while developing the students’ analytical, artistic and interpretative faculties.

**ARC240 Sketching** [1-2, 2 cr.] A general course on sketching, stressing freehand drawing techniques with pencil, charcoal, as well as the basics of watercolor rendering.

**ARC241 Technical Graphics I** [1-2, 2 cr.] An introduction to the basics of formal representation, with two-dimensional representation of objects through orthographic projections and auxiliary drawings; isometric and axonometric drawings, and the basics of shades and shadows. This studio will also introduce the student to the various tools and techniques of technical drawing in pencil and ink.

**ARC251 Introduction to Computer Graphics** [2-2, 3 cr.] An introduction to computer graphics, with the basics of generating and manipulating of images using digital media, and covering monochrome patterns, control and mix of colors, raster images, scanning, pixel and vector graphics. The course includes basic exposure to computer platforms as well as the basic softwares mainly used for computer graphics applications (Adobe Illustrator, Photoshop, etc.).

**ARC261 Introduction to Design** [2-0, 2 cr.] An introduction to design in relation to art, photography, film, music, and other cultural manifestations of the 20th century. This course is a creative presentation of the multiple dimensions and aspects of the design field, through a series of lectures, film screenings, art documentaries and other events including guest speakers, to initiate the students into the wider cultural framework of design.

**ARC271 History of Design** [2-0, 2 cr.] Survey of design activity from the 19th century development of the Arts and Crafts movement and the subsequent developments of Art Nouveau and Art Deco, Bauhaus, and the development of international and regional design trends in Italy, Scandinavia, Japan; down to the more recent contemporary trends. This course will explore the various
manifestations of these artistic developments in the Applies Arts from spatial design to furniture to various products design, and their relationship to the aesthetic ideas behind these movements.

ARC311 Building Systems I [3-0, 3 cr.] This course is an introductory course to the basic laws of equilibrium, covering forces on particles, bodies, and structures or assemblage of elements, simple algebraic applications of the equations of equilibrium in 1-D and 2-D with free body diagram analysis. The course will include experimental investigation of the stability of structures (solid object, beams, frames, trusses, simple buildings) and the different ways to support gravity and other loads by vertical transfer and lateral transfer of forces. It will also include an introduction to the concept of compressive and tensile uniaxial stresses in structural members, and to internal forces in beams, shear and moment diagram concepts, with empirical investigation of beam bending. Prerequisite: MTH102 Calculus II and PHY111 Mechanics.

ARC312 Building Systems II [3-0, 3 cr.] Introduction of the basic concepts of internal stresses and strains inside structural members, solid bodies and the limit states for strength and deformation. Experimental investigation of the different types of stresses and resulting deformations. This course will also make use of computer software to model internal and external behavior of structural elements, and assemblages of structural elements. It will serve to develop a physical understanding of the interrelationship of material properties, structural dimensions, and structural behavior and safety through the numerical simulation of the behavior of typical designs using simple computer packages. Prerequisites: MTH102 Calculus II and PHY111 Mechanics.

ARC331 Design Studio III [3-6, 6 cr.] This studio builds upon and extends the theoretical knowledge gained in the foundation studios through a concrete application of conceptual and perceptual analysis to problems of small and medium scale in design, and the exploration of the limits and means of developing concepts into architectural form. The studio will emphasize on the development of representational tools in translating ideas into architectural drawings and models, specifically stressing on the importance of drawing as a design tool. Prerequisites: ARC231 Design Studio I-A, ARC232 Design Studio I-B, ARC233 Design Studio II-A, ARC234 Design Studio II-B.

ARC332 Design Studio IV [3-6, 6 cr.] This studio further elaborates the process of theoretical investigation of space, with the emphasis on the communication of ideas through different representational models and tools. Problems at this stage will continue the study of small to medium scale projects with emphasis on basic principles of spatial design. References and case studies of canonical works in modern design may serve as theoretical background in the continuing development of a theoretical foundation. The elaboration of a complete set of architectural drawings for the final design [plans/sections/elevations] in addition to models will be expected at this stage. Prerequisite: ARC331 Design Studio III.

ARC341 Technical Graphics II [2-2, 3 cr.] Specific application of technical drawing to architectural plans, sections and elevations, with two-dimensional and three-dimensional representations, axonometric, perspective, shades and shadows applied to two-dimensional, three-dimensional and perspective drawings. Prerequisite: ARC241 Technical Graphics I.

ARC342 Technical Graphics III [2-2, 3 cr.] Translation of the technical drawings of canonical projects into three-dimensional architectural models with different materials and techniques, and development of the full set of corresponding architectural drawings (plans/sections/elevations) at appropriate scales. Prerequisite: ARC341 Technical Graphics II.

ARC351 Computer Graphics I [1-2, 2 cr.] This course specifically addresses architectural applications in computer graphics, for drafting of architectural plans, sections, elevations, and details. Prerequisite: ARC251 Introduction to Computer Graphics.
**ARC352 Computer Graphics II** [1-2, 2 cr.] This course expands on the skills learned to cover new applications for surface and solid modeling, as well as rendering, material library, applications of light, leading to the development of complete project renderings. Prerequisite: ARC351 Computer Graphics I.

**ARC361 Theory I** [2-0, 2 cr.] This course introduces major aesthetic theories in the field of design, with an investigation of the relations between these theories and physical space in its aesthetic, social and cultural significance, examining the ideological frameworks behind paradigmatic changes and movements in aesthetics and their effects on the field of design.

**ARC363 Theory II** [2-0, 2 cr.] This course examines in depth the ideologies behind modern and postmodern culture and the influence of contemporary theories on the architectural and design cultures, with a thematic approach that deals with specific aspects of contemporary practice.

**ARC371 History of Architecture I** [3-0, 3 cr.] This course will trace the development of Western architecture from the Greek and Roman period to the Byzantine, Gothic, and Italian Renaissance, Late Renaissance and Baroque, with the analysis of important icons and landmarks in art and architecture, and the principles, technical developments, and ideologies underlying these various movements. The course will also study the importance of cultural ideas and ideals and their relation to the development of aesthetic forms in particular and civilization in general.

**ARC372 History of Architecture II** [2-0, 2 cr.] This course will trace the developments in architecture from Neo-Classicism, in the 18th and 19th centuries, to the full development of Modern architecture in the 20th century; examining the seminal projects and buildings that characterized these developments and their subsequent transformations in Post-Modernism, Deconstruction and later trends.

**ARC373 History of Landscape Design** [2-0, 2 cr.] Overview of the historical developments of landscape design, with a survey of the ideas, principles and practical considerations behind the major landscape design cases under study, from the classical to the modern period.

**ARC375 Introduction to Islamic Art (650 – 1650)** [3-0, 3 cr.] An introductory course to the arts of the Muslim world from the rise of Islam until the advent of the early modern period. This course will comprise a selective survey of artifacts drawn from a variety of media which represent the pinnacles of artistic accomplishment across the vast expanse of the Islamic world. Paintings, textiles, coins, ceramics, metal work, jewelry, and woodcarving will be investigated in the context of cultural history and examined in terms of their evolving forms, multiple meanings, and the development of a distinctly Islamic aesthetic. Particular emphasis will be placed on the spiritual content of Islamic art, the role of the artist in Islamic society, and the effect of religious pronouncements on the production of art.

**ARC376 Introduction to Islamic Architecture (650 – 1650)** [3-0, 3 cr.] This course is a survey of the architectural heritage of the Islamic world from the early caliphate to the era of the Muslim superpowers of the pre-modern times. It traces the most significant and influential edifices of the Muslim world from Spain in the West to India in the East. Monuments will be studied and analyzed in their political, religious, socio-economic, cultural, and aesthetic contexts. The course will also examine the evolution of such varied building types as mosques, madrassas, mausoleums, caravanserais, and palaces. Selected structures will be studied through a range of methodologies and the development of Islamic architecture will be analyzed from the standpoint of the manipulation of space, materials, and building technology.

**ARC381 Architectural Photography** [1-2, 2 cr.] Advanced photography course emphasizing specific photographic techniques, lighting and composi-
tion, dealing with architectural and design subjects. Prerequisite: PHO211 Photography I.

**ARC405 Design Workshop – IAAD** [0-2, 1 cr.] This workshop will revolve around an intensive thematic investigation consisting of a seminar combined with design application, addressing a design problem of current importance, such as a competition for a mosque or madrassa, or the restoration of a historic structure in the Islamic world. Prerequisite: ARC332 Design Studio IV.

**ARC404 Landscape Design Workshop** [1-2, 2 cr.] Elaboration of an actual landscape design project or competition, either within the format of a regular term project, or as a series of intensive workshops.

**ARC411 Building Systems III** [3-0, 3 cr.] Introduction to the different soil-structural systems and the different ways they impact architectural design, in addition to the analysis of the properties of different structural systems. Discussion of the interaction between building envelopes and structural systems, and introduction of the current and applicable engineering structural models. Prerequisite: ARC312 Building Systems II.

**ARC412 Building Systems IV** [3-0, 3 cr.] Selection of specific applications for the design of structural systems in conjunction with architectural design projects, or as applicable to a real life situation. Comparison between computer/empirical simulation for design and code compliance. Selection of one structural system (Concrete/ACI, Steel/AISC, or other) for detailed design. Prerequisite: ARC312 Building Systems II.

**ARC421 Building Technology I** [2-0, 2 cr.] Overview of the major components of a building (foundation, walls, openings, roof, floors) and their interrelation through construction. Analysis of the different construction elements (structure, bearing walls, envelope, components) with their variation in materials, in addition to the study of the different techniques used for the insulation of buildings.

**ARC422 Building Technology II** [2-0, 2 cr.] Analysis of traditional construction systems such as concrete, brick and wood construction, and their various properties. Focus on the specific characteristic of each system and its compatibility with other materials, its physical treatment, as well as the different possibilities of its finishing, weathering and maintenance.

**ARC431 Design Studio V** [3-6, 6 cr.] This studio will deal with projects that examine problems of different structures and materials, and focus on building technology, building program, environmental and site factors as essential parameters in the development and resolution of a design project. The studio will be given in correlation with Building Technology courses in order to reinforce the relationship of conceptual design to materials and construction techniques, and as a means to give concrete form to design projects. Prerequisite: ARC332 Design Studio IV.

**ARC432 Design Studio VI** [3-6, 6 cr.] Development of projects of greater complexity in terms of functional and programmatic constraints, with specific attention to the structural dimension in design, according to different technologies and building systems projected. This studio will address technical and construction details, and will explore the architectural detail as an essential element in the design process. Prerequisite: ARC431 Design Studio V.

**ARC435 Design Studio – MIAA** [2-4, 4 cr.] Investigation of a project pertaining to contemporary design issues in the Islamic world, as for example design of religious centers, housing, schools, cultural compounds, libraries, and so on, with specific focus on the issues of context, cultural setting, and climate. The design will be studied in terms of functional and programmatic constraints and in relationship to cultural considerations. Students will be encouraged to develop their ideas by critically assessing the applicability of traditional Islamic design paradigms to contemporary design problems. The studio will be further enriched through discussions and
critique of contemporary design in the Islamic world. Prerequisite: ARC332 Design Studio IV.

ARC451 Digital Modeling [2-2, 3 cr.] An introduction to 3-D digital modeling as related to design issues and applications, enabling students to explore new tools for design. Prerequisite: ARC352 Computer Graphics II.

ARC452 Computer Animation [1-2, 2 cr.] Introduction to the basics of computerized representations of space, using walk-through and animation techniques. Prerequisite: ARC352 Computer Graphics II.


ARC461 Topics in Architecture Theory [2-0, 2 cr.] This course will address issues and architectural theories with a focus on specific themes of contemporary relevance and importance. The course will be run as an advanced theory seminar. Prerequisite: ARC362 Theory II.

ARC471 Contemporary Trends [2-0, 2 cr.] Study of important design projects with analysis of their aesthetic concepts and structural innovations, focusing on particular themes and/or movements in contemporary design.

ARC472 Classical Art and Architecture [2-0, 2 cr.] A thorough investigation of the Classical art and architecture of the Greek and Roman periods, with specific studies of important artistic and architectural works, highlighting the theoretical dimensions of these works, and their role within the cultural history of the periods in which they were created.

ARC473 Architecture of the Renaissance [2-0, 2 cr.] A thorough investigation of the art and architecture of the Italian Renaissance and Late Renaissance, with specific studies of important artistic and architectural works, and the theoretical framework of these works, and their role within the cultural history of the periods in which they were created, with the consequences and developments of these works on the broader European context.

ARC475 Islamic Architecture in the Age of Empires [2-0, 2 cr.] This course surveys the development of Islamic architecture under the most powerful Islamic empires of the early modern period, namely the Ottomans of Turkey, the Mughals of India, and the Safavids of Iran. It reviews and analyzes a number of paradigmatic architectural examples from these illustrious Islamic dynasties as a way of elucidating how each royal house possessed its unique vision of the world, a vision which ultimately led to the formulation of unique regional styles in architecture. Sacred, commemorative, and secular monuments will be closely examined so as to illustrate how royal Muslim patronage evolved, how it produced structures of unprecedented scale and complexity, and how Islam and modernity began to come to terms. Prerequisite: ARC376 Introduction to Islamic Architecture.

ARC476 Art and Architecture of the Mamluks [2-0, 2 cr.] This course offers a close examination of the visual art of the Mamluks from the 13th century until the beginning of the 16th century. It will discuss and analyze the distinctive design vocabulary of the Mamluks and trace its stylistic development across time and space. Cities, landmarks, and artifacts will be studied in their cultural, political, socio-economic and aesthetic contexts and evaluated in terms of courtly aspirations and the sources of design inspiration. Furthermore, the course will employ a range of methodologies and will explore a variety of themes including patronage, power, courtly taste, and the role of waqf. Prerequisite: ARC376 Introduction to Islamic Architecture.

ARC477 Art and Architecture of the Umayyad [2-0, 2 cr.] This course offers an in-depth investigation of the material heritage of the Umayyad dynasty in Syria in the seventh and eighth centuries. Monuments and artifacts will be examined
In terms of their purpose and meaning and will be interpreted in the context of cultural history. Particular attention will be afforded to the issue of the formation of Islamic art and to the discernment of what can be regarded as “Islamic” in the visual art forms of Islam. This will involve exploring cross-cultural dialogues in the Levant in the first century of Islam, and the attempt to blend elements from west and east in the framework of the new faith. Prerequisite: ARC376 Introduction to Islamic Architecture.

ARC478 The Decorative Arts of Islam (650–1650) [2-0, 2 cr.] This course is a survey of the salient examples of decorative arts of Medieval Islam. Arts of the Book, calligraphy, metalwork, ceramics, textiles, ivory, and woodcarving will be explored within their religious, political, and socio-economic context as well as in terms of meaning, function, aesthetics and emerging forms. Particular emphasis will be given to the regional design vocabulary and to the evolution of style, content, and iconography. The course will also investigate the pivotal role of geometry, vegetable ornaments, and epigraphy in Islamic design and the supremacy of color and pattern. Prerequisite: ARC375 Introduction to Islamic Art.

ARC481 Construction Documents [1-6, 4 cr.] Preparation of a full set of architectural working drawings for the execution of a mid-size building or project. The course will also cover the basics of preparing a specifications document. Prerequisites: ARC432 Introduction to Islamic Architecture, ARC432 Design Studio VI.

ARC482 Regional Architecture I [2-0, 2 cr.] Analytical and historical survey of the regional architectural heritage with a specific focus on the traditional domestic architecture of Lebanon, and the analysis of setting and building techniques and other factors on the development of regional architecture in the 19th and early 20th century. Prerequisite: ARC332 Design Studio IV.

ARC483 Regional Architecture II [2-2, 3 cr.] On-site application of the study of the regional architectural heritage, with case studies, analysis and documentation of particular landmarks, religious structures, and domestic houses. Prerequisite: ARC332 Design Studio IV.

ARC484 Regional Urbanism [2-2, 3 cr.] Case study of a regional town supported by a field survey of the urban structure and its historical development, with an investigation of the role of climate, topography, typology, building technology, and other factors in the development of its urban plan and morphology. Prerequisite: ARC332 Design Studio IV.

ARC501 Design Workshop I [0-2, 1 cr.] A workshop in conjunction with Design Studio VII, to introduce new computer modeling and rendering techniques, and/or to explore new technologies in structural and environmental design. Prerequisite: ARC432 Design Studio VI.

ARC502 Design Workshop II [0-2, 1 cr.] A workshop in design topics that offer exposure to the practice of architecture in other contexts, revolving around specific and intensive design exercises, as a supplement to Design Studio VIII. Prerequisite: ARC432 Design Studio VI.

ARC521 Building Technology III [2-0, 2 cr.] This course deals with detailing in design and the role of the detail in the generation of design, from brick to wood and steel detailing, with actual drawing and/or actual construction exercises at 1:1 or 1:2 scale of wall sections in different materials, fixture details, windows, and other architectural components.

ARC522 Building Technology IV [2-0, 2 cr.] Analysis of high-tech construction systems such as steel and glass, as well as new systems and materials of construction, and their various properties and technical advantages. Focus on the specific characteristic of each system/material and its compatibility with other materials, its physical treatment, as well as the different possibilities of its finishing, weathering and maintenance.

ARC523 Environmental Systems I [3-0, 3 cr.] Study and design of plumbing systems, in addition to
heating, ventilation and air-conditioning systems with a survey of the different systems and their properties, cost analysis, and environmental factors; including a survey of environmentally sound alternatives (solar energy and heating, insulated walls, alternative materials).

ARC524 Environmental Systems II [3-0, 3 cr.] This course deals with two subjects: lighting and electrical circuits, and acoustics. The first part addresses the analysis of basic electric circuits with emphasis on energy management, electric ratings and capacity, wiring and lighting systems and different lighting equipment, and methods for building electrical systems. The second part is a survey of basic acoustical systems, theories, acoustic properties of different materials used in buildings and their consequences on noise reduction, as well as study of properties of acoustical spaces such as theaters or concert halls.

