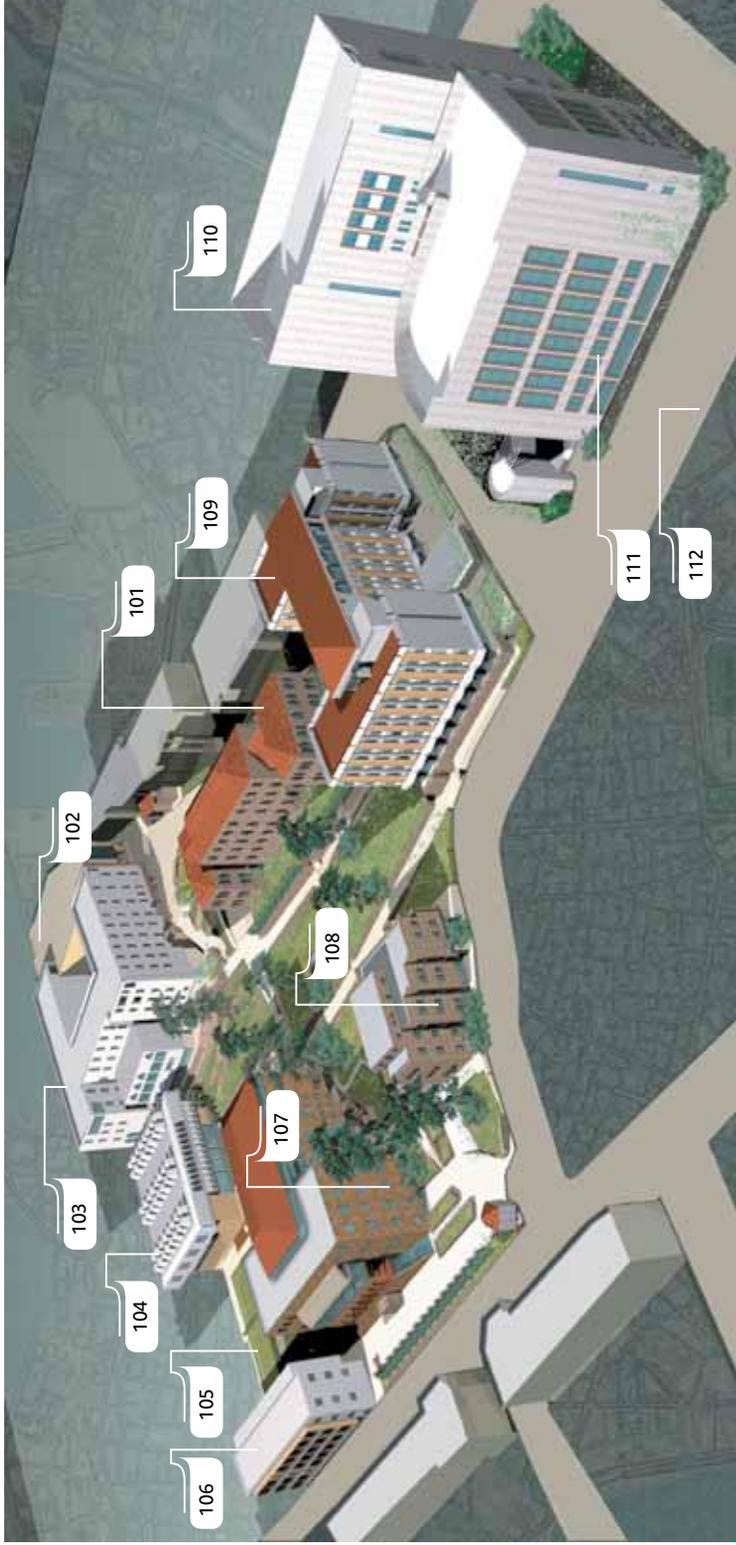


ACADEMIC CATALOG

2012 – 2013



BEIRUT CAMPUS 3D VIEW



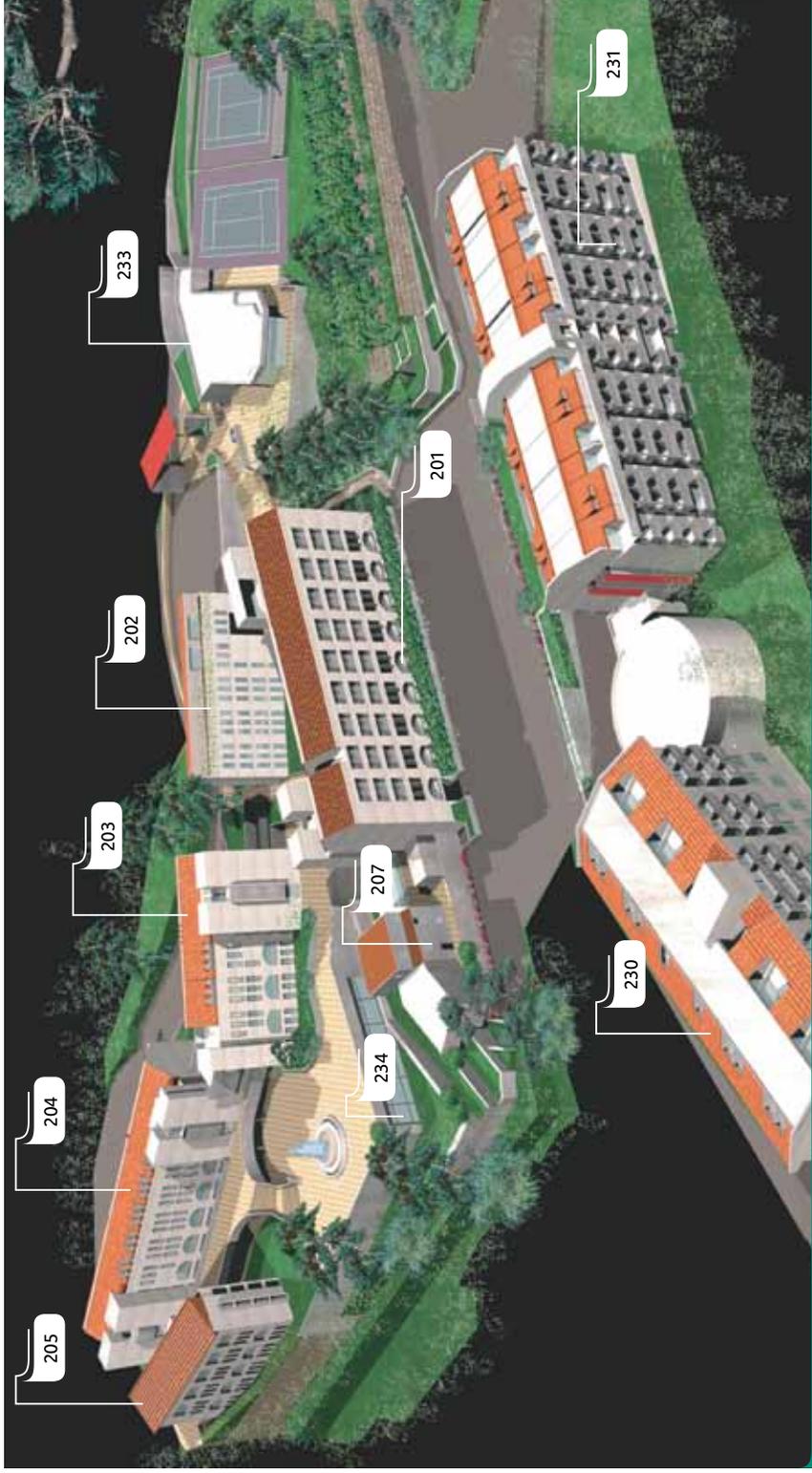
101 Sage Hall
102 L.R.C
103 Nicol Hall

104 Safadi Fine Arts
105 Gymnasium
106 Faculty Apartments

107 Irwin Hall
108 Shannon Hall
109 Orme-Gray Hall

110 Business School
111 Riyadh Nassar Library

BYBLOS CAMPUS 3D VIEW

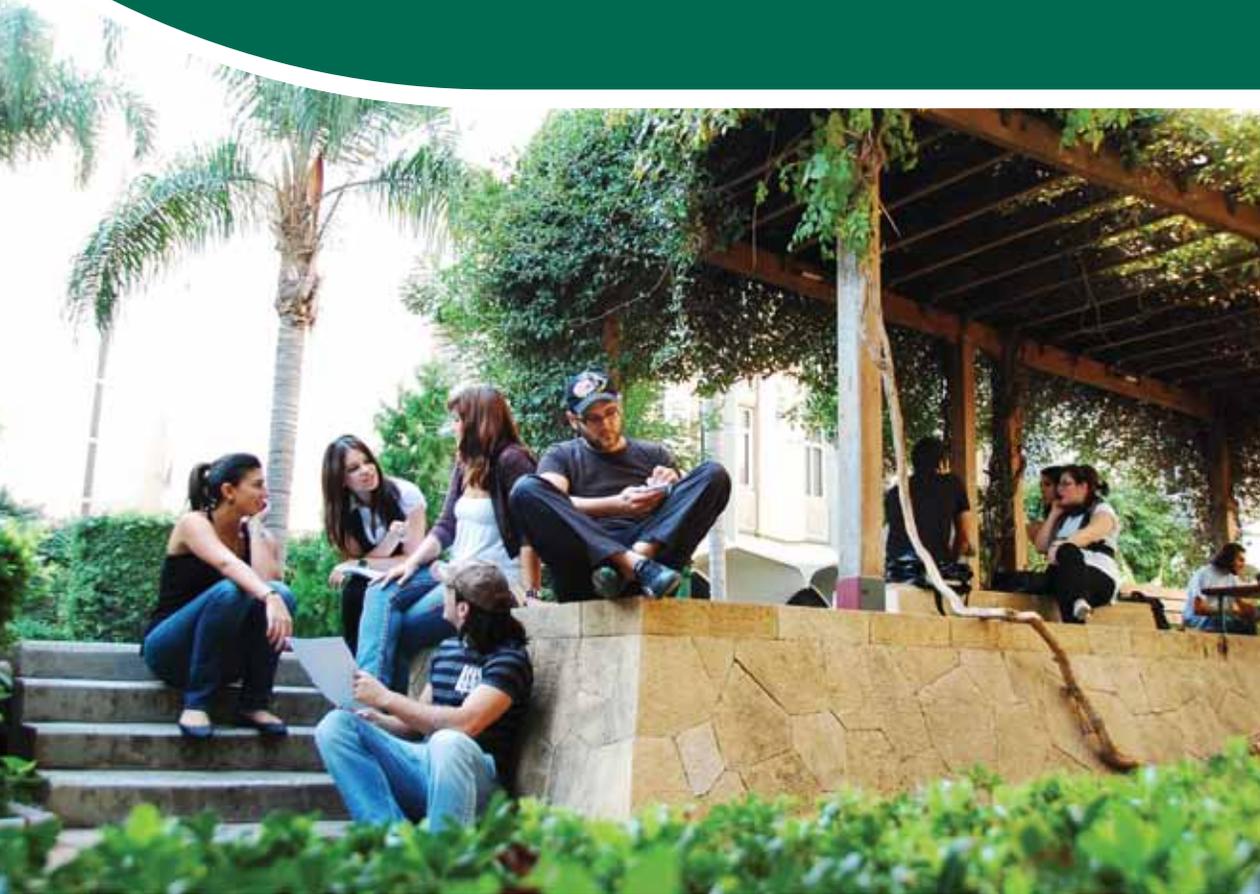


201 Science One Building
202 Tohme-Rizk Hall
203 Architecture Hall

204 Zakhem Engineering Hall
205 Bassil Hall
207 Library Extension

230 Dorms Block A
231 Dorms Block B

233 Cafeteria
234 Student Center



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2012 – 2013

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Academic Calendar 2012-2013

JULY 2012

Monday 2 Medicine Year III and IV begins

AUGUST 2012

Wednesday 1 Pharm-D classes begin

SEPTEMBER 2012

Monday 3 Classes for medical students begin (2012-2013)
Monday 10-Monday 17 Registration of freshman students accepted into a program for Fall 2012
Tuesday 11-Friday 14 Orientation Program for new students
Monday 17 Deadline for intercampus transfer for Fall 2012 except for Business
Tuesday 18-Friday 21 Advising period for new students
Tuesday 18-Friday 21 Registration for new students for Fall 2012
Friday 21 Registration for returnees who reactivated files for Fall 2012
Monday 24 Fall 2012 classes begin
Monday 24-Friday 28 Late registration with late fees and Drop/Add for Fall 2012

OCTOBER 2012

Tuesday 2 Collection of Statements of Fees period begins for Fall 2012
Wednesday 10 Deadline for payment of tuition fees for Fall 2012
Thursday 25-Friday 26 * Al Adha holiday

NOVEMBER 2012

Thursday 15 * Hijra New Year holiday
Thursday 22 Independence Day holiday
Friday 23 Deadline for incomplete grades (from Spring and Summer 2012)
Saturday 24 Ashoura Day

DECEMBER 2012

Friday 7 Last day for withdrawing from courses for Fall 2012
Thursday 13 Deadline for intercampus transfer for Spring 2013 for Business school
Saturday 22 Christmas and New Year vacation begins

JANUARY 2013

Sunday 6 Armenian Christmas
Monday 7 Christmas and New Year vacation ends (8:00 am) - Classes resume
Tuesday 8 Deadline for intercampus transfer for Spring 2013 except for Business
Wednesday 9-Friday 11 Advising period for current students
Monday 14-Friday 18 Registration for current students for Spring 2013
Thursday 17 Fall 2012 classes end
Friday 18-Sunday 20 Reading period
Monday 21-Wednesday 30 Final Exams period
Thursday 24 * Prophet's Birthday

Academic Calendar 2012-2013

FEBRUARY 2013

Tuesday 5-Wednesday 6	Orientation Program for new students
Wednesday 6-Friday 8	Advising period for new students
Wednesday 6-Friday 8	Registration for new students
Friday 8	Deadline for applying to Medical School for 2013-2014
Friday 8	Registration for returnee students who reactivated files (Spring 2013)
Saturday 9	St. Maroun's holiday
Monday 11	Spring 2013 classes begin
Monday 11 - Friday 15	Late registration with late fees and Drop/Add period for Spring 2013
Monday 18	Collection of Statements of Fees period begins for Spring 2013
Wednesday 27	Deadline for payment of tuition fees for Spring 2013

MARCH 2013

Monday 25	Annunciation day holiday
Friday 29	Western Easter vacation begins (8:00 am)

APRIL 2013

Tuesday 2	Easter vacation ends (8:00 a.m)- classes resume
Friday 5	Deadline for intercampus transfer for Module I for Business School
Thursday 11	Deadline for incomplete grades (from Fall 2012)
Thursday 25	Last day for withdrawal from courses for Spring 2013
Monday 29-Thursday May 16	Payment of deposit for Fall 2013

MAY 2013

Wednesday 1	Labor day holiday
Thursday 2	Deadline for intercampus transfer for Module II for Business School
Thursday 2	Deadline for intercampus transfer for Module I for all students except Business
Thursday 2-Friday 10	Advising period for current students
Friday 3	Eastern Easter vacation begins (8:00 am)
Sunday 5	Medicine year IV ends
Tuesday 7	Eastern Easter vacation ends (8:00 a.m)- classes resume
Wednesday 8-Tuesday 14	Registration for current students for Module I, Summer 2013
Wednesday 15-Friday 17	Registration for current students for Module II, Summer 2013
Monday 20- Friday 24	Registration for current students for Fall 2013
Monday 27	Spring 2013 classes end
Tuesday 28 - Wednesday 29	Reading Period
Thursday 30-Saturday June 8	Final Exams period
Friday 31	Medicine year III ends

Academic Calendar 2012-2013

JUNE 2013

Tuesday 11	Orientation Program for new students
Thursday 13-Monday 17	Advising period for new students
Thursday 13-Monday 17	Registration for new students for Module I, Summer 2013
Monday 17	Registration for returnees who reactivated files for Module I, 2013
Tuesday 18	Module I, Summer 2013 classes begin
Tuesday 18-Friday 21	Late registration with late fees & Drop/Add period for Module I, 2013
Monday 24	Collection of Statements of Fees period begins for Module I, Summer 2013

JULY 2013

Monday 1	Deadline for payment of tuition fees for Module I, Summer 2013
Thursday 4	Commencement Exercises - Byblos Campus
Saturday 6-Sunday 7	Commencement Exercises - Beirut Campus
Thursday 11	Deadline for intercampus transfer for Fall 2013 for school of Business
Thursday 11	Last day for withdrawal from courses for Module I, Summer 2013
Friday 12	Last day of classes for medical students
Monday 22	Module I, Summer 2013 classes end
Tuesday 23	Reading period
Wednesday 24-Thursday 25	Final Exams period
Monday 29	Deadline for intercampus transfer for Module II except for Business
Tuesday 30	Orientation and Advising for new students
Wednesday 31	Registration & Advising for new students for Module II, Summer 2013
Wednesday 31	Registration for returnees who reactivated files for Module II, 2013

AUGUST 2013

Thursday 1	Module II, Summer 2013 classes begin
Thursday 1 - Tuesday 6	Late registration with late fees and Drop/Add for Module II, 2013
Wednesday 7-Friday 9	Al Fitr Holiday
Monday 12	Collection of Statements of Fees period begins for Module II, Summer 2013
Thursday 15	St. Mary's Assumption holiday
Monday 19	Deadline for payment of tuition fees for Module II, Summer 2013
Friday 30	Last day for withdrawal from courses for Module II, Summer 2013

SEPTEMBER 2013

Monday 2	Classes for medical students begin (2013-2014)
Tuesday 10	Module II, Summer 2013 classes end
Wednesday 11	Reading period
Thursday 12- Friday 13	Final Exams period

** Tentative dates*

*# Different dates may apply to the school of Medicine #
Details will be available on LAU web page*

Historical Background



The university's early days in 1835 find a reminder in an engraved stone in Beirut's city center: "Site of the first edifice built as a school for girls in the Turkish Empire." The engraving refers to the American School for Girls, established in Beirut by American Presbyterian missionaries.

Then in 1924 a two-year program was added to the high 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 moved to its present location.

In 1948-49 the AJCW program was expanded into a university-level institution under the name of Beirut College for Women (BCW). During that academic year, it was granted a provisional charter by the Board of Regents of the University of the State of New York and authorized to bestow the Associate in Arts (AA) and Associate in Applied Sciences (AAS) degrees for a two-year course. In 1955 the Board of Regents granted the College an absolute charter with all its rights and privileges, including the authority to hand out Bachelor of Arts (BA), Bachelor of Science (BS), Associate in Arts and Associate in Applied Science degrees. 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.

In 1970 another milestone was reached when the Lebanese Government officially recognized BCW's BA and BS degrees as equivalent to the national Licence. Having accepted men into some AA programs, the college in 1973 changed its name to Beirut University College (BUC). The following academic year five BA/

BS majors were opened to male students, and in October 1975 men were admitted into all programs. In 1978, BUC opened an off-campus program in the north and a year later another one was operational in the South.

Adding to the college's constantly evolving programs, in 1985, the Board of Regents amended the charter to include two branches. In 1987, based on the amended charter, BUC opened its northern branch on the outskirts of the historical port of Byblos in rented buildings in Amsheet. In October 1991 classes started in the newly built campus at Blat overlooking Byblos; it was officially inaugurated on July 16, 1992.

According to a Board decision, BUC became a University in October 1992. In 1994, the Board of Regents in New York approved BUC's request to change into the Lebanese American University (LAU), reflecting further growth and the addition of several professional schools.

In 1999, the Government granted LAU a license to operate a Medical School and a Nursing School. The first pre-medical students were admitted to LAU in the fall semester of 2006/2007; in fall 2009, the Gilbert and Rose-Marie School of Medicine welcomed its first class of medical students. In September 2007, the Board of Trustees approved the establishment of the School of Nursing; in fall 2010, the Alice Ramez Chagoury School of Nursing welcomed its first class of students.

On May 13, 2010, the Board of Trustees of the New England Association of Schools and Colleges (NEASC) voted to grant LAU initial accreditation with the Commission on Institutions of Higher Education effective November 11, 2009.

Board Leadership

BOARD OF TRUSTEES

Dr. Charles Elachi,
Chair of the Board of Trustees
Mr. Salim G. Sfeir,
Vice Chair of the Board of Trustees
Mr. Fred Rogers,
Secretary of the Board of Trustees
Dr. Paul F. Boulos
H.E. Amb. Gilbert Chagoury
Rev. Christine Chakoian
Mrs. Eva Kotite Farha
Dr. George N. Faris
Dr. Benita Ferrero-Waldner
Mr. Antoine Frem
Mr. Arthur Gabriel
Dr. Ray Irani
Mr. Wadih (Bill) Jordan
Rev. Joseph Kassab
Mr. Samer Khoury
Mr. Charles Muller
Mr. Richard (Dick) Orfalea
Mr. Todd Petzel
Mr. Ghassan Saab
Dr. H. John Shammass
Rev. Ronald L. Shive
Mr. Peter Tanous
Dr. George E. Thibault
Mr. Abdallah Yabroudi

Emeritus Trustees

Mr. Jose Abizaid
Mr. Wilbert F. Newton

Ex-Officio Members

Mr. Kanan Hamzeh
Rev. Dr. Nuhad Tomeh
Rev. Fadi Dagher
Dr. Joseph Jabbara, LAU President
Chair of the Faculty Senate

RESPONSIBILITIES

GENERAL DUTIES

The BOARD shall be responsible for seeing that the purpose of the University is met organizationally, administratively, educationally, spiritually, socially, and 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 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 safe-guards 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 Leadership

BOARD OF INTERNATIONAL ADVISORS

Mr. Kanan Hamzeh,
Chair of the Board of International Advisors
Mr. Enan Galaly,
Vice Chair of the Board of International Advisors
Mr. George Doumet,
Secretary of the Board of International Advisors
Mr. Mike Ahmar
Dr. Raymond Audi
Mrs. Taline Avakian
Dr. Jihad Azour
H.E. Ivonne A. Baki
Dr. Francois Bassil
Mr. Zuhair Boulos
Mrs. Abla Chammas
Mr. Bassem F. Dagher
Mr. Mazen S. Darwazah
Mr. Raphael Debbane
Mr. Neemat G. Frem
Mrs. Maha Kaddoura
Dr. Najib Khatib
Sheikh Fouad El Khazen
Dr. Mahmoud A. Kreidie
Dr. Mary Mikhael
Mr. Mazen Nazzal
Mrs. Youmna Salame
Mr. Talal K. Shair

Ex-Officio Members

Rev. Fadi Dagher
Mrs. Leila Saleeby Dagher
Dr. Joseph Jabbra, LAU President
Chair of the Faculty Senate

OVERVIEW

The mission of the Board of International Advisors (BIA) is to provide advice, guidance, support, and advocacy for the University as well as for the continuing development of its undergraduate and graduate programs. The BIA's role is advisory to the University President, and to the Board of Trustees.