ARC531 Design Studio VII [3-4, 5 cr.] Elaboration of projects with continuing emphasis on technical, structural, and environmental parameters in design, through the investigation of complex building types, stressing the necessity of adapting computer-aided means in the early phases of the design process, as a design tool, from analysis to design production. The studio will also investigate emerging technologies in environmental systems as a means to making new buildings responsive to environmental issues. Prerequisite: ARC432 Design Studio VI.

ARC532 Design Studio VIII [3-4, 5 cr.] This studio will be open to new issues in design, through projects that address contemporary design problems, and/or use state of the art media in the process of design production and representation. Projects that deal with complex urban issues, and/or competitions are encouraged at this stage. Prerequisite: ARC531 Design Studio VII.

ARC551 Computer Graphics Studio [1-4, 3 cr.] An investigation of design problems through the use of computer graphics from the initial stages of design conceptualization to design development, visualizing a new approach to different issues of computer-aided design. Prerequisites: ARC451 Digital Modeling and ARC452 Computer Animation.

ARC561 Seminar [2-0, 2 cr.] A series of lectures and/or presentations that focus discussions around ideas/theories and projects that affected classical, modern, or contemporary developments in architecture. Prerequisite: ARC432 Design Studio VI.

ARC581 Urban Planning I [3-0, 3 cr.] Survey of the city as a historical development, in relation with economic, social, and political factors, from the early settlements to the development of contemporary urbanism; with a broad overview of current planning theories from the context of modernist ideals to the social studies of planners and sociologists. Prerequisite: ARC432 Design Studio VI.

ARC582 Urban Planning II [2-0, 2 cr.] Study of actual planning processes, issues and problems, urban and regional zoning, demographical projections, with comparative studies of regional or international planning cases. Prerequisite: ARC581 Urban Planning I.

ARC583 Internship [0-0, 1 cr.] Introduction to professional practice, with introductory lectures that outline the basics of job search, application, and practical training, to be followed by a documented practical experience (200 work hours) in a professional firm approved by the department. Prerequisite: ARC432 Design Studio VI.

ARC584 Building Codes and Laws [1-0, 1 cr.] Study of the local and regional building codes, with an introduction to other codes (USA, Europe, Arab World) as comparative tools, and introduction to the local laws governing the building industry.

ARC585 Professional Practice [2-0, 2 cr.] This course will introduce the business aspects of the design practice through the exploration of the financial, legal and managerial aspects, contract negotiations, marketing design services and managing client/contractor relationships, with an introduction to economic and management
principles of design projects, financing, cost-estimate and budgeting.

**ARC591 International Studio** [1-4, 3 cr.] Study abroad, covering specific works of classical or modern architecture, supported by a preparatory series of lectures/presentations on the subject of study. Students would be required to analyze and document specific works and study their relationship the urban history and culture of the area, to be documented and presented in a portfolio. Prerequisite: ARC532 Design Studio VIII.

**ARC595 International Studio–IAAD** [1-4, 3 cr.] This studio offers an opportunity to experience first hand the wealth and breadth of the material heritage of the Arab and Islamic worlds. Knowledge acquired through design history and theory courses will be complemented by field trips and site visits that offer direct exposure to and immediate engagement with the architectural heritage of a particular region in the Islamic world or an area with substantial Islamic heritage outside of the Islamic world. Students would be required to analyze and document specific works and study their relationship the urban history and culture of the area, to be documented and presented in a portfolio. Prerequisite: ARC432 Design Studio VI.

**ARC592 International Workshop** [1-2, 3 cr.] Workshop abroad at a host school, revolving around specific and intensive architectural and urban design projects. Prerequisite: ARC432 Design Studio VI.

**ARC601 Final Project Research** [0-2, 1 cr.] Research under the selected advisor for the final project studio with the elaboration and definition of a thesis proposal, including a detailed program and site analysis, as well as the documentation of any other relevant research material. Prerequisite: ARC532 Design Studio VIII.

**ARC631 Design Studio IX** [3-4, 5 cr.] This studio will concentrate on a design problem addressing the urban dimension in architecture. Projects in this studio would analyze problems of practical relevance to contemporary urban settings, with an investigation of the social and ideologi-
duction to partial differential equations; Fourier series and Fourier integral; numerical solution of ordinary and partial differential equations. Pre-requisite: MTH204 Differential Equations, GNE333 Engineering Analysis I.

GNE498 Professional Experience [0-6, 6 cr.] Professional experience through training in the execution of real-life engineering projects. Prerequisite: Final year standing and instructor’s consent.

Civil Engineering

CIE200 Statics [3-0, 3 cr.] Review of vector algebra, forces, moment and couples, free body diagrams and application to beams, frames, arches, planes, trusses, center of gravity. Friction, virtual work. Prerequisite: Sophomore standing.

CIE202 Mechanics of Materials [3-0, 3 cr.] Review of free-body diagrams and equilibrium principles; types of stress and linear stress-strain relationships; axial, shear, torsion, and bending deformations; shear force and bending moment diagrams and deflection of beams. Prerequisite: CIE200 Statics.

CIE302 Structural Analysis I [3-0, 3 cr.] Classification of statically determinate/indeterminate structures. Analysis of statically determinate frames: axial force, shear force and bending moment diagrams; influence lines; deflections using the principle of virtual work. Prerequisite: CIE202 Mechanics of Materials.

CIE303 Structural Analysis I–SOFT [0-2, 1 cr.] Structural analysis using commercial software. Computational model for trusses and frames: load cases, supports, linear static analysis. Results visualizations and assessment: axial force, shear force and bending moment diagrams; deformed shapes. Co-requisite: CIE302 Structural Analysis I.

CIE304 Stress Analysis [3-0, 3 cr.] Stress-strain formulations in 1-, 2-, and 3-D; stress-strain based failure criteria for materials; design and analysis of pressure vessels; elastic stability and simple buckling problems of plates and shells; introduction to linear elastic fracture mechanics (LEFM) concepts and integrated design. Prerequisite: CIE202 Mechanics of Materials.


CIE306 Concrete Structures I [3-0, 3 cr.] Reinforced concrete behavior and design approach; design of: beams, one-way slabs, T-beams, doubly reinforced beams including development length and splicing of reinforcing steel bars. Prerequisite: CIE302 Structural Analysis I.

CIE307 Concrete Structures I–SOFT [0-2, 1 cr.] Concrete design using commercial software. Results visualization and assessment for beams, slabs, columns and footings: concrete section, reinforcement, development length, reinforcement layout. Co-requisite: CIE306 Concrete Structures I.

CIE308 Construction Materials [3-0, 3 cr.] General considerations on the use of materials in construction, required properties, selection, testing, design, and quality control of materials with emphasis on ordinary Portland cement concrete, asphaltic concrete, masonry, steel, and wood; overview of composites and other materials in civil engineering. Prerequisite: CIE202 Mechanics of Materials.

CIE309 Construction Materials–LAB [0-3, 1 cr.] Laboratory demonstration of materials testing and evaluation methods with emphasis on aggregate, concrete, and steel reinforcement testing. Co-requisite: CIE308 Construction Materials.

CIE320 Fluid Mechanics [3-0, 3 cr.] Properties of fluids; hydrostatics and kinematics; basic equations and conservation laws; Reynolds Transport Theorem; viscous flow and shear forces; steady pipe flow; laminar and turbulent pipe flows; dimensional analysis and introduction to open channel flow. Prerequisite: CIE200 Statics.
CIE321 Fluid Mechanics–LAB [0-3, 1 cr.] Laboratory applications in fluid mechanics including fluid measurements and properties; flow in pipes; Reynolds number; forces on gates; orifices; weirs; open channel flow; and pumps. Co-requisite: CIE320 Fluid Mechanics.

CIE322 Hydraulics [3-0, 3 cr.] Governing equations, design of water supply and distribution systems, flow in pipes and flow regimes; methods of flow measurements; open channel flow with backwater computations; hydraulic machinery, introduction to river engineering; sediment transport, and pollutant dispersion. Prerequisite: CIE320 Fluid Mechanics.

CIE323 Hydraulics–SOFT [0-2, 1 cr.] Analysis and design using commercially available software: distribution networks including pipes, reservoir, pumps and losses. Results visualizations and assessment: pressure, velocity, head losses. Co-requisite: CIE322 Hydraulics.

CIE360 Surveying [2-3, 3 cr.] Basic measuring procedures for distances, elevations, and angles; leveling, and mapping; construction and topographic surveys, traverses, subdivision of land; cut and fill; Road surveys: horizontal and vertical curves and views. Prerequisite: Junior level.

CIE400 Steel Structures [3-0, 3 cr.] Introduction to the LRFD design philosophy; discussion of the behavior and design of steel structures; design of tension members, simple connections, compression members, laterally supported beams, beams under torsion, and beams under lateral torsional loading. Prerequisite: CIE302 Mechanics of Materials.

CIE424 Environmental Engineering I–LAB [0-3, 1 cr.] Fundamental quantities, titration, primary standards, colorimetric and chromatographic analysis, organic matter determination, microorganisms identification and enumeration, toxicity elements, contaminants, physical, chemical and biological wastewater characteristics, and data analysis. Co-requisite: CIE424 Environmental Engineering I.

CIE426 Environmental Engineering II [3-0, 3 cr.] Design of sanitary and storm sewers and related appurtenances, sources and characteristics of wastewater, fluctuation of flow, design periods and requirements, variability; guidelines and standards; treatment systems including preliminary, primary, secondary and tertiary. Prerequisite: CIE322 Hydraulics.

CIE444 Soil Mechanics [3-0, 3 cr.] Introduction to soil mechanics including: formation and types of soils, field testing and classification, mechanical properties and failure criteria, laboratory testing and triaxial stress strain relationships, and theory of consolidation. Prerequisite: CIE202 Mechanics of Materials.

CIE445 Soil Mechanics–LAB [0-3, 1 cr.] Laboratory testing for properties and characteristics of soils including: classification tests, strength measurement tests, and hydraulic conductivity and consolidation. Corequisite: CIE444 Soil Mechanics.

CIE446 Foundation Engineering [3-0, 3 cr.] Introduction to the elastic and plastic theories of foundations; behavior and design of shallow foundations; behavior and design of lateral earth retaining structures; introduction to deep foundations design and case studies. Prerequisite: CIE444 Soil Mechanics.
CIE447 Geotechnical Engineering—SOFT [0-2, 1 cr.] Geotechnical analysis and design using commercial software including design of foundations and lateral earth retaining systems. Results visualizations and assessment. Corequisite: CIE446 Foundation Engineering.

CIE460 Transportation Engineering I [3-0, 3 cr.] Planning, design, and operation of transportation systems. Theory and practice in geometric highway design including horizontal and vertical curves. Design of traffic elements, volume counts, capacity analysis, intersections, and interchanges. Prerequisite: CIE360 Surveying.

CIE461 Transportation Engineering I—SOFT [0-2, 1 cr.] Highway design using commercial software integrating planning, geometric design, traffic modeling and GIS systems. Results visualizations and assessment. Corequisite: CIE460 Transportation Engineering I.

CIE500 Advanced Mechanics of Materials [3-0, 3 cr.] Stress-strain relationships, strain energy, failure theories, curved beams, unsymmetrical bending, shear center, torsion of noncircular sections, energy principles, Castigliano’s theorem, inelastic behavior. Prerequisite: CIE202 Mechanics of Materials.


CIE511 Structural Analysis II [3-0, 3 cr.] Analysis of statically indeterminate structures: flexibility method, slope-deflection method and direct-stiffness method. Structural analysis of indeterminate frames using commercial software. Prerequisite: CIE302 Structural Analysis I.

CIE512 Concrete Structures II [3-0, 3 cr.] Design of: beams reinforced for shear and torsion; stair cases, columns, two-way column-supported slabs, footings, foundation and retaining walls. Prerequisite: CIE306 Concrete Structures I.

CIE520 Solid Waste Management [3-0, 3 cr.] Quantity and quality of municipal and industrial solid wastes, collection, transfer, disposal, treatment and recovery of solid wastes, hazardous and non hazardous residues, solid waste management processes, environmental impact assessment, environmental legislation and risk, and pollution control management. Prerequisite: Consent of instructor.

CIE521 Hydrology [3-0, 3 cr.] Occurrence of water, precipitation, interception, depression storage, infiltration, evaporation, transpiration, snow melt, well hydraulics, stream flow, data sources, instrumentation, runoff and hydrographs, hydrograph routing, probability in hydrologic design, and introduction to hydrologic modeling. Prerequisite: CIE322 Hydraulics.

CIE560 Transportation Engineering II [3-0, 3 cr.] Analysis and design of infrastructure systems, components of highway systems: interchanges, intersections; execution methods and practices; basic design of major transportation facilities. Prerequisite: CIE460 Transportation Engineering I.

CIE580 Construction Management [3-0, 3 cr.] Organization and management theory applied to the construction process, scheduling and planning models, CPM, PERT, resource allocation, budgeting and cost control. Prerequisite: Fifth-year level.

CIE581 Construction Management—SOFT [0-2, 1 cr.] Use of commercial software for the operations, scheduling, planning, resource allocation, budgeting and control of construction projects. Corequisite: CIE580 Construction Management.

CIE582 Infrastructure Management [3-0, 3 cr.] General methods of engineering systems management and the different types of infrastructure. Analyze possible financing, engineering solutions and alternatives, and overall management during the life cycle of the project. Prerequisite: INE320 Engineering Economy I.
CIE583 Packaging Engineering [3-0, 3 cr.] Introduction to the function and design requirements of packaging systems; introduction to design concepts; materials selection, properties, processes, and technology; elements of design management. Prerequisite: Consent of instructor.

CIE584 Quality Management Systems [3-0, 3 cr.] Introduction to quality management systems, ISO 9000, 14000, Total Quality Management, and the applications of QMS to engineering and management of large projects, systems, and organizations. Prerequisite: Consent of instructor.

CIE585 Risk and Natural Hazard Management [3-0, 3 cr.] Types, frequency, effects of natural hazards, calculation of return period, planning and designing engineering systems to survive natural events, mitigation of damage. Prerequisite: GNE331 Probability and Statistics.

CIE600 Topics in Civil Engineering [3-0, 3 cr.] Special topic relevant to civil engineering. Course title and content are announced prior to registration time. Prerequisite: To be announced prior to registration time.

CIE601 Project I [3-0, 3 cr.] Independent work performed by student. Selection of topic and progress of work are supervised by a faculty advisor. Formal technical report and presentation are required. Prerequisite: Consent of instructor.

CIE602 Project II [3-0, 3 cr.] Independent work performed by student with emphasis on research. Selection of topic and progress of work are supervised by a faculty advisor. Formal technical report and presentation are required. Prerequisite: Consent of instructor.

Computer Engineering

COE201 Computer Proficiency [0-2, 1 cr.] Word processing; spreadsheet; presentation software; internet; e-mail; database; web design.

COE211 Computer Programming [3-2, 4 cr.] Master one language syntax; structured programming; basic constructs; arrays; object programming; case studies; projects. Prerequisite: COE201 Computer Proficiency.

COE312 Data Structures [3-0, 3 cr.] Programming principles; stacks and recursion; queues; lists; searching and sorting algorithms; binary trees; introduction to object-oriented programming concepts. Prerequisite: CSC245 Computer Programming II.

COE314 File Processing [3-0, 3 cr.] Data transfer; sequential files; indexed files; tree-based files; multi-list and inverted files. Prerequisite: COE312 Data Structures.

COE321 Logical Design [3-0, 3 cr.] Digital signals; binary numbers; logic numbers; combinational logic design; boolean algebra; MSI building blocks; arithmetic circuits; flip flops; sequential state machines; registers; shift registers; counters; asynchronous logic; synchronous logic. Prerequisites: CSC245 Computer Programming II or COE211 Computer Programming, ELE302 Electrical Circuits II.

COE322 Logical Design Lab [0-3, 1 cr.] Laboratory experiments in Logical Design. Concurrent with COE321 Logical Design.

COE323 Microprocessor [3-0, 3 cr.] Microprocessors and assembly language; storing; manipulating; moving data; basics of control flow; interfacing to analog and/or digital devices; device drivers Development. Prerequisites: CSC245 Computer Programming II or COE211 Computer Programming, ELE302 Electrical Circuits II.

COE324 Microprocessor Lab [0-3, 1 cr.] Laboratory experiments in Microprocessor. Concurrent with COE323 Microprocessor.

COE414 Operating Systems [3-0, 3 cr.] Process management; process synchronization; process communications; process scheduling; disk management; security and protection. Prerequisite: COE312 Data Structures.
COE416 Software Engineering [3-0, 3 cr.] S/W analysis; development; design; documentation. Prerequisite: COE312 Data Structures.

COE418 Database Systems [3-0, 3 cr.] Data modeling; relational database; SQL; query languages; object oriented databases; client-server databases. Prerequisite: COE312 Data Structures.

COE423 Computer Architecture [3-0, 3 cr.] General data path design techniques; instruction set design; general control path design techniques; hardwired control; microprogrammed control; basic pipelined techniques for datapath and control design. Prerequisites: COE321 Logical Design, COE323 Microprocessor.

COE424 Reconfigurable Computing [3-0, 3 cr.] Introduction to VLSI design and digital testing; rapid prototyping using reconfigurable architectures; field programmable gate arrays (FPGA’s); design abstractions; design style; high-level design methodologies; RTL and system level design. Prerequisite: COE321 Logical Design.


COE431 Computer Networks [3-0, 3 cr.] Networks; topologies; installation and configuration; testing; modeling and simulating networks; protocols; standards; TCP/IP; socket programming. Prerequisite: COE414 Operating Systems.

COE511 Object Oriented Programming [3-0, 3 cr.] Object-oriented techniques for analysis, design and implementation. Prerequisite: COE312 Data Structures.

COE527 VLSI [3-0, 3 cr.] VLSI design; circuits layout; timing; delay; power estimation; use of layout editors and circuit simulation tools; synthesis; introduction to electronic design automation. Prerequisite: COE321 Logical Design.

COE533 Advanced Computer Networks [3-0, 3 cr.] Advanced networks; remote procedure calls (RPC’s); layering; ISO. Prerequisite: COE431 Computer Networks.

COE591 Project I [3-0, 3 cr.] Selected engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

COE592 Project II [3-0, 3 cr.] Advanced engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

COE599 Topics in Computer Engineering [1-3, 3 cr.] Treatment of new development in various areas of computer engineering. Prerequisite: Final year standing and consent of instructor.

Electrical Engineering

ELE201 Electrical Circuits I [3-0, 3 cr.] Resistors; capacitors and inductors; transformers; voltage and current sources; operational amplifiers; voltage and current laws; node and mesh analysis; network theorems; power and energy; three-phase circuits; DC and sinusoidal excitation of circuits; computer-aided circuit simulation (SPICE). Prerequisite: PHY201 Electricity and Magnetism.

ELE302 Electrical Circuits II [3-0, 3 cr.] Frequency-domain response of circuits; transfer functions; resonant circuits and filter designs; time-domain response of circuits; step, impulse and ramp responses; linearity and time invariance; input-output descriptions of circuits; parameter representation of two-ports networks; computer-aided circuit simulation (SPICE). Prerequisites: ELE201 Electrical Circuits I, MTH204 Differential Equations.
ELE303 Electrical Circuits II Lab [0-3, 1 cr.] Laboratory experiments in Electrical Circuits II. Concurrent with ELE302 Electrical Circuits II.

ELE305 Introduction to Electrical Engineering [3-0, 3 cr.] Study of AC/DC electrical circuits; single-phase and three-phase systems; basic electronics; survey of AC/DC machines. Prerequisite: Second year standing.

ELE401 Electronics I [3-0, 3 cr.] Semiconductors; diodes; transistors; integrated circuits; operational amplifiers; computer-aided circuit simulation (SPICE). Prerequisite: ELE302 Electrical Circuits II.

ELE402 Electronics I Lab [0-3, 1 cr.] Laboratory experiments in Electronics I. Concurrent with ELE401 Electronics I.

ELE411 Electromagnetic Fields [3-0, 3 cr.] The electromagnetic model; vector analysis; static electric fields; static magnetic fields. Prerequisite: PHY201 Electricity and Magnetism.

ELE413 Electromagnetic Waves [3-0, 3 cr.] Time-varying fields and Maxwell’s equations; plane electromagnetic waves; transmission lines; waveguides; antennas. Prerequisites: ELE201 Electrical Circuits I, ELE411 Electromagnetic Fields.

ELE420 Electromechanics [3-0, 3 cr.] Magnetic circuits; power transformers; DC machines; induction machines; synchronous machines. Prerequisites: ELE201 Electrical Circuit I, ELE411 Electromagnetic Fields.

ELE422 Power Systems [3-0, 3 cr.] Complex power; power triangle; per unit system; power system components models; admittance model and network calculations; power-flow solutions, economic dispatch. Prerequisite: ELE420 Electromechanics.

ELE423 Power Systems Lab [0-3, 1 cr.] Laboratory experiments in Power Systems. Prerequisite: ELE420 Electromechanics.

ELE430 Signals and Systems [3-0, 3 cr.] Signal and system modeling concepts; system modeling and analysis in time domain; the Fourier series; the Fourier transform and its applications; the Laplace transformation and its applications; discrete-time signals and systems; analysis and design of digital filters; DFT and FFT. Prerequisite: ELE302 Electrical Circuits II.

ELE442 Control Systems [3-0, 3 cr.] Modeling and dynamical systems; transient-response analysis; response of control systems; root locus analysis; modern control (state space). Prerequisite: ELE430 Signals and Systems.

ELE443 Control Systems Lab [0-3, 1 cr.] Laboratory experiments in Control Systems. Concurrent with ELE442 Control Systems.

ELE502 Electronics II [3-0, 3 cr.] Differential and multi-stage amplifiers; frequency response; feedback topologies; power amplifiers; filters and tuned amplifiers; MOS digital circuits; computer-aided circuit simulation (SPICE). Prerequisite: ELE401 Electronics I.

ELE525 Faulted Power System [3-0, 3 cr.] Impedance model; three-phase symmetrical faults; symmetrical components; unsymmetrical faults. Prerequisite: ELE422 Power Systems.

ELE527 Power Electronics [3-0, 3 cr.] Power semiconductor devices; controlled rectifiers; AC voltage controllers; choppers; inverters; cycloconverters. Prerequisites: ELE401 Electronics I, ELE420 Electromechanics.

ELE528 Electrification of Plants [3-0, 3 cr.] Short circuit analysis; electric plant layouts; power distribution systems; lighting and auxiliary system design Prerequisites: ELE422 Power Systems, MEE220 Engineering Graphics.

ELE537 Communication Systems [3-0, 3 cr.] Linear and angle modulation/ demodulation; feedback demodulators (PLL); analog and digital pulse modulation; interference; multiplexing. Prerequisite: ELE430 Signals and Systems.
ELE538 Noise in Communication Systems [3-0, 3 cr.] Physical noise sources; noise calculations in communication systems; stochastic processes; communication systems performance in the presence of noise. Prerequisite: ELE537 Communication Systems.

ELE539 Telecommunication Systems [3-0, 3 cr.] Spread spectrum and data communications; microwave and satellite links; optical fiber; mobile radio systems. Prerequisite: ELE537 Communication Systems.


ELE544 Feedback Control [3-0, 3 cr.] Frequency-response analysis; control systems design by frequency response; PID controls; introduction to robust control. Prerequisite: ELE442 Control Systems.

ELE591 Project I [3-0, 3 cr.] Selected engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

ELE592 Project II [3-0, 3 cr.] Advanced engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

ELE599 Topics in Electrical Engineering [1-3, 3 cr.] Treatment of new development in various areas of electrical engineering. Prerequisite: Final year standing and consent of instructor.

Industrial Engineering

INE302 Linear Programming [3-0, 3 cr.] Formulation of linear programming problems; Simplex method; Duality and sensitivity analysis. Prerequisite: GNE333 Engineering Analysis I.

INE304 Stochastic Processes [3-0, 3 cr.] Markov decision processes and chains stochastic processes. Prerequisite: GNE331 Probability and Statistics.

INE306 Decision Analysis [3-0, 3 cr.] Decision analysis; game theory; Bayesian decision theory; utility theory. Prerequisite: GNE331 Probability and Statistics.

INE320 Engineering Economy I [3-0, 3 cr.] Equivalence and interest formulae; real world transactions; present worth analysis; annual equivalent worth; rate of return analysis; depreciation; inflation; cost/benefit ratio. Prerequisite: Sophomore standing.

INE340 Advanced Statistics [3-0, 3 cr.] Single factor experiments; randomized blocks; Latin squares; introduction to factorial designs; $2^k$ factorial blocking and confounding; forecasting. Prerequisites: GNE331 Probability and Statistics.

INE345 Production Control [4-0, 4 cr.] Forecasting; Capacity planning; Aggregate planning; Line balancing; Financial analysis. Prerequisites: INE302 Linear Programming, INE320 Engineering Economy I, GNE331 Probability and Statistics.

INE402 Optimization [3-0, 3 cr.] Queuing theory and models; linear programming; integer programming; transportation/allocation; assignment; inventory; annealing; networks; dynamic programming; forecasting; simulation techniques. Prerequisite: GNE333 Engineering Analysis I.

INE407 Network Flow [3-0, 3 cr.] Networks; shortest/longest path; decision trees; network flow. Prerequisite: INE302 Linear Programming.

INE410 Motion and Time Study [3-0, 3 cr.] Graphic tools and operation analysis; worker and machine relationship; motion study and time study; performance rating allowances; standard data; work sampling; overview of ISO standards. Prerequisite: Third year standing.

INE414 Human Factors in Engineering [3-0, 3 cr.] Information input and processing; auditory and visual and tactual displays; motor skills; human factors in systems design; physical work and MMH; hand tools and devices; work place
design; illumination; climate and noise considerations. Prerequisite: Third year standing.

**INE415 Occupational Safety [2-0, 2 cr.]** Eliminating and controlling hazards; system safety; expert systems and accident reconstruction methodologies. Prerequisites: INE410 Motion and Time Study, INE414 Human Factors in Engineering.

**INE427 Project Scheduling [3-0, 3 cr.]** Basic critical path planning and scheduling with arrow and precedence networks; introduction to resource leveling and least cost scheduling including time-cost tradeoff analysis; schedule control. Prerequisites: Fourth year standing, professional experience.

**INE429 Project Contracting [3-0, 3 cr.]** Construction contracting for contractors, owners and engineers. (1) Industry structure; (2) Types of contracts and delivery systems of construction; (3) Planning, estimating; quantity takeoff and pricing; labor and equipment estimate; (4) Proposal preparation; students use contract documents to prepare detailed estimate. Prerequisite: Fourth year standing, professional experience.

**INE434 Facilities Planning and Layout [4-0, 4 cr.]** Process product and schedule design; determining activity relationships and space requirements; mathematical layout models and computerized layout algorithms; location and assignment models; storage spaces and warehouse design; design of non-manufacturing facilities; airport design; evaluation of alternative design. Prerequisite: INE302 Linear Programming.

**INE436 Materials Handling [3-0, 3 cr.]** Materials handling equipment; selection and design of material handling systems; simulation; interface with facilities layout. Prerequisites: INE302 Linear Programming, INE304 Stochastic Processes, INE434 Facilities Planning and Layout.

**INE442 Quality Control I [3-0, 3 cr.]** Modeling process quality; inferences about process quality; statistical process control; types of control charts; acceptance sampling; process capability analysis. Prerequisite: GNE331 Probability and Statistics.

**INE443 Quality Control II [1-2, 2 cr.]** Application of SPC tools to control process quality in a real manufacturing setting; introduction to TQM/ISO standards. Prerequisite: INE340 Advanced Statistics, INE442 Quality Control I.

**INE444 Inventory Analysis [3-0, 3 cr.]** Continuous/periodic/deterministic/stochastic inventory models; materials requirements planning (MRP); just-in-time production systems; assembly systems; flexible manufacturing distribution systems. Prerequisites: INE304 Stochastic Processes, INE345 Production Control.

**INE448 Machine Scheduling [3-0, 3 cr.]** Basic single machine problem (BSMP); flow shop scheduling with setup cost (TSP); vehicle routing. Prerequisite: INE302 Linear Programming.

**INE450 Simulation [3-0, 3 cr.]** Random number generation; random variate generation; components of discrete event simulation; learning simulation software; simulation of simple systems: queuing, inventory, manufacturing, QC, transportation, layout. Prerequisite: INE304 Stochastic Processes.

**INE462 Production Processes and Machinery [3-0, 3 cr.]** Metal machining; cutting tools technology and thermal cutting processes; machining operations and machine tools; abrasive processes; joining and assembly processes. Prerequisite: MEE241 Dynamics.

**INE463 Production Processes and Machinery Lab [0-3, 1 cr.]** Laboratory experiments in production processes and machinery. Concurrent with INE462 Production Processes and Machinery.

**INE502 Integer Programming [3-0, 3 cr.]** Integer programming; general search techniques. Prerequisite: INE302 Linear Programming.

**INE504 Nonlinear Optimization [3-0, 3 cr.]** Nonlinear/continuous optimization methods. Prerequisite: GNE331 Probability and Statistics.
sites: INE302 Linear Programming, INE304 Stochastic Processes.

**INE521 Engineering Economy II** [3-0, 3 cr.] Dealing with uncertainty; breakeven analysis; sensitivity analysis; probabilistic risk analysis; accounting principles. Prerequisites: INE320 Engineering Economy I, GNE331 Probability and Statistics.

**INE551 Advanced Simulation** [4-0, 4 cr.] Analysis of simulation data: input and output; validation and verification of system design; comparing alternative system configuration; simulation of complex systems; case studies. Prerequisite: INE450 Simulation.

**INE563 CAD/CAM** [3-0, 3 cr.] Use of computer-aided design software packages including systems for computer-aided drafting; solid modeling; finite element analysis, and computer-aided manufacturing; design projects including fabrication of physical prototypes generated with numerically controlled machines. Prerequisite: INE462 Production Processes and Machinery.

**INE591 Project I** [3-0, 3 cr.] Selected engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

**INE592 Project II** [3-0, 3 cr.] Advanced engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

**INE599 Topics in Industrial Engineering** [1-3, 3 cr.] Treatment of new development in various areas of industrial engineering. Prerequisite: Final year standing and consent of instructor.

**Mechanical Engineering**

**MEE201 Thermodynamics** [3-0, 3 cr.] Basic concepts of work and heat; systems and control volumes; pure substances; equation of state; first law for systems; steady flow energy equation; second law for systems and control volume; entropy. Prerequisite: Sophomore standing.

**MEE220 Engineering Graphics** [2-4, 4 cr.] Basic engineering drawing; CAD proficiency; sketching and schematics.

**MEE241 Dynamics** [3-0, 3 cr.] Kinematics and kinetics of particles, systems of particles, kinetics of rigid bodies. Prerequisites: MTH201 Calculus III, CIE200 Statics.

**MEE290 Instrumentation and Measurements** [1-3, 2 cr.] Data acquisition; design of experiments and laboratory safety; selection of instruments for experiments; informal and formal report writing; statistics of large samples applied to fixed and dynamic response of instruments; use of instrumentation software. Prerequisite: Third year standing.

**MEE302 Energy Conversion** [3-0, 3 cr.] Performance and design considerations of energy conversion systems; design and performance problems involving steam, gas turbine, and combined cycle power plants, and reciprocating and rotary engines. Prerequisite: MEE201 Thermodynamics.

**MEE304 Heat Transfer** [3-0, 3 cr.] Transfer of heat by conduction; radiation and convection; analysis of steady state and simple transient heat processes; evaporation boiling and condensing heat transfer. Prerequisites: MTH204 Differential Equations, MEE311 Fluid Mechanics.

**MEE305 Heat Transfer Lab** [0-3, 1 cr.] Laboratory experiments in Heat Transfer. Concurrent with MEE304 Heat Transfer.

**MEE311 Fluid Mechanics** [3-0, 3 cr.] Fluid statics; analysis of fluid motion using the continuity, momentum and energy relationship; introduction to viscous flow. Prerequisite: MEE241 Dynamics.

**MEE312 Fluid Mechanics Lab** [0-3, 1 cr.] Laboratory experiments in Fluid Mechanics. Concurrent with MEE311 Fluid Mechanics.

**MEE320 Strength of Materials** [3-0, 3 cr.] Mechanical properties and behavior of stressed ma-
terials. Stress analysis of beams; columns and shafts; statically indeterminate structures; plane stress and strain; principal stresses. Prerequisite: CIE200 Statics.

MEE321 Material Properties and Processes [3-0, 3 cr.] The mechanical and physical properties of engineering materials (metals, ceramics, and polymers) are explained through their structures; topics include strength and ductility; crystal structures and defects; phases; heat treatment; manufacturing processes and material economics.

MEE341 Kinematics and Dynamics of Linkages [3-0, 3 cr.] Kinematics of mechanical devices; displacement, velocity and acceleration of linkages; cams and gear trains; an introduction to synthesis; design and computer problems. Prerequisite: MEE241 Dynamics.

MEE401 Energy Systems [2-0, 2 cr.] Energy and its transformation; balance; open/closed systems. Prerequisite: Third year standing.

MEE405 Refrigeration and Air-Conditioning [3-0, 3 cr.] Principles of vapor compression and absorption refrigeration; heat pumps; psychrometrics; principles of thermal comfort and environmental aspects; determination of heating and cooling loads; air conditioning system design and analysis. Prerequisite: MEE304 Heat Transfer.

MEE406 Refrigeration and Air-Conditioning Lab [0-3, 1 cr.] Laboratory experiments in Refrigeration and Air-Conditioning. Concurrent with MEE405 Refrigeration and Air-Conditioning.

MEE407 Internal Combustion Engines [3-0, 3 cr.] Principles, practice and characteristics of internal combustion engines, with laboratory demonstrations in engine testing and performance. Prerequisite: MEE201 Thermodynamics.

MEE408 Internal Combustion Engines Lab [0-3, 1 cr.] Laboratory experiments in Internal Combustion Engines. Concurrent with MEE407 Internal Combustion Engines.

MEE412 Thermofluids [3-0, 3 cr.] Analysis of the mechanics and thermodynamics of flowing compressible fluids. Design of incompressible fluid flow and machinery. Prerequisites: MEE311 Fluid Mechanics, MEE304 Heat Transfer.

MEE422 Mechanical Engineering Design [3-0, 3 cr.] Application of engineering design process to the design of mechanical components; subsystems and machines; problem solving techniques; ethics; patents. Prerequisite: MEE320 Strength of Materials.

MEE432 Production Processes and Machinery [3-0, 3 cr.] Metal machining; cutting tools technology and thermal cutting processes; machining operations and machine tools; abrasive processes; joining and assembly processes. Prerequisite: MEE241 Dynamics.

MEE433 Production Processes and Machinery Lab [0-3, 1 cr.] Laboratory experiments in Production Processes and Machinery. Concurrent with MEE432 Production Processes and Machinery.

MEE442 Machine Dynamics [3-0, 3 cr.] Kinematics and force analysis of machine and machine elements; balancing; critical speed; flywheel design, and dynamic measurement; design and computer problems. Prerequisite: MEE341 Kinematics and Dynamics of Linkages.

MEE443 Machine Dynamics Lab [0-3, 1 cr.] Laboratory experiments in machine dynamics. Concurrent with MEE442 Machine Dynamics.