The BIA serves as an advocacy group both on and off campus and will assist in promoting a positive LAU image with its constituents and society at large; moreover, it shall act as an advisor to the Board of Trustees and its Executive Committee on university policies; further, the BIA membership will include individuals of distinction who will bring their considerable talents, experience and wisdom to assist in promoting LAU and strengthening its mission.

The BIA shall consist of prominent international leaders willing to become involved in helping the University fulfill its mission. The members should be devoted to the promotion and to the advancement of the cause of LAU as an American Higher Education Institution operating in the Middle East.

The Duties of each member shall be to:

1. Promote the educational and strategic goals of the University.
2. Serve, wherever situated, as an LAU ambassador.
3. Strengthen LAU as an educational institution by communicating to the President suggestions, complaints, needs, and trends.
4. Actively support LAU's mission statement at all times.
5. Carry the word, whenever possible, about the University's accomplishments to professional and personal acquaintances.
6. Help, as appropriate, with the cultivation and solicitation of financial support for the University.
7. Attend, as appropriate, events sponsored by the University.



LAU's Mission, Values and Vision

MISSION

The Lebanese American University is committed to academic excellence, student centeredness, civic engagement, the advancement of scholarship, the education of the whole person, and the formation of leaders in a diverse world.

VALUES

In both planning for its future and conducting its daily activities, LAU seeks to act in a manner that is guided by a deeply rooted sense of shared ethical values and aspirations. Built upon this foundation, the university is able to draw its fundamental inspiration from the devotion of its Presbyterian Founders to always seek the truth, respect human dignity, promote gender equality and be inclusive. It also provides educational opportunities as one university with multiple campuses, each with distinctive gifts and attributes. As such, LAU is committed to:

- Providing academic and service excellence throughout the institution
- Demonstrating dignity and respect for and from, the Board, faculty, staff and students, in both word and deed;
- Celebrating the accomplishments and contributions of all the members of the LAU community;
- Succeeding because its people take ownership of, take pride in, and are held accountable for their actions;
- Working together as an extended family community that reflects the highest ethical and moral standards;
- Enabling individuals to find their own spiritual and personal fulfilment, while remaining sensitive to the changing global village in which they live;
- Promoting social connectedness of the students to the country of Lebanon, and encouraging their commitment to social justice and democracy.

VISION

The vision of LAU is driven by its mission and values, and is carried out by:

- 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 socio-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 state-of-the-art infrastructure and support services that 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.



Academic Affairs Policy

*Approved by the Board of Trustees on June 6 & 7, 2003
Amended by the Board of Trustees on March 9 & 10, 2006
Amended by the Board of Trustees on September 14 & 15, 2006
Amended by the Board of Trustees on March 19 & 20, 2009*

The Academic Affairs Policy finds its inspiration in the Mission, Values, and Vision of the University, and in its commitment to academic excellence. The University is dedicated to upholding and preserving the principles of academic freedom. These precepts reflect the University's fundamental mission, which is to acquire and disseminate knowledge; foster independent thinking and expression while respecting the freedom of others; protect freedom of inquiry, research, teaching, and publication; and promote critical thinking and independent problem solving. These freedoms enable the University to advance learning and to transmit it effectively to its students, and to the public. The academic mission is also fulfilled by other policies that govern the quality of life and conduct in the University.

The Lebanese American University operates as one institution with multiple campuses, each with distinctive gifts and attributes:

- 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;
- Fostering in its students a mature independence of mind, honesty and integrity in academic, professional, and personal affairs, leadership qualities, awareness of responsibility to others, as well as celebration of diversity;
- Embracing liberal arts in all curricula;
- Fostering independent thinking and expression while respecting the freedom of others;
- Providing an environment where faculty and students are able to express the widest range of viewpoints in accordance with the standards of scholarly inquiry, mature discourse, civic and social responsibility, professional ethics and a culture of peace;
- Creating opportunities for rigorous research and the dissemination of knowledge;
- Fostering collaboration across the university in teaching, learning, research and service;

English is the official language of instruction at LAU.

A. EDUCATIONAL STANDARDS

1. Academic Rules and Procedures

The Academic Rules and Procedures shall be developed, reviewed, and updated by the Faculty, through the appropriate faculty body and the University process, when applicable. These Rules and Procedures shall be readily available to students, faculty, and staff, and shall be published, as appropriate, in full, or in condensed form in the University Catalog, Student Manual, Faculty Manual, as well as on the university website.

2. Graduation Requirements

Requirements for graduation with a Master's, Bachelor's, 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 the Lebanese Government, when applicable. These requirements are published in the University Catalog.

3. Faculty Evaluation

Faculty Evaluation procedures shall be established to evaluate the teaching competence, research, and service of faculty members, as stipulated by Personnel Policy Faculty.

4. Program Evaluation

Program Evaluation procedures shall be established by the Board of Trustees, through its Academic Affairs Committee, to audit 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 Master of Business Administration (M.B.A.) program are required to take the GMAT exam.

B. ACADEMIC SERVICE

1. **Academic Records shall be maintained to collect key academic information needed to judge the academic standards of the institution, utilizing the commonly accepted approaches in higher education.**
2. **Resources shall be made available to adequately support the academic offerings of the university.**
3. **Learning laboratory facilities shall be established to augment the traditional classroom teaching methods, and to utilize the latest educational technological aids to teaching.**

C. FACULTY DUTIES

In accordance with the bylaws 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. They shall take the steps necessary to assure quality standards that are in accordance with 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 provide the students with the best educational experience possible. Faculty should also contribute to 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 Policy Faculty.

D. ACADEMIC CALENDAR

1. Basis of Calendar

In accordance with the regulations of the Board of Regents of the University of the State of New York, under which LAU is chartered, the minimum requirements for each academic year shall be 30 weeks of actual classroom work, or 32 weeks including examinations. Normally, fall and spring terms will total about 33 weeks of classes and examinations, in order to ensure the minimum requirements, and to allow for the uncertainties of the holidays

and extra holidays that may be proclaimed. Faculty duty shall be for a 36-week period, as explained in the Personnel Policy Faculty.

In addition to the regular terms, the University Calendar shall include summer sessions of five or more weeks of actual classroom with prorated contact hours.

For lecture courses, each credit hour will consist of one period of 50 minutes per week in a regular term, and a prorated duration in summer sessions. Laboratory, studio, clinical and shop courses will have up to three contact hours per credit, depending on the type of activity.

2. Academic Holidays

The calendar shall be constructed in such a way that classes will not be held on the holidays considered official by the Government of Lebanon for the private sector.

3. Make-up days missed

All class days missed for any reason, excluding official holidays, shall be made up pursuant to the following:

- a. **Material lost as a result of suspension of classes must be made up. The way such material is to be made up is left up to the discretion of the teacher, provided that the period of the suspension of classes does not exceed three teaching days per semester.**
- b. **The faculty member is responsible to inform the Chair of the division/department who in turn shall forward the information to the concerned Dean.**
- c. **If the time lost per semester exceeds three teaching days, the University Planning Council shall decide on the time and means of make-up, such as by the extension of semester, Saturday classes, and reduction of holidays. Such a decision shall be made after consultation with the faculty and the Student Cabinet. When the lost days in a semester reach ten, the semester should be extended to avoid loss of credits, and make-up shall be arranged.**

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 the modern world, the university's administration feels obligated to swiftly implement any changes promoting greater effectiveness in the academic program. The university therefore reserves the right to change any aspect of its program, or Policies and Procedures, described in this catalog, in order 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 that is responsive to the region's educational and social needs.

All students must complete a Liberal Arts Curriculum (see "Liberal Arts Curriculum"), 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."

Most students have a required Internship Program linked to their major field of study, or to their 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.



Major Fields of Study

The Lebanese American University offers several major fields of study leading to the following degrees*:

**Please note that all Associate Degrees – A.A. and A.A.S. programs – will no longer be offered effective Fall 2011.*

SCHOOL OF ARTS AND SCIENCES

BACHELOR'S DEGREES

Bachelor of Arts (B.A.) in:

- Arabic Language and Literature
- Communication Arts
- Education
- English
- History
- Philosophy
- Political Science/International Affairs
- Political Science
- Psychology
- Social Work
- Translation

Bachelor of Science (B.S.) in:

- Biology
- Chemistry
- Computer Science
- Mathematics
- Nutrition

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

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

BACHELOR'S DEGREES

Bachelor of Engineering (B.E.) in:

- Civil
- Computer
- Electrical
- Industrial
- Mechanical

MASTER'S DEGREES

Master of Science (M.S.) in:

- Civil and Environmental Engineering
- Computer Engineering
- Industrial Engineering and Engineering Management



Major Fields of Study

SCHOOL OF ARCHITECTURE AND DESIGN

BACHELOR'S DEGREES

Bachelor of Arts (B.A.) in:

- Fine Arts
- Interior Architecture

Bachelor of Architecture (B. Arch.)

Bachelor of Science (B.S.) in:

- Graphic Design
- Interior Design

SCHOOL OF PHARMACY

BACHELOR'S DEGREE

Bachelor of Science (B.S.) in Pharmacy

DOCTORATE DEGREE

Doctor of Pharmacy (Pharm.D.)

SCHOOL OF MEDICINE

DOCTORATE DEGREE

Doctor of Medicine (M.D.)

SCHOOL OF NURSING

BACHELOR'S DEGREE

Bachelor of Science (B.S.) in Nursing

SPECIAL PROGRAMS

CERTIFICATE PROGRAMS

Teaching Diploma (T.D.)



Division of Continuing Education Program

The mission of the Continuing Education Program (CEP) serves a wide range of adult learners by offering innovative learning programs while enhancing performance, promoting professional advancement, and encouraging achievement. The CEP strives to create an energetic learning environment that fosters both personal and professional growth while promoting best practice and ethical practices in the workplace. In these dynamic educational programs, adult learners utilize industry proven resources that are applicable, relevant, and up-to-date. The programs, currently held in Beirut, Tripoli and Zahle, focus on academic excellence while developing the specialized skills, knowledge and abilities that are required to compete in today's local, regional, and international workplace.

CE PROGRAMS

I. LANGUAGES

- I.1 English SAT/EEE/TOEFL/GMAT Preparatory
- I.2 English for Professionals
- I.3 English for Healthcare Professionals
- I.4 English for Lawyers

II. CEP CERTIFICATES

- II.1. Essentials of Business
- II.2. Executive Office Management
- II.3. Preschool Education
- II.4. Professional Fitness Diploma
- II.5. Capacity Building for Nonprofits
- II.6. Graphic Design

III. PROFESSIONAL QUALIFICATIONS

- III.1. Chartered Financial Analyst (CFA®)
- III.2. Certified Information Systems Auditor (CISA®)
- III.3. Certified Information Security Manager (CISM®)
- III.4. Professional in Human Resources (PHR®)
- III.5. Senior Professional in Human Resources (SPHR®)
- III.6. Certified Public Accountant (CPA®)
- III.7 Project Management Professional (PMP®)

IV. CEP PROFESSIONAL WORKSHOPS

- IV.1 Law Series
 - IV.1.1 The Lebanese Labor Law
 - IV.1.2 The Law of Contracts
 - IV.1.3 The Legal Setup of Corporations
- IV.2 Business Etiquette
- IV.3 Presentation Skills

V. CEP STANDARDS PROFESSIONAL WORKSHOPS

- V.1. HR the Business Partner
- V.2 Quality Management
- V.3 Mind Tools
- V.4 Sales
- V.5 Corporate Social Responsibility
- V.6 Customer Service Excellence
- V.7 Coaching
- V.8 Leadership Skills
- V.9 Marketing

VI. OTHER CEP COURSES

- VI.1 Remedial Program
- VI.2 Summer Camp

VII. TAILORED CORPORATE TRAINING

VIII. CEP OUTREACH

- VIII.1 CEP Entrance Exam Preparation Program
- VIII.2 CEP and the Makassed Philanthropic Islamic Association Partnership
- VIII.3 CEP and Creation Learning Center-Homs, Syria and Unlimited Horizons Center-Damascus, Syria
- VIII.4 CEP and the Safadi Foundation in Tripoli, Lebanon
- VIII.5 CEP and the Secondary Evangelical School of Zahle in Zahle, Lebanon

In many of the offered programs, students have the option to enroll in individual courses or register for the full program.

I. LANGUAGES

I.1. ENGLISH SAT/EEE/TOEFL/GMAT PREPARATORY

The majority of higher educational institutions require that applicants take one or more of the recognized standardized exams. These exams test students' aptitudes in a number of different areas including quantitative, verbal, analytical thinking, and time management. The tests are designed to provide academic institutions with a benchmark to judge a student's acquired knowledge as well as future academic potential. The courses offered by the CEP help students prepare for these exams by reviewing and applying basic mathematical, grammar, and syntax skills and learning optimal strategies to ensure success on the examination and obtain higher scores.

Contact hours per course:

Fall and Spring Semesters: 12 weeks, 16 hours per week

Summer Semester: 8 weeks, 16 hours per week

Introduction to SAT/EEE/TOEFL

Students at this level:

- Learn to enhance their verbal skills and participate in simple conversations
- Begin to read simple material about familiar topics
- Begin to write about simple and standard topics
- Are introduced to PSAT verbal and writing skills

Basic SAT/EEE/TOEFL

Students at this level:

- Learn to converse about day-to-day topics and areas of special interest
- Read general texts and some specialized readings with good comprehension
- Write with some fluency about a range of familiar day-to-day topics
- Start implementing verbal, grammar, and writing testing points and strategies

Intermediate SAT/EEE/ TOEFL Reinforcing Testing Points Skills

Students at this level:

- Understand spoken English in many day-

- to-day settings involving familiar topics
- Participate in conversations covering a range of topics
- Read a variety of standard and professional material with good speed and comprehension
- Write about topics of personal interest and a variety of social issues
- Easily apply and analyze the required overall SAT English testing points

Advanced Intensive SAT/EEE/ TOEFL Test Taking Strategies

Students at this level:

- Can easily participate and engage in conversations in professional settings
- Can easily read a variety of materials with a high degree of comprehension and speed
- Can write about familiar topics, specialized topics of personal interest, and areas of expertise
- Master SAT verbal, critical reading skills, grammar, and writing testing points and strategies
- Are prepared to take university entrance exams (EEE/TOEFL/SAT)

I.1. INTENSIVE SAT PREPARATION

SAT I – Mathematics – 6 hours per week / 8 weeks

This course focuses on the SAT mathematical section and covers many concepts including exponential growth, absolute value, and functional notation. It also places emphasis on topics such as linear functions, manipulations with exponents, and properties of tangent lines. Other key topics include numbers and operations, algebra and functions, geometry, statistics, probability, and data analysis.

SAT I – English – 6 hours per week / 8 weeks

This course focuses on the English section of the SAT test and covers two sections, critical reading and writing. The critical reading section, formerly known as the verbal section, includes the reading of numerous passages where students are asked questions based on information directly stated or implied in the text. The writing section tests students' ability to identify and use proper grammar and word choice.

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GMAT Preparation

English: 50 hours per week / 6 weeks

Math: 26 hours per week / 6 weeks

This course focuses on the GMAT which is a standard requirement for admission into graduate MBA programs. The GMAT exam consists of three main parts: the Analytical Writing Assessment (AWA), the Quantitative section, and the Verbal section. This course focuses on developing a variety of skills necessary to succeed on the exam in both lab and exam simulation settings.

I.2. ENGLISH FOR PROFESSIONALS

English Writing Skills:

contact hours: 4 weeks, 6 hours per week

This course focuses on improving basic writing skills. It aims to enhance the skills of those who have strong listening comprehension skills, but are unable to express themselves satisfactorily. This course will improve the skills of those who spend too much time writing too few lines and end up dissatisfied with what they have written.

Public Speaking:

contact hours: 4 weeks, 6 hours per week

This course focuses on the elements of public speaking and the obstacles that students may face, including shyness and a lack of language mastery. This course encourages students to develop the oratory skills that are needed in everyday conversational contexts. Candidates will learn techniques to overcome obstacles and present their speech in a professional, correct, and impressive manner.

I.3 ENGLISH FOR HEALTHCARE PROFESSIONALS

This program is designed to meet the specific needs of today's medical professionals. It aims to develop linguistic skills in a medical setting to give doctors and nurses ample practice and exposure to terminology used for consultations and diagnosis. It focuses on the language as it is used by practitioners in the field. It targets employees of healthcare institutions, healthcare centers, healthcare NGOs, medical centers, and hospitals.

Participants will enhance oral and written

medical language skills through class activities while discussing updated medical texts and current health issues.

This three-level program includes:

Intensive English for Healthcare, 18 weeks (90 hours)

Basic English for Healthcare, 12 weeks (60 hours)

Advanced English for Healthcare, 12 weeks (60 hours)

I.4 ENGLISH FOR LAWYERS

This program aims to promote advanced language proficiency and communication through legal content and developing work and study skills necessary for lawyers, paralegals, judges, managers and law students. Participants will learn to interpret and explain contract clauses, improve cross-border communication with colleagues and clients, and enhance negotiating skills.

This three-level program includes:

Intensive English for Lawyers, 18 weeks (90 hours)

Basic English for Lawyers, 12 weeks (60 hours)

Advanced English for Lawyers, 12 weeks (60 hours)

II. CEP CERTIFICATES

The certificate programs focus on developing overall industry knowledge so that participants will be more informed and better prepared to pursue employment in today's workplace. Topics are updated on a regular basis to address the new challenges and trends in the business environment.

II.1 ESSENTIALS OF BUSINESS

This program is composed of nine fundamental courses. The candidate must complete six of the nine classes in order to be eligible for the certificate. Participants seeking professional development may enroll in any of the listed courses and receive a statement of completion at the end of the course. Topics are updated on a regular basis to address the new challenges and trends in the business environment.

Contact hours per course: 12 weeks, 3 hours per week

Essentials of Business Principles

This course studies the overall business environment focusing on the various processes and functions.

Key topics include the organization of a business, business environment, management, managing employees, marketing, and financial management.

Accounting for Non-Accountants

This course introduces the Generally Accepted Accounting Principles (GAAP) including assets, liabilities and owner's equity, preparation of financial statements, and completion of the accounting cycle. Key topics include the building blocks of accounting, GAAP assumptions-basic accounting equation, the recording process, account adjustment, completion of the accounting cycle, accounting for merchandising operations, and inventories.

Economics for Non-Economists

This course introduces students to the principles of supply and demand, monetary and fiscal policies, and national income.

Key topics include the nature and scope of economics, consumer behavior, theory of the firm, price determination, and allocation of resources.

Essentials of Business Statistics

This course provides an understanding of statistical data, time series, frequency distributions, probabilities, charts, and surveys. Key topics include probability, random variable, sampling theory, estimation, hypothesis testing, correlation and regression, time series, and index numbers.

Basic Management Skills

This course studies the functions of business management including planning, organization, leadership, decision making, and controlling. Key topics include the dynamic new workplace, the decision making process, environment and diversity, global dimensions of management, planning and decision making, strategic management, organizing as a management function, organizational structures, and leadership.

Essentials of Human Resources Management

This course provides a practical and realistic approach to the study of human resource management with emphasis on the

interrelationship between various human resource functions. Key topics include strategic human resource management, social responsibility and business ethics, job analysis and human resource planning, recruitment, training and development, career planning, performance appraisal, and compensation and benefits.

Marketing Skills for Non-Marketers

This course familiarizes students with the marketing environment covering the marketing mix (product, price, promotion, and distribution). Key topics include elements of the marketing mix, marketing process, and legal and social environments.

Essentials of Consumer Behavior

This course focuses on the understanding of various factors that influence consumer buying behavior.

Key topics include an overview of current trends in the field, an in-depth analysis of consumer motivation, a focus on buying behavior and how it influences marketing strategies, a review of the internal and external environments, and the strategic initiatives that can be developed to address these issues.

Finance for Non-Financial Managers

This course provides an overview of the different applications of tools and techniques to analyze businesses' financial problems. Key topics include working capital management, capital budgeting, organizational financial policies, and conduct of business enterprises.

II.2. EXECUTIVE OFFICE MANAGEMENT

This one-year program is designed to develop the necessary office management skills for future professional Executive Office Managers. The courses focus on building key technical capabilities and communication skills to ensure organizational efficiency. To be eligible for a certificate, the candidate should complete the program within one year.

English Language:

contact hours: 12 weeks, 8 hours per week

This course focuses on improving various English language skills. The objective is to enhance proficiency within the framework of business correspondence. The focal point of the course is on reading business texts, and learning professional grammar and writing structures so that students may convey

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messages more efficiently and effectively.

Introduction to Business Principles:

contact hours: 12 weeks, 3 hours per week

This course gives candidates a basic introduction to the business environment. Topics include basic business functions, accounting, finance, management, marketing, and economics.

Office Computer Applications:

contact hours: 12 weeks, 1 hour per week

This course introduces basic information systems theory and practice through office software applications such as Excel and Word.

Business Correspondence:

contact hours: 12 weeks, 4 hours per week

This course focuses on examining the various categories of business correspondence, and presenting an overview of the styles and formats appropriate to each. The participants will learn to communicate within a business setting with confidence. By the end of the course, participants will be able to generate business letters, memos, and reports.

Office Management and Behavioral Skills:

contact hours: 12 weeks, 2 hours per week

This course introduces students to the general functions required in the office environment including mail handling, filing systems, information channeling, email, internet usage, organization of meetings, appointments, and communication skills.

Management of Office Finance:

contact hours: 12 weeks, 3 hours per week

This course provides students with knowledge about daily financial transactions including cash and trade discounts, promissory notes and simple discount notes, compound interest and present value.

Advanced Office Computer Applications:

Contact hours: 12 weeks, 3 hours per week

This course provides students with more advanced knowledge about office software applications such as advanced Excel and PowerPoint.

II.3. PRESCHOOL EDUCATION

This teacher-training program is designed to prepare students for employment and career advancement in the field of early childhood education. The aim of the program is to provide students with sufficient knowledge and practical skills to plan and implement developmentally appropriate programs for children from 2 to 6 years of age in various types of childcare settings. Throughout this one-year (three-semester) program, trainees will develop and update their teaching methods and earn a certificate.

Program Outline:

Contact hours: 442 hours over a year and a half and 100 hours of practical experience

- Grammar and Writing I, II and III
- Reading and Oral Fluency I and II
- Introduction to Early Childhood Education
- Field Practice I
- Learning with Music and Movement
- Issues in Early Childhood Math, Science, and Technology
- Literature in Early Childhood Education
- Field Practice II
- Art and the Young Child
- Emergent Literacy
- Developmental Curriculum and Program Planning
- Management in Early Childhood
- Child Safety, Health & Nutrition
- Child Development Foundations
- Introduction to Computers and Applications

II.4. PROFESSIONAL FITNESS DIPLOMA

Health and fitness remain among the fastest growing industries in today's world. This has led to considerable investment in health clubs, spas, weight loss, and beauty clinics. Such investments are not only common in Lebanon but throughout the Middle East. With this rapid growth, specialists who possess good physical and athletic performance along with a scientific background are currently in great demand. The changing needs in society combined with the increasing demand for certified and qualified trainers make the LAU Professional Fitness Certification Program a great opportunity for students who are seeking a professional career in the health and fitness sector.

The Professional Fitness is a one year program that is comprised of 3 semesters. Students may enroll in 3 to 4 courses per semester for a total of 11 courses.

Program Outline:

Fall Semester

- Human Anatomy
- Exercise Physiology
- Biomechanics of Weight Lifting
- Group Fitness Class

Spring Semester

- Nutrition for Health & Performance
- Health Fitness Training
- Athletic Fitness Training
- Fitness Management

Summer Semester

- Injury Prevention / Post Rehabilitation Training
- Fitness Marketing
- Internship

II.5 CAPACITY BUILDING PROGRAM FOR NON PROFITS

The emphasis of this program is on NGO management and development which provides participants with working knowledge of the managerial, financial, and organizational aspects of nonprofit organizations. It also focuses on issues related to the private sector such as corporate social responsibility and its relationship with NGOs.

Program Outline:

Contact hours: 18 hours per module, 3 full days or 6 half days

- Introduction to Nonprofits
- A Guide to Fundraising
- Fundraising Process
- Fundraising Planning & Development
- Social Marketing & Corporate Social Responsibility
- Strategic Planning
- Financial Management
- Concept Paper & Proposal Writing
- Monitoring & Evaluation
- Project Management
- Social Media
- Working with Volunteers

- Organizational Leadership

II.6 GRAPHIC DESIGN

This program prepares students, through a variety of design software, to combine words and images to create a visual representation of ideas. It targets recent graduates in graphic design, working professionals and individuals interested in managing projects using print and web design.

The certificate requirements are met once the student completes the core courses and one of the three modules.

Core Courses

- Adobe Photoshop
- Adobe Acrobat Professional
- Microsoft Windows
- Internet Explorer

Modules

- Module 1: Graphic Print and Design (Adobe Illustrator, QuarkXPress, Adobe InDesign)
- Module 2: Web Design (HTML, Adobe Dreamweaver, Adobe Flash)
- Module 3: Design and Drafting: Architecture and Designing (3D Studio Max, AutoCAD 2D, AutoCAD 3D, Adobe Illustrator)

Course Offered

- Adobe Photoshop (50 hrs)
- Adobe Acrobat Professional (12 hrs)
- Microsoft Windows (12 hrs)
- Internet Explorer (12 hrs)
- Adobe Illustrator (30 hrs)
- QuarkXPress (30 hrs)
- Adobe InDesign (36 hrs)
- HTML (36 hrs)
- Adobe Dreamweaver (40 hrs)
- Adobe Flash (40 hrs)
- 3D Studio MAX (72 hrs)
- AutoCAD, ACAD (2D 60 hrs -3D 30 hrs)

Today's work environment is becoming increasingly competitive. Globalization, as well as new advances in education, technology and business practices, is forcing workers to update their skills and regularly acquire new ones. Certificate programs offer experienced and aspiring professionals an opportunity to develop new skills that will increase their value in the job market. The CEP offers a number of internationally recognized certificates that will

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help individuals realize their career goals. These programs provide a cost-effective and flexible alternative to obtaining a formal degree and many are designed to meet the specific needs of working professionals.

III. PROFESSIONAL QUALIFICATIONS

III.1 CHARTERED FINANCIAL ANALYST (CFA®) PREPARATORY

The CFA is the most globally recognized and valued credential in the field of finance. It provides evidence of professionalism and excellence in investment management. The successful completion of the program with at least one examination will give the candidate an opportunity for career advancement in the financial sector. The charter allows entry into several fields including risk management, investment banking, equity analysis, portfolio management, fixed income, and investment advising.

Contact hours: 173 hours, 47 sessions (2 sessions per week, 3 hours per session) and a 4 day boot camp

Exam/Course Topical Outline (see www.cfainstitute.org)

- Ethical and Professional Standards (9 hours)
- Quantitative Methods (24 hours)
- Economics (18 hours)
- Financial Reporting and Analysis (30 hours)
- Corporate Finance (9 hours)
- Equity Investments (15 hours)
- Fixed Income (15 hours)
- Derivatives (9 hours)
- Alternative Investments (6 hours)
- Portfolio Management and Wealth Planning (6 hours)

III.2 CERTIFIED INFORMATION SYSTEMS AUDITOR (CISA®)

In a joint effort between LAU, a leader in business education, and ISACA, a world-renowned global organization for information governance, control, security, and audit professionals, the Certified Information Systems Auditor (CISA®) and Certified

Information Security Manager (CISM®) review courses are now being offered through the CEP.

The CISA certification demonstrates the individual's expertise and knowledge in information systems audit, control, and security. Holders of the CISA certification have an awareness of the unique requirements particular to information technology environments.

Contact hours: 10 weeks, 2 times per week

Exam/Course Topical Outline
(see www.isaca.org)

- The Process of Auditing Information Systems (6 hours)
- IT Governance and Management (6 hours)
- Information Systems Acquisition, Development and Implementation (9 hours)
- Information Systems Operations, Maintenance and Support (9 hours)
- Protection of Information Assets (9 hours)

III.3 CERTIFIED INFORMATION SECURITY MANAGER (CISM®)

The CISM designation targets individuals with information security management responsibilities. Although there are many IT security credentials, the CISM remains the only one designed to assess the skills and knowledge of information security managers.

Contact hours: 10 weeks, 2 times per week

Exam/Course Topical Outline
(see <http://www.isaca.org>)

- Information Security Governance (8 hours)
- Information Risk Management (8 hours)
- Information Security Program Development (8 hours)
- Information Security Program Management (12 hours)
- Incident Management and Response (8 hours)

III.4 PROFESSIONAL IN HUMAN RESOURCES (PHR®) **SEE SPHR

III.5 SENIOR PROFESSIONAL IN HUMAN RESOURCES (SPHR®)

The Professional in Human Resources (PHR®) and Senior Professional in Human Resources

(SPHR®) are the two most internationally recognized certifications in HR. Through the PHR® and SPHR® designations, HR practitioners can advance their careers, prepare for increased responsibilities, and play a leadership role in supporting their organization's goals.

Contact hours: 105 hours: 35 sessions, 2 times a week

Exam/Course Topical Outline
(see <http://www.hrci.org>)

- Strategic Management (21 hours)
- Workforce Planning and Employment (21 hours)
- Human Resource Development (15 hours)
- Total Rewards (18 hours)
- Employee and Labor Relations (18 hours)
- Risk Management (12 hours)

III.6 CERTIFIED PUBLIC ACCOUNTANT (CPA®)

A direct result of globalization is the increasing need for accounting professionals worldwide. Companies are looking for employees who have mastered advanced accounting knowledge and practice, including the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP). A designation in Certified Public Accounting (CPA) is a mark of excellence that meets this market demand and enhances the individuals' opportunities for career growth. CPAs are distinguished from other accountants by the certification's strict requirements which demand education, examination, and experience.

Contact hours: 135 hours, 45 study sessions

For more information: <http://www.cpa-exam.org>

Exam/Course Topical Outline
(see <http://www.aicpa.org>)

- Auditing and Attestation
- Business Environment and Concepts
- Financial Accounting and Reporting
- Regulation

III.7 PROJECT MANAGEMENT PROFESSIONAL (PMP®)

PMI's Project Management Professional (PMP®) credential is the most important industry recognized certification for project managers. Globally recognized and demanded, the PMP® demonstrates that holders have the experience, education and competency and to

successfully lead and direct projects.

Contact hours: 42 hours – 4.2 CEUs

Suggested prerequisite:

Knowledge of Project Management Principles

Exam / Course Topical Outline:

- Project Management Framework
- Project Time Management
- Project Scope Management
- Project Integration Management
- Project Cost Management
- Project Quality Management
- Project Human Resource Management
- Project Communication Management
- Project Risk Management
- Project Procurement Management
- Professional Responsibility of the Project Managers

IV. CEP PROFESSIONAL WORKSHOPS

IV. LAW SERIES

IV.1.1 THE LEBANESE LABOR LAW

This one day workshop is for working professionals, non-lawyers, employees and employers interested in learning more about legal issues in the workplace. Participants will learn about employee / employer rights and obligations, vacation, overtime and sick leave, abusive firing, labor cases, employment contracts, and understanding social security regulations in the private and public sectors.

IV.1.2 THE LEBANESE LAW OF CONTRACTS

A thorough understanding of legal contracts is becoming a must for all professionals. The legal aspect of business transactions must not be taken lightly in the business community. This one day workshop comes with educative tools that can be used by all professionals, employees and employers who confront legal issues in the workplace, as well as any individuals responsible for signing legal documents in Lebanon.

IV.1.3 THE LEGAL SETUP OF CORPORATIONS

Launching a business with a long-term expansion vision begins by forming a suitable type of company with relevant financial conditions. This one day workshop is useful for employees and employers who have an interest in learning about the fundamentals of a solid foundation in business. This workshop will discuss the process of creating and managing a business entity, types of companies in Lebanon, the advantages and disadvantages of each option, and the rights and obligations as an employer and employee.

IV.2 BUSINESS ETIQUETTE

Being comfortable in a business meeting, breakfast, lunch or dinner setting is a result of proper business etiquette training. This one day workshop will cover the guidelines of IMPACT - Golden Rules of Business Etiquette, the importance of etiquette and netiquette in business, common courtesies, appropriate office dress, and appropriate conversations based on environment.

IV.3 PRESENTATION SKILLS

Good presentation skills are the key to success in the workplace. Individuals must be comfortable presenting and speaking in order to successfully convey important material and information. This workshop will discuss the basic elements of public speaking, the speaker-audience connection, guidelines on preparing, organizing, and outlining a presentation, visual aids, body language, the perfect delivery, handling Q&A, and the most common mistakes in presentations.

V. CEP STANDARDS PROFESSIONAL WORKSHOPS

LAU's Continuing Education Program (CEP) and Standards, a Lebanese consultancy firm that specializes in innovative management and human resource solutions for high-profile employers, have formed a partnership and are offering new and enhanced professional development workshops for both the public and corporate sectors. CEP and Standards are offering a variety of business related workshops in Beirut and in the new centers in Tripoli and Zahle.

V.I. HR THE BUSINESS PARTNER

Hands-on human resource management training programs bring insight to the rising importance of HR management as a strategic business partner and the vital role it plays in contributing to business success. HR the Business Partner will explore innovative strategies to attract and retain new talent while making them highly efficient in the organization.

Participants will learn to recognize best HR practices and implement them to positively affect bottom line results. In addition, creating compensation and benefit systems, detecting training needs and managing T&D will be covered.

Legal and ethical issues must also be identified and studied in order to ensure organizational efficiency.

Program Outline:

Advanced Recruitment Strategies – 6 hours

This full day workshop analyzes the process of finding the best fit candidate for a specific post in an organization. It will explore the decision making process involved in choosing the most suitable candidate among a large pool of applicants.

Managing Training Needs – 6 hours

Employee training and development is vital for every business and is the key to success and satisfaction. Therefore, it is important to understand the relevance of the training needs analysis and evaluation. In this workshop, different levels of training evaluations will be discussed, as well as establishing and clarifying training needs for each employee.

Job Analysis and Job Descriptions – 6 hours

It is essential that employees understand what is required of them in the workplace in order for them to reach their maximum potential. This workshop will introduce the methods of developing a job analysis system that details all the tasks and responsibilities that are expected of each employee. This will help to clarify their roles and understand their duties within the organization.

Behavioral Interviewing Skills – 6 hours

A person's past performance on the job is an accurate indicator of how they will perform in the future. Therefore, it is important to ask the right questions in order to properly analyze potential candidates. This workshop will introduce the behavioral interviewing

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method, relevant questions to be discussed, and behavior on which to focus.

Job Evaluation and Grading System – 6 hours

This workshop analyzes fair grading systems and benefits. It will assist organizations in creating a balanced system that simplifies the job evaluation process. The finished structure will serve as a reference for the entire organization that can be utilized at all levels for development.

Compensation and Benefits – 6 hours

Employees can be motivated not only through financial rewards (base pay) but through incentives and benefits as well. This workshop will discuss the importance of compensation and benefits in a business setting. Participants will learn how to create systems that attract talented candidates, retain quality employees and encourage superior performance.

Succession Planning – 6 hours

An organization must prepare for the evolution of its employees as a proactive and progressive process within the company. Therefore, it is important to have a contingency plan in order to facilitate a successful transition. This workshop will discuss the elements of a succession plan and how to prepare for the growth of personnel from within.

Counseling and Disciplinary Procedures – 6 hours

Supervisors and employees should meet regularly to discuss workplace performance, conduct and behavior. When necessary, disciplinary action may be taken in order to correct deficiencies. This workshop will explore present day counseling methods utilized in organizations for the purpose of attaining best performance.

Motivation and Performance Feedback – 6 hours

Each person has unique biological, emotional, cognitive, and social forces that direct their individual behavior. Positive feedback serves as an overall motivating force in workplace satisfaction. This workshop will review the elements of a healthy work environment and discuss ways to motivate employees via performance feedback.

Writing Policies and Procedures – 6 hours

The HR Department's main goal is to align strategy with employee performance

while adhering to policies and procedures. Employees must follow established guidelines in order to be successful in the workplace. This workshop will aid in identifying the specific needs of the organization, hence writing effective policies and procedures for the organization to follow.

Talent Management: Retaining your Talent – 6 hours

Talent management is an overall organizational strategy that gives a competitive advantage to those who implement such systems into their business environment. Research has proven that organizations that use talent management strategies and solutions exhibit higher performance in the workplace. This workshop will analyze the talent management process and focus on ways to retain valued employees.

V.2 QUALITY MANAGEMENT

Six Sigma – 42 hours

Six Sigma is a disciplined, data-driven approach and methodology for eliminating defects (driving toward six standard deviations between the mean and the nearest specification limit) in any process, from manufacturing to transactional and from product to service.



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The fundamental objective of the Six Sigma methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application of improvement projects. As a result, Six Sigma is a measure of quality that strives for near perfection. This workshop will cover the disciplined, data-driven approach and methodology for eliminating defects in any process.

V.3 MIND TOOLS- BUSINESS TOPICS

There are many self-development tools that aid employees in their business success. MINDTOOLS brings together all the soft skills needed to perform a job, and enhance leadership, communication, time and stress management skills. This workshop will explore the latest creative, problem solving, decision making and team building skills.

Program Outline:

Creativity Tools – 6 hours

Participants will learn to identify several useful techniques to develop technical creativity to solve real life business problems. They will explore a wide range of approaches as well as developing and generating new and innovative ideas.

Memory Techniques – 6 hours

There are many techniques that can be used to strengthen the memory in regard to names, numbers, facts and a variety of other essential pieces of information. Different tools and techniques will be discussed that can be applied to the workplace as well as in everyday situations.

Telephone Techniques – 6 hours

Basic communication concepts will be discussed as participants explore how to master telephone communications (specifically in customer service and sales). Telephone techniques and proper phone etiquette will also be covered.

Business Writing Skills – 6 hours

Participants will develop business writing skills so that correspondence will be appropriate in format and professional in tone. Special writing techniques that utilize expressive and pointed language will be taught.

Time and Stress Management – 6 hours

Time management is an essential element in any business environment. Participants will learn to prioritize and manage time in a productive manner while still attending to all necessary duties and obligations.

Corporate Communication Skills – 6 hours

Core elements behind successful communication and several practical techniques will be introduced. Through situational activities, participants will be able to implement the learned techniques in order to better understand the issues at hand.

Transactional Analysis – 6 hours

Transactional analysis is conducted in order to understand personality, and in turn, improve human relations. Therefore, self-analysis is essential to understanding oneself as well as others in the business environment. This workshop will analyze behavioral patterns and transactions as well as identify strategies for modification and stroking.

Building Effective Teams – 6 hours

Teamwork is used within most organizations in today's business environment. Therefore, individuals must be comfortable working with others while understanding their specific role on a team. This workshop will introduce skills and tools that employees can use in order to enhance team performance and become more successful in their role as a team participant.

Effective Problem Solving – 6 hours

Employees are often confronted with many issues on a daily basis that require problem solving skills. This workshop will cover the elements of problem solving and simplify the process so that individuals can manage issues in a rational manner.

Effective Decision Making – 6 hours

Decision making is an ongoing process that presents itself on a regular basis in the workplace. This workshop will discuss the steps involved in making decisions and offer techniques to perform a cost-benefit analysis to help choose the best options.

Managing Complex Situations – 6 hours

Complex situations are often presented in a business environment. Therefore, employees must be prepared to handle a variety of circumstances that occur regularly in the workplace. This workshop will examine how

to effectively handle complex situations, and in turn, build better relationships and enhance overall job satisfaction.

The Art of Being Interviewed – 6 hours

The interview is the first step toward obtaining employment in an organization. There are many important elements which are standard in interviewing practices. This workshop will prepare applicants for the interviewing process, build confidence, and enhance overall performance during the session.

Project Planning Skills – 6 hours

Project planning is a specialized skill that is needed in many positions in an organization. Employees must manage tight schedules and resources while delivering timely results within budget. This workshop will address the skills and steps needed to successfully plan projects and achieve company goals.

V.4 SALES

Effective Negotiation Skills – 12 hours

In sales, it is necessary to have effective negotiation skills in order to close deals and be successful. This workshop will cover the elements of negotiation, tactics, maneuvers, counter measures and arguments in addition to other techniques and methods that can be useful in negotiating in the business world.

Effective Selling Skills – 12 hours

In order to be successful in today's business world, sales employees must have skills that are relevant and up to date. This workshop will cover all aspects of selling, including techniques and tools that can be used for becoming a more persuasive sales person. It will cover the entire sales process from cold calling to the main aspects of closing deals.

Cross-Selling and Up-Selling – 12 hours

In addition to direct selling, cross-selling and up-selling sales techniques are also commonly used. This workshop will discuss the principles and elements of selling and explain how it adds value to the customer.

Sales Presentation Skills – 24 hours

A great sales presentation involves not only interesting material but also a knowledgeable speaker. This workshop will focus on the essential elements of a sales presentation and discuss how to create a presentation that will capture the audience's attention and attract

customers.

Successful Prospecting – 6 hours

Prospecting is the act of seeking potential clients for sales purposes. This workshop will discuss the elements of prospecting, techniques that can be implemented and key factors that can turn a lead into a prospect, and in turn, generate more sales for a company.

Pre-Approach: The FABs Technique – 6 hours

The pre-approach is a tool that identifies the steps in planning a sales call after a prospect has been identified. This workshop will cover the steps in identifying the features, advantages and benefits of any product or service and how to better present it while being sold. It will also discuss how to build confidence and create a professional image using this special method.

Negotiation Tactics and Counter-Tactics – 12 hours

There are many strategic techniques that can be implemented during a negotiation process. This workshop will introduce several concepts including the who, what, when, where and why of negotiations, as well as the definition and practice of reservation points and the best alternative to making a sale. In addition, tactical tools will be discussed and participants will learn how to resist change in their own positions while changing their opponents' minds.

Trial Closing and Closing – 12 hours

The sales process starts with a lead, turns into a prospect, and then the pre-approach, approach, presentation and closure follow. This workshop discusses the overall sales process and specifically focuses on the closing stage. In addition, participants will learn how to properly finalize deals and identify implications if sales are not sufficiently closed.

The Selling Attitude – 12 hours

To be successful in sales, it is important to have the right attitude and display many specific skills and characteristics. This workshop will address both personal and professional attributes that are necessary for success in a business environment. Participants will learn how to focus on positive elements, and in turn, become more effective in selling.

Division of Continuing Education Program

The SPIN Methodology

SPIN methodology focuses on asking and answering questions in a sales call or during a presentation. This workshop will give insight into the exchange and show how to give appropriate and dynamic answers. In addition, participants will learn how to identify crucial points in the dialogue and how to benefit from these conversations.

V.5 CORPORATE SOCIAL RESPONSIBILITY

Introduction to Corporate Social Responsibility - 12 hours

Corporate social responsibility defines an organization in regard to its behavior toward consumers, employees, stakeholders, the community and environment. It is essential that a company have a realistic yet progressive policy that addresses all the groups involved in a positive way. This workshop will introduce the elements of corporate social responsibility and discuss the components that are necessary for a successful and effective CSR policy.

Integrating Corporate Social Responsibility into Business - 12 hours

Having a solid and functioning corporate social responsibility policy guides the organization and aids it in making important decisions. In this workshop, participants will acquire knowledge, skills and tools to use in the implementation of a corporate social responsibility policy within an organization.

HR - Corporate Social Responsibility's Main Enabler - 12 hours

The Human Resources Department plays an important role in setting the corporate social responsibility platform in an organization. Therefore, HR professionals must acquire in-depth knowledge of their critical role in the policy. In this workshop, strategic opportunities between HR and CSR will be identified and participants will explore techniques to drive change and successfully implement an effective policy.

V.6 CUSTOMER SERVICE EXCELLENCE

Feelings - Mastering the Art of Customer Service - 12 hours

Customer service is truly an art that can be mastered if the proper techniques are used. This workshop, conducted in partnership with the Service Quality Institute USA, will discuss

how employees can positively transform situations by being aware of customer needs, improving skills in dealing with customers, increasing self-worth and improving communications and cooperation with other employees.

Essence of Caring - The Key to Clinic, Health Management Organization, and Managed Care Survival - 12 hours

Hospitals, clinics and health institutions serve a variety of customers in many different ways. This workshop will enable health care employees to demonstrate a more caring behavior that will ensure that patients receive the proper care in a hospitable manner. Part of SQI (Service Quality Institute) has been offered in over 100 institutes and positive results have been acclaimed worldwide.

Remember Me - Mastering the Art of Customer Name Recognition and its Effect on your Business Relationship - 12 hours

Consumers pride themselves on being remembered by people with whom they interact. This workshop, conducted in partnership with the Service Quality Institute USA, will demonstrate techniques for frontline managers and employees to boost memory and maintain personal relationships with customers. In addition, it will explore the importance of relationships and how it affects growth and service excellence.