MEE445 Control Systems [3-0, 3 cr.] Control system design of mechanical systems; emphasis on thermal, fluid, and motion systems under feedback control; classical control topics including Laplace transforms; system modeling; stability theory; practical applications to professional practice. Prerequisite: GNE333 Engineering Analysis I.

MEE490 Energy Audit [2-0, 2 cr.] Survey of energy sources; cost analysis; alternatives; environmental issue; audit techniques; technical reporting. Prerequisite: Fourth year standing.
MEE503 Power Plant Engineering [3-0, 3 cr.] Steam and gas turbine power cycles; modern power plants; combined power plants; energy and availability analysis; economics of power generation; design problems and field trips. Prerequisites: MEE302 Energy Conversion, MEE412 Thermo-fluids.

MEE505 Solar Systems [3-0, 3 cr.] Solar energy resources; collector models; active DHW and space heating systems; passive heating;utilizability and design-chart method; photovoltaic and wind systems. Prerequisite: MEE304 Heat Transfer.

MEE513 Gas Turbines [3-0, 3 cr.] Design and performance of stationary and propulsion gas turbines. Prerequisite: MEE412 Thermo-fluids.

MEE521 Finite Element Methods [3-0, 3 cr.] The stiffness method and the plane truss; Element based on assumed displacement fields; the isoparametric formulation; coordinate transformation; solids of revolution; bending of flat plates and shells. Prerequisites: GNE333 Engineering Analysis I, MEE320 Strength of Materials.

MEE533 CAD/CAM [3-0, 3 cr.] Use of computer-aided design software packages including systems for computer-aided drafting; solid modeling; finite element analysis, and computer-aided manufacturing; design projects including fabrication of physical prototypes generated with numerically controlled machines. Prerequisite: MEE432 Production Processes and Machinery.

MEE543 Acoustics and Vibration Control [3-0, 3 cr.] Acoustic momentum, energy and intensity; propagation, reflection and absorption; effects of the physical properties; transmission of sound in real media; forced and free vibration systems with one or more degrees of freedom; vibration isolation and transmission applied to problems of rotating and reciprocating machinery; design problems on vibration isolation systems and absorbers. Prerequisite: MEE442 Machine Dynamics.

MEE591 Project I [3-0, 3 cr.] Selected engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

MEE592 Project II [3-0, 3 cr.] Advanced engineering project using acquired technical knowledge; formal report and presentation. Prerequisite: Final year standing and consent of instructor.

MEE599 Topics in Mechanical Engineering [1-3, 3 cr.] Treatment of new development in various areas of mechanical engineering. Prerequisite: Final year standing and consent of instructor.

Packaging Minor

PKG/INE570 Introduction to Packaging [3-0, 3 cr.] This course will present an overview of the history of packaging, functions, materials and development and an overview of packaging design, processing systems, and testing. The historical, social, technological, environmental impact and legal aspects of packaging will also be discussed. Examples will include product/package combinations and the impact these choices make on the market success of a product, and the important role of proper packaging design in the reduction of solid waste, and sustainable development. Prerequisite: 2nd year standing.

PKG/INE572 Packaging Dynamics and Permeation [2–3, 3 cr.] An introduction to the mechanics, stresses and strains, shock, vibration, compression, temperature, humidity, friction and pressure as factors affecting the design of packaging, including the design of packages to protect against these hazards. Damage boundary, product fragility, barrier properties against permeation will be explored from the point of view of the packaging industry. Prerequisite: PHY211 Statics or ARC311 Building Systems.

PKG/INE573 Packaging Types and Processes [3-0, 3 cr.] Study of operation and performance of modern packaging systems (e.g. die cutting, blister packaging, blow molding, injection molding, etc.). Topics include equipment selection and specification, design and implementation of packaging lines in production, assessing and im-
proving operating performance, process control and instrumentation, as well as overall environmental friendliness of the process, its sustainability and amenability to reuse, recycling, and total waste reduction. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE580 Packaging Design [1-4, 3 cr.] Application of graphic skills on 3-D representations, and investigation of new materials and methods in designing product containers. Projects include designing a line of products under the same brand name, constructing die cut boxes, labels, and creating experimental packages. Prerequisite: 2nd year standing.

PKG/INE574 Paper & Paperboard Packaging [3-0, 3 cr.] Study of the sources of cellulose fiber, methods of extraction, the effect of different fibers on the finished product, additives, conversion to paper and paperboard, identify paper types, surface finishes, design features and performance of basic paper characterization tests. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE575 Corrugated Packaging [3-0, 3 cr.] Study of distribution packaging which includes: product design factors affecting transportation, transportation hazards, protective package design, modern computer aids to shipping package design, regulations, methods and significance of various pre-shipment test procedures. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE576 Rigid Plastic Packaging [3-0, 3 cr.] Study of the different methods of forming polymers into usable shapes and the advantages and limitations of each, with case studies of plastic bottle designs, thermoform design practice, with performance of standard container tests and evaluations. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE577 Packaging for Food, Drug, and Cosmetics [3-0, 3 cr.] Physical and chemical properties of packaging materials including metals, glass, paper and polymers, will be studied in relation to their use in food, drugs, and cosmetics packaging applications. The major technical, safety and legislative areas critical to the successful application of packaging technologies will be reviewed; including a brief exploration of the historical aspects of food, drug, and cosmetics packaging in order to provide a perspective on modern packaging industries and their associated regulatory measures. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE578 Food Preservation Packaging [3-0, 3 cr.] Study of the process of food deterioration and the packaging methods that are used to control these processes in order to extend useful shelf life of certain products. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE579 Special Topic Course in Packaging Engineering [3-0, 3 cr.] This course will address current issues in packaging engineering and trends in the market, with lectures by invited guests from the field. Prerequisite: consent of instructor.

PKG/INE582 Structural Packaging [1-4, 3 cr.] This course will revolve around the creation and manipulation of basic shapes in order to generate new structures for package designs. Issues of structures’ functional relevance and appropriateness will be investigated, in addition to the emphasis on the notion of the package as a work of art. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE584 Package Branding [1-4, 3 cr.] This course will examine packaging in relation to the brand identity of a product. Students will be encouraged to explore new methods and bring fresh ideas to the concept of surface treatment and structure in the elaboration of the visual identity of a product. Prerequisite: PKG/INE570 Introduction to Packaging.

PKG/INE586 Computer Graphics for Packaging [2-2, 3 cr.] Covers major software tools used by professionals in the packaging industry. Students will design and develop a relational database. Commercial label design software will
be used to create product labels including bar codes. Spreadsheets and programming environment will be used to solve packaging/business related problems. 2D/3D design software will be used to develop packaging concepts, and generate working drawings. Prerequisite: MEE220 Engineering Graphics or ARC251 Introduction to Computer Graphics or DES251 Introduction to Computer Graphics or GRA251 Introduction to Computer Graphics.

**PKG/INE588 Packaging Applications [1-4, 3 cr.]**
This course provides the students the opportunity to apply the knowledge gained through actual projects, with a follow up on the production of packages in the factory. Assignments will address the functionality of packaging from product identification to its entire appeal, stacking, display and protection. Prerequisite: PKG/INE573 Packaging Types and Processes, and, PKG/INE572 Packaging Dynamics and Permeation or PKG/INE580 Packaging Design.

**PKG/INE589 Special Topic Course in Packaging Design [3-0, 3 cr.]** This course will address current issues in packaging design and trends in the market, with lectures by invited guests from the field. Prerequisite: consent of instructor.
**The School of Pharmacy**

The School of Pharmacy, located at the Byblos Campus, was established as an integral part of LAU to meet the demand of a clinical pharmacy practice in Lebanon and in the Middle East.

The Pharmacy curriculum offers two professional degree programs: a five-year program leading to a Bachelor of Pharmacy (B.Ph.) degree and a six-year program leading to a Doctor of Pharmacy (Pharm.D.) degree.

The School prepares its graduates for a career in Clinical Pharmacy with a thorough understanding of drugs and diseases. The program prepares pharmacists who can act as competent consultants to the public in various pharmacotherapeutics matters and who can play a more effective role in patient health care in time of emergency. The clinical pharmacy curriculum is designed to promote interaction between pharmacists and other health professionals in the delivery of comprehensive health care.

The goal of the School of Pharmacy is to graduate scientifically and technically competent pharmacists who can provide maximum health care services to patients and assume leadership in modern Pharmacy practice with moral and social responsibilities. LAU graduates will be trained to function as health care informants and educators or to practice pharmacy in the drug retail sector. They will also possess the skills to work as clinical pharmacists in a hospital setting, researchers in a medical or pharmaceutical research center or as technical representatives with various pharmaceutical companies.

**Accreditation Status: Accreditation Council for Pharmacy Education (ACPE)**

The School of Pharmacy is a member of the American Association of Colleges of Pharmacy. The Doctor of Pharmacy Program is accredited by the ACPE (Accreditation Council for Pharmacy Education). The next on-site accreditation review will take place in Spring 2008. Since June 30, 2002, LAU Doctor of Pharmacy graduates have been eligible to sit for the pharmacist licensure examination in most U.S. States and Canadian Provinces. To date, the Doctor of Pharmacy Program at LAU is the only program outside the United States to enjoy such a privileged status.
Faculty

Acting Dean
Mohamad Mroueh, Ph.D.

Dean designate
Sadik F., Ph.D.

Chairs
Soula Boustani, Ph.D., Basic Pharmaceutical Sciences
Oussayma Moukhachen, Pharm.D., BCPS, Pharmacy Practice

Faculty
Abou Jaoude C., Pharm.D.;
Akl N., Ph.D.;
Baroudy G., Ph.D.;
Bogharian K., Ph.D.;
Boukarim C., Ph.D.;
Boustani S., Ph.D.;
Chaar H., Pharm.D.;
Chamoun S., Pharm.D.;
Daheb M., M.D.;
Hashaw F., Ph.D.;
Houri A., Ph.D.;
Husseini A., R.PH.;
Irani R., M.S., D.N.;
Kabbani A., Ph.D.;
Moalem H., Ph.D.;
Moukhachen O., Pharm.D., BCPS;
Mroueh M., Ph.D.;
Nabhani S., Pharm.D.;
Nassour Z., R.PH.;
Nawas T., Ph.D.;
Nehme N., M.D.;
Ramadan W., Pharm.D.;
Razzouk J., M.D.;
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Saab A., Ph.D.;
Saab Y., Pharm.D., Ph.D.;
Sheikh-Taha M., Pharm.D.;
Tolkajian S., Ph.D.;
Zeitoun A., Pharm.D.

Volunteer Adjunct Faculty
Abi Ghanem W., R.PH.;
Al-Ali I., R.PH.;
Antaki F., R.PH.;
Azzam R., R.PH.;
Bawab M., R.PH.;
Drouby N., R.PH.;
Elkadoum R., R.PH.;
Feghali L., Pharm.D.;
Gbayi N., R.PH.;
Ghoub J., R.PH.;
Hindi B., R.PH.;
Iskandar K., R.PH.;
Issa P., R.PH.;
Sili G., Pharm.D.;
Khoury L., R.PH.;
Kordahi A., R.PH.;
Khouzami G., R.PH.;
Maalouf M., R.PH.;
Maksoud M., R.PH.;
Masri R., R.PH.;
Melki M., R.PH.;
Osta S., R.PH.;
Nassour Z., R.PH.;
Saad Y., R.PH.;
Sassine L., R.PH.;
Sfeir H., R.PH.;
Shanouha U., R.PH., M.S.;
Tawil A., R.PH.;
Yazbeck G., R.PH.;
Mokdad I., R.PH.;
Mohamad O., R.PH.;
Machmouchi M., R.PH.;
Merhi F., Pharm.D.;
Chami L., R.PH.;
Haidar G., R.PH.;
Khoury O., R.PH.;
Tabet J., R.PH.;
Hadi M., R.PH.;
Al Gharib A., R.PH.;
Nassereeddine M., R.PH.;
Zalaquett M., R.PH.;
Mrad M., R.PH.;
El-Hakim R., R.PH.;
Karam R., R.PH.;
Charafeddine F., R.PH.;
Younes M., R.PH.;
Feghali R., Pharm.D., R.PH.;
Mahfouz J., R.P.H.;
Waked S., R.PH.;
Hakim S., R.PH.;
Tohme S., R.PH.;
Richani O., R.PH.;
Tayeh C., R.PH.;
Rahbani S., R.PH.;
Hantouche G., R.PH.;
Barnabe N., R.PH.;
Bashasha L., R.PH.;
El-Hakim S., R.PH.;
Daher M., R.P.H.;
Azzam R., R.PH.;
Chaker G., R.PH.;
Addada S., R.PH.;
Abi-Ghosn G., R.P.H.;
Khoury P., R.P.H.;
Dabliz O., R.P.H.;
Dabliz I., R.P.H.;
Aboulhosn N., Pharm.D., R.P.H.;
Nawfal N., R.PH.;
Kehde F., R.P.H.;
Kaidbey N., R.P.H.;
Joulanda R., R.P.H.;
Abou Jaoude M., R.P.H.;
Sakr H., R.P.H.;
Khayatt G., Pharm.D.
PHARMACY CURRICULUM

FIRST YEAR

Fall Semester
ARA201 Appreciation of Arabic Literature .......... 3
BUS205 Survey of Economics and Marketing .......... 3
INF201 Learning Resources Techniques .......... 1
CHM201 Chemical Principles .......... 3
PHA311 Computer Applications to Pharmacy .......... 2
— Physical Education .......... 1
Total .......... 13

Spring Semester
BIO201 Biology I .......... 4
PHA205 Statistics for Health Profession Majors .......... 3
CHM204 Quantitative Analysis .......... 2
CST201 Cultural Studies I .......... 3
— Social Science course (excluding Economics courses) .......... 3
Total .......... 15

SECOND YEAR

Fall Semester
PHA202 Medical Anatomy & Physiology .......... 4
CHM311 Organic Chemistry I .......... 4
CST202 Cultural Studies II .......... 3
ENG201 Communication Arts .......... 3
PHA211 Microbiological Basis of Disease .......... 4
Total .......... 18

Spring Semester
ENG202 Sophomore Rhetoric .......... 3
CHM312 Organic Chemistry II .......... 4
CST301 Cultural Studies III .......... 3
PHA201 Pharmacy Practice/History & Ethics .......... 2
PHA305 Introduction to Drug Information and Literature Evaluation .......... 2
PHA303 Pharmaceutical Calculations .......... 2
Total .......... 16

PROFESSIONAL YEAR I (3RD YEAR)

Fall Semester
PHA301 Biochemical Basis of Disease .......... 4
PHA411 Medicinal Chemistry I .......... 3
PHA331 Dosage Forms I .......... 3
PHA307 Physical Pharmacy .......... 3
PHA461 Pathophysiology .......... 4
Total .......... 17

Spring Semester
PHA412 Medicinal Chemistry II .......... 3
PHA332 Dosage Forms II .......... 3
PHA508 Professional Communication .......... 1
PHA407 Pharmacy Management .......... 3
PHA502 Physical Assessment .......... 2
PHA323 Biotechnology & Pharmaceutical Analysis .......... 3
PHA525 Interpretation of Lab Data .......... 2
Total .......... 17

Summer Semester
PHA450 Int. Professional Pharm. Pract. Experience .......... 1
PHA408 Pharmacy Practice Management I .......... 3
PHA409 Pharmacy Practice Management II .......... 2
Total .......... 6

PROFESSIONAL YEAR II (4TH YEAR)

Fall Semester
PHA522 Pharmacokinetics & Biopharmaceutics .......... 4
PHA511 Pharmacology I .......... 4
PHA527 Pharmaceutical Parenterals .......... 2
PHA541 Pharmacotherapeutics I .......... 3
PHA542 Pharmacotherapeutics II (Sequentially with PHA541) .......... 3
Total .......... 16

Spring Semester
PHA405 Pharmacy Seminar I .......... 2
PHA413 Pharmacognosy & Evidence Based Herbal Medicine .......... 2
PHA503 Non-Prescription Drugs .......... 2
PHA513 Pharmacology II .......... 4
PHA555 Toxicology & Emergency Medicine .......... 2
PHA543 Pharmacotherapeutics III .......... 3
PHA544 Pharmacotherapeutics IV (Sequentially with PHA 543) .......... 3
Total .......... 18
### Summer Semester

<table>
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<tr>
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<tr>
<td>PHA545</td>
<td>Pharmacotherapeutics V</td>
<td>4</td>
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<tr>
<td>PHA546</td>
<td>Pharmacotherapeutics VI (Concurrently with PHA545)</td>
<td>2</td>
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<tr>
<td>PHA658</td>
<td>Dispensing Laboratory</td>
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### PROFESSIONAL YEAR III (5TH YEAR)

#### Fall Semester

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<tr>
<td>PHA505</td>
<td>Pharmacy Seminar II</td>
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<tr>
<td>PHA506</td>
<td>Clinical Nutrition &amp; Diet Therapy</td>
<td>3</td>
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<tr>
<td>PHA603</td>
<td>Professional Pha. Practice Experience I</td>
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<td>PHA602</td>
<td>Statistical Methods for Pharmacy Research</td>
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#### Spring Semester

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<td>PHA 604</td>
<td>Professional Pha. Practice Experience II</td>
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<tr>
<td>PHA605</td>
<td>Pharmacogenomics</td>
<td>2</td>
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<tr>
<td>PHA608</td>
<td>Pharmacy Law</td>
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<tr>
<td>PHA610</td>
<td>Pharmacoeconomics</td>
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### PROFESSIONAL YEAR IV (6TH YEAR/DOCTOR OF PHARMACY/PHARM.D. CANDIDATE ONLY)

#### Fall Semester

Students in the Fall Semester have to register for 2 Required Advanced Pharmacy Practice courses (3 credits each) and 2 topics for Elective Advanced Pharmacy Practice (2 credits each).