V.7 COACHING

Coaching your Emotions

Managing emotions in a stressful workplace is a daily challenge. This workshop will focus on tools and techniques that can be used for controlling behavior and bringing about positive outcomes in a variety of different situations. Both one on one and group activities will be used in the session.

Decisions Make Destinies

In life, it is important to develop character and continuously challenge oneself in order to become more experienced and mature. This workshop will explore personal leadership and self-development skills that will aid participants in setting and attaining relevant life goals.

V.8 LEADERSHIP SKILLS

The Pyramid of Leadership- 24 hours

In order to be successful in today's business world, individuals should demonstrate superior leadership skills. The Pyramid of Leadership is a customized tool designed by STANDARDS to empower individuals and allow them to recognize their abilities and potential to be true leaders. This workshop will aid participants in developing innovation, flexibility and self-awareness in relationships with colleagues and peers.

Effective Team Leading – 24 hours

Teamwork is commonly used within many organizations in today's business world. Therefore, it is necessary to have effective team leaders in order to guide workers towards productivity and success. This workshop will assist managers in identifying talent within an organization, enhance team building, and discuss techniques for empowering employees under the leadership of higher management.

Leading Dynamic Teams – 12 hours

Teams, if used effectively, can add to the overall productivity of an organization. Dynamic teams are highly motivated and create a positive work environment for their peers. This workshop will address the main aspects and procedures to follow in creating a successful team, tools to increase team performance and elements of a successful team.

V.9 MARKETING

Blue Ocean Methodology – 12 hours

Blue Ocean Methodology introduces principles used by companies to create and capture “blue oceans,” thus eliminating the competition. In this workshop, the methodology will be reviewed and a wide range of strategic moves across different industries will be examined. Participants will learn how to formulate and execute their own strategies.

Premium Merchandising Techniques - 12 hours

Companies must utilize good merchandising methods as well as other proven techniques such as trade marketing and offers in order to be successful in today's marketplace. This workshop will focus on increasing the sales of an organization. In addition, it will examine displays, merchandising arrangements and below the line activities in order to make the retail sales experience more successful and rewarding for all involved.

Social Media for the Social Company – 12 hours

Globalization and technology have changed the world, making the business environment more competitive. Many new communication tools, including social media, are giving companies exposure on the web and through mobile technology. This workshop will discuss the elements of social media and how it can be used as a competitive advantage.

Above the Line vs. Below the Line – 12 hours

Above the line and below the line are tools and techniques that are used to market products or brands. This workshop will discuss the dynamics of each method and discuss the advantages and disadvantages of each. It will also examine the correct usage of each concept with the appropriate reasoning behind the decision.

Modern Trade Management – Key Accounts Management – 12 hours

The key account manager serves as the main contact between any organization and a retailer. It is their job to ensure that the objectives of both parties are met through a win-win relationship. This workshop will demonstrate the necessary techniques used to manage and strengthen relationships with key accounts, and in turn, will lead to profitable growth and success.

Basic Marketing Tools – 12 hours

Marketing has long been considered an essential part of building business. It is important that a company recognize this need and use it to their advantage in order to expand business, retain their customers and attract new ones. This workshop will review the basic elements and principles behind marketing, as well as the marketing mix and study that are essential to any successful marketing plan.

Distribution Strategies: Best Techniques – 12 hours

Distribution focuses on establishing a system that allows customers to purchase a product in a marketplace that is accessible. No matter how strong a product may be, it will be useless if customers cannot access the product in a location that is convenient to them. This workshop will discuss the best practices and techniques that are used in the market for distribution strategies and decision making.

Brand Management: From Portfolio Management to Market Reporting – 12 hours

It is important that a company oversee all aspects of brand management so that an organization can assess the success of a product. This workshop will cover the essential elements of marketing, as well as introducing new products for a specific target market. In addition, it will discuss new products, the customer-level adoption process, market reporting, forecasting and feedback.

Private Labels: Opportunities and Threats – 12 hours

Private labels have faced many challenges recently, especially after the last global recession. This workshop will review the opportunities and threats that private labels have faced against competing national brands. It will also discuss how to overcome threats to a product and how to become successful when faced with direct competition.

VI. OTHER CEP COURSES

VI.1 REMEDIAL PROGRAM

Non-credit Courses for Suspended Students

This program is designed to keep suspended students engaged in classroom activities. There are four non-credit courses offered that students may take during the period of their suspension from the university. These courses are graded on a pass/fail basis.

Courses Offered:

- Stress and Time Management (42 hours)
- Introduction to Business (42 hours)
- Study Skills & Communications (42 hours)
- Logic and Methods of Reasoning (42 hours)

VI.2 SUMMER CAMP

The CEP offers a six-week summer camp for children 6 to 12 years of age. The well-rounded program and experienced staff provide an extraordinary summer experience for children. Participants engage in various activities including cooking, basketball, tennis, music, drama, gymnastics, Wushu, art, swimming, storytelling, and board games.

VII. TAILORED CORPORATE TRAINING PROGRAM

The CEP organizes tailored workshops and seminars to meet organizational training needs. Trainings have been delivered to companies in a wide range of industry sectors. The strength of the corporate training programs lies in the ability to customize the training material to the clients' needs. In addition, the capacity building and quality control mechanisms allow the CEP to handle large numbers of on-site training.

In addition, many of the on-site corporate training programs and workshops are designed around the working schedules of individuals and employees. All training materials are created with clearly defined learning objectives that include skills, knowledge, and abilities.

VIII. CEP OUTREACH

VIII.1 CEP ENTRANCE EXAM PREPARATION PROGRAM

LAU has conducted off-campus university entrance preparatory programs in Nabatieh, South Lebanon, Lebanese Catholic Schools and the Makassed Islamic Association Schools.

VIII.2 CEP AND THE MAKASSED PHILANTHROPIC ISLAMIC ASSOCIATION PARTNERSHIP

This outreach partnership offers several education and training programs for recent Makassed graduates, alumni members, and any individuals interested in joining the workforce or pursuing higher education. These programs are open to all Makassed students, boys and girls, who have successfully completed and passed grade nine.

VIII.3 CEP AND CREATION LEARNING CENTER-HOMS, SYRIA AND UNLIMITED HORIZONS CENTER-DAMASCUS, SYRIA

Three banking programs are offered on specialized skills for excellence in Syria in the areas of:

- Banking Management
- Islamic Banking and Finance
- Insurance and Islamic Insurance (Takaful)

Division of Continuing Education Program

For the program's topical outline and details:
(http://cep.lau.edu.lb/cep_strategic_partners.php)

VIII.4 CEP AND THE SAFADI FOUNDATION IN TRIPOLI, LEBANON

In its efforts to expand its outreach a new partnership was signed with the Safadi Foundation to offer a variety of programs and workshops that meet the needs of the local business communities in North Lebanon.

For further information, contact the CEP Office at Tel. 1290 Ext. 222 or email: cep.tripoli@lau.edu.lb.

VIII.5 CEP AND THE SECONDARY EVANGELICAL SCHOOL OF ZAHLE IN ZAHLE, LEBANON

In its efforts to expand its outreach, a new partnership was signed with the Evangelical School of Zahle to offer a variety of programs and workshops that meet the needs of the local business communities in the Bekaa region.

For further information, contact the CEP Office at 08-800-214 or email: cep.zahle@lau.edu.lb



Campus Facilities

Campus facilities services are aligned strategically and operationally with the University's strategic plan, as well as with the respective support service and core functions. Campus facilities services are committed to delivering, sustaining and providing quality support services in addition to providing a range of physical campus planning services to guide future and present development. The goal is to deliver facilities services in an efficient, cost effective manner while maintaining and delivering an excellent service that meets the University's Strategic objectives on all campuses.

Although many resources are available across campuses for specific needs, the following are broadly available to all students to help them pursue academic goals and achieve greater skills for life-long learning: University Library, Smart Classrooms, Computer Labs, Writing Centers, Learning Centers, Laboratories, Simulation Labs, Auditoriums, Exhibition Halls, Gymnasiums, outdoor playing fields and ball courts, indoor swimming pool, aerobic studios, dancing rooms, workshops, common areas, cafeterias, student housing, IT and Computing, multi-purpose rooms, testing rooms, etc. As a framework for future physical development, the Campus Master Plan establishes overall goals, objectives, and design principles that are aligned with the University's overall strategic context. It also provides long range planning for architecture, land use, space use, landscaping and grounds, parking, and infrastructure. It includes proposed new building growth while at the same time addressing replenishment of buildings and defining outdoor spaces that unify all functions of the University.



BEIRUT CAMPUS

LAU's 25,368 square meters, built up areas of 54,235 square meters and 4,000 square meters of greenery, in the heart of a residential neighborhood in Ras Beirut, provide the perfect surroundings for the campus facilities, from Sage Hall, the first building dating to 1933 to the newest facility, the Underground Parking, Library and Business Buildings, completed in 2005. To meet the growing University facilities' needs, off-campus spaces of 3,580 square meters are rented to provide additional dormitories, administrative units and storage spaces.

Currently, 12 buildings surround the central campus green, which is beautifully landscaped with Mediterranean trees and foliage. Several buildings are undergoing renovation to meet the development space needs of the University. The LRC Building will undergo major renovation to serve as a state of the art Student Center with the finest and most modern indoor spaces. Components of the complex include recreational areas, lounges, student club offices, one-stop shop, health office, Red Cross Office, student-related administrative offices, etc. The Campus Cafeteria, the social hub of the campus, will undergo a major upgrade in summer 2012 in addition to providing a cyber café to enrich and stimulate the vibrant, engaging, and educational environment. Shannon Hall Building is under renovation to revitalize the Early Childhood Center and provide additional offices in support of the academic goals and developments. Furthermore, there is the major renovation of the Campus Infrastructure, Data Center and Building Systems and that of the Faculty Apartments Building that is rendered to group mostly all University services offices.

Looking forward to optimizing land and translating academic programs into physical concepts, a space program along with a feasibility study is underway for the construction of new facilities; the School of Arts & Sciences Complex and the Classroom Building.



Campus Facilities

BYBLOS CAMPUS

The Byblos Campus is a home for 14 buildings, with land area of 172,584 square meters, built up area of 42,060 square meters, and 8,000 square meters of greenery. Parking services provide a full range of parking and transportation-related services. Faculty, staff, students, and visitors are served in their day-to-day parking needs whereby 1,130 outdoor car parks and 87 indoor parking spaces are supported. Campus buildings provide space and facilities for vital functions that are distinctive and complementary to the academic programs. In support of the student services, off-campus spaces of 1,600 square meters are rented in addition to the major renovation of Dorms C Building to provide additional dormitories for students.

The ideal climate, historic landmarks, numerous attractions, city environment and fast road network provide an inviting campus environment for an institution of higher learning.

Underway, several on-going major capital and renovation projects are under design and execution to maintain a safe, beautiful and functional campus environment. The Medical, Nursing, and Pharmacy Schools Building with a built-up area of 15,500 and 5,000 square meters of greenery, located at the center of the upper Byblos Campus, will be completed in June 2012. It houses academic and modern simulation labs, research labs, multi-disciplinary research labs, a large anatomy lab, a 200-seat auditorium, smart classrooms, high-tech case method rooms, exam rooms, a medical library and reading lounges, open interactive space, a cyber cafe , etc. The University Medical Center – Rizk Hospital serves as the primary teaching hospital for LAU's Schools of Medicine, Nursing, and Pharmacy.

The other project consists of constructing a five story 19,000 square meters Underground Parking that will eventually house around 625 cars that will become usable in year 2013. Additionally, the Byblos Campus services will be enhanced by centralizing the Campus infrastructure plants in a remote site, serving the Campus through an underground tunnel system to supply electricity, potable, chilled, and hot water, to new facilities, as well as data and communication lines.

In the alignment of the University capital plan with academic goals and resources, the Engineering Workshops and Labs Building is in its design phase. Looking ahead, the envisaged constructions in Byblos Campus will include also the Library and Central Administration Building and the Sports Building.



Student Life

STUDENT & UNIVERSITY POLICY

The Lebanese American University is committed to the total development of its students. As stated in the Student and University Policy, the University “seeks to develop responsible students with leadership skills, and community awareness... LAU shall provide its students with opportunities to develop academically, physically, intellectually, socially, and morally, in order to meet the challenges they may face in life.”

OFFICE OF THE DEAN OF STUDENTS

Drawing its inspiration from the Lebanese American University’s mission to educate the whole person, the Office of the Dean of Students is charged with providing students opportunities for academic growth and personal development in order to enrich the student’s overall experience at LAU. Each student is seen as a professional in training, deserving high-quality service and personalized attention.

1. New Student Orientation Program (NSOP)

The new student orientation program is organized by the Office of the Dean of Students in the beginning of the Fall and Spring of each semester in order to acquaint new students with university life to become active members of the LAU community.

NSO aims to:

- Introduce students to various academic programs, services and activities that will support their academic and personal success;
- Orient students towards advising and registration;
- Introduce students to the main resources available on campus; and
- Address issues and problems that students may face.

2. Counseling Services

Counseling is designed to help students address academic, personal, and emotional concerns. Counselors meet with students on a regular basis to:

- Discuss different problems students are facing which might have negative effects on their academic progress;

- Provide help to students with non-academic problems, thus developing needs assessment and evaluation forms;
- Evaluate different cases and decide on referrals to professionals as needed;
- Keep detailed, accurate and updated records of all cases; and
- Follow up on existing and previous cases to minimize future problems.

3. Professional Advising Services

Professional advising aims to help students overcome academic difficulties, probationary status, and concerns regarding academic issues. Through individual meetings, the academic advisors help students to identify the factors that contribute to their academic difficulties and try to give them the right academic advice.

Advisors meet regularly with students to:

- provide accurate information regarding policies, procedures, regulations, educational options, major and minor requirements, curricula, registration procedures, deadlines, etc.;
- Advise students to repeat courses in which they failed;
- Refer students to available programs, or support services when needed;
- Help students understand the purposes, opportunities, and challenges of higher education;
- Advise freshman students in matters related to meeting the requirements of the schools for major declaration, fulfilling the requirements of the Ministry of Higher Education for the equivalence of the Lebanese Baccalaureate, transitioning from high school to college, etc.;
- Act promptly on progress reports sent by the faculty to help students with difficulties;
- Guide students in planning courses of action to correct academic difficulties;
- Respond to parents’ inquiries;
- Cooperate with Academic Advisors to solve students’ problems; and
- Encourage students to join LAU activities and clubs.

The professional advisors coordinate with the career advisor in order to help students understand how their interests, abilities and passion can predict success in the academic and career fields that they are considering, and then helping them to choose their academic and career goals accordingly.

4. Career Guidance Services

Career Guidance is provided to Graduate and Undergraduate students. The Career Advisors encourage students to explore career options, develop effective planning skills, create job plans, identify career goals, and learn the necessary skills to succeed in chosen professions. Courses of action are recommended, based on the objectives expressed by students.

The Career Advisors work with students to:

- Clarify their academic and career interests, and to help them choose the right major;
- Identify connections between each student's major and career options;
- Research potential employers;
- Discover job search strategies;
- Acknowledge skills and strengths;
- Write effective résumés and cover letters;
- Prepare for interviews;
- Evaluate job offers from potential employers;
- Learn to negotiate salaries; and
- Determine a course of action to meet career objectives.

The university hosts annual Career Fair and Internship Fair in which local and international companies offer LAU students full-time, part-time, and internship opportunities. Moreover, Career Guidance collaborates closely with the Alumni Office to help meet the employment needs of recent graduates and long-term alumni.

5. Health Services

The Health Services office at LAU provides primary health care to students and serves as an information resource for the campus community through its organization of several health-related campaigns each year.

The Health Services offices operate under the supervision of full time registered nurses.

The offices provide the following services when the university is in session:

- Acute illness evaluation and treatment;
- Emergency assistance and first aid;
- General medical/nursing care;
- Medications supply of over-the-counter drugs for emergency relief;
- Blood pressure checks;
- Blood sugar level assessment;
- Eating disorder and nutritional consultation;

- Health counseling and education;
- Health promotion programs and information;
- Referrals to community health-care providers or specialists; and
- Verification of absences to professors and release of a signed notification of extended absence due to medical reasons.

All consultations and medical records are kept completely confidential. No information is ever discussed with or released to anyone without the patient's consent. Medical records and academic records are not connected in any way.

6. Extra-Curricular Activities

LAU students organize, and participate in extracurricular activities, through a variety of campus clubs dedicated to cinema, music, debate, drama, the Red Cross, human rights, social work, international affairs, and many others in different areas of students' interests. The Office of the Dean of Students coordinates the formation of clubs, and Faculty Advisors provide assistance towards achieving club objectives.

7. International Student Program And National Cultural Clubs

With the different nationalities represented on its campuses, LAU has developed programs to help international students adapt to the Lebanese way of life, as well as to fully integrate into the University community. Through various national cultural clubs, students network with peers from their countries, while learning to appreciate and celebrate diversity. LAU celebrates the richness of such diversity through annual activities such as the International Heritage Day Exhibitions, International Students Athletics Tournament, and others.

8. Student Honor Society

LAU students with a cumulative GPA of 3.5/4.0 or higher, upon completion of 24 credits, are honored at an annual ceremony where they receive awards and certificates of appreciation. To further recognize academic achievement, students with the highest Cumulative GPAs in each school receive a financial award during the ceremony.

9. Student Publications

The Office of the Dean of Students coordinates, and supervises the production of publications, such as the *Trireme* (Yearbook), the *Student Agenda*, and other publications that help

students become more acquainted with relevant services and information, including regular Health Awareness publications and others.

10. Student Representation

LAU has Campus Student Councils, as well as a University Student Council. A constitution to that effect was approved by the Board of Trustees in September 2006, and the Bylaws were written by a Committee of students and University officials.

The Student Council:

- Represents the students in the regulation and coordination of all phases of student governance;
- Promotes the LAU's highest interest;
- Cultivates its culture as stated in its mission and vision;
- Advances the welfare of the LAU student population;
- Enhances campus atmosphere and life through extra-curricular activities; and
- Acts as an effective liaison between the students, faculty, staff and administration.

11. Athletics Office

LAU's athletics program plays a vital role in the academic and extracurricular life of students. The program's mission is to provide athletic training, education, and competition opportunities for LAU students. The LAU Athletics Office offers a wide range of sports and extra-curricular activities which are well suited to the needs of our students and the LAU community.

The following sports/activities are currently offered: Aerobics, basketball, fitness, folk dance, Latin dance, Jazz dance, swimming, table-tennis, taekwondo, Thai kickboxing and tennis all as extra-curricular activities; while basketball, futsal, swimming, table-tennis, taekwondo, Thai kickboxing, tennis, track & field (whenever possible), soccer and volleyball (all for men & women), and men's handball and rugby league are also offered as varsity sports. Badminton (men and women) has recently been added.

Throughout the year, the LAU Athletics Office organizes intercollegiate, intramural, high school, and international tournaments, in addition to participating in other local, regional and international events. Most of the varsity teams get exposed to high-level competition,

locally and internationally, and play in a regular championship league season against some of the officially recognized universities and colleges in Lebanon. At the end of each academic year an Athletics Awards banquet is held to recognize and honor LAU's best and most dedicated athletes and coaches.

12. Residence Halls

LAU provides Residence Halls for its students on both campuses.

In Beirut, Orme-Gray Residence Hall is for females and Capital Suites for males. In Byblos, there are 3 separate Residence Halls: Dorm B divided into two wings, one for men and one for women, Maatouk Building, for women, and Dorm C, for men. On each campus, a residence hall supervisor and a team of assistants run the dormitories, and provide social and extra-curricular activities for resident students. The facilities are comfortable, contributing to the students' academic and social needs.

In Beirut, the rooms are nicely furnished with beds, desks, cupboards, safety boxes, bed sheets, covers, cable TV, internet connection, telephones, central heating and air conditioning. Fully equipped common kitchens and laundry rooms are available. Toilets and showers are also common areas. The dorms have lounges equipped with piano, TV, computers with Internet connections and vending machines. 24 hours security and provision of safety training are provided.

In Byblos, the rooms are also nicely furnished with bathrooms, beds, desks, cupboards, safety boxes, bed sheets, covers, refrigerators, TVs, telephones... Wireless internet, cable, and individual heating and air conditioning are available in all rooms and apartments. Fully equipped kitchens and laundry rooms are available in all the buildings. The halls also provide cleaning and maintenance services, 24-hour security, lounges equipped with cable TV, DVD player, computers, free internet access, and vending machines. The common areas are all monitored round-the-clock by CCTVs. Student resident assistants live on-site and help familiarize residents with the buildings and available resources as well as hall policies.

Students who wish to reside on campus must submit an application as soon as they are accepted to LAU.

OUTREACH AND CIVIC ENGAGEMENT

STUDY ABROAD AND INTERNATIONAL EXCHANGE

LAU is an official member of two prestigious higher education international networks, the Institute of International Education [IIE] and the Council on International Educational Exchange [CIEE] thus putting LAU on the map of international institutions and linking it to a network of over a thousand universities worldwide.

Through such international networks, the Study Abroad office aims at facilitating and supporting international exchange programs with prestigious accredited universities in different regions of the world. For that purpose, the Study Abroad office:

- Initiates communication with international universities and directs their proposals to the concerned School/Department;
- Works closely with faculty on developing and running student exchange programs;
- Plans and communicates effectively with the sending and receiving universities;
- Advises students on the different study abroad opportunities available at LAU that match their qualifications; and
- Supports incoming and outgoing students through their study abroad experience by administering orientation programs, and providing professional advising on different related matters such as visa procedures, housing, registration and transfer of credits processes.

VOLUNTEERISM AND THE OCE

One of the main aims of the Outreach and Civic Engagement Unit is to bridge the gap between LAU and the communities around it. Through its various range of activities, workshops and fundraisers, the OCE encourages and empowers students to reach out and become agents of constructive change in their society.

LAU NGO Fair:

Every year, the OCE organizes an NGO (Non-governmental Organization) fair inviting dozens of NGOs to LAU to promote social awareness, internship and opportunities amongst students.

LEADERSHIP PROGRAMS, WORKSHOPS AND OUTREACH ACTIVITIES

The OCE provides LAU students with leadership opportunities, training and workshops. Its programs take on an experiential approach where students practice leadership in different contexts.

LAU Model United Nations: A School of Leadership "Par Excellence"

Every year, LAU invites top middle & high school students from around Lebanon to participate in the university's Global Classrooms LAU Model United Nations program, established in 2005.