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>Required Advanced Pharmacy Practice</td>
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<td>PHA705-708</td>
<td>Required Advanced Pharmacy Practice</td>
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<tr>
<td>PHA750</td>
<td>Elective Advanced Pharmacy Practice (Topic I)</td>
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<td>PHA750</td>
<td>Elective Advanced Pharmacy Practice (Topic II)</td>
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<td>PHA722</td>
<td>Clinical Pharmacokinetics</td>
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#### Spring Semester

Students in the Spring Semester have to register for 2 Required Advanced Pharmacy Practice courses, (3 credits each) and 1 topic for Elective Advanced Pharmacy Practice (2 credits).

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>PHA705-708</td>
<td>Required Advanced Pharmacy Practice</td>
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<td>PHA705-708</td>
<td>Required Advanced Pharmacy Practice</td>
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<tr>
<td>PHA750</td>
<td>Elective Advanced Pharmacy Practice (Topic III)</td>
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<td>PHA789</td>
<td>Pharm.D. Project</td>
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</table>

Students have to take the following Pharmacy Practice:

- PHA705 Required Advanced Pharmacy Practice in Internal Medicine (3 cr.)
- PHA706 Required Advanced Pharmacy Practice in Pediatrics (3 cr.)
- PHA707 Required Advanced Pharmacy Practice in Intensive Care (3 cr.)
- PHA708 Required Advanced Community Pharmacy Practice (3 cr.)
- PHA750 Elective Advanced Pharmacy Practice (topic I) (2 cr.)
- PHA750 Elective Advanced Pharmacy Practice (topic II) (2 cr.)
- PHA750 Elective Advanced Pharmacy Practice (topic III) (2 cr.)

Students have to choose 3 different topics of the following (2 in the Fall and 1 in the Spring):

- Pharmacokinetics (2 cr.)
- Emergency Medicine (2 cr.)
- Ambulatory Care (2 cr.)
- Psychiatry (2 cr.)
- Dermatology (2 cr.)
- Nephrology (2 cr.)
- Cardiology (2 cr.)
- Bone Marrow Transplant (2 cr.)
- Oncology (2 cr.)
- Infectious Diseases (2 cr.)
- ENT (2 cr.)
- Surgery (2 cr.)
- Neonatal Intensive care (2 cr.)
- Orthopedics (2 cr.)
- OB/GYN (2 cr.)
- Gastroenterology (2 cr.)
- CCU (2 cr.)
- Pediatrics (2 cr.)
- Medical Intensive Care (2 cr.)
- Surgical Intensive care (2 cr.)
- Endocrinology (2 cr.)
- Laboratory Medicine (2 cr.)
- Neurology (2 cr.)
- Family Medicine (2 cr.)
- Pulmonary medicine (2 cr.)
- Community Pharmacy (2 cr.)
COURSE DESCRIPTIONS

**PHA201 Pharmacy Practice/History and Ethics** [2 cr.]
Introduction to the practice of pharmacy in institutional settings and clinics. This course will also provide the student with a study of the development of the profession of pharmacy, emphasizing the historical background and ethical principles upon which the profession rests. The nature and place of pharmaceutical services in society will also be discussed and the moral standards and professional conduct required of a pharmacist emphasized. Co-requisite: 2nd year status.

**PHA202 Medical Anatomy and Physiology** [4 cr.]
Anatomy and physiology of the human body with emphasis on the central nervous system, autonomic nervous system, cardiovascular and renal systems, immune, endocrine, gastrointestinal and respiratory systems. A thorough understanding of receptors, their affinity to drugs and hormones as well as targets for therapeutic interventions will be emphasized. Congenital malformations and their physiological impacts will also be discussed. Prerequisite: BIO201 Biology I.

**PHA205 Statistics for Health Profession Majors** [3 cr.]
Descriptive and basic inferential statistics and issues surrounding the design of biomedical and biopharmaceutical investigations.

**PHA211 Microbiological Basis of Disease** [3-3, 4 cr.]
This course covers the structure, physiology and general characteristics of medically important microorganisms. Included will be study of host defense mechanisms, infections of human systems, control of infection, and development of microbiological techniques. Prerequisite: BIO201 Biology I.

**PHA301 Biochemical Basis of Disease** [4 cr.]
Chemical factors affecting bioactivity of drugs, role of enzymes in biochemistry and disease, metabolism of biochemicals and drugs, maintenance of acid/base balance. Lipids and prostaglandins; cholesterol and steroid hormones, biosynthesis of amino acids and nucleotides; nucleic acids, molecular genetics and biotechnology; immunology; targets for therapeutic intervention. Prerequisite: BIO201 Biology I, CHM312 Organic Chemistry II. Co-requisite: 1st professional year status (3rd year).

**PHA303 Pharmaceutical Calculations** [2 cr.]
Given a prescription or medication order, the student shall be able to make the necessary basic calculations required to compound and dispense a drug. Calculation of doses, percentage preparations, dilution and concentration, and isotonic electrolyte solutions will be emphasized. Co-requisite: 2nd year status.

**PHA305 Introduction to Drug Information and Literature Evaluation** [2 cr.]
This course integrates information management principles and the use of reference sources to prepare students to utilize, retrieve, interpret and disseminate information on their clinical clerkships and in practice. The students will learn about advanced information sources, how to evaluate the literature, and how to interpret information appropriate to specific practice situations. Co-requisite: 2nd year status.

**PHA307 Physical Pharmacy** [3 cr.]
A study of the physical-chemical properties of drugs necessary to define, characterize and develop a stable and effective dosage form. An introduction to basic thermodynamics leads to studies of acid-base equilibria, partitioning, solubility, diffusion and surface properties. The application of chemical kinetics to drug stability as well as polymers and other biomaterials used in drug delivery are also discussed. Prerequisites: CHM201 Chemical Principles, CHM312 Organic Chemistry II. Co-requisite: 3rd year status (1st professional year).

**PHA311 Computer Applications to Pharmacy** [2 cr.]
This course will allow students to use computers for professional, educational and business problem-solving. It will also introduce students to the utility of computer technology, on-line information resources, hardware peripherals, CD-ROM databases, programs and multimedia computing systems that pharmacists can use in their practice.
PH323 Biotechnology and Pharmaceutical Analysis [2-2, 3 cr.] This lecture and laboratory course deals with the quality of drug products including biotechnology-derived pharmaceuticals. The student will learn pharmacopeias (USP, BP and others) standards that guarantee the quality of a pharmaceutical product and the analytical methods used to meet these standards. The students will get familiarized with techniques of extraction, stability testing, spectroscopy, chromatography (TLC, GC, HPLC) and dissolution procedures. Prerequisites: CHM201 Chemical Principles, CHM204 Quantitative analysis II, CHM312 Organic Chemistry II. Co-requisite: PH307 Physical Pharmacy, 3rd year status (1st professional year).

PH331 Dosage Forms I [2-2, 3 cr.] This course deals with the design, manufacturing and evaluation of pharmaceutical dosage forms based on physical-chemical principles. The laboratory is designed to allow the students to apply the above principles and to develop proficiency when compounding certain selected formulations. The course content will include drug regulatory affairs and current good manufacturing practices in compliance with FDA guidelines and standards, pre-formulation studies, solid dosage forms, solutions, aerosols as well as formulation of biotechnology-derived pharmaceuticals. Prerequisites: PHA303 Pharmaceutical Calculations. Co-requisite: PHA307 Physical Pharmacy, 3rd year status (1st professional year).

PH332 Dosage Forms II [2-2, 3 cr.] The course and the laboratory will emphasize pharmaceutical disperse systems, ophthalmic, otic, nasal and dermatological products as well as suppositories. A survey of novel drug delivery systems with a review of the scientific principles upon which they are based will be discussed. Prerequisites: PHA307 Physical Pharmacy and PHA331 Dosage Forms I. Co-requisite: 3rd year status (1st professional year).

PH405 Pharmacy Seminar I [2 cr.] It will introduce the student to proper methods of oral presentations in pharmacy related topics. Prerequisites: PHA205 Statistics for Health Profession Majors and PHA305 Introduction to Drug Information and Literature Evaluation. Co-requisites: PHA511 Pharmacology I and 4th year status (2nd professional year).

PH407 Pharmacy Management [3 cr.] An introduction to basic concepts, principles and methods of pharmacy management in all practice settings, emphasizing practice alternatives, management approaches and styles, organizational principles, behavior and forms, personnel, purchasing and inventory control, pricing, professional fees and pharmacy services and patronage. Topics will be discussed within the framework of the U.S. health care delivery system and the pharmacist’s role within it and within professional organizations. Prerequisites: PHA201 Pharmacy Practice History and Ethics, BUS205 Survey of Economics and Marketing. Co-requisites: 3rd year status (1st professional year).

PH408 Pharmacy Practice Management I [3 cr.] Pharmacists in all practice settings use a variety of skills on a daily basis. This is the first of a two-course sequence designed to expose pharmacy students to practical experiences in selected Pharmacy Management environments under the supervision of pharmacists and clinical faculty coordinators. This course focuses on community pharmacy management approaches and styles, organizational principles, personnel, purchasing and inventory control, pricing, professional fees and community pharmacy services. Prerequisites: PHA407 Pharmacy Management, PHA508 Professional Communication, PHA332 Dosage Forms II, PHA502 Physical Assessment, PHA461 Pathophysiology. Co-requisite: PHA412 Medicinal Chemistry II and 3rd year status (1st professional year).

PH409 Pharmacy Practice Management II [2 cr.] This course provides pharmacy students with practical experiences in selected Hospital Pharmacy Management environments under the supervision of pharmacists and clinical faculty coordinators. It focuses on management approaches and services provided in hospital pharmacies. Prerequisites: PHA407 Pharmacy Management, PHA508 Professional Communication, PHA332 Dosage Forms II, PHA502 Physical Assessment,
PHARMACY

PHA525 Interpretation of Lab Data, PHA461 Pathophysiology. Co-requisites: PHA412 Medicinal Chemistry II and 3rd year status (1st professional year).

**PHA411 Medicinal Chemistry I [3 cr.]** A course on the fundamentals of the application of chemical principles to the study of medicinal agents. Basic heterocyclic chemistry as is needed to develop the chemistry of physiologically active molecules. Physicochemical properties of drugs and their relation to physiological activity, fundamental consideration of the metabolic changes in drug molecules, synthetic pathways, structure-activity-relationship. CNS depressants and stimulants, analgesics, and local anesthetics are emphasized. Prerequisites: CHM201 Chemical Principles and CHM312 Organic Chemistry II. Co-requisite: 3rd year status (1st professional year).

**PHA412 Medicinal Chemistry II [3 cr.]** This course is a continuation of PHA411 Medicinal Chemistry I. Emphasis will be on cholinergics, adrenergics, anticoagulants, diuretics, antihistamines, antilipidemics, antidiabetics, antibiotics and chemotherapeutic cardiac and anti-inflammatory agents. Prerequisite: PHA411 Medicinal Chemistry I. Co-requisite: 3rd year status (1st professional year).

**PHA413 Pharmacognosy & Evidence Based Herbal Medicine [2 cr.]** The course provides an introduction to the study of natural products with an emphasis on drugs derived from plants. It introduces the students to the traditional uses, chemical constituents, pharmacological activities and toxic effects of most commonly used medicinal plants around the world. The course also enables the students to grasp sufficient knowledge for proper utilization and dispensing of medicinal plants. Scientific literature and public information will be compared to evaluate the therapeutic potential herbal medicine. Methods of preparation and extraction of medicinal herbs will be covered. Prerequisite: PHA412 Medicinal Chemistry II. Co-requisite: 4th year status (2nd professional year).

**PHA450 Introduction to Professional Pharmacy Practice Experience [1 cr.]** This course introduces the student to the practice of pharmacy through structured early learning experience in different clinical settings under the supervision of clinical faculty. Lecture and workbook exercises will be utilized to reinforce the fundamentals of clinical practice presented to the student to serve as a foundation for later professional experiential rotations. Prerequisites: PHA407 Pharmacy Management, PHA508 Professional Communication, PHA332 Dosage Forms II, PHA502 Physical Assessment, PHA525 Interpretation of Lab Data, PHA461 Pathophysiology. Co-requisites: PHA412 Medicinal Chemistry II and 3rd year status (1st professional year).

**PHA461 Pathophysiology [4 cr.]** This course provides a basic introduction to disease processes. It will consider the alterations, derangements and mechanisms involved in selected disease states which represent the disruption of normal physiology. Various disorders of the nervous, cardiovascular, respiratory, and renal systems will be presented to provide the student the rationale required for an effective drug therapy. Prerequisite: PHA202 Medical Anatomy and Physiology. Co-requisite: 3rd year status (1st professional year).

**PHA502 Physical Assessment [2 cr.]** This course is designed to introduce the student to various physical assessment techniques and the tools used in monitoring the efficacy of patient drug regimens. The course consists of lectures followed by a laboratory period where students will be introduced to equipment and techniques necessary to conduct physical examinations. Prerequisite: PHA461 Pathophysiology. Co-requisite: 3rd year status (1st professional year).

**PHA503 Nonprescription Drugs [2 cr.]** A study of products used by the self-medicating public, including material on the symptoms for which patients seek self-treatment, evaluation and selection of products used to treat them, aspects of patient counseling in the safe and effective use of the products and various legal considerations of this class of drugs. Prerequisite: PHA412 Medicinal Chemistry II. Co-requisites: PHA511 Pharmacology I and 4th year status (2nd Professional year).
PHARMACY

PH305 Pharmacy Seminar II [2 cr.] Presentations and discussions of issues of current significance in the profession of pharmacy. Emphasis will be on evaluation of drug literature articles for proper research and design and data interpretation. Discussion and presentation of selected case studies. Prerequisites: PHA405 Pharmacy Seminar I, PHA541 Pharmacotherapeutics I, PHA542 Pharmacotherapeutics II, PHA543 Pharmacotherapeutics III, PHA544 Pharmacotherapeutics IV, PHA545 Pharmacotherapeutics V, and PHA546 Pharmacotherapeutics VI. Co-requisite: 5th year students (3rd professional year).

PH306 Clinical Nutrition and Diet Therapy [3 cr.] This course reviews the foundation of nutrition with emphasis on the nutritional aspects of carbohydrates, lipids, proteins, vitamins, electrolytes and trace elements. Nutrition for growth and development and nutrition/clinical care of selected disease states will be covered. Institutionalized nutritional therapy in specific disease states such as metabolic stress, liver, and gall bladder diseases, renal disease and the care of premature neonates will be addressed. The role of the pharmacist as a “nutritionist” and a specialist in drug-nutrition interaction will be emphasized. Prerequisites: PHA513 Pharmacology II, PHA541 Pharmacotherapeutics I, PHA542 Pharmacotherapeutics II, PHA543 Pharmacotherapeutics III, PHA544 Pharmacotherapeutics IV, PHA545 Pharmacotherapeutics V, and PHA546 Pharmacotherapeutics VI. Co-requisite: 5th year students (3rd professional year).

PH308 Professional Communication [1 cr.] An analysis and application of factors promoting or hindering successful communication between pharmacists and patients, pharmacists and the general public, and pharmacists and other health care personnel. The course is designed to brief students on the importance of communication to interpersonal interaction, and the consequences of poor communication. Prerequisites: PHA201 Pharmacy Practice/History and Ethics, ENG201 Communication Arts and ENG202 Sophomore Rhetoric. Co-requisite: 3rd year students (1st professional year).

PH311 Pharmacology I [4 cr.] Principles of pharmacology based on discussion of normal and abnormal physiologic and biochemical mechanisms. Emphasis on drug-receptor interaction, absorption distribution, metabolism, and elimination. This course will include the pharmacological properties of adrenergics, cholinergics, CNS depressants and stimulants, analgesics and anti-inflammatory agents. Prerequisites: PHA461 Pathophysiology and PHA412 Medicinal Chemistry II. Co-requisite: 4th year students (2nd professional year).

PH313 Pharmacology II [4 cr.] This is a continuation of PH311 Pharmacology I. Drugs affecting cardiovascular, pulmonary, renal, gastrointestinal, homeostasis systems as well as pharmacology of hormones and chemotherapeutic agents are also emphasized. Prerequisites: PHA511 Pharmacology I and PHA211 Microbiological Basis of Disease. Co-requisite: 4th year students (2nd professional year).

PH322 Pharmacokinetics & Biopharmaceutics [4 cr.] Introduction to drugs’ time course in the body in view of their absorption, distribution, metabolism and elimination (ADME). Consideration is given to rate processes, the physicochemical influences on ADME and formulation factors involved in drug delivery and availability. Prerequisites: PHA332 Dosage Forms II. Co-requisite: 4th year status (2nd professional year).

PH325 Interpretation of Laboratory Data [2 cr.] In this course, the student will identify and interpret laboratory tests commonly used for monitoring the efficacy of drugs in the treatment of various diseases. By relating tests and results to case studies, the student will learn principles of monitoring as a method of determining drug effectiveness. Co-requisites: PHA461 Pathophysiology, PHA301 Biochemical Basis of Disease, and 3rd year status (1st professional year).

PH327 Pharmaceutical Parenterals [2 cr.] This lecture and laboratory course will review proper methods used in the preparation, handling, quality control, and dispensing of sterile dosage
forms, including aseptic preparation of parenteral and enteral nutrition products, chemotherapy agents, biological and specialty solutions. Prerequisites: PHA332 Dosage Forms II. Co-requisite: 4th year status (2nd professional year).

PHA541 Pharmacotherapeutics I [3 cr.] This is the first in a series of six Pharmacotherapeutics courses. These sequence courses address the principles of Pharmacotherapeutics and the functional consequences of major diseases. Discussions will focus on therapeutic problem solving, and the evaluation of drugs commonly used in clinical practice. Emphasis includes the individualization of Pharmacotherapy, the selection of appropriate drug regimen with its efficacy and toxicity monitoring parameters, the assessment of various drug interactions or adverse reactions, and the determination of therapeutic endpoints. Diseases Prevention, patient counseling, and pharmcoeconomic issues will be an integral part of each disease state management. Pharmacotherapeutics of the psychiatric and neurological diseases will be discussed in this course. Prerequisites: PHA450 Introduction to Professional Pharmacy Practice Experience, PHA408 Pharmacy Practice Management I and PHA409 Pharmacy Practice Management II. Co-requisites: PHA51 Pharmacology I and 4th year status (2nd professional year).

PHA542 Pharmacotherapeutics II [3 cr.] This is the second in a series of six Pharmacotherapeutics courses. These sequence courses address the principles of Pharmacotherapeutics and the functional consequences of major diseases. Discussions will focus on therapeutic problem solving, and the evaluation of drugs commonly used in clinical practice. Emphasis includes the individualization of Pharmacotherapy, the selection of appropriate drug regimen with its efficacy and toxicity monitoring parameters, the assessment of various drug interactions or adverse reactions, and the determination of therapeutic endpoints. Diseases Prevention, patient counseling, and pharmcoeconomic issues will be an integral part of each disease state management. Pharmacotherapeutics of the Endocrinologic, and oto/ophthalmologic diseases and women’s health will be discussed in this course. Prerequisites: PHA450 Introduction to Professional Pharmacy Practice Experience, PHA408 Pharmacy Practice Management I and PHA409 Pharmacy Practice Management II. Co-requisites: PHA51 Pharmacology I and 4th year status (2nd professional year).

PHA543 Pharmacotherapeutics III [3 cr.] This is the third in a series of six Pharmacotherapeutics courses. These sequence courses address the principles of Pharmacotherapeutics and the functional consequences of major diseases. Discussions will focus on therapeutic problem solving, and the evaluation of drugs commonly used in clinical practice. Emphasis includes the individualization of Pharmacotherapy, the selection of appropriate drug regimen with its efficacy and toxicity monitoring parameters, the assessment of various drug interactions or adverse reactions, and the determination of therapeutic endpoints. Diseases Prevention, patient counseling, and pharmcoeconomic issues will be an integral part of each disease state management. Pharmacotherapeutics of the cardiovascular, and dermatologic diseases will be discussed in this course. Prerequisites: PHA450 Introduction to Professional Pharmacy Practice Experience, PHA408 Pharmacy Practice Management I, PHA409 Pharmacy Practice Management II and PHA511 Pharmacology I. Co-requisites: PHA513 Pharmacology II and 4th year status (2nd professional year).

PHA544 Pharmacotherapeutics IV [3 cr.] This is the fourth in a series of six Pharmacotherapeutics courses. These sequence courses address the principles of Pharmacotherapeutics and the functional consequences of major diseases. Discussions will focus on therapeutic problem solving, and the evaluation of drugs commonly used in clinical practice. Emphasis includes the individualization of Pharmacotherapy, the selection of appropriate drug regimen with its efficacy and toxicity monitoring parameters, the assessment of various drug interactions or adverse reactions, and the determination of therapeutic endpoints. Diseases Prevention, patient counseling, and pharmcoeconomic issues will be an integral part of each disease state management.
therapeutics of the pulmonary, gastrointestinal, arthritic, and nephrologic disorders will be discussed in this course. Prerequisites: PHA450 Introduction to Professional Pharmacy Practice Experience, PHA408 Pharmacy Practice Management I, PHA409 Pharmacy Practice Management II and PHA511 Pharmacology I. Co-requisites: PHA513 Pharmacology II and 4th year status (2nd professional year).

PHA545 Pharmacotherapeutics V [4 cr.] This is the fifth in a series of six Pharmacotherapeutics courses. These sequence courses address the principles of Pharmacotherapeutics and the functional consequences of major diseases. Discussions will focus on therapeutic problem solving, and the evaluation of drugs commonly used in clinical practice. Emphasis includes the individualization of Pharmacotherapy, the selection of appropriate drug regimen with its efficacy and toxicity monitoring parameters, the assessment of various drug interactions or adverse reactions, and the determination of therapeutic endpoints. Diseases Prevention, patient counseling, and pharmcoeconomic issues will be an integral part of each disease state management. Pharmacotherapeutics of the hematologic/oncologic, genitourinary and male reproductive system diseases will be discussed in this course. Prerequisites: PHA450 Introduction to Professional Pharmacy Practice Experience, PHA408 Pharmacy Practice Management I, PHA409 Pharmacy Practice Management II and PHA513 Pharmacology I. Co-requisites: 4th year status (2nd professional year).

PHA555 Toxicology and Emergency Medicine [2 cr.] Introduces students to the basic principles of toxicology. Common disease state presentations in acute care with an emphasis on the management of the poisoned patient and cardiovascular emergencies will be reviewed. Toxicology topics that will be covered in this course will include managing ingestions of aspirin, acetaminophen, anticholinergics, psychotropics, cardiac and diabetic medications, isoniazid, iron, lithium, phenytoin, carbamazepine, theophylline, pesticides and toxic alcohols. Other topics include acute asthma management, treating hypertensive crisis, status epilepticus, and cardiac arrest. Other medical emergencies will be covered as well. Prerequisites: PHA511 Pharmacology I, PHA450 Introduction Professional Pharmacy Practice Experience, PHA408 Pharmacy Practice Management I, PHA409 Pharmacy Practice Management II and PHA513 Pharmacology II. Co-requisites: 4th year status (2nd professional year).

PHA602 Statistical Methods for Research in Pharmacy [1-0, 1 cr.] This course is a solid foundation for statistical analysis in pharmaceutical and health sciences. Concepts discussed include sampling, pharmaceutical data gathering, data description, some basic probability concepts and sampling distributions, estimation, hypothesis testing, and design issues of power and sample size. Pharmacy students will be able to understand and evaluate critically frequently used statistical methods in the medical literature. The emphasis is on the application of statistical concepts to clinical and experimental data. Prerequisite: PHA201 Statistics for Health Profession Majors. Co-requisite: PHA610 Pharmacoconomics and 3rd Professional Year students.
PHARMACY

PH401 Professional Practice Experience I [12 cr.] Students will be exposed to proper pharmacy practice and patient-oriented pharmacy services and will be given the opportunity in the following pharmacy functions: Dispensing medication; communicating with patients and other health professionals providing proper information and utilizing good communication skills; monitoring patient profiles for drug interactions, medication noncompliance and inappropriate drug therapy (Drug Utilization Review); detecting and solving problems encountered in hospital pharmacy practice. Additionally, students will develop basic familiarity with community and hospital pharmacy management, drug distribution systems, and hospital organization and policy. Students will apply knowledge acquired in the didactic portion of the curriculum in a practical environment. Moreover, students will go through the Drug Information Center to gain the needed skills to provide information to other health professionals and the public. Prerequisite: Passing all PHA courses with a minimum of C from prior years.

PH402 Professional Practice Experience II [12 cr.] Through patient monitoring, therapeutic consultation, in-service presentation and communication with other health care professionals and patients alike, students gain additional clinical experience to strengthen those skills. The areas covered in this clerkship will include, Internal Medicine, Pediatrics, Critical Care and Cardiology. Prerequisite: Passing all PHA courses with a minimum of C from prior years.


PH404 Pharmacoeconomics [2 cr.] This course introduces the student to the role of pharmacoeconomics in the health-care system and society, and its usefulness in making Hospital Formulary decisions. The student will learn how to evaluate a pharmacoeconomic research article, to conduct a pharmacoeconomic analysis, and to calculate the costs and health outcomes. The student will be able to compare and contrast cost-minimization, cost-benefit, cost-effectiveness and cost-utility analyses. Prerequisite: PHA407 Pharmacy Management. Co-requisites: PHA602 Statistical Methods for Research in Pharmacy and 5th year status (3rd professional year).

PH405 Pharmacogenomics [2 cr.] The course is designed to provide a comprehensive introduction to pharmacogenomics, allowing for a more systematic understanding of the relationship of genetic inter-individual variability to drug response. Some ethical considerations related to the emerging key role of pharmacogenomics in drug development will also be discussed. Prerequisite: PHA513 Pharmacology II. Co-requisite: Third professional year students.

PH406 Dispensing Laboratory [0-4, 2 cr.] This course will instruct students on the proper techniques and skills required to safely and accurately distribute drug products to patients. Emphasis will be on computerized patient record keeping, patient counseling, finding errors and omission in prescriptions, communication with other health care providers and patients. Prerequisites: PHA508 Professional Communication, PHA503 Non Prescription Drugs, PHA513 Pharmacology II, PHA541 Pharmacotherapeutics I, PHA542 Pharmacotherapeutics II, PHA543 Pharmacotherapeutics III, PHA544 Pharmacotherapeutics IV. Co-requisites: PHA545 Pharmacotherapeutics V, PHA546 Pharmacotherapeutics VI, and 4th year status (2nd professional year).

PH407 Clinical Pharmacokinetics [2 cr.] Clinical Pharmacokinetics is the application of Pharmacokinetics principles for the rational design of an individualized dosage regimen. The objectives of Clinical Pharmacokinetics are: (a) An optimum drug concentration at the receptor site must be achieved to produce the desired therapeutic response; (b) The drug’s adverse or toxic effects should be minimized.

To meet both objectives, this course will provide students the ability to use serum drug concentrations as a guide for monitoring drug
therapy, and recommended dosage utilizing pharmacokinetic parameters; half-life, volume of distribution, elimination rate constant, and clearance. Students will understand the clinical application of pharmacokinetics to specific drugs through the presentation and solution of common clinical problems (i.e. Renal failure patients, burn patients, ICU patients, etc). These drugs will include, among others, amphotericin B, carbamazepine, digoxin, lithium, phenytoin, procainamide, salicylates, theophylline and vancomycin. Prerequisite: Bachelor of Pharmacy/4th professional year status.

**PHA789 Pharm.D. Project** [3 cr.] A written project describing certain aspects of clinical pharmacy practice. Project pre-proposals must be approved in advance by the School of Pharmacy. A formal presentation of project topic is required of all students in the program. Prerequisite: Bachelor of Pharmacy/4th professional year status.

**PHA705 Required Advanced Pharmacy Practice in Internal Medicine** [3 cr.] This module is designed to allow the student to develop a strong understanding of Advanced Internal Medicine. The goals that students should achieve during this module are to further understand the pathophysiology and treatment of various Internal Medicine diseases, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the chief of Internal Medicine, often on a one on one basis. Furthermore, the student will also work with both medical and pharmacy services and will provide pharmaceutical care to the patients. The student will gain relevant knowledge, learning valuable information for future practice. Prerequisite: Bachelor of Pharmacy/4th professional year status.

**PHA706 Required Advanced Pharmacy Practice in Pediatrics** [3 cr.] This module is designed to allow the student to develop a strong understanding of advanced pediatric principles. The student will work closely with the Chief of pediatrics, often on a one on one basis. Furthermore, the student will also work with both pediatric medical team and pharmacy services and provides pharmaceutical care to the patients. The goals that the student should achieve during this module are: To understand the advances in pathophysiology and treatment of pediatric diseases, develop skills in the design and monitoring of rational specific regimens, utilizing patient specific information to maximize pharmaceutical care. The student will gain relevant knowledge, learning valuable information for future practice. Prerequisite: Bachelor of Pharmacy/4th professional year status.

**PHA707 Required Advanced Pharmacy Practice in Intensive Care** [3 cr.] This module is designed to allow the student to develop a strong understanding of Advanced Critical Care Medicine. The student will work closely with the Chief of Critical Care Medicine, often on a one on one basis. Furthermore, the student will also work with both Critical Care team and pharmacy services and provides pharmaceutical care to the patients. The goals that should be achieved during this module include: understanding the pathophysiology and treatment of various Critical Care diseases, developing advanced skills in the design and monitoring of rational pharmacotherapy regimens, and understanding and utilizing lab data in the management of critical care diseases. Prerequisite: Bachelor of Pharmacy/4th professional year status.

**PHA708 Required Advanced Community Pharmacy Practice** [3 cr.] This module is designed to allow the student to develop a strong understanding of Advanced Community Pharmacy Practice. The student will work closely with the Registered Pharmacist. Furthermore, the student will also work on providing a good pharmaceutical care to the patients, and this will be achieved by further advancing the student on the proper community pharmacy practice and patient oriented pharmacy services via dispensing, counseling, reviewing patient profile for the best combination and avoiding drug interactions. Moreover, students will gain strong skills in professional and educational communications. Prerequisite: Bachelor of Pharmacy/4th professional year status.
PHARMACY

PHA750 Elective Advanced Pharmacy Practice. Students are required to choose three (3) topics from the following. Prerequisite: Bachelor of Pharmacy/4th professional year status.

**Topic: Pharmacokinetics [2 cr.]** This module is designed to allow the student to develop a strong understanding of Clinical Pharmacokinetics. The student will work closely with the preceptor, often on a one on one basis. Furthermore, the student will also work with pharmacy services to provide the best pharmaceutical care to the patient. The student will gain relevant knowledge learning valuable information for future practice. The students will learn how to design a drug dosage regimen (dose, dosing interval, route, dosage form) for individual patients, based upon general population and patient specific pharmacokinetics.

**Topic: Emergency Medicine [2 cr.]** This module is designed to allow the student to develop a strong understanding of Emergency Medicine. The goals that students should achieve during this module are to further understand the pathophysiology and treatment of various Emergency Medicine diseases, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the chief of Emergency Medicine, often on a one on one basis. Furthermore, the student will also provide pharmaceutical care to the patients. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Ambulatory Care [2 cr.]** This module is designed to allow the student to develop a strong understanding of Ambulatory Care Medicine. The goals that students should achieve during this module are to further understand the pathophysiology and treatment of various Ambulatory Care diseases, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Medical Specialists at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Psychiatry [2 cr.]** This module is designed to allow the student to develop a strong understanding of Psychiatry Medicine. The goals that students should achieve during this module are to further understand the pathophysiology and treatment of various Psychiatry disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Psychiatrist at the service, often on a one on one basis. The student will gain relevant knowledge learning valuable information for future practice.

**Topic: Dermatology [2 cr.]** This module is designed to allow the student to develop a strong understanding of Dermatology. The goals that students should achieve during this module are to understand the pathophysiology and treatment of various dermatological disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Dermatologist at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Nephrology [2 cr.]** This module is designed to allow the student to develop a strong understanding of Nephrology. The goals that students should achieve during this module are to understand the pathophysiology and treatment of various Nephrological disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Chief at the Nephrology service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.
**Topic: Cardiology** [2 cr.] This module is designed to allow the student to develop a strong understanding of Cardiology. The goals that students should achieve during this Module are to understand the pathophysiology and treatment of various Cardiological disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Medical Specialists at the Cardiology service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Bone Marrow Transplant** [2 cr.] This module is designed to allow the student to develop a strong understanding of Bone Marrow Transplant (BMT). The goals that students should achieve during this module are to understand the pathophysiology and treatment of BMT, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Medical Specialists at the BMT service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Oncology** [2 cr.] This module is designed to allow the student to develop a strong understanding of Oncology. The goals that students should achieve during this module are to understand the pathophysiology and treatment of Oncology disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Oncology Specialists at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Infectious Disease** [2 cr.] This module is designed to allow the student to develop a strong understanding of basic and advanced infectious diseases (ID) principles and antimicrobial pharmacotherapy. The student will spend time in the microbiology laboratory, under the supervision of the chief of microbiology. The goals that students should achieve during this module are to understand the pathophysiology and treatment of ID disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Medical Specialists at the ID service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Eyes, Ears, Nose and Throat (ENT)** [2 cr.] This module is designed to allow the student to develop a strong understanding of ENT. The goals that students should achieve during this module are to understand the pathophysiology and treatment of ENT disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the ENT Specialist at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Neonatal Intensive Care (NICU)** [2 cr.] This module is designed to allow the student to develop a strong understanding of NICU. The goals that students should achieve during this Module are to understand the pathophysiology and treatment of NICU disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the NICU specialists at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Orthopedics** [2 cr.] This module is designed to allow the student to develop a strong under-
standing of Orthopedics. The goals that students should achieve during this Module are to understand the pathophysiology and treatment of orthopedic disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the Orthopedic specialists at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Obstetric and Gynecology (OB-GYN) [2 cr.]** This module is designed to allow the student to develop a strong understanding of Obstetric and Gynecology. The goals that students should achieve during this module are to understand the pathophysiology and treatment of OB-GYN disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the specialists at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Gastroenterology [2 cr.]** This module is designed to allow the student to develop a strong understanding of Gastroenterology. The goals that students should achieve during this module are to understand the pathophysiology and treatment of Gastroenterology disorders, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens and how they can utilize available data to maximize pharmaceutical care. The student will work closely with the specialist at the service, often on a one on one basis. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Coronary Intensive Care [2 cr.]** This module is designed to allow the student to develop a strong understanding of Advanced Coronary Critical Care Medicine (CCU). The student will work closely with the chief of CCU, often on a one on one basis. Furthermore, the student will also work with both CCU team and pharmacy services and provides pharmaceutical care to the patients. The goals that should be achieved during this module include understanding the pathophysiology and treatment of various Coronary Critical Care diseases, developing advanced skills in the design and monitoring of rational pharmacotherapy regimens, and understanding and utilizing lab data in the management of coronary critical care diseases.

**Topic: Pediatrics [2 cr.]** This module is designed to allow the student to develop a strong understanding of advanced pediatric principles. The student will work closely with the chief of pediatrics, often on a one on one basis. Furthermore, the student will also work with both pediatric medical team and pharmacy services and provides pharmaceutical care to the patients. The goals that the student should achieve during this module are: To understand the advance in pathophysiology and treatment of pediatric diseases, develop skills in the design and monitoring of rational specific regimens utilizing patient specific information to maximize pharmaceutical care. The student will gain relevant knowledge, learning valuable information for future practice.