Students attend a series of training sessions about UN procedures, negotiations and public speaking skills, caucusing, and position paper and resolution writing. The program bestows on participant's global cognition about international diplomacy and proven leadership skills.

Participation has surged from 541 students and 76 schools in 2006 to about 1,600 students and 143 schools in 2012. A once in a lifetime opportunity is given every year to a group of high school students to participate in the international High School Model United Nations conference, held by the United Nations Association of the United States of America in the UN headquarters in New York.

LAU MODEL ARAB LEAGUE PROGRAM

In 2011 LAU signed a Memorandum of Understanding with the National Council on U.S.-Arab Relations (NCUSAR) and now has the exclusivity and the right to use the title of "Model Arab League" as the project to be implemented in Lebanon. Consequently, LAU has partnered with the Hariri Foundation for Sustainable Human Development (HFSHD) to implement the first MAL program in Lebanon.

The LAU MAL program helps engage students from various religious and political backgrounds in Lebanon to discuss various social, political, and economic subjects that are affecting and shaping the Arab World. Representing one of the Arab League's 22 member-states, student delegates work to achieve consensus on questions that diplomats face every day.

THE LEADERSHIP AND U MAGAZINE

The Leadership and U Magazine is a student led magazine that operates under the guidance of the Outreach and Civic Engagement

Student Life

Department and provides students with a platform to express themselves, share their passions and make themselves heard while keeping the overarching view of leadership in perspective.

THE USAID UNIVERSITY SCHOLARSHIP PROGRAM

The USAID University Scholarship Program targets public high school needy and academically qualified Lebanese students from all regions of Lebanon.

The objective of the program consists in providing quality education in the fields of education, nutrition, communication arts, engineering, business, computer science and nursing, and to integrate the students in the leadership and civic engagement activities of LAU so that they acquire the necessary cognitive and leadership skills that will permit them to develop their own communities.

OCE manages this University Scholarship Program once students enroll at LAU.



Admission to undergraduate programs

GENERAL ADMISSION REQUIREMENTS

Applicants must submit the following¹ :

- a. The Admissions Application Form, available at the Admissions Offices or online at www.admissions.lau.edu.lb
- b. The High-School grades of the last three years. The grades should be sent in a signed and sealed envelope, directly to the Admissions Office. The grades of the last year, or semester should also be sent as soon as they become available.
- c. The official scores of the SAT exams.
- d. A photocopy of the Identity Card or Passport (this should be the same as all the nationalities declared in the application form).
- e. Two recent passport-size colored photos.
- f. A non-refundable application fee of \$50 (L.L. 75,000) payable either in cash, or by credit card for online application.
- g. The official Secondary School Certificate and its official Lebanese Equivalence, as soon as they become available.
- h. The Official Freshman enrolment permission and/or the Official exemption from Arabic (issued by the Ministry of Education in Lebanon), if applicable.
- i. Transfer applicants must submit an official transcript of grades, and a catalogue from all the colleges, or universities, they have attended. Undeclared transcripts will not be accepted after enrolment.

Note: students who are U.S Citizens or U.S. green card Holders must submit along with the application the W-9S form that could be downloaded at www.lrs.gov

ENGLISH PROFICIENCY REQUIREMENTS

English is the official language of instruction at LAU and applicants must demonstrate their proficiency in the language by taking one of the following tests:

- a. English as a Foreign Language (TOEFL)
- b. English Entrance Exam (EEE) administered by LAU, which may be repeated at a one month interval.
- c. SAT I Writing.

For minimum required test scores, please contact our Admissions Offices.

1. All submitted documents become the property of LAU and will not be returned.
2. Applicants taking the TOEFL should sit for the international test. Institutional TOEFL is not accepted at LAU. When registering for the SAT I, SAT II or TOEFL, please use LAU's code: 2595.
3. The Professional Schools are the School of Pharmacy, Medicine and Engineering.

ADMISSION TO THE SOPHOMORE CLASS

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

- a. Holders of one of the four types of the Lebanese Baccalaureate:
 - i. General Science
 - ii. Life Science
 - iii. Economics and Sociology
 - iv. Literature and Humanities
- b. Holders of the Technical Baccalaureate
Applicants under this category may only choose programs in the same area of specialization as those of their technical degree, or as assigned by the Ministry of Education.
- c. Holders of the official Secondary School Certificates, equivalent to the Lebanese Baccalaureate such as the French Baccalaureate, the International Baccalaureate Diploma, the German Abitur and the Tawjihieh.
Lebanese applicants under this category must obtain an official equivalence from the Lebanese Ministry of Education.
- d. Applicants who have successfully completed two years of the CEGEP (Collège d'enseignement général et professionnel) in Québec, Canada.
- e. Applicants coming from the British system, who have completed a minimum of three subjects at the Ordinary Level, in addition to two subjects at the Advanced Level, or four Advanced Supplementary subjects, excluding languages.

Please note that above applicants with a permission from the Equivalence Committee of the Lebanese Ministry of Education to pursue their education in a foreign program are automatically exempted from the Arabic requirements.

ADMISSION TO THE FRESHMAN CLASS

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

- a. Holders of the High School Diploma.
- 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, excluding languages.
- c. Applicants who have successfully completed one year of the CEGEP (Collège d'enseignement général et professionnel) in Québec, Canada.
- d. Holders of the International Baccalaureate certificate from outside Lebanon.

Admission to undergraduate programs

Holders of a GCE (General Certificate of Education) certificate with only O-levels subjects do not qualify for admission.

Lebanese applicants to the Freshman class must obtain, prior to their registration, a permission, from the Equivalence Committee of the Lebanese Ministry of Education, stating that the student is allowed to enrol 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 sit for the SAT I prior to admission but may choose to take the SAT II exams, during the Freshman year i.e. the first year of enrolment at LAU.

The Equivalence Committee specifies a minimum score of 2600 for Freshman Arts, and 2750 for Freshman Science, for the six subjects of SAT I and SAT II combined.

The subjects in the SAT II exams, required for applicants to the Freshman Science, are:

- a. Mathematics 2C
- b. Two sciences from Biology, Chemistry, or Physics

The subjects of SAT II exams, required for applicants to the Freshman Arts, are:

- a. Mathematics I or IC
- b. Any two subjects can be chosen from the SAT II subject tests.

ADMISSION OF TRANSFER STUDENTS

- a. Students who have successfully completed 12 credits will not have to sit for any Placement Exams. Students who have successfully completed less than 12 credits have to sit for the SAT I.
- b. Transfer applicants must submit official transcripts of records, as well as academic catalogues from all the previous colleges, or universities, they have attended, along with the application for admission.
- c. The School concerned and the Registrar's Office evaluate the credits and determine the acceptability of courses to transfer. This is usually made before the time of registration.
- d. Transfer students coming from an institution of higher education recognized by LAU where English is the language of instruction, are not required to take the EEE or TOEFL. However, 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 an institution of higher education recognized by LAU where English is not the language of instruction, are required to take the EEE or the TOEFL.

- e. Transfer students coming from an institution of higher education not recognized by LAU may be conditionally accepted after satisfying the English requirements for admission at LAU. If accepted, their admission will be on probation with no transfer of credits. They must complete 12 new credits in the first semester of enrolment at LAU, 6 of which must be major courses, and achieve a minimum GPA of 2.50/4.00. Then, they may petition to the School concerned for transfer of credits if applicable.

ADMISSION FOR A SECOND DEGREE

Applicants for the second degree must apply for admission and must complete all the requirements of the School in which they intend to enroll.

VALIDITY OF ACCEPTANCE FOR ADMISSION

Acceptance at LAU is valid for one semester. Admitted students who do not register will need to fill out and submit a "Reactivation Application" at the Admissions Office.

SPECIAL PROGRAMS

Special Students are those who are eligible for admission, and choose to take courses for credits, without working towards a degree. Students under this category 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 an institution of higher education recognized by LAU, where English is not the language of instruction, are required to pass the EEE, or the TOEFL.

1. All submitted documents become the property of LAU and will not be returned.
2. Applicants taking the TOEFL should sit for the international test. Institutional TOEFL is not accepted at LAU. When registering for the SAT I, SAT II or TOEFL, please use LAU's code: 2595.
3. The Professional Schools are the School of Pharmacy, Medicine and Engineering.

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 (UCC) to study any suggested changes to the Academic Rules and Procedures, and to submit its recommendations to the University Planning Council for final approval.

It shall be the responsibility of the Admissions' Offices, and the University Admissions Council, to ensure 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 to observe the rules herein.

It shall be the responsibility of the Guidance Offices, and the Academic Advisors, to give general guidance to students.

It shall be the responsibility of every student to study, and to 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 and submitting it by the specified deadlines. Once they transfer, they must register for, at least, 2 regular semesters in the new campus, before they are allowed to transfer back.

B. CHANGE OF MAJOR

1. A student may request, at any time, from the School concerned, to change their major. The Admissions' conditions, and/or 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 with an approved Change of major will have the option of dropping, from the Grade Point Average (GPA)

computation, the grades of 3 courses taken at LAU, belonging to the requirements of the old major and not to any requested new major. Only grades C and below can be deleted.

3. Students must submit a request to have their grades deleted at the Registrar's Office, no later than one semester of the Change of major, and not after graduating, or after leaving the University for more than 2 consecutive semesters. This rule applies for changes of major within a School, or when a student transfers from one School to another.

4. Students who benefited from the above stated rule in C.2., cannot return to their old major, and cannot request to have their major changed, again, to any major which requires a course whose grade was deleted from the GPA computation.

C. FRESHMAN STUDENTS REGISTRATION IN SOPHOMORE COURSES

All students enrolled in a Freshman program who only lack ENG 102 to complete their Freshmen requirements, may be allowed by the University Admissions Council to declare a major. These students must register in ENG 102 during the first term of registration in the new major. Lebanese students, and students who are required to have the equivalent of the Lebanese Baccalaureate II, must have passed the SAT I and SAT II examinations with the required scores, prior to being admitted to a major. Students in this category who fail to pass the ENG 102 course in the first term of registration in the new major, are required to complete 3 additional non-Freshman credits, over and above the requirements for the Bachelor degree.

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 score 500 or above, on the English Entrance Exam (EEE), or the equivalent in the Test of English as a Foreign Language (TOEFL).
 - b. ENG002 students must pass the Intensive English course 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

Academic rules and procedures for undergraduate programs

from the Arabic or Math disciplines, in addition to a Physical Education course upon advisor's consent.

E. ENGLISH REQUIREMENTS

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, (3 credits), and ENG102 English II, (3 credits) before 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 6 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 3 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 IECE, 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 2 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, on the assigned dates, is required of all students, in accordance with the posted procedures and regulations. Late registration is subject to a Late Registration Fee. Intensive English students, transferring students, cross-registering students, and students on double probation, as well as 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 enrol in a course if he/she has an Incomplete grade in their prerequisite(s).
5. In exceptional cases, the Chairperson may give special permission for registration if points 3 and 4, listed above, are not met.

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 the Professional Schools.
2. Students with a cumulative GPA of 3.00, and above, are allowed to carry up to a maximum of 21 credits.
3. Students, in their last semester of graduation, may register for a maximum of 21 credits, provided they are in good academic standing.
4. Students who are on probation are not allowed to carry more than 13 credits in regular semesters.
5. The maximum course load per Summer module is 7 credits. Students registering in some courses that span both summer modules (1 & 2) may register for more than 7 credits per module but not to exceed 14 credits total for both modules.
6. Students in the Professional Schools, who are registered in the Internship courses during the Summer modules, may be allowed to exceed the total allowed credits for the Summer, provided the requirements for the internship are fulfilled beyond the Summer modules.
7. In regular semesters, and in special cases, the Academic School Council may allow students to exceed the allowed maximum load, within the constraints of the University Charter.

C. REGISTRATION FOR PASS/NOT PASS COURSES

1. Students may choose to take free elective courses (Sophomore level and above) over and above the University requirements, and the major requirements, on a Pass or No Pass basis.
2. Courses taken on a Pass or No Pass basis will not count in the GPA, but the credit hours successfully completed will be counted towards graduation. The Pass

Academic rules and procedures for undergraduate programs

grade is given when the grade in the course is C, or above.

3. Students are not allowed to take more than one course per semester on a Pass or No Pass basis.

D. REGISTRATION FOR TUTORIAL COURSES

In exceptional cases, students are allowed to take courses on a Tutorial basis, subject to the following:

1. Students may apply for a Tutorial in their junior and senior years in the School of Arts and Sciences, and the School of Business, or during their last two years in the Professional Schools, provided they have completed, at least, 30 semester credits at LAU, with a GPA of 2.50, and above, or they are students who are graduating with a BA/BS Degree, and whose courses, in their last semester at LAU, are not offered.
2. Permission may be granted to a student to enroll in a Tutorial by the School Council, if all of the following conditions apply:
 - a. A substitute is not offered at LAU.
 - b. The approval of the Advisor and the Division Chairperson is secured.
 - c. The School Council approves a petition of the student to be allowed a Tutorial before the beginning of the semester.
3. The Division Chairperson and/or the Academic Dean shall select the appropriate instructor for the Tutorials.
4. No student may take more than two courses as Tutorials in their Undergraduate Program. These credits shall not be taken in one semester. Non-graduating students should take, at least, nine other credits in regularly scheduled courses, or, at least, one other regularly scheduled course during the Summer.
5. Applied courses (labs and studios), and those being repeated, shall not be taken as Tutorials.
6. Tutorials involve close and regular monitoring of the student's progress, therefore, course requirements, and the grading standards, set in a regularly scheduled course should apply to a Tutorial.

E. COURSE CHANGES AFTER REGISTRATION

Changes in registration are permitted, subject to the following provisions:

1. No course may be added or a change of section be made or the type of registration for a course (P/NP, audit...) be changed after the end of the Drop/Add period.
2. If a student drops a course within the Drop/Add period, no grade is recorded for that course and its fees will not be included in the Statement of Fees. Students who officially withdraw after the late registration period will receive a W. Withdrawing from courses is allowed only before the end of the 10th week of the fall and spring semesters, and before or on the 18th day of a summer module.

F. COURSE SUBSTITUTION

Course substitutions in the major courses may be made, under special circumstances, before final registration for the course, and upon the recommendation of the Department/Division concerned, and the approval of the Academic School Council. Substitution of the University requirements needs the approval of the Curriculum Council.

G. CROSS-REGISTRATION

1. Cross-Registering Between LAU Campuses

Students may be allowed to Cross-Register by following the Cross-Registration Procedures stated below:

- a. Fill in an intercampus Cross-Registration Form.
- b. Secure the authorized signatures of the Advisor, and the Chairperson of the Division offering the course.
- c. Have the courses registered in the Registrar's Office.

Students Cross-Registering 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 campus of origin of the student. This condition applies for regular semesters only, hence Fall and Spring semesters. During the Summer modules, students can Cross-Register for as many credits as they wish, within the limit allowed by the student's course load regulation.

2. Cross-Registering to Other Universities in Lebanon

Cross-Registration to another university in Lebanon may be allowed, only if a course in the

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last term 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. Students should pay at LAU.

The students must follow the following procedure:

- a. The student must fill out the Cross-Registration Form and a Regular Registration Form, and have them approved by the Advisor, and the Division/Department Chairperson.
- b. The student must secure the signatures of the Business Office, and the Registrar's Office at LAU, and forward this to the registrar at the other institution.
- c. After completing the registration and securing the authorized signature, in the space provided, at the other institution, the student must return the proper copy to the LAU Registrar's Office.

No credit will be given for a course taken at another institution unless the above stated procedures are followed..

3. Registration in universities outside of Lebanon.

Students who, during their study at LAU, decide to take courses at universities outside of Lebanon should follow the following steps:

1. Prior approval of the Academic School Council is needed in order for the course to be transferred.
2. It is the duty of the student to provide the Academic School Council with the catalog, course description, and syllabus of the course(s).
3. The course(s) should not be a repeat.
4. The course(s) should not be within the last 30 credits needed for graduation.
5. The course is to be considered a transfer course.

A course may be transferred only if the student's grade in the course is equivalent to C, or above. Transferred courses are not included in the GPA computation.

H. REFUND POLICY

Courses dropped after the Drop and Add period will not be refunded, and a grade of W will be recorded.

I. AUDITING COURSES

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.

III. WITHDRAWAL FROM THE UNIVERSITY

Students wishing to withdraw from one or more courses must follow the Withdrawal Procedure provided by the Registrar's Office.

Students withdrawing from courses after the Late Registration Period, and before the Withdrawal Deadline (the end of the 10th week of the Fall and Spring semesters, and before or on the 18th day of a Summer module), will receive a "W" on all the courses in progress.

IV. RE-REGISTRATION

Students who fail to register for, at least, one regular semester (Fall or Spring) are required to reactivate their files at the Registrar's Office, before the registration period. If they do not register for four consecutive semesters they will have to re-enroll, according to the existing curriculum upon their return.

V. CLASSIFICATION OF STUDENTS

Students are classified as Full-Time when they enroll in 12 credits and above, and they are considered Part-Time when they enroll in less than 12 credits per semester.

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A. DEGREE STUDENTS

Degree students are classified as follows:

<i>Classification</i>	<i>Credit Hrs Completed</i>
<i>Freshman (1st year)</i>	<i>0 - 29</i>
<i>Sophomore (2nd year)</i>	<i>30 - 59</i>
<i>Junior (3rd year)</i>	<i>60 - 89</i>
<i>Senior (4th year)</i>	<i>90 - 119</i>
<i>5th year</i>	<i>120 - 159</i>
<i>6th year</i>	<i>160 and above</i>

B. SPECIAL STUDENTS

Students taking courses for credit but not working towards a Degree are classified as Special Students.

VI. ATTENDANCE REGULATIONS AND MAKEUP POLICY

A. ATTENDANCE REGULATIONS

Students are held responsible for all the 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 instruction, 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, after the Drop and Add period.

Such specific attendance regulations 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.

Students who exceed the allowed number of absences must withdraw from the course; otherwise, the course grade will be recorded as "F" (NP).

In highly exceptional cases, students may be given permission by the Academic School Councils to continue in the course.

B. MAKE-UP POLICY

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

Three days, to be made up according to a schedule set at the discretion of each Faculty member.

Seven days, to be scheduled by a decision of the University Planning Council, in consultation with the Faculty.

The 10 day period is seen as the period beyond which no makeup can be considered, and credit loss becomes inevitable. Alternately, the semester may be extended, and students may have to bear any additional expenses resulting from such an extension.

C. CLASS TIME

If the instructor is late to class, students are required to wait 15 minutes before leaving.

VII. 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 Division Chairperson, and the Registrar's Office.

When determining class size, the following guidelines will be followed:

Lecture courses	40 students
Language and Seminar courses	25 students
Studio, Lab, Internship, and Physical Education courses	20 students

Normally, an addition of no more than 10% will be used to account for possible attrition.

Academic rules and procedures for undergraduate programs

VIII. TESTS AND EXAMINATIONS

A. REGULATIONS AND PROCEDURES

1. Final examinations are held at the end of each semester and Summer module. Final examinations should not count for more than 40 percent of the course grade. At least two tests, and/or graded projects, should account for the remaining percentage of the course grade.
2. If a student absents himself/herself from a final examination, a grade of zero will be given for that examination. Accordingly, the course grade will be calculated, and reported, with a “missed final” note. If, within one week, the student submits 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 have his/her grade changed to an I, and to be allowed to sit for an examination, and have the final grade adjusted accordingly, within a deadline set by the School concerned, but not exceeding the deadline of Incomplete grades (refer to section IX-A Grading System). If a valid excuse is presented before the course grades are out, the Instructor of the course may give an Incomplete grade, if the conditions stated in Section IX-A are met.
3. Any incomplete work (refer to section IX-A Grading System) must be made up at a time planned with the Instructor, but no later than the eighth week of the following semester (Fall or Spring) in which the student is enrolled at the University. Otherwise, the grade of “I” is changed to an “F” (or an NP). It is the responsibility of the student to contact the Instructor to make the 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 no later than one full year after the end of the semester, or module, in which the grade of 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 grade of I was received.

4. Final examinations will not be scheduled on dates outside the stated examination period. In case of an 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.
5. No more than three final exams will be scheduled, per day, for any student. In case a student has more than three scheduled final exams in the same day, the student is entitled to have the final exam of the highest course number rescheduled.
6. When there are final examination conflicts between an LAU course, and a course at another institution, the student involved must resolve the conflict with the LAU instructors in advance.
7. When there are final examination conflicts among LAU courses, students must inform the Registrar’s Office by the deadline indicated on the examination schedule.
8. Students are entitled to 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 the following two regular semesters.
9. Some of the above rules, namely rules 1, 4, and 8, may not apply to the 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.
10. 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..

B. CODE OF CONDUCT DURING EXAMINATIONS

Students are expected to abide by the Code of Conduct during all the examinations. For more details on the conduct during examinations, kindly refer to the Student Code of Conduct.

Academic rules and procedures for undergraduate programs

IX. SCHOLASTIC STANDING

A. GRADING SYSTEM

The University Grading System uses a series of letters to which grade quality points are assigned. The Grade Point Average (GPA) is calculated according to a procedure outlined in the following section.

Grade	Quality Points
A	4
A-	3.67
B+	3.33
B	3
B-	2.67
C+	2.33
C	2
C-	1.67
D+	1.33
D	1
F	0
P	No quality points
NP	No quality points
U	No quality points
W	No quality points
I	No quality points

- Grade A indicates work of excellent quality. It is valued at four quality points for each credit hour.
- Grade B indicates work of good quality. It is valued at three quality points for each credit hour.
- Grade C indicates a satisfactory achievement. It is valued at two quality points for each credit.
- Grade D indicates the minimum passing grade, and is indicative of poor performance. It is valued at one quality point for each credit hour.
- Grade F indicates an unsatisfactory performance in the course. It has zero quality points. No credit will be added to the student's record.
- Grade P indicates a 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 average. It has no quality points.

- Grade NP indicates a failing performance in courses taken on a Pass/No Pass basis. No credits will be added to the student's record, nor will the average be affected. It has no quality points.
- Grade U indicates 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 indicates an 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 before the last two teaching days of the Summer modules. It has no quality points. It does not count in the average, and no credits will be added to the student's record. A Withdrawal Form must be submitted by the student to the Registrar's Office.
- Grade I indicates incomplete work. This grade is exceptionally given by the Instructor when a student, with a valid excuse, did not sit for the final exam, and/or did not present the final project. Students will not be entitled to an "I" grade, unless they have a passing grade of the completed material, throughout the course, and so long as they have not exceeded the allowed number of absences.

The "I" grade does not count in the average, and it adds no credits to the student's record.

Section VIII. A-3 of this document, explains how to have the grade of "I" changed to a different grade.

B. GRADE POINT AVERAGE (GPA)

All courses taken by a student at LAU will be included in the computation of the cumulative Grade Point Average. The Grade Point Average is the ratio of the number of points gained, to the number of credit hours attempted.

Example of semester GPA computation:

Course	Grade	Credit	x	Points	Total
ARA201 Arabic	D	3	x	1	3
BIO101 Biology	A	4	x	4	16
ENG102 English	C+	3	x	2.33	6.99
CST201 Cultural Studies	B-	3	x	2.67	8.01
HLT201 Basic Health	F	1	x	0	0
		14			34

Academic rules and procedures for undergraduate programs

The semester GPA = Total semester quality points/Total semester credit hours attempted.

The semester GPA for the five courses stated above would be: $34/14 = 2.42$

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

C. REPEATING COURSES

1. An Undergraduate student may repeat a course, up to two times, and will receive credit once for the course. It should be noted that a withdrawn course counts as a repeat. Students are not allowed to repeat a course in which they have earned a grade above "C+", or an Incomplete. When a course is repeated, only the highest grade earned in the course will be included when calculating the student's cumulative, and major, GPA.
2. Once a student registers in a course that was transferred from another institution, this transferred course will be deleted from the transcript, and replaced by the course, and grade, taken at LAU.
3. Courses taken at LAU cannot be repeated at another institution, and transferred to LAU. In cases where agreements between LAU and other institutions of higher learning exist, transfers may be authorized, provided that prior approval of the courses taken has been secured.
4. Students are not allowed to register in any course more than three times, including withdrawals. Students unable to get a passing grade after taking the course three times will be dropped from the University, or the Program, depending on whether the course is part of the General University Requirements, or the Program Requirements. Dismissal from the university and being dropped from a program will apply only if the repeated course is required in the major, specifically named in the LAC requirements, or required as a remedial course.

D. GRADES AND PROGRESS REPORTS

1. All semester grades must be turned in to the Registrar's Office no later than 72 hours after the particular final examination is given.
2. Course 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. Progress reports on weak students are to be submitted by the Instructor to the Guidance Office, no later than the eighth week of a regular semester, and the third week of a Summer module.

E. REQUIREMENTS FOR DEGREES

Degrees are awarded three times a year, namely: 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 modules (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 Certificate Program

- a. A minimum of 30 credits completed in a designated Program.
- b. The credits may be counted within the requirements of another Degree.
- c. A cumulative GPA of 2.00 in all the courses attempted in the Certificate Program.

2. Requirements for the Bachelor's Degrees

- a. Holders of the Lebanese Baccalaureate, or any official certificate equivalent to the Lebanese Baccalaureate, who are admitted to the Sophomore class, are required to complete a minimum of 92 credits, excluding Freshman-level and remedial courses.
- b. Students entering as Freshmen:
A minimum of 122 credits are required of all students entering as Freshmen. Non-Lebanese students entering as Freshmen need to complete the freshman requirements before switching to a BA/BS program. Lebanese students entering as Freshmen need to get the equivalence of the Baccalaureate, after completing the freshman requirements and before switching to a BA/BS program. Students cannot register in Sophomore level courses before completing the freshman requirements. After completing the freshman requirements, students will be considered as Sophomore students, and will be required to complete a minimum of 92 credits, excluding Freshman level and remedial courses.
- c. Credits for Baccalaureate II Equivalence: Credits taken in a semester at the end of which the Baccalaureate II equivalence is granted, and which are in excess of the 30 credits used for the equivalence, will be counted within the credits required for the

Academic rules and procedures for undergraduate programs

major. These extra credits should not be of Freshman level. Freshman courses taken after the Baccalaureate II Equivalence will not be counted towards graduation.

Transfer students who can obtain the Baccalaureate II Equivalence but are missing some LAU Freshman requirements will have to make up for the missing credits.

- d. A residency of a minimum of six regular semesters at an institution of higher education, provided that the last two regular semesters, and the last 30 credits, are done at LAU.
- e. 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 the requirements for the new Degree. No two B.A. or two B.S. Degrees may be received from the same School. A graduate from outside of LAU may work towards attaining another Bachelor's Degree, provided he/she completes all the requirements of the new major, a residency of at least two regular semesters, and at least 30 credits. Students holding a BA/BS degree who are transferring to LAU from institutions of higher learning that require a Liberal Arts core will have their Liberal Arts courses waived, except for the English requirements where LAU regulations shall apply. The School of Arts & Sciences will decide with regard to the Liberal Arts courses of BA/BS students transferring from other institutions whose curriculum does not include a Liberal Arts core.
- f. A minimum of 36 credits in a major, plus any additional courses required by the major.
- g. A minimum cumulative GPA of 2.00 is required in all the courses taken at the University. Transfer students will be given credit for all the transferable courses. Only courses taken at LAU will be counted in the students' GPA.
- h. A minimum cumulative GPA of 2.00 in the major courses is required.
- i. For transfer students, 50% of the credits corresponding to the required major must be completed at LAU.
- j. Students expecting to graduate are required to submit an application for graduation one semester prior to the graduation date, according to the deadlines set by the Registrar's Office.

- k. Students who completed their course requirements for graduation, but who have not acquired a minimum cumulative GPA of 2.00, and/or a minimum average of 2.00 in their major courses, are allowed to enroll for a maximum of 21 credit hours, 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 cumulative GPA, or GPA, computation. If taken for the first time, courses numbered 200 and above will count. Any such student who fails to graduate, at the end of that year, will be dismissed from LAU.

- l. Special rules pertaining to specific programs may apply and are listed under the program requirements in the Academic Catalog.

3. Requirements for a Minor

Students can work for a Minor by completing, with a minimum GPA of 2.00, the Minor requirements. These requirements should be completed before a student earns his /her Bachelor's Degree. No more than nine credits of transferable courses may be counted towards a Minor.

A student should declare at the Registrar's Office the minor he/she is pursuing as soon as possible, but no later than the deadline for the Application for Graduation (Clearance). The courses required for the minor at the time a student declares it shall apply. All the special cases will be handled by the School where the minor is offered.

Students who have graduated may petition the concerned school requesting that they be allowed to register as special undergraduate students in order to complete the requirements of a minor. The minor should be completed within one year of graduation.

4. Requirements for the Teaching Diploma

A minimum cumulative GPA of 2.00 must be achieved in the courses required for the Teaching Diploma. The Teaching Diploma is granted upon completion of 21 required credits beyond a BS or a BA Degree. No more than six credits of transferable courses may be counted towards the Teaching Diploma. Education courses counted in granting a Minor in Education may be counted toward the Teaching Diploma, only if not counted toward the Bachelor's degree.

Academic rules and procedures for undergraduate programs

F. ACADEMIC RECOGNITION

1. Students who complete, at least, 12 credit hours in a semester (not including Summer), with a GPA in the range of 3.20 and 3.49, are placed on the Honor List. If the GPA is in the range of 3.50 and 4.00, they are placed on the Distinguished List. The above applies, provided the students have no incomplete grades, nor is their cumulative GPA below 2.00. Courses taken on a Pass/No Pass basis are not considered among the 12 credit hours.
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 the 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 a grade of "F" or "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 20, or more, credits counted in the cumulative GPA.
2. If, at the end of any academic term, a student does not achieve a minimum cumulative GPA of 2.00 in all the 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 major.

X. ACADEMIC SUSPENSION

Students on Academic Probation will be suspended if they fail to remove the Probation in two consecutive semesters of enrolment at LAU (Summer modules excluded), regardless of any Incompletes and semester Withdrawal.

Students with two consecutive Probations, and whose cumulative GPA is below 2:00 will not be suspended at the end of the semester, only if they achieve the following:

A term GPA of 2.20, in a minimum of 12 attempted credits, totalling 26.4 quality points. If the student attempts less than 12 credits, a total quality points of 26.4 or more would still be required.

Students who may petition for a one semester grace period are those who lack 12 or less credit hours to graduate, and whose GPA for graduation is within possible reach in that one semester's grace. Such students who are given this chance and do not complete all the requirements for graduation, will be suspended.

Students who can avoid suspension upon changing the major may do so at any time.

Students with two consecutive Probations will not be allowed to register if they have an Incomplete grade.

XI. 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. 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.

Students readmitted, after suspension, will be placed on probation, and be given two semesters, excluding Summers, to remove the probation. If they fail to remove the probation they will be dismissed.

Academic rules and procedures for undergraduate programs

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 re-enrollment.

Students suspended 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 recognized by LAU, and completed a minimum of 12 credits, with an average of C, or higher. Students are urged to seek advice from the Registrar's Office about institutions whose credits may be transferred to LAU.
- b. The student has spent one full calendar year outside LAU engaged in activities that may improve his/her chances of academic success.
- c. The student who passes the Special Program of remedial courses, at the Continuing Education Program.

Students reaching suspension with a cumulative GPA of less than 1.20 will not be readmitted, and are dismissed.

Students who have been suspended twice, will not be readmitted, and will be dismissed. However, a dismissed LAU student may apply for reentry after three years of academic work in another university whose credits may be transferred to LAU, or seven years of work experience. Each case will be studied individually.



Admission to graduate programs

Admission to one of the Graduate Programs at LAU is granted 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 does not guarantee admission to the university.

ADMISSION REQUIREMENTS

Applicants must submit the following¹ :

- a. The Application Form, available at the Admissions Offices or online at www.admissions.lau.edu.lb
- b. Official Transcript of grades from all colleges or universities attended, to be sent directly to the Admissions Office. Failure to declare attendance in other institutions could result in an invalidation of admission, and any credits or degrees earned.
- c. Originals of all the educational and professional certificates.
- d. Recommendations from two professors who are familiar with the applicant's academic performance. In the case of work experience, a certificate of employment should also be supplied.
- e. Official scores of the Test of English as a Foreign Language (TOEFL)², or the English Entrance Exam (EEE) administered by LAU, which may be repeated at a one month interval.
- f. Applicants to the MBA must submit the official scores of the Graduate Management Admission Test (GMAT).
- g. Applicants to the graduate programs in the School of Arts and Sciences and the School of Engineering must submit the official scores of the GRE (it is mandatory for the MA, MS, and MSE programs).
- h. Applicants to the School of Medicine must submit the official score of the MCAT
- i. A photocopy of the Identity Card or Passport (should be the same as the nationality to be used in the registration).
- j. Two recent passport - size colored photos.
- k. A non-refundable fee of \$50 (L.L. 75,000) payable either cash or by check drawn on a Lebanese or US bank.
- l. An interview with the Graduate Admissions Council is required for the applicants to the School of Medicine and may be required to the other graduate applicants.

- m. The W-9S form should be filled and submitted by all applicants who are U.S. citizens or U.S. Green card holders.

For minimum required test scores, please contact our Admissions Offices.

ADDITIONAL ADMISSION REQUIREMENTS TO SPECIFIC PROGRAMS

- a. Applicants must hold a Bachelor's Degree, from a recognized college or university, with a minimum Grade Point Average (GPA) equivalent to 2.75, on a 4-point scale, and a GPA of 2.75, in the major courses of the major to be pursued. (Applicants to the MSE programs in Engineering must be holders of a BS or BE degree in Engineering).

For the MBA program, the minimum required GPA is 3.00. Should the GPA fall to the level of 2.75 but the GMAT score remains above 500, and the composite index score remains above the required level, the applicant may be accepted on probation.

For the MSE programs in Engineering, the applicant should be a holder of a BE in Engineering. BS holders may later on face a problem in securing the equivalence of their MSE degrees from the Ministry of Higher Education.

For the School of Medicine, the GPA of the Pre-Med courses assigned by LAU should not fall below the required level.

- b. 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 a university recognized by LAU. A minimum score of 101 in IBT, 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 should be written in English, and the other in the candidate's second language, should be submitted when applying.
- c. Applicants to the Executive Master of Business Administration (EMBA) must have a Bachelor's degree from college or university recognized by LAU, and at least six years of professional experience.

¹. All submitted documents become the property of LAU and will not be returned.

². Applicants taking the TOEFL should sit for the international test. Institutional TOEFL is not accepted at LAU. When registering for TOEFL please use LAU's code 2595 or 0954 for the GMAT.

Admission to graduate programs

DOCTOR OF PHARMACY (PHARM.D.)

Applicants to the Doctor of Pharmacy program should hold a Bachelor of Pharmacy Degree from an Accreditation Council for Pharmacy Education (ACPE) accredited college or university. Applications are submitted to the School of Pharmacy, and all applicants are subject to an interview by the School's Admissions Committee.

SPECIAL GRADUATE & UNDERGRADUATE

(not applicable to graduate programs in the School of Engineering)

- a. If the Bachelor's degree of the applicant is not in the field to be pursued, but his/her cumulative GPA is 2.75 and above, then the applicant may be accepted, as a Special Graduate, and will be required to take remedial courses in the major. 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.
- b. If the Bachelor's degree is not in the field to be pursued, and the cumulative GPA is less than 2.75, but equal to, or greater than, 2.5, then the applicant 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 Department or School, with a minimum cumulative GPA of 3.00.

TRANSFER OF CREDITS

A maximum of six graduate credits, for 30-credit programs, and a maximum of nine Graduate credits, for 39-credit programs, may be

transferred from another institution recognized by LAU, or between LAU Graduate Programs.

Except where otherwise specified, 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 that is required for admission to the Graduate Program in which a student is enrolled. A request for the transfer of credits should be filed at the Registrar's Office, during the student's first semester of residence and the petition shall be reviewed by the Department/Division/School concerned.

PROBATIONARY ADMISSION

The Graduate Admissions Council may accept some applicants not meeting all the requirements for admission, on a probation basis. Applicants accepted on probationary basis must complete the first four courses, without any repeats, with a minimum GPA of 3.00 otherwise they will be dismissed.

Accepted applicants on probation into the MBA program will earn regular status upon the completion of 12 graduate credits with a minimum grade of "B" on each course without repeats otherwise they will be dismissed.

Probationary admission is not applicable to the School of Medicine nor to the PharmD program.



Academic rules and procedures for graduate programs

I. REGISTRATION

1. REGISTRATION

Registration is required of all students in accordance with the University's 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.

1.1. ADVISING

Upon admission, students will be assigned Academic Advisors who will assist them in planning an appropriate course of study. At a later date, students choosing to undertake a project or a thesis will be assigned a Thesis / Project Advisor.

1.2. COURSE LOAD

The normal course load for a full-time student is 9 credit hours per semester and the maximum is 12 in regular semesters and 6 in summer. Graduate students with a full or part-time employment are strongly advised to take a reduced load

For information about course load allowed in case of graduate assistantship, check section 5.2 (Rights and obligations).

1.3. CROSS-REGISTRATION

A student may request permission from the concerned School / Department to cross-register at another institution of higher education that is of academic standing comparable to LAU if a course needed for the student's graduation is not offered at the university, provided that the number of credits transferred / cross-registered does not exceed the number of credits allowed to be transferred as stated in section 2.4 (Transfer of credits).

1.4. AUDITING

Only candidates who have satisfied all the admission requirements may audit graduate courses. Auditing will only be permitted when places are available.

1.5. PROGRAM SHIFTS

Any shift from one graduate degree program at LAU to another requires submission of a new

application for admission.

1.6. COURSE CHANGES AFTER REGISTRATION

Course changes after registration are permitted subject to the following provisions:

- Any course change must be made during the "Drop and Add" period.
- Students will get no refund for courses dropped after the "Drop and Add" period
- All course changes which increase the student's tuition obligation will be noted by the Business Office, and the added fee shall be collected before the change is finalized; changes decreasing the tuition obligation are subject to the Refund Policy.

II. ACADEMIC RULES AND PROCEDURES

2.1. 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.

Grade	Quality Points
A	4
A-	3.67
B+	3.33
B	3
B-	2.67
C+	2.33
C	2
C-	1.67
D+	1.33
D	1
F	0
P	Pass*
NP	No Pass*
U	Audit*
W	Withdrawal*
I	Incomplete*

*Not computed in the Grade Point Average (GPA)

Academic rules and procedures for graduate programs

- **Grade A:** Indicates work of excellent quality (4 points per credit hour).
- **Grade B:** Indicates work of good quality (3 points per credit hour).
- **Grade C:** Indicates work of unsatisfactory quality (2 points per credit hour).
- **Grade D:** Indicates work of poor quality (1 point per credit hour).
- **Grade F:** Indicates work of unacceptable quality (0 point per credit hour).
- **Grade W:** Indicates official withdrawal from a course after the late registration period and within the withdrawal deadline.
- **Grade P:** Indicates that the student has successfully passed the defense of the Thesis / Project.
- **Grade NP:** indicates that the student has failed to pass the defense of the Thesis / Project.
- **Grade U:** Assigned to a course taken on audit basis. It adds no credits and it has no quality points.
- **Grade I:** Represents an incomplete work. Grade 'I' is exceptionally given by the course instructor when a student with a valid excuse did not complete some of the course requirements.
- To be entitled to an 'I' grade, a student should have fulfilled the minimum attendance condition and completed a minimum of 60% of the course requirements with a satisfactory grade. An 'I' grade does not count in the Grade Point Average.

For information on the procedure for removing an "I" grade, refer to section 3.7.

2.2. ACADEMIC STANDING AND PROBATION

Graduate students are considered to be in good academic standing if they maintain a cumulative GPA of 3.00 on all graduate coursework. Students whose GPA falls below 3.0 at any time after the first nine credits will be placed on probation. Only one probation (besides probation upon admission) is allowed during a graduate program.

2.3. DISMISSAL

- a. Students on probation must get back into good academic standing (GPA \geq 3.00) upon the completion of nine credits.

Otherwise they will be dismissed from the program in which they are enrolled.

- b. Students who have at any time two repeats and more than two grades of C+ or lower will also be dismissed from the program in which they are enrolled.
- c. Any student who earns an F on any 3-credit course will also be dismissed from the program in which he/she is enrolled. For 1 or 2-credit courses, please refer to the specific rules of the different programs (such as EMBA)

2.4. TRANSFER OF CREDITS

A maximum of 6 graduate credits for 30-credit programs and a maximum of nine credits for 39-credit programs may be transferred from another institution of higher education that is of academic standing comparable to LAU or from other LAU graduate programs. This rule applies also to graduate courses taken at LAU in the student's undergraduate program over and above the total number of credits required for graduation. Transferred credits apply only to courses with a grade of B or above. Unless otherwise specified in the specific requirements of a program (such as Engineering Program), transferred credits should not have been used for another degree required for admission to the graduate program in which the student is enrolled. A request for transfer of credits shall be submitted to the Registrar's Office during the student's first semester of residence. The request shall be reviewed by the Department / School concerned, and the decision communicated to the Registrar's Office.

2.5. COURSE SUBSTITUTION

A student may substitute up to 6 graduate credits for an equal number of credits. A request for approval of such substitution shall be submitted to the Registrar's Office. The request shall be reviewed by the Department / School concerned and the decision communicated to the Registrar's Office.

2.6. ATTENDANCE REGULATIONS

Regular attendance is required of all graduate

Academic rules and procedures for graduate programs

students. A student who misses more than one-third of class hours in a course for any reason is advised to withdraw from the course within the official withdrawal deadline otherwise a grade of F will be assigned.

2.7. REMOVAL OF AN INCOMPLETE GRADE

In order to have a grade of 'I' changed to a regular grade, the student must complete all requirements within one calendar year unless otherwise indicated in the specific program. If the requirements are not duly completed, the grade of "I" will turn into "F".

2.8. WITHDRAWAL FROM COURSES

If a student withdraws officially from a course before the withdrawal deadline set for the semester, a grade of 'W' is assigned. The student must submit a withdrawal form to the registrar's office within the set deadline.

Only one withdrawal is allowed from any given course. The second withdrawal from the same course will result in an "F".

2.9. REPETITION OF COURSES

- a. Graduate courses with grades less than C may not be used towards graduation. Any required course with grade below C should be repeated.
- b. During their course of study, students may repeat one or two courses in which a grade of 'B' or less has been earned, depending on the graduate program in which they are enrolled. It is allowed to repeat a maximum of one graduate course in 30-credit programs, and a maximum of two graduate courses in 39-credit programs. In either case, the higher grade(s) will be counted in the determination of the grade point average.

2.10. 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, will receive "W's" for all the courses in progress.

2.11. TIME LIMIT

Students must complete all requirements for a Master degree within six years from their first registration in graduate courses. Students who exceed this time limit must submit a petition to request extension. In such a case their program of study must be revalidated. Revalidating a program by the concerned Department / School may imply taking additional courses and / or repeating outdated ones. Revalidation is granted for one time only and the new requirements must be completed according to a prorated time period. Under no circumstances the extension time may exceed one year.

Once a student's program is revalidated, the student and the academic Advisor must prepare a course completion plan that must be reviewed for approval by the Department and the School. The Registrar must be notified about the revalidation and completion plan in writing.

2.12. ACADEMIC INTEGRITY

The University fosters an atmosphere of high integrity by maintaining an ongoing dedication to honesty and responsibility. Any act of lying, cheating, plagiarism, deliberate misrepresentation, theft, scientific fraud, dishonesty or ill use of other human beings is a blatant violation of this Code and will be treated as such.

2.12.1. PLAGIARISM AND FALSIFICATION OF RESEARCH MATERIAL

Plagiarism is using someone else's ideas, words, or work as if it were one's own without clearly acknowledging the source of that information. Examples of plagiarism include:

- Submitting research work (a report, project, thesis, etc...) written by someone else and claiming that it is one's own work.
- Paraphrasing another person's words without citing the source.
- Including material (e.g., written work, figures, tables, charts, graphs, computer programs, etc...) in one's work without acknowledging its source.

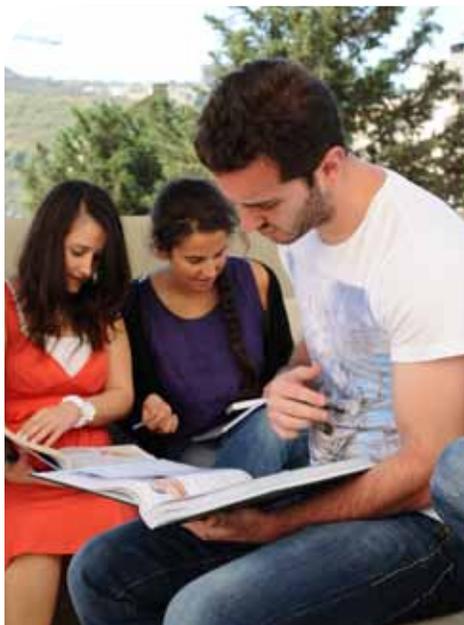
Academic rules and procedures for graduate programs

Plagiarism and falsification or forging of research material or data are serious academic offenses subject to disciplinary action by the faculty and / or the Department / School concerned. The severity of the disciplinary action is determined according to the extent of the act. The disciplinary action could range from resubmitting the work with penalty to dismissal from the program. At the request of the faculty, the Dean of Graduate Studies / Dean of the School shall issue a written warning. A copy of the warning will be kept in the student's file and at the Registrar's office.