**Topic: Medical Intensive Care [2 cr.]** This module is designed to allow the student to develop a strong understanding of Advanced Medical Intensive Care Medicine (MICU). The student will work closely with the head of MICU, often on a one on one basis. Furthermore, the student will also work with both MICU team and pharmacy services and will provide pharmaceutical care to the patients. The goals that should be achieved during this module include understanding the pathophysiology and treatment of various Medical Intensive Care diseases, developing advanced skills in the design and monitoring of rational pharmacotherapy regimens, and understanding and utilizing lab data in the management of medical intensive care diseases.
Topic: Surgical Intensive Care [2 cr.] This module is designed to allow the student to develop a strong understanding of Advanced Surgical Intensive Care Medicine (SICU). The student will work closely with the chief of SICU, often on a one on one basis. Furthermore, the student will also work with both SICU team and pharmacy services and will provide pharmaceutical care to the patients. The goals that should be achieved during this module include understanding the pathophysiology and treatment of various Surgical Intensive Care diseases/problems, developing advanced skills in the design and monitoring of rational pharmacotherapy regimens, and understanding and utilizing lab data in the management of surgical intensive care diseases.

Topic: Endocrinology [2 cr.] This module is designed to allow the student to develop a strong understanding of Endocrinology. The student will work closely with the chief of Endocrinology, often on a one on one basis. Furthermore, the student will also work with both Endocrinology team and pharmacy services and will provide pharmaceutical care to the patients. The goals that should be achieved during this module include understanding the pathophysiology and treatment of various Endocrinological Disorders, developing advanced skills in the design and monitoring of rational pharmacotherapy regimens, and understanding and utilizing lab data in the management of Endocrinological Disorders.

Rules and Regulations

Entrance Requirements

Any student who wishes to pursue a pharmacy degree and who fulfills general requirements for admission to the University is encouraged to apply to the School of Pharmacy.

Promotion to the First Professional Year (Third Year)

To be promoted to the third year (first professional year) in Pharmacy, students should have completed all of the first and second year courses with an overall GPA of at least 2.50 and passed all of the major courses with an overall GPA of at least 2.50. Major courses include the following:

- CHM201 Chemical Principles
- CHM204 Quantitative Analysis
- CHM311 Organic Chemistry I
- CHM312 Organic Chemistry II
- BIO201 General Biology I
- PHA201 Pharmacy Practice History and Ethics of Pharmacy
- PHA202 Medical Anatomy and Physiology
- PHA211 Microbiological Basis of Disease
- PHA303 Pharmaceutical Calculations
- PHA305 Introduction to Information and Literature Evaluation
- PHA205 Statistics for Health Profession
- PHA311 Computer Applications to Pharmacy

Admission to the professional program (third year or first professional year) in Pharmacy is a competitive process. Meeting the minimum requirements for admission does not automatically guarantee acceptance.

Admission of Students with B.S., B.A. or Licence Degrees

Applicants who join the Pharmacy Program after having received a B.A. or a B.S. degree are exempted from taking general university requirements, but are required to complete all the major courses (see list above) with an overall GPA of at least 2.50.

B.A./B.S. or License holders may be admitted to the School of Pharmacy if they have an overall GPA of 77.5/100 (American University of Beirut) 12/20 (Université St. Joseph), 60/100 (Lebanese University) or 2.75/4.00 (all other universities).
ADMISSION OF STUDENTS TO THE DOCTOR OF PHARMACY PROGRAM (PHARM.D.)

Admission into the Pharm.D. program will take place only in the fall semester. All students who wish to enter the Pharm.D. program must submit a completed application form no later than July 15 of the year in which fall semester admission is desired.

a. LAU Students

To be promoted to the Doctor of Pharmacy Program, fifth year pharmacy students at LAU should have received a Bachelor of Pharmacy degree and passed all of the courses taken at LAU with a minimum GPA of 2.75. Admission to the Pharm.D. is a competitive process. Meeting the minimum requirements for admission does not automatically guarantee acceptance. All candidates will be scheduled for an interview as part of the admission process.

b. Transfer students/non-LAU students

Applicants who received their B.S. degree in Pharmacy from outside LAU are encouraged to apply to the Pharm.D. program. The applications will be reviewed on an individual basis. Based on the review of the curriculum completed and school attended, remedial courses will be required. Students will be required to complete at least the last two years of the B.S. program at LAU with a minimum GPA of 2.75 to be considered eligible. Eligibility does not mean automatic acceptance. All candidates will be scheduled for an interview as part of the admission process.

B.S. in pharmacy graduates of LAU and other ACPE-accredited schools of pharmacy are given priority.

GRADING POLICY

A minimum grade of C is required in all PHA courses as of Fall 2005.

A student failing to score at least a C in any of the PHA courses after taking the course three times (including withdrawal) will be dismissed from the School of Pharmacy. For courses with a lab component, a student failing to pass the course may be waived from repeating the lab component if he/she has passed it. A student is allowed to be placed only once on academic probation (GPA<2). If a student fails to maintain good standing after one probation, the student will be dismissed from the school.

GRADUATION REQUIREMENTS

Graduation from the B.S.

In order to graduate from the School of Pharmacy with a Bachelor of Science in Pharmacy, a student must have at least an overall GPA of 2.00 in all of the courses taken at LAU and have a minimum grade of C in all PHA courses, including Professional Pharmacy Practice Experiences.

Graduation from the Pharm.D. program

In addition, students with an LAU B.S. pharmacy degree wishing to earn the Doctor of Pharmacy degree are required to complete successfully, in the sixth year, seven four-week Advanced Pharmacy Practice Experiences, an Advanced Clinical Pharmacokinetic course and a Project. Project pre-proposals must be approved in advance by the School of Pharmacy. A presentation of the project topic is required of all students in the program. To graduate with the Pharm.D. degree, a student needs to maintain a minimum GPA of 3.00 with no more than two repeats and/or two grades of C in all the required sixth year courses.


**Faculty**

**Joseph G. Jabbra**, President

**Abdallah A. Sfeir**, Vice President for Academic Affairs

**Layla T. Nimah**, Vice President for Student Affairs

**Abdallah, Dr. Fawz**

**Abdallah, Dr. Wissam**

**Abdel Baki, Ms. Randa**

**Abdel Nour, Dr. Samar**

**Abdel Wahab El Hindi, Mrs. Zeina**

**Abdo, Dr. Huda**


**Abi Fares, Mrs. Ghada**

**Abosedra, Dr. Salaheddin**

**Abou Arbid, Ms. Silia**
Bachelor of Architecture, University of Montreal, 1993.

**Abou Jaoude, Dr. Cynthia**

**Abu Khzam, Dr. Faisal**

**Abu Teen, Mr. Samir**

**Abu-Fadil, Mrs. Magda**

**Acra, Mr. Usama**
Aercke, Dr. Kristiaan Paul Guido

Aghacy, Dr. Samira

Alagha, Mr. Joseph

Andraos, Mr. Albert

Ariss, Dr. Rima

Armache, Dr. Jalal

Assad, Mr. Tony

Assaf, Ms. Nadra

Azar, Dr. Danielle

Bacha, Dr. Nahla

Badr, Dr. Elie

Bahous, Dr. Rima

Baroudi, Dr. Ketty

Baroudi, Dr. Sami

Baroudy, Dr. George

Bazzi, Dr. Tarif
Ph.D., Arabic Literature, American University of Beirut, 1991. M.A., Arabic Language & Literature, American University of Beirut, 1970. B.A., Arabic Literature, American University of Bei-

**Behmardi, Dr. Vahid**

**Beyrouti, Dr. Nouri**

**Bogharian, Mrs. Keghouhie**

**Bogharian, Dr. Krikoris**

**Bohsali, Mr. Rached**

**Boumosleh, Dr. Anwar**

**Boustani, Dr. Soula**

**Chalhoub, Dr. Michel**

**Chamoun, Mr. Chaouki**

**Chamoun, Dr. Rachid**

**Chatila, Dr. Jean**

**Cormier, Dr. Gilles**

**Daccache, Dr. Maroun**

**Dadayan, Dr. Sara**

**Dah, Dr. Abdallah**

**Daher, Dr. Costantine**

Darwish, Mrs. Orpha

Dawy, Dr. Sanaa

Diab, Mrs. Nuwar

Dib, Dr. Jean

Dibeh, Dr. Ghassan

Djoundourian, Dr. Salpie

El Moalem, Dr. Habib

Fallaha, Ms. Nathalie

Farjallah, Mr. Tony

Finlay, Dr. Jim L.

Fouladkar, Mr. Assad
M.S., Film, Boston University, 1989.  Licence, Theater, Lebanese University, 1984.

Gabrielian, Mrs. Sylvia

Garabedian, Mr. Sami

Ghajar, Dr. Raymond

Ghassas, Dr. Renee

Ghorayeb, Dr. Amal
Ghosn, Dr. Irma-Kaarina  
Ph.D., Education, University of Leicester, 2002.  
B.S., Education, Southwest University, 1986.

Gupta, Dr. Jay  
Ph.D., Philosophy, University of Toronto, 2001.  
M.A., Philosophy, University of Toronto, 1994.  

Habre, Mrs. Paula  
B.A., English Language, American University of Beirut, 1986.  
T.D., English Language, American University of Beirut, 1986.

Habre, Dr. Samer  
Ph.D., Mathematics, Syracuse University, 1991.  
M.S., Mathematics, Syracuse University, 1987.  
B.S., Mathematics, American University of Beirut, 1984.

Haddad, Dr. Elie  
Bachelor of Architecture, Architecture, Boston Architectural Center, 1989.

Hage, Mrs. Nermine  

Hajjar, Ms. Bughdana  
Licence, Library Science, Lebanese University, 1983.

Hajjar, Dr. Jacqueline  
Ph.D., Comparative Literature, University of Illinois, 1982.  
M.A., Comparative Literature, University of Illinois, 1977.  

Hamdan, Dr. May  
Ph.D., Mathematics, Syracuse University, 1994.  
B.S., Mathematics, American University of Beirut, 1985.

Hammoud, Dr. Hassan  
Ph.D., Social Welfare, Case Western Reserve University, 1981.  
M.S., Social Administration, Case Western Reserve University, 1975.  
B.A., Psychology, Lebanese University, 1972.

Haraty, Ms. Nabelah  
M.A., Liberal Arts, Western Maryland College, 1994.  
Licence, English Language & Literature, Lebanese University, 1978.

Haraty, Dr. Ramzi  
Ph.D., Computer Science, North Dakota State University, 1992.  
M.S., Computer Science, Montana State University, 1989.  
B.S., Computer Science, Montana State University, 1988.

Harfoushe, Mr. Abdel Majid  
Certified Public Accountant, Maryland State Board of Public Accountancy, 1984.  
B.A., Business Management, University of Maryland, 1981.

Harmananani, Dr. Haidar  
Ph.D., Computer Engineering, Case Western Reserve University, 1994.  
M.S., Computer Engineering, Case Western Reserve University, 1991.  
Computer Engineering, Computer Engineering, Case Western Reserve University, 1989.

Harmoush, Dr. Layla  
B.A., English Language, American University of Beirut, 1963.  

Hashwa, Dr. Fouad  
Doctor of Philosophy, Microbiology, University of Goettingen, 1972.  
M.S., Biology, American University of Beirut, 1967.  
B.S., Biology, American University of Beirut, 1965.
Houri, Dr. Ahmad

Hussari (El), Dr. Ibrahim

Issa, Dr. Camille
Ph.D., Structural Engineering, Virginia Polytechnic Institute & State University, 1985. M.S., Structural Engineering, Mississippi State University, 1982. B.S., Civil Engineering, Mississippi State University, 1980.

Jabbour, Ms. Mona

Jamati, Dr. Sandra

Jeha, Dr. Mimi

Jureidini, Mr. Farid
Bachelor of Architecture, American University of Beirut, 1984.

Kabbani, Dr. Ahmad

Kahil, Dr. Abdallah

Kaloyeros, Mrs. Loulwa

Karam, Dr. Gebran

Karkoulian, Dr. Silva

Khachan, Dr. Victor

Khalaf, Dr. Roy

Khalife, Mr. Joseph
Licence en Musicologie, Musicologie, Université Saint-Esprit Kaslik (USEK), 1991.

Khalifeh, Mr. Joseph

Khoury, Dr. Michel
Ph.D., Mechanical Engineering, Lehigh University, 2004. Masters of Science, Mechanical Engineering, Middle East Technical University,

Khoury, Mr. Tarek

Khuri, Dr. Richard

Kiprianos, Dr. Joseph

Knio, Dr. Mona

Korfali, Dr. Samira

Ladki, Dr. Said

Lahoud, Mr. Antoine

Lahoud, Mr. Bassam

Maalouf, Mr. Maurice
Master of Theater Arts, Pasadena Playhouse College of Theater Arts, 1970. Bachelor of Theater Arts, Pasadena Playhouse College of Theater Arts, 1969.

Maalouf, Dr. Ramez

Maalouf, Mrs. Ruth
Master of Design, Royal College of Art, 1968.

Majdalani, Mr. Michel

Malik, Dr. Habib

Mansour, Dr. Cedar

Mansour, Dr. Nashat

Marroum, Dr. Marianne
Mawlawi, Dr. Ziad  

McGill, Dr. John  

Mehanna, Dr. Rock-Antoine  

Messara, Mrs. Leila  

Mikdashi, Dr. Tarek  

Mohsen, Dr. Raed  

Mouawad, Dr. Ray  

Moubarak, Dr. Walid  

Moujaes, Mr. Joe  

Moukhaehen, Dr. Oussayma  
Doctor of Pharmacy, Massachusetts College of Pharmacy, 1998. B.S. in Pharmacy, Massachusetts College of Pharmacy, 1996.

Mroueh, Dr. Mohammad  

Musallam, Dr. Ayshegul  

Musallam, Mr. Munjid  

Na’was, Dr. Tarek  
Ph.D., Medical Sciences, American University of Beirut, 1983. M.S., Microbiology, American University of Beirut, 1979. B.S., Biology, American University of Beirut, 1977.

Naaman, Mrs. Aida  

Nabhani, Dr. Mona  
Nabhani, Dr. Shereen

Naja, Mr. Hassan

Nakad, Dr. Zahi

Naous, Mrs. Ghada

Nasr, Dr. George Elias

Nasrallah, Mrs. Therese
M.S., English Language & Literature, Mankato State University, 1987. B.S., English Language & Literature, Mankato State University, 1983.

Nassar, Dr. Lina
Doctorat, Theater, Université de la Sorbonne Nouvelle, 1995.

Nasser, Dr. Soumana

Nimah, Dr. Layla

Nour, Dr. Chadi

Obeid, Mr. Samir

Osta, Dr. Iman

Ouaiss, Dr. Iyad

Ouaiss, Dr. Jennifer

Oueini, Dr. Ahmad

Papazian, Mr. Vatche
Pempedjian, Ms. Giselle

Prescott-Decie, Mr. Brian

Raad, Dr. Elias

Rivers, Dr. George

Romanos, Mr. Antoine

Rowayheb, Dr. Marwan

Saab, Dr. Samer

Saab, Dr. Yolande

Salman, Mr. Nabil
Bachelor of Business Administration, Central State University, 1980. B.A., English, Central State University, 1970.

Samia, Mr. Elie

Seigneurie, Dr. Kenneth

Semaan, Dr. Mars

Sensenig, Dr. Dima

Sfeir, Dr. Abdallah

Shahin, Dr. Wassim

Shahine, Ms. Mona

Sheikh Taha, Dr. Marwan

Sreih, Dr. Josiane
of Business Administration, American University of Beirut, 1984.

**Taan, Mrs. Yasmine**  

**Tabar, Dr. Paul**  
Ph.D., Sociology/Anthropology, Macquarie University, 1990. B.A., Philosophy, Macquarie University, 1980.