2.12.2. CHEATING

Students caught cheating on an exam receive a score of zero on the exam in their first cheating attempt in the course and receive a warning from the Department / School concerned, at the request of the faculty. A copy of the warning will be kept in the student's file and at the Registrar's office. A score of zero on an exam resulting from cheating must be counted in the student's course grade.

Students caught cheating for the second time in the same course will receive a grade "F" in the course. The act of cheating will be recorded and included in the student's file.



III. THESIS AND PROJECT

3.1. THESIS

The thesis shall be based on original research work carried out in the basic and/or applied field of study.

3.2. PROJECT

The Project shall be based on substantial applied work, involving, for example, critical literature review, experimental or analytical studies, development of kits / systems, empirical testing of theories, etc.

3.3. REGISTRATION AND TIME LIMIT

Students may register for the Thesis / Project at any time after completion of 12 credits. Before registration, the student should have secured the consent of a faculty member to serve as Thesis / Project Advisor. Once registered for the thesis / project, a student must complete a thesis within two calendar years, and a project within three regular semesters (not counting the Summer).

Registration for thesis / project will allow students to retain their status with the University for two years / three semesters with no additional tuition fees provided that the student re-registers every term (for zero credits and no fees) if they are not taking other courses. Past that date, students allowed to have a thesis or project extension by the School Academic Council will be required to register for a residence fee (0 quality point), and to pay for 50 % of one graduate credit per semester.

3.4. GUIDELINES

- a. A student seeks a faculty member's consent to serve as the Thesis / Project Advisor. The Advisor should be a full-time (or retired) faculty member at the professorial rank in the concerned Department. The Dean approves the selection of the Advisor, based upon the recommendation of the Department Chair.
- b. A Thesis Committee shall be made up of three members, and a Project Committee of two members including the Advisor.

Academic rules and procedures for graduate programs

- c. The Thesis / Project Advisor and student jointly form the Thesis / Project Committee. At least one member of the Thesis Committee (besides the Advisor) must be a full-time faculty in the Department / School concerned. The Advisor, shall chair the Committee.
 - d. The role of the Thesis / Project Advisor is to guide the student's work until the completion of thesis / project. The role of the other Committee members is to review and assess the student's work. The Committee members shall be kept informed of the progress of the thesis / project.
 - e. Students must successfully defend their thesis proposal before the members of their Thesis Committee normally within the first semester in which they register for the thesis. Once the Proposal is approved, the Thesis Advisor notifies the Office of the Dean of Graduate Studies / Dean of School concerned using the Thesis Proposal Form (Appendix B1. Thesis Proposal Form).
 - f. The grade for a thesis / project can be Pass, or No Pass (P or NP). The grade does not contribute to the G.P.A.
 - g. Throughout their work on thesis / project, students may petition to shift to another option as allowed in the concerned program (see Appendices on Program specific Rules and Regulations)
1. Students shifting from Project to Thesis option will be required to pay only for the extra credits, provided that the student remains with the same Advisor.
 2. Students shifting from Thesis to Project / Course(s) option will pay for the additional courses.
 3. The changes above shall be made at least one semester before graduation, and shall carry the approval of the Department / School.

3.5. CONFLICT OF INTEREST

A Faculty member shall not serve as the Thesis / Project Advisor or on the Thesis / Project

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

N.B.

Family member: Spouse, parents, children, siblings, siblings of parents, first cousins and any person related to one of these individuals by marriage, or any other relation who resides in the same household with the Faculty member.

Business associate: One in which the Faculty member serves as an officer, director, partner, trustee, owner, or controlling stockholder of an organization related to the student.

3.6. PREPARATION AND SUBMISSION OF THESIS / PROJECT REPORTS

- a. Theses/Projects shall be written and prepared as specified in the "Thesis and Project Format Guidelines" (Appendix A)
- b. The student should submit the manuscript to the Thesis / Project Committee members prior to the announcement of the defense.

Appendixes A and B are available at the University Graduate Council (UGC) section of the LAU website.

3.7. PROCEDURES FOR THESIS DEFENSE AND PROJECT PRESENTATION

3.7.1. THESIS DEFENSE

- a. The Thesis Advisor sets the date of the defense in consultation with the student and the Committee members. The Advisor then notifies the Department Chair and School Dean, in writing, about the details (student's name, title and abstract of the thesis, date and place of the defense) for the announcement of the defense.
- b. The thesis defense should be public and the date shall be announced by the concerned School Dean at least two weeks in advance.
- c. The thesis defense session shall start by the candidate giving a public presentation. This will be followed by an open question / answer / debate session. The Thesis Committee will then deliberate in private in the absence of the candidate to reach a

Academic rules and procedures for graduate programs

final decision.

- d. The result of the defense is reported on the Thesis Defense Result Form (Appendix B2). If the Committee recommends changes, the student shall deliver the corrected / changed thesis manuscript to the Advisor within a period that shall not exceed one month. The Advisor must verify that the corrected version complies with the Committee's requested corrections. The Thesis Approval Form (Appendix B3) is then signed (on 5 copies) by all Committee members. The Advisor submits the Thesis Approval Form and the Thesis Defense Result Form to the Dean of Graduate Studies / Dean of School concerned.

3.7.2. PROJECT PRESENTATION

Each Department / School will set its own guidelines for Project presentations. Once the Committee approves the project, members should sign the Project Approval Form (Appendix B4), which should be included in the final approved project report.

3.7.3. SUBMISSION OF THESIS AND GRADING

- a. The candidate must provide the Library with two copies (one soft in PDF format on a CD and one hard copy) of the final approved manuscript of the thesis for format verification and binding. Each copy should include a completed and signed Thesis Approval Form (Appendix B3). The librarian shall fill and sign the Library Clearance Form (Appendix B5). Besides the student's copy, two copies of the thesis report will remain at the library, and one copy should be sent to the Thesis Advisor.
- b. The Advisor sends the grade / Change-of-Grade form together with the duly filled and signed Thesis / Project Approval Form and Library Clearance Form to the Registrar's Office, after securing the Department Chair's and the School Dean's signatures.

IV. CLEARANCE FOR GRADUATION

Students shall apply for graduation at the beginning of the semester in which they expect to graduate. 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.

V. GRADUATE ASSISTANTSHIP

5.1. OBJECTIVES

Graduate assistantship is intended to enhance students' educational experiences, through providing academic services to their Department / School, such as teaching and research. In return, a percentage of their tuition fees is waived.

5.2. RIGHTS AND OBLIGATIONS

- a. To be eligible for graduate assistantship, a student shall take a minimum of 6 credits and a maximum of 9 credits in the Fall and Spring semesters and a minimum of 3 credits and a maximum of 6 credits in Summer. Students who are left with one course to graduate may be granted assistantship during that last semester.
- b. Students with the status of special undergraduate and students on probation are not eligible for graduate assistantship.
- c. Graduate students granted full (100%) assistantship are entitled to 100% tuition waiver. In return, the student is required to provide twenty working hours per week.
- d. For partial assistantship grants, the percentage of tuition waiver and the number of weekly work hours are prorated.
- e. Graduate assistants are not entitled to the benefits granted to University Faculty and Staff members according to the Personnel Policy.
- f. The tuition waiver does not cover any repeated course, irrespective of the reason for repeating it, including withdrawal.
- g. Only graduate courses are covered by the assistantship tuition waiver. Undergraduate courses taken as pre-requisite, remedial or complementary courses are not, except in cases to be approved by department / school.

Academic rules and procedures for graduate programs

5.3. APPLYING FOR GRADUATE ASSISTANTSHIP

Eligible graduate students interested in graduate assistantship shall submit an application to their Department / School within the specified deadline. Decisions on the applications are made by a committee appointed by the Department / School and chaired by the Department Chair / School Dean. The committee shall assign graduate assistantship grants taking into consideration the allocated budget. Decisions are to be recorded in minutes of meetings and communicated to the applicants and to the Business Office in writing. The assistantship contracts are to be signed by the Department Chair and the Dean, as well as the student.

5.4. SELECTION CRITERIA

Graduate assistantships are granted on a competitive basis and guided by the following criteria:

- GPA and Entrance Exam scores.
- The student's interests and skills fit departmental needs for teaching, research, or other duties.

To renew their graduate assistantship, students must keep a good academic standing, and must have performed assigned duties satisfactorily in the preceding semesters, as determined by the supervising faculty's positive evaluation. Evaluation is performed every semester using a Departmental / School form.



Freshman requirements

FRESHMAN ARTS REQUIREMENTS (30 CREDITS)

Freshman students admitted to Bachelor of Arts programs are considered “freshman arts” students, while those admitted to Bachelor of Science programs are considered “freshman science” students. However, freshman students on the Graphic Design, Interior Design or Business majors can choose to complete either set of requirements.

PHL101	Introduction to Philosophy	3
ENG101	English I ¹	3
ARA101	Arabic Essay Reading and Writing I ²	3
ART101	Introduction to Music and Art	3
ENG102	English II ¹	3
ARA102	Arabic Essay Reading and Writing II ²	3

Any two of the following Science courses (8 credits) or one of the following, and one Math course (7 credits):

BIO101	Introduction to Biological Science	4
PHY101	Introduction to Physical Science	4
CHM101	General Chemistry	4
MTH111	Basic Mathematics	3
BUS105	Business Mathematics	3
Other	Freshman Math	3

Any one of the following Social Science courses (3 credits):

ECO201	Microeconomics	3
ECO202	Macroeconomics	3
POL201	Introduction to Political Science	3
PSY201	Introduction to Psychology	3
SOC201	Introduction to Sociology	3

Free Electives (1 or 2 credits)

FRESHMAN SCIENCE REQUIREMENTS (32 CREDITS)

CHM101	General Chemistry	4
MTH101	Calculus I	3
PHL101	Introduction to Philosophy	3
ENG101	English I ¹	3
ARA101	Arabic Essay Reading and Writing I ²	3
MTH102	Calculus II	3
PHY111	Mechanics	4
ART101	Introduction to Music and Art	3
ENG102	English II ¹	3

Any one of the following Social Science courses (3 credits):

ECO201	Microeconomics	3
ECO202	Macroeconomics	3
POL201	Introduction to Political Science	3
PSY201	Introduction to Psychology	3
SOC201	Introduction to Sociology	3

Notes:

1. a. Entering Freshman students with scores between 500 and 549 on the Entrance English Exam (EEE), or its equivalent on the Test Of English as a Foreign Language (TOEFL), must take ENGO09 Remedial English (valued at three non-credits), ENG101 English I (worth three credits), and ENG102 English II (worth three credits), before taking the Sophomore level English courses.

b. Entering Freshman students with scores between 550 and 599 on the EEE, or its equivalent on the TOEFL, must take ENG101 English I (worth three credits), and ENG102 English II (worth three credits), before taking the Sophomore level English courses.

c. Entering Freshman students with scores between 600 and 649 on the EEE, or its equivalent on the TOEFL, if enrolled in a BA/BS Program, must take ENG102 English II (worth three credits), before taking the Sophomore level English courses. They must also take three elective credits to make up for the missing credits. If the students are enrolled in an AA/AAS Program, they must take ENG102 English II (worth three credits), and either ENG202 Sophomore Rhetoric, or ENG203 Fundamentals of Oral Communication.

d. Entering Freshman students with scores of 650 and above on the EEE, or its equivalent on the TOEFL, if enrolled in a BA/BS Program, can take Sophomore level English courses directly. They must also take six elective credits to make up for missing credits. If the students are enrolled in an AA/AAS Program, they must take ENG202 Sophomore Rhetoric, and ENG203 Fundamentals of Oral Communication.

2.

Freshman students who are exempted from Arabic by the Admissions council can substitute the Arabic course(s) with:

SAR111	Standard Arabic I	
SAR112	Standard Arabic II	
HST 230	History of Lebanon, from Antelias Man to the Ottoman Conquest	
HST231	History of Lebanon, from the Imarah to the 1975-1990 War	
HST240	History of the Arab Peoples	

Liberal arts curriculum

Mission

The mission of the Liberal Arts Curriculum is to foster the education of the cultured and civically engaged person, and the formation of students as future leaders.

Educational Objectives

Students who complete the LAC program will

1. Gain cultural breadth.
2. Value ethical responsibility.
3. Develop analytical/critical thinking and quantitative competence.
4. Communicate effectively.

Learning Outcomes

Students will be able to:

1. Recognize and value social and cultural diversity.
2. Exhibit an appreciation for the arts.
3. Demonstrate an appreciation of wellness and health.
4. Discern and make ethically based choices.
5. Demonstrate critical thinking.
6. Apply analytical reasoning.
7. Demonstrate aptitude in written communication.
8. Demonstrate aptitude in oral communication.
9. Demonstrate information literacy.

The Liberal Arts Curriculum consists of 13 credits of required courses and 21 credits of elective courses for a total of 34 credits.

REQUIRED COURSES (13 CREDITS)

Six credits of English¹:

ENG202	Sophomore Rhetoric	3
ENG203	Fundamentals of Oral Communication	3

Three credits of Arabic Language or Literature²:

ARA201	Appreciation of Arabic Literature	3
ARA301	Advanced Arabic Grammar	3
ARA302	Arabic Rhetoric	3
ARA321	Creative Writing	3
ARA322	Principles of Translation	3
ARA332	Ancient Arabic Literature	3
ARA333	New Trends in Modern Arabic Literature	3
ARA341	Modern Arabic Novel and Short Story	3
ARA342	Arabic Drama	3

One credit of Computer Applications:

CSC201	Computer Applications	1
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One credit of Basic Health:

ETH201	Moral Reasoning	1
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One credit of Ethics:

HLT201	Basic Health	1
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One credit of Physical Education:

PED211	Beginning Swimming	1
PED218	Table Tennis	1
PED220	Beginning Tennis	1
PED231	Modern Dance	1
PED232	Folk Dance	1
PED251	BasketBall	1
PED261	VolleyBall	1
PED271	Tae-Kwan-Do	1
PED291	Physical Fitness	1

ELECTIVE COURSES (21 CREDITS)

CULTURAL STUDIES, HISTORY, PHILOSOPHY, RELIGION

A minimum of three and a maximum of nine credits of Cultural Studies, History, Philosophy, or Religion:

Cultural studies

CST201	Cultural Studies I	3
CST202	Cultural Studies II	3
CST203	Cultural Studies III	3

History

HST221	The Ancient World, Greece and Rome	3
HST231	History of Lebanon, from the Imarah to the 1975-1990 War	3
HST240	History of Arab Peoples	3
HST242	Europe and the Middle East (1798-1956)	3
HST302	Medieval Europe (1066-1453)	3
HST303	Early Modern Europe (1450-1750)	3

Philosophy

PHL204	Modern Philosophy	3
PHL301	Ethics	3
PHL302	Theory of Knowledge	3
PHL303	Metaphysics	3
PHL311	Philosophy of Religion	3
PHL324	Philosophy of Science	3

Liberal arts curriculum

Religion

REL312	Interpretation of Religious Literature	3
REL411	Myth and Ritual	3
REL412	History of Religious Thought in the Middle East	3
REL413	Representatives of Christian Thought in the Modern Period	3
REL414	Representatives of Islamic Thought in the Modern Period	3

Literature

A minimum of three and a maximum of six credits of Literature, taught in the English language

ENG211	Literature I
ENG212	Literature II
ENG323	Renaissance Drama
ENG324	Medieval Literature
ENG325	Renaissance Poetry
ENG326	Restoration and Neoclassical Literature
ENG328	Early Novel
ENG336	Romantic and Victorian Poetry
ENG339	19th-Century British Novel
ENG342	Modernism and Beyond
ENG345	The 20th-Century British Novel
ENG346	Contemporary Culture
ENG348	Postcolonial Anglophone Literatures
ENG351	Early American Literature
ENG352	20th-Century American Novel
ENG354	Theories of Literature and Culture
ENG372	Comparative and World Literatures
ENG479	Topics in Literature and Culture

Sciences

A minimum of three and a maximum of nine credits of Sciences

BIO201	General Biology I
BIO202	General Biology II
CHM201	Chemical Principles
CHM202	Analytical Chemistry
CSC241	Introduction to Computing
ENV200	Introduction to Environmental Science
MTH201	Calculus III
MTH206	Calculus IV
MTH207	Discrete Structures I
NUT201	Fundamentals of Human Nutrition

Arts

A minimum of three and a maximum of six credits of Arts

ARC/DES371	History of Architecture I
ARC/DES372	History of Architecture II
ARC/DES375	Introduction to Islamic Art
ARC/DES376	Introduction to Islamic Architecture

ART331	History of Art I
ART332	History of Art II
ART335	Islamic Art of the Middle East
ART431	Modern Art
COM210	Communication Media and Society
COM225	The Art of Film
COM242	Introduction to the Art of Theater
COM249	Theater in Lebanon and the Arab World
COM345	Modern Drama
MUS311	Survey of Western Music
MUS312	Survey of Middle Eastern Music

Social Sciences

A minimum of three and a maximum of nine credits of Social Sciences

ECO201	Microeconomics
ECO202	Macroeconomics
PJE201	Cross-cultural Communication for Peace
POL201	Introduction to Political Science
POL231	Introduction to Human Rights
PSY201	Introduction to Psychology
PSY202	Child Psychology
PSY335	Consumer's Psychology
SOC201	Introduction to Sociology
SOC215	Introduction to Gender Studies
SOC311	Social Problems
SOC321	Sociology of the Arab World
WOS311	Issues and Debates in Feminist Theory
WOS313	Women in the Arab World: Sociological Perspectives
WOS412	Representations of Women in the Arts and the Media

Notes:

- Entering Freshman students with scores between 500 and 549 on the English Entrance Exam (EEE), or its equivalent on the Test Of English as a Foreign Language (TOEFL), must take ENG009 Remedial English (valued at three non-credits), ENG101 English I (worth three credits), and ENG102 English II (worth three credits), before taking the Sophomore level English courses.

b. Entering Freshman students with scores between 550 and 599 on the EEE, or its equivalent on the TOEFL, must take ENG101 English I (worth three credits), and ENG102 English II (worth three credits), before taking the Sophomore level English courses.

c. Entering Freshman students with scores between 600 and 649 on the EEE, or its equivalent on the TOEFL, if enrolled in a BA/BS Program, must take ENG102 English II (worth three credits), before taking the Sophomore level English courses. They must also take three elective credits to make up for the missing credits. If the students are enrolled in an AA/AAS Program, they must take ENG102 English II (worth three credits), and either ENG202 Sophomore Rhetoric, or ENG203 Fundamentals of Oral Communication.

d. Entering Freshman students with scores of 650 and above on the EEE, or its equivalent on the TOEFL, if enrolled in a BA/BS Program, can take Sophomore level English courses directly. They must also take

Liberal arts curriculum

six elective credits to make up for missing credits. If the students are enrolled in an AA/AAS Program, they must take ENG202 Sophomore Rhetoric, and ENG203 Fundamentals of Oral Communication.

These scores are under revision and are subject to change without prior notice.

2. Sophomore students who are exempted from Arabic by the Admissions Council, must substitute the Arabic course by one of the following courses:

SAR221	Developmental Arabic
SOC321	Sociology of the Arab World
WOS313	Women in the Arab World
HST230	History of Lebanon, from Antelias Man to the Ottoman Conquest
HST231	History of Lebanon, from the Imarah to the 1975-1990 War
HST240	History of the Arab Peoples



Course Numbers

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:

Prefix	Title
ACC	Accounting
ARA	Arabic
ARC	Architecture
ART	Fine Arts
BCH	Biochemistry
BIO	Biology
BUS	Business
CHM	Chemistry
CIE	Civil Engineering
CLT	Comparative Literature
COE	Computer Engineering
COM	Communication Arts
CSC	Computer Science
CST	Cultural Studies
DES	Interior Design
ECO	Economics
EDU	Education
ELE	Electrical Engineering
ENG	English
ENV	Environmental Science
ETH	Ethics
FEB	Family and Entrepreneurial Business
FIN	Finance
GER	German
GNE	General Engineering
GRA	Graphic Design
HLT	Health
HOM	Hospitality Management
HST	History
IBS	International Business
IMS	Medicine
INA	International Affairs
INE	Industrial Engineering

INF	Information Science
MEE	Mechanical Engineering
MGT	Management
MIS	Management Information Systems
MKT	Marketing
MTH	Mathematics
MUS	Music
NUR	Nursing
NUT	Nutrition
OFM	Office Management
PED	Physical Education
PHA	Pharmacy
PHL	Philosophy
PHO	Photography
PHY	Physics
PJE	Peace and Justice Education
PKG	Packaging
POL	Political Science
PSY	Psychology
REL	Religion
SAR	Special Arabic
SOC	Sociology
SPA	Spanish
STA	Statistics
WOS	Women's Studies

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; and the third number indicates credit hours counted toward Graduation, upon completion of the course.

Example:

BI0806 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 Architecture & Design (SArD)

The School of Architecture and Design

INTRODUCTION

The School of Architecture & Design was officially established in 2009, following the consolidation of existing programs in Fine Arts, Foundation, Architecture, Interior Design, and Graphic Design, under one school. The established programs had a long history at LAU, with the program in Fine Arts dating back to 1957, Interior Design to 1982, Architecture to 1993 and Graphic Design to 1994. In the Fall of 2002, the Foundation program was established as a common platform for all entering design students, upon completion of which they can choose their area of specialization.

SCHOOL MISSION AND VISION

The Mission of the School of Architecture & Design is to educate competent designers and fine artists in the various design fields, who will have the breadth of knowledge and the skills necessary to creatively engage different artistic and design problems, in addition to a broad culture founded on liberal education, that will allow graduates to operate as responsible citizens and ethical professionals in a global world.