**Tabbara, Dr. Mazen**  

**Takchi, Dr. Jean**  

**Tofailli, Dr. Mary**  

**Tokajian, Dr. Sima**  

**Touma, Mr. Rony**  

**Touma, Dr. Walid**  

**Trabulsi, Dr. Fawwaz**  

**Yunis, Ms. Manal**  

**Zaatary, Dr. Larissa**  
M.A., Philology, Kiev State University, 1977.

**Zakka, Mrs. Janine**  

**Zein (El), Dr. Hiyam**  

**Zeitoun, Dr. Abeer**  

**Zeitouni, Dr. Latif**  

**Zouein, Dr. Pierette**  
LAU PRESIDENTS

Frances Irwin 1924–1935
Winifred Shannon 1935–1937 (Acting)
William A. Stoltzfus 1937–1958
James. H. Nicol 1941–1943 (Acting)
Rhoda Orme 1954–1955 (Acting)
Grace Loucks Elliot 1958–1959 (Acting)
Frances M. Gray 1959–1965
Salwa Nassar 1965–1967
Marie Sabri 1967–1969 (Acting)
Albert Y. Badre 1973–1982
Riyad F. Nassar 1982–2004
Joseph G. Jabbra 2004–

UNIVERSITY OFFICERS

– Joseph G. Jabbra, Ph.D., President
– Abdallah Sfeir, Ph.D., Vice President for Academic Affairs
– Layla T. Nimah, Ph.D., Vice President for Student Development and Enrollment Management
– Émile Lamah, B.S., C.P.A., Acting Vice President for Finance
– Richard Rumsey, M.ED., Vice President for University Advancement
– Raymond Ghajar, Ph.D., Acting Vice President for Human Resources and University Services
– Samira Aghcy, Ph.D., Dean, School of Arts and Sciences, Beirut
– Fouad Hashwa, Ph.D., Dean, School of Arts and Sciences, Byblos
– Tarek Mikdashi, Ph.D., Dean, School of Business, Beirut
– Mouhamed Mroura, Ph.D., Acting Dean School of Pharmacy
– George E. Nasr, Ph.D., Acting Dean School of Engineering and Architecture
– Farid Sadik, Ph.D., Dean Designate, School of Pharmacy
– Wassim Shahine, Ph.D., Dean, School of Business, Byblos
– Mars Semaan, Ph.D., Dean of Students, Byblos
– Tarek Na’was, Ph.D., Dean of Students, Beirut
– Youssef Abi Abdallah, B.E., Assistant Vice President for Facilities Management
– Elie Badr, Ph.D., Assistant Vice President for Academic Programs
– Sami Baroudi, Ph.D., Assistant Vice President for Faculty Affairs
– Roy Majdalani, M.B.A., Assistant Vice President for Information Technology
– Raja Nahas, M.S., Assistant Vice President for Development
– Cedar Mansour, J.D., General Counsel and Special Assistant to the President
– Camille Issa, Ph.D., Faculty Representative, Byblos
– Raed Mohsen, Ph.D., Faculty Representative, Beirut

ACADEMIC OFFICERS

School of Arts & Sciences

Beirut Campus

– Samira Aghacy, Ph.D., Dean, School of Arts and Sciences, Beirut
– Ramzi Haraty, Ph.D., Assistant Dean, School of Arts and Sciences, Beirut
– Layla Harmoush, Ph.D., Chair, Humanities, Beirut
– Mona Knio, Ph.D., Chair, Arts and Communication, Beirut
– Krikoris Bogharian, Ph.D., Chair, Natural Sciences, Beirut
Social Sciences, Beirut
– Nashaat Mansour, Ph.D., Chair, Computer Science and Mathematics, Beirut

Byblos Campus

– Fuad Hashwa, Ph.D., Dean, School of Arts and Sciences, Byblos
– Irma Ghosn, Ph.D., Assistant Dean, School of Arts and Sciences, Byblos
– Costantin Daher, Ph.D., Chair, Natural Sciences, School of Arts and Sciences, Byblos
– Haidar Harmanani, Ph.D., Chair, Computer Science and Mathematics, Byblos
– Nahla Bacha, Ph.D., Chair, Humanities, Byblos
– Walid Mubarak, Ph.D., Chair, Education and Social Sciences, Byblos

School of Business

Beirut Campus

– Tarek Mikdashi, Ph.D., Dean, School of Business, Beirut
– Jim Finlay, Ph.D., Assistant Dean, School of Business, Beirut
– Abdallah Dah, Ph.D., Chair, Economics/Marketing/Finance, Beirut
– Said Ladki, Ph.D., Chair, Management/Hospitality Management/Accounting, Beirut

Byblos Campus

– Wassim Shahin, Ph.D., Dean, School of Business, Byblos
– Ghassan Dibeh, Ph.D., Assistant Dean, School of Business, Byblos
– Salpie Djoundourian, Ph.D., Chair, Economics/Management, Byblos
– Elias Raad, Ph.D., Chair, Accounting/Banking and Finance/Marketing, Byblos and Director of the Institute for Banking and Finance, Coordinator E.M.B.A.

School of Engineering & Architecture

– George E. Nasr, Ph.D., Acting Dean, School of Engineering and Architecture
– Elie Haddad, Ph.D., Assistant Dean, School of Engineering and Architecture
– Samer Saab, Ph.D., Chair, Electrical/Computer Engineering
– Jean Chatila, Ph.D., Chair, Civil Engineering
– Maroun Daccache, Ph.D., Chair, Architecture and Design
– Pierrette Zouein, Ph.D., Chair, Mechanical/Industrial Engineering

School of Pharmacy

– Farid Sadik, Ph.D., Dean Designate, School of Pharmacy
– Mohamad Mroueh, Ph.D., Acting Dean, School of Pharmacy
– Soula Boustani, Ph.D., Chair, Basic Pharmaceutical Sciences
– Oussama Moukhachen, Pharm.D., Chair, Pharmacy Practice

Center for Strategic Development

– Walid Touma, Ph.D., Acting Director

Institute for Women’s Studies in the Arab World

– Dima Dabbous-Sensenig, Ph.D., Acting Director

Library

– Aida S. Naaman, M.A., Director, Beirut
– Fawz Abdallah, Ph.D., Director, Byblos

STUDENT AFFAIRS OFFICERS

Deans of Students
– Tarek Na’was, Ph.D., Dean of Students, Beirut
– Mars Semaan, Ph.D., Dean of Students, Byblos
Admissions Office
– Nada Badran, M.A., Director, Beirut
– Michel Najjar, M.S., Director, Byblos

Athletics Office
– Sami Garabedian, M.S.E., Director, Beirut
– Joe Moujaes, B.E., Director, Byblos

Financial Aid Office
– Samir Obeid, M.S., Director, Beirut
– Ghada Abi Fares, M.B.A., Director, Byblos

Guidance Office
– Janine Zacca, M.B.A., C.P.A., Director, Beirut
– Elie Samia, A.B.D., Director, Byblos

Registrar’s Office
– Vatche Papazian, M.S., Registrar, Beirut
– Fouad Salibi, B.A., Registrar, Byblos

Residence Halls
– Hiam Musharrafieh, M.A., Supervisor, Beirut
– Suzy Saba, T.S., Supervisor, Byblos

Testing Services
– Mimi Melki Jeha, Ph.D., Director of University Testing Services and Continuing Education, Byblos
– Maria Mroueh, M.A., Director of Continuing Education Program, Beirut

FINANCE OFFICERS

Budget and Financial Planning Office
– Sonia Hajjar, M.B.A., Director

Grants and Contracts Office
– Sonia Hajjar, M.B.A., Coordinator

Business Office
– Naji Medlej, D.E.A., Associate Comptroller, Beirut
– Elias Kassis, B.A., Associate Comptroller, Byblos

Comptroller’s Office
– Charles Abu Rjeily, Licence, University Comptroller and Acting Internal Auditor

HUMAN RESOURCES AND UNIVERSITY SERVICES OFFICERS

Human Resources
– Nabil Semaan, M.S., Director, Beirut
– Joseph Michael, D.G.E.S., Director, Byblos

Facilities Management
– Shaheen Boujaoude, B.E., Director, Program Management and Contract Administration
– Joseph Chbay’a, D.I., Director, Space Management and Renovations
– Emile Hanna, M.E., Director, Campus Operations and Maintenance, Beirut
– Wissam Mansour, B.E., Director, Campus Operations and Maintenance, Byblos

Information Technology
– Melissa Stockman, B.A., Director, IT Infrastructure and Support
– Joe Syriani, M.S., Acting Director, IT Applications and Solutions
– Brigitte Baroudy, B.S., CISM, Director, IT Security

Campus Services
– Jassem Othman, B.E., Director, Beirut
– Jean Rizk, M.B.A., Director, Byblos
– Nehmat Aoun, Licence, Campus Hostess, Beirut
– Caroline Salloum, B.A., Campus Hostess, Byblos
– Ahmad Hassouna, Head of Security, Beirut
– Hassib El-Hashem, Security Officer, Byblos

Purchasing Office
– Antoine Faris, M.S., Director, Byblos
UNIVERSITY ADVANCEMENT OFFICERS

Development Office, USA
– Michael Kendrick, B.S., Associate Director of Development, New York

Development Services
– Amal Abdel Massih, B.S., Assistant Director

Alumni Affairs Office
– Abdallah Al Khal, B.S., Associate Director

Publications Office
– Magda Abu-Fadil, M.A., Director of University Publications

INTERNAL AUDIT OFFICE

– Charles Abu Rjeily, Licence, University Comptroller and Acting Internal Auditor

PUBLIC RELATIONS OFFICE

– Karim Moufarrej, M.A., Director of Relations
TUITION AND OTHER FEES 2005–2006

(Per credit hour)
Non Lab ........................................... U.S.$ 342
Lab/Business ................................. U.S.$ 424
Computer, Engineering, Pharmacy . . U.S.$ 440
Graduate ............................................ U.S.$ 519
EMBA (per Credit) ............................. U.S.$ 515
Student Association (per semester) . . . U.S.$ 133
Graduation (one-time fee) .............. U.S.$ 100
Late Registration Fee ...................... U.S.$ 216

Application Fees:
Application ........................................ U.S.$ 40
Application, Outside Lebanon ............ U.S.$ 60

Dormitory Fees:

Beirut:
Per Semester
  Single ............................................. U.S.$ 2,663
  Shared ............................................. U.S.$ 1,791
  Single ............................................. U.S.$ 889
  Shared ............................................. U.S.$ 597
  Single ............................................. U.S.$ 819
  Shared ............................................. U.S.$ 547
  Single ............................................. U.S.$ 30
  Shared ............................................. U.S.$ 20

Byblos: Duplex:
Type A, Per Semester, Single ............. U.S.$ 1,350
Type A, Per Month, Single ................. U.S.$ 300
Type A, Per Module, Single ............... U.S.$ 375
Type A, Per Day, Single ..................... U.S.$ 15
Type A, Per Semester, Double ............ U.S.$ 900
Type A, Per Month, Double ............... U.S.$ 200
Type A, Per Module, Double .............. U.S.$ 250
Type A, Per Day, Double ................. U.S.$ 10
Type B, Per Semester, Single ............. U.S.$ 2,025
Type B, Per Month, Single ............... U.S.$ 450
Type B, Per Module, Single ............... U.S.$ 550
Type B, Per Day, Single .................... U.S.$ 20
Type B, Per Semester, Double .......... U.S.$ 1,350
Type B, Per Month, Double ............... U.S.$ 300

Type B, Per Module, Double ............... U.S.$ 375
Type B, Per Day, Double ................... U.S.$ 15
Type C, Per Semester, Single ............ U.S.$ 2,350
Type C, Per Month, Single ............... U.S.$ 525
Type C, Per Module, Single ............... U.S.$ 650
Type C, Per Day, Single .................... U.S.$ 20
Type C, Per Semester, Double ........... U.S.$ 1,575
Type C, Per Month, Double ............... U.S.$ 350
Type C, Per Module, Double .............. U.S.$ 425
Type C, Per Day, Double ................... U.S.$ 15

Settlement of fees can be made in U.S. dollars or Lebanese Pounds at the exchange rate prevailing at the time of payment.

REFUND POLICY

Students are entitled to a full refund (100%) of their tuition until the end of the Drop/Add period. No refund is allowed thereafter.

FINANCIAL AID

Achieving educational objectives is normally the most important factor for a student who is choosing a university and selecting a major. Tuition fees however, may also constitute a major decisive factor.

LAU, in its efforts to offer students a better chance for making it through their university years, is committed to making financial aid available to needy students. In this respect and within budget constraints, financial aid serves as a means to ensure diversity in the composition of LAU’s student body.

The Financial Aid program is basically a work-study grant, designed to provide an opportunity for full-time students demonstrating financial need to earn part of their tuition fees by working at LAU. Loans, scholarships and special grants are complimentary to the program when available.
Forms of Financial Aid

Once the financial need is determined, financial aid proportional to that need is granted in one or more of the following forms:

Work-aid

All financial aid recipients are required to work a certain number of hours in one of the campus offices. Besides helping students to cover their financial need, the Work-Study program helps them acquire work skills and develop discipline, and promote a sense of personal responsibility and accomplishment.

Loan

The university extends student loans as part of the total Financial Aid program. Loans may be extended to students when requested and in accordance with the loan procedure. Reimbursing the loan may be spread over nine years following a three-year interest-free grace period from the date of withdrawal or graduation from the university. After this grace period, a service charge equivalent to 50 percent of the market credit interest rate will be charged. Moreover, collection incentives are available for graduating students willing to settle their loans prior to maturity.

Scholarships

Honor scholarships are awarded to financial aid recipients on a competitive basis. Upon the completion of 24 credits at LAU with a minimum cumulative Grade Point Average (CGPA) of 3.20, the financial aid student may become eligible for an Honor Scholarship. An Honor Scholarship usually ranges between 15 and 50 percent of the tuition depending on their CGPA and is granted to eligible students with the highest averages in each academic school.

Grants

LAU offers a limited number of different grants. Grants could be awarded in addition to work-study and loans to cover a greater percentage of the tuition fees.

• Special Grants: Awarded to students majoring in Elementary Education.

• In-service Grants: Awarded to full-time school teachers working towards a Teaching Diploma on part-time basis. The grant amounts to one third of the tuition fees.

• Conditional Grants: Awarded to students according to donor’s conditions.

• Dependents Grants: Awarded to dependents of full time faculty and staff.

Applying for Financial Aid

To apply for financial aid at LAU, a potential student should fill out a Financial Aid Application Form that is available at the Financial Aid Office. These applications must be taken and submitted with required documents within set deadlines. An interview with the applicant and a parent will be subsequently scheduled.

Financial aid is ordinarily granted for one regular academic year and may be renewed upon re-application if the student’s eligibility is maintained.

Financial Aid Decision

The university shall grant financial aid, within budget constraints, based on a systematic assessment of need and good academic standing.

Need analysis procedures are complex and decisions are taken by the Financial Aid Council.

Other Types of Aid at LAU

Student Employment

LAU provides additional limited part-time work opportunities to needy students who have acquired work skills. Applications are available at the Human Resources Office. Placement and hourly rate depend on the student’s skills, academic level and the nature of the job.

Graduate Assistantship

Graduate students may apply for assistantships at the Dean’s office of the school to which the student is applying. Graduate assistantships cover a portion of tuition fees. In return, students are expected to work a number of hours every week, normally for an academic department. Graduate assistantships are usually awarded on the basis of academic record.
INSTITUTE FOR WOMEN'S STUDIES IN THE ARAB WORLD

Established and sponsored by LAU and located on the Beirut campus. The institute is a center for documentation, research, action programs and communication of issues and data relating to Arab women and children.

CENTER FOR STRATEGIC DEVELOPMENT

A semi-autonomous interdepartmental unit of LAU with headquarters at the Byblos Campus. The center is responsible for coordinating and managing all sponsored research and development projects undertaken by the university.

INSTITUTE FOR BANKING & FINANCE

Offers seminars for middle managers and top executives of financial institutions who work in increasingly complex and uncertain environments. IBAF’s courses are designed to provide participants with methods to manage their banks’ portfolios in such contexts.

BEIRUT INSTITUTE FOR MEDIA ARTS

Provides a forum for collaboration between the professional and academic media communities. With an advisory body that includes the chief executives of local media organizations and advertising agencies, BIMA supports activities that bring together media practitioners, faculty and students.

INSTITUTE OF FAMILY & ENTREPRENEURIAL BUSINESS

Develops educational programs to support individuals and families in maintaining successful family enterprises. It aims to further the continuity and prosperity of Lebanese and Middle Eastern family businesses by conducting research, spreading information, updating professionals and providing problem-solving assistance to family enterprises.

INSTITUTE FOR HOSPITALITY & TOURISM MANAGEMENT STUDIES

The IHTMS is housed in the schools of business. It conducts applied research to solve particular problems, identifies factors affecting hospitality and tourism development, determines what makes tourism possible, and investigates how tourism can become an important contributor to the wealth of Lebanon.

HUMAN RESOURCE INSTITUTE

Seeks to provide high-quality human resource development programs to prepare Lebanese and regional employees, human resource professionals and their employers for the future. HRI activities include research in current issues, professional development programs and comprehensive publications programs.

INSTITUTE FOR PEACE AND JUSTICE EDUCATION

IPJE is based in the School of Arts and Sciences. The Institute’s aim is to forward the culture of peace through courses, training programs, publications and research, which involve both LAU students and the wider community. Issues addressed include, amongst others, human rights, conflict resolution, inter-faith dialogue, and peace education pedagogy. Director: Dr. Irma-Kaarina Ghosn.

INSTITUTE FOR PROFESSIONAL JOURNALISTS

Based at the Beirut Campus, it organizes training sessions for professional journalists wanting to upgrade their writing, reporting, editing and online skills in English and Arabic as well as conferences and seminars on media-related issues.

SOFTWARE INSTITUTE

Seeks to promote and disseminate modern software engineering practices and recent software technology, promote the Lebanese software industry, provide advanced and continuing education and support research and development on software engineering and innovative applications.
SUMMER INSTITUTE FOR INTENSIVE ARABIC & CULTURE
Offers courses in language and culture both through formal instruction and total immersion in an authentic cultural setting. The program includes weekly trips to historic and tourist sites in Lebanon. (See also page 23.)

TEACHER TRAINING INSTITUTE
Established to meet the curriculum and reform needs of Lebanese schools. It keeps teachers abreast of advances, technologies and methods, and prepares them to tackle the different roles they are expected to play in the classroom.

URBAN PLANNING INSTITUTE
Its purpose is to address problems of urban growth and environmental change in Lebanon and the Middle East. It aims at assisting certain Lebanese ministries in studies related to planning, zoning, land use, demographic projections, CAD mapping, urban statistics, utilities, conservation and recycling of resources, land management, natural reserves, etc.

INSTITUTE FOR WATER RESOURCES & ENVIRONMENTAL TECHNOLOGIES
Aims at promoting usable technology in the areas of water resources, environmental protection and agriculture in the Middle East. It seeks to initiate new ideas and venues for applied research.

CISCO ACADEMY TRAINING CENTER
Offers Cisco courses in computer networking and trains Cisco instructors for the Middle-East North-Africa region. The institute also performs quality visits on regional and local Cisco academies in the MENA region. These visits are meant to insure that these academies are offering high standard Cisco courses and have the proper man-power and equipment resources to perform the work.

INSTITUTE FOR ISLAMIC ARTS ARCHITECTURE & DESIGN
This institute is mainly concerned with the investigation, documentation, and interpretation of the material heritage of Islam particularly as it pertains to the cultural manifestations in the Arab world. The institute’s mission is to expand the teaching of Islamic art and architecture, promote excellence in academic research, and further the understanding of Islamic architecture and urbanism in light of contemporary design practices.
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