The vision of the School of Architecture and Design is driven by its Mission and Values, specifically to:

- Create a School that brings together the various design and fine arts disciplines
- Develop an atmosphere of collegiality, exchange of ideas, experimentation and research
- Provide a forum for emerging talents in the various design and fine arts fields
- Meet the goals of the University in achieving excellence and measuring up to international standards of education and practice in the design and fine arts field

INTERIM DEAN

Elie Badr, Ph.D

ASSISTANT DEAN

Elie G. Haddad, Ph.D

DEPARTMENT CHAIRS

Rached Bohsali, C.E.A.A
Department of Fine Arts & Foundation Studies

Maroun El-Daccache, Ph.D
Department of Architecture & Interior Design

Randa Abdel Baki, M.F.A
Department of Graphic Design

ASSOCIATE CHAIRS

Farid Jureidini, B. Arch
Department of Fine Arts & Foundation Studies

Tarek Khoury, M.F.A
Department of Graphic Design

SArD faculty 2012-13

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Bassam Lahoud
Hanibal Srouji

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Part Time Faculty

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Bassam Geitani
Ghassan Ghazal
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Fady Kallab
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Arwa Seifeddine

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SArD staff 2012-13

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Yasmine Taan

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Mariella Jaeger
Maria Bahous

Part Time Faculty

Merwad Abdalla
Jihane Azar
Raffi Boyadjian

Architecture Lab Supervisor

Jalal Kahwaji
Jad Njeim

Academic Computer Center Senior Administrator

Lina Abdoun
Elie Derian

Graphic Designer

Charbel Harb

Shop Technicians

Issam Abboud
Shaker Azzi



BEIRUT FACILITIES

ARCHITECTURE COMPUTER LAB

This lab is dedicated to architecture, interior architecture, and interior design applications. It is used for computer lab courses as well as a support facility for design studios.

ARCHITECTURE LASER LAB

The laser lab is equipped for the digital production of models for architecture and design applications. It has a state of the art laser-cutting machine, which allows students to build their design models in-house.

GRAPHIC DESIGN COMPUTER LABS

There are three Graphic Design computer labs dedicated to all graphic design digital production services. The labs are equipped with state of the art computers, digital cameras, scanners, plotters, and other equipment. The labs are open to graphic design students, and for the support of all graphic design studios, in addition to design workshops held during the semester. One of the labs is dedicated to all digital graphic design studio courses.

PHOTOGRAPHY STUDIO

This studio is open to all students taking photography courses. It allows students to develop films and prints in the dark room. It is equipped for studio photography, with a professional digital camera, as well as small, medium & large format analogue cameras, and full digital studio equipment.

SILKSCREEN STUDIO

This studio is open to students enrolled in the silkscreen studio. It is used for silkscreen and binding projects, and fully equipped with screen printing machines, frames, water guns, light room and printing material.

CERAMICS WORKSHOP

This workshop is equipped with all the tools needed for the production of ceramic artworks, such as slab rollers, coil extruder, wheels and kilns. It is open to students taking the ceramics courses.

WOOD & METAL WORKSHOP

This workshop is equipped with metal and wood machinery used for the production of three-dimensional, hand-made design models. It allows students to produce their own study and final models for architecture and design studios.

BYBLOS FACILITIES

ARCHITECTURE COMPUTER LAB

This lab is dedicated to architecture, interior architecture, and interior design applications. It is used for computer lab courses as well as a support facility for design studios.

ARCHITECTURE LASER LAB

The laser lab is equipped for the digital production of models for architecture and design applications. It has a state of the art laser-cutting machine, which allows students to build their design models in-house, in addition to a new 3D printing machine.

GRAPHIC DESIGN COMPUTER LAB

The Graphic Design computer lab is dedicated to all graphic design digital production services. The lab is equipped with state of the art computers, digital cameras, scanners, plotters, and other equipment. It is open to graphic design students, and used for the support of all graphic design studios.

PHOTOGRAPHY STUDIO

This studio is open to all students taking photography courses. It allows students to develop films and prints in the dark room. It is equipped for studio photography, with a professional digital camera, as well as small, medium & large format analogue cameras, and full digital studio equipment.

CERAMICS WORKSHOP

This workshop is equipped with all the tools needed for the production of ceramic artworks, such as slab rollers, coil extruder, wheels and kilns. It is open to students taking the ceramics courses.

WOOD & METAL WORKSHOP

This workshop is equipped with metal and wood machinery used for the production of three-dimensional, hand-made design models. It allows students to produce their own study and final models for architecture and design studios.

SArD institutes

INSTITUTE OF ISLAMIC ART & ARCHITECTURE (IIAA)

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. Its mission is to expand the teaching of Islamic art and architecture, to promote excellence in academic research, and to further the understanding of Islamic architecture and urbanism, in light of contemporary design practices.

URBAN PLANNING INSTITUTE (UPI)

This institute's 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.



Department of Fine Arts and Foundation Studies

Foundation studies program for design majors

The Foundation Studies Program aims at creating an open multidisciplinary platform that serves all design disciplines and enriches the student's design culture through a number of design modules that cover visual perception and plastic modeling, in addition to technical support courses, art electives and liberal arts requirements.

MISSION

The mission of the Foundation Studies Program is to offer students in the design fields a comprehensive educational platform based on the principles of liberal education, fostering the development of creativity through an initiation into critical thinking, aesthetic judgment, and technical knowledge.

EDUCATIONAL OBJECTIVES

The purpose of the Foundation Studies Program is to offer a comprehensive introduction to design, providing students with a broad outlook into design as a creative activity neither limited nor separated by disciplinary boundaries.

LEARNING OUTCOMES

At the end of the Foundation Studies Program year students will acquire the following skills:

- i. Ability to conceptualize and to analyze
- ii. Development of visual representational and interpretational skills
- iii. Development of critical aptitude
- iv. Mastery of shop skills [metal and wood]
- v. Initiation into computer graphics
- vi. Introduction of cultural and aesthetic dimensions of design

Note: This Program is common to all Design Majors [Architecture, Interior Design, Interior Architecture and Graphic Design], to be completed in the First Year of enrollment.

FOUNDATION CURRICULUM (36 CREDITS)

Fall Semester (13 credits)

ARC/DES/GRA 231	Design Studio I-A	3
ARC/DES/GRA 232	Design Studio I-B	3
ARC/DES/GRA 241	Technical Graphics	2
ART221	Drawing I	3
ARC/DES/GRA 271	History of Design	2

Spring Semester (15 credits)

ARC/DES/GRA 233	Design Studio II-A	3
ARC/DES/GRA 234	Design Studio II-B	3
ARC/DES/GRA 261	Design Culture	2
ARC/DES/GRA 251	Introduction to Computer Graphics	3
PH0211	Photography I	3
ETH201 or HLT 201	Moral Reasoning or Basic Health	1

Summer Modules I and II (8 credits)

ARC/DES/GRA 240	Sketching	2
—	Art Elective*	3
—	LAC Elective**	3

* Art Electives:

ART 211	Ceramics I	3
ART222	Drawing II	3
ART334	Graphics	3
ART341	Painting I	3
ART351	Sculpture I	3
PH0212	Photography II	3

**LAC Electives

Refer to the list of University approved Liberal Arts Curriculum Electives



COURSE DESCRIPTIONS

ARC/DES/GRA 231 Design Studio I-A [2-2, 3 cr.]

This studio emphasizes on visual perception through an initiation into the different modes of representation and formal analysis of the elements of visual language, such as line, volume, texture, colour, and shape. The studio also covers the effects of light on forms, which constitutes the basics of two-dimensional studies. Exercises in this course are intended to sharpen and focus the student's perception of forms and to train the eye and the hand in the process of interpretation and representation of forms.

ARC/DES/GRA 232 Design Studio I-B [2-2, 3 cr.]

This studio emphasizes the study of structural characteristics as foundational to an understanding of morphology/the manifestation of different forms, natural or artificial. Students analyze scale, proportion, structural constraints and orientations required of gravity for three-dimensional forms. A variety of concepts and processes will be explored with considerable emphasis placed on learning by making, stressing different techniques of plastic modeling from cardboard to foam and wood, and requiring an active use of the workshop. A shop orientation session is required to introduce students to the basic tools and safety procedures for using the wood and metal shop.

ARC/DES/GRA 233 Design Studio II-A [2-2, 3 cr.]

This studio will continue the development of visual perception in the two-dimensional field elaborating projects that investigate the relation of form to content through two-dimensional representation. The studio will explore different image making techniques emphasizing composition, layout and presentation as a means of conceptual expression and communication in design. Critical thinking, analysis as well as verbal and visual presentation are further developed through process studies and research.

Prerequisites: Passing grade [C] in Design Studio I-A

ARC/DES/GRA 234 Design Studio II-B [2-2, 3 cr.]

This studio further explores issues of visual perception and form-making through more elaborate three-dimensional studies. Exercises in this module involve formal and structural analysis, dissection, assembly, re-configuration. Projects in this studio would emphasize plastic modeling in various materials [wood, metals, plastics] while

developing the students analytical, artistic and interpretive faculties and stressing the importance of process as a necessary mode in the refinement and elaboration of design projects.

Prerequisites: Passing grade [C] in Design Studio I-B

ARC/DES/GRA 240 Sketching [1-2, 2 cr.]

This general course on sketching stresses freehand drawing techniques with pencil, charcoal, as well as the basics of watercolor rendering.

ARC/DES/GRA 241 Technical Graphics [1-2, 2 cr.]

This course is 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 shade and shadows. This studio will also introduce students to the various tools and techniques of technical drawing in pencil and ink.

ARC/DES/GRA 251 Introduction to Computer Graphics [2-2, 3 cr.]

This course is 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 software mainly used for computer graphics applications [adobe illustrator, photoshop].

ARC/DES/GRA 261 Design Culture [2-0, 2 cr.]

This course is an introduction to the wide discipline of design, and the inter-relations between design and art, photography, film music, etc. It is a creative presentation of the multiple dimensions of the design field, through a series of lectures, film screenings, art documentaries and other events that initiate the student to the design world.

ARC/DES/GRA 271 History of Design [2-0, 2 cr.]

This course surveys design activity from the nineteenth century development of the Arts & Crafts movement and the subsequent development of Art Nouveau and Art Deco, Bauhaus, and the development of International and Regional design trends in Italy, Scandinavia and Japan, down to the more recent contemporary trends. This course explores the various manifestations of these artistic developments in the applied arts from spatial design to furniture to various product designs and their relationship to the aesthetic idea behind these movements.

Undergraduate Program

BACHELOR OF ARTS (B.A.) IN FINE ARTS

MISSION

The mission of the Fine Arts program is to help students to attain full development as leading creative artists and thinkers, in both the studio arts context and within the framework of art history and philosophy.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Fine Arts is:

1. To seek a liberal arts education designed to acquaint the students with leading ideas and forces that steer and shape the arts and art education globally.
2. To provide students with the technical skills and knowledge of the use of materials and technologies in the making of drawing, sculpture, printmaking, ceramics, multimedia and computer art, as professional artists.
3. To prepare students interested in art education for a career in teaching art.
4. To pave the way for graduate studies in studio art, art theory, and/or art education.
5. To relate the fine arts to other disciplines and practices in design, technology, science and the humanities, for inspiration and areas of interaction.
6. To help heighten the student's sense of imagination, creative personal expression and their pursuit for excellence in today's highly competitive art world.
7. To provide a yearly art exhibition and an accompanying art catalogue featuring the student's works, introducing them to how a professional art exhibit is carried out, while also exposing them to galleries, art critics and the public at large.

LEARNING OUTCOMES

Graduates of the Fine Arts program will be able to perform as:

1. A professional artist who is highly trained and equipped to exhibit and marketing their own work. They will have a strong portfolio and at the end of the year, a state-of-the-art exhibition catalogue mainly featuring the works of senior students.

2. An art teacher in elementary and secondary school, with a strong educational background and a distinctive art portfolio.
3. A graduate student pursuing higher education in art theory, and/or in creative studio art.
4. An illustrator contributing drawings and illustrations to books, newspapers and magazines.
5. An artist/intellectual contributing to both their own culture and to the world reservoir of creative art and art theory works.
6. An art critic.
7. An artist seeking employment in museums and art galleries.

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 a 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 for careers in art production, scholarly research, art education, art reporting, graphic and industrial design, book illustration, theatre, or the management of art enterprises.

Students need 92 credits to graduate, which can be normally completed in 3 years (34 credits Liberal Arts Curriculum, 42 credits for the major, 9 credits for art electives).

B.A. IN FINE ARTS

Year I - 31 credits

Fall

ART221	Drawing I	3
ART201	Fundamentals of Design I	3
ART223	Perspective Drawing	1
--	LAC Electives*	6
--	Art Elective	3

Spring

ART222	Drawing II	3
ART202	Fundamentals of Design II	3
--	LAC Electives*	6
--	Art Elective	3

Year II - 32 credits

Fall

ART341	Painting I	3
ART351	Sculpture I	3
ART211	Ceramics I	3
ART331	History of Art I	3
--	LAC Electives*	5

Spring

ART342	Painting II	3
ART352	Sculpture II	3
ART212	Ceramics II	3
ART332	History of Art II	3
--	LAC Electives*	5

Year III - 28 credits

Fall

ART441	Painting III	3
ART335	Islamic Art of Middle East	3
--	LAC Electives	6

Spring

ART442	Painting IV	3
ART499	Senior Study	3
--	LAC Electives*	6
--	Art Elective	3

*LAC Electives

Refer to the list of University approved Liberal Arts Curriculum Electives

COURSE DESCRIPTIONS

ART101 Introduction to Music and Art [3-0, 3 cr.]

This is a course in music and art appreciation, introducing students to techniques, outstanding examples, and representative works of the various Periods, with a look at the interrelationship between them.

ART201 Fundamentals of Design I [0-6, 3 cr.]

This course is a studio course investigating the basic elements and principles of the visual arts in two dimensional media and form.

ART202 Fundamentals of Design II [0-6, 3 cr.]

This course is a studio course investigating the basic elements and principles of the visual arts in three dimensional media and form.

ART211 Ceramics I [0-4, 3 cr.]

This course is an introductory course to the primary techniques of hand-made pottery,

its maintenance, and finish, as well as the understanding, preparation, and maintenance, of clay through its various stages, and the relation of design, functional and otherwise, to the medium.

ART212 Ceramics II [0-4, 3 cr.]

This course is 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.

Prerequisite: ART211 Ceramics I.

ART221 Drawing I [0-6, 3 cr.]

This course is a study of the basic drawing techniques in various media with regard to landscape, still life, and the human figure.

ART222 Drawing II [0-6, 3 cr.]

This course is a concentrated study of the human figure, emphasizing analysis and the synthesis of visual experience.

Pre-requisite: ART221 Drawing I.

ART223 Perspective Drawing [1 cr.]

This course is 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.

Co-requisite: ART221 Drawing 1

ART331 History of Art I [3-0, 3 cr.]

This course is a survey of the visual art in the ancient Oriental, Classical, and Medieval Periods.

ART332 History of Art II [3-0, 3 cr.]

This course is a survey of the visual art in the Renaissance, Baroque, and Modern periods.

ART333 Art Education [1-4, 3 cr.]

This course is a survey of the 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.]

This course is 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.]

This course is 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.]

This course is an introduction to painting procedure. The course includes detailed studies from still life, landscape, and the human figure.

Prerequisites: ART221 Drawing I, or the consent of the Instructor.

ART342 Painting II [0-6, 3 cr.]

This course is a studio course that looks into a variety of approaches to space interpretation on a two dimensional plane.

Prerequisite: ART341 Painting I, or the consent of the Instructor.

ART351 Sculpture I [0-6, 3 cr.]

This is a course facilitating the realization of three dimensional forms by modeling, carving, and casting, meaningful subjects

ART352 Sculpture II [0-6, 3 cr.]

This is an advanced course that provides for greater proficiency in creation of the three-dimensional form. Special emphasis on the production of free standing, and relief sculpture for specific sites, is covered.

Prerequisite: ART351 Sculpture I, or the consent of the Instructor.

ART 380 Modern Art and Visual Culture in the Middle East [3cr]

This course will survey the development of Modern art in the Middle East from the end of the Nineteenth century to the Present. The survey will cover the colonial period and the process of westernization in Middle Eastern countries, as well as the formation of National schools of Fine Arts the ensuing spread of Modernism. The problematic relationship between modernity and local traditions will be examined, in addition to the particular 'postmodern' reactions that followed. The impact of Modernism on the formation of artistic identity in Major Middle Eastern cultures as it developed in cities such as Beirut, Cairo, Baghdad, Tehran, and Istanbul will also be discussed. The spread of artistic experience into various of aspects of visual culture, until the formation of its contemporary branches, including graphic design is also noted.

Pre-requisite ARC/DES/GRA 261 Design Culture

ART431 Modern Art [3-0, 3 cr.]

This course is a comprehensive examination of stylistic developments in visual art from the advent of impressionism to the present.

ART441 Painting III [0-6, 3 cr.]

This course is 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 the consent of the Instructor.

ART442 Painting IV [0-6, 3 cr.]

This course is a studio course developing skills in the use of various painting materials and techniques. It is a stepping stone to different media.

Prerequisite: ART441 Painting III, or the consent of the Instructor.

ART499 Senior Study [0-6, 3 cr.]

This is 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.

PH0211 Photography I [2-3, 3 cr.]

This course is an introduction to the basic photographic methods. It covers an applied study in pictorial composition, and darkroom procedures, in relation to advertising.

PH0212 Photography II [2-3, 3 cr.]

This course 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: PH0211 Photography I.

UNDERGRADUATE PROGRAM

- Bachelor of Arts (B.A.) in Interior Architecture.
- Bachelor of Science (B.S.) in Interior Design
- Bachelor of Architecture (B.Arch.)

MINORS IN

- Digital Media
- Islamic Art & Architecture

Department of Architecture and Interior Design

BACHELOR OF SCIENCE IN INTERIOR DESIGN

The Bachelor of Science in Interior Design program offers students a general exposure to the practice of Interior Design, teaching them how to develop the necessary base for practice in the field. Building upon the common foundation year, students are introduced in the second and third years, to various design problems of gradually increasing complexity.

This program may be completed in a minimum of three years, with two Summer Term modules, 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 and/or an interior architect, may continue their studies by adding one additional year and thus completing the Bachelor of Arts in Interior Architecture. Refer to the section on Bachelor of Arts in Interior Architecture.

MISSION

The mission of the Interior Design program is to provide students with a comprehensive education based on a humanistic approach to the discipline. This program prepares students to pursue a career in interior design upon graduation or to pursue graduate studies in interior design or other related fields.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Science in Interior Design is to:

- i. Offer students who successfully complete their studies with the Degree of Bachelor of Science in Interior Design.
- ii. Provide a platform for graduate specializations in Furniture Design, Product Design, Interior Design, Industrial Design, Fashion Design and other fields in design.
- iii. Develop a broad base of theoretical knowledge and the necessary practical skills to assert the role of the interior designer as a synthesizer of the different factors which affect the living built environment.
- iv. Expose students to the current issues in theory and practice, as well as the latest technology in the field.

LEARNING OUTCOMES

Graduates of the Bachelor of Science in Interior Design program will acquire the following skills:

- i. The ability to practice interior design in various contexts and cultures.
- ii. Refined critical thinking and problem-solving skills.
- iii. The ability to identify design issues and to provide solutions.
- iv. The ability to design and execute projects related to interior design, renovation, restoration and other projects.
- v. Flexibility to deal with a large scope of interior design problems and to understand the different materials and technologies, as well as space-planning, furniture design, and other interior design-specific tasks.
- vi. The capacity to deal innovatively with projects of different types and scales.
- vii. The capacity to elaborate projects with innovative structural systems, detailing, and material.
- viii. Flexibility to operate in a multi-disciplinary environment.
- ix. The ability to serve the community in organizations in both the public and private sectors.

B.S IN INTERIOR DESIGN CURRICULUM

Year I - 36 credits

See *Foundation Program*

Year II

Fall Semester (16 credits)

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 credits)

DES332	Design Studio IV	6
DES352	Computer Graphics II	2
DES342	Technical Graphics III	3
DES372	History of Architecture II	2
—	LAC Elective**	3

Summer Modules I and II (10 credits)

HLT201	Basic Health	1
—	LAC Elective**	3
—	LAC Elective**	3
—	LAC Elective**	3

Department of Architecture and Interior Design

Year III

Fall Semester (17 credits)

DES401	Interior Design Workshop I	1
DES431	Design Studio V	5
DES421	Design Technology I	2
—	Art Elective*	3
—	LAC Elective**	3
—	LAC Elective**	3

Spring Semester (14 credits)

DES402	Interior Design Workshop II	1
DES432	Design Studio VI	5
DES422	Design Technology II	2
—	LAC Elective**	3
—	LAC Elective**	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 Theatre	3
COM345	Modern Drama	3
MUS201	Fundamentals of Music	3
PHO212	Photography II	3

*LAC Electives

Refer to the list of University approved Liberal Arts Curriculum Electives



BACHELOR OF ARTS IN INTERIOR ARCHITECTURE

The Bachelor of Arts in Interior Architecture Program includes the basic foundation of the Bachelor of Science in Interior Design Program, but also features an additional year of specialization that allows students a more comprehensive exposure to the interior design profession. This program also prepares students for potential specialization and graduate studies in areas such as industrial design, historic preservation, furniture design, and other graduate fields of study.

Students enrolled in the Bachelor of Arts in Interior Architecture program also have the option of adding to their studies by focusing their professional electives in one of two areas of specialization – Islamic Art and Architecture, or Graphic Design.

A total number of 139 credits are required for the Bachelor of Arts in Interior Architecture program, excluding the Freshman year. For the Bachelor of Arts in Interior Architecture program with a minor in Islamic Art and Architecture, a total number of 147 credits is required; whereas to minor in Graphic Design, a total number of 151 credits is required.

This program may be completed in four academic years after the Freshman year, including Summer term modules. Students may elect to extend the program over a longer period of time if they choose not to take any Summer term modules.

Students enrolled in the Bachelor of Science in Interior Design may apply to this program and typically complete its requirements in one additional year of study.

MISSION

The mission of the Interior Architecture program is to give students a comprehensive education based on a humanistic approach to the discipline. This program prepares students to assume their role as interior architects upon graduation and/or to pursue graduate studies in interior architecture and other related fields.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Interior Architecture is to:

- i. Offer students who successfully complete the program with the degree of Bachelor of Science in Interior Architecture.

- ii. Provide a platform for graduate specializations in furniture design, product design, interior design, industrial design, fashion design and other fields in design.
- iii. Develop a broad base of theoretical knowledge and the necessary practical skills.
- iv. Assert the role of the interior architect as a synthesizer of the different factors which affect the built environment.
- v. To expose students to the current issues in theory and practice and to the latest technology in the field.

LEARNING OUTCOMES

Graduates of the Bachelor of Arts in Interior Architecture will acquire the following skills:

- i. The ability to practice interior architecture in various contexts and cultures.
- ii. The capacity for critical thinking, and the ability for problem solving.
- iii. The ability to identify design issues, to conduct research, and to provide solutions.
- iv. The ability to design, and execute, projects relating to interior architecture, renovation, restoration and other related projects.
- v. A flexibility to deal with a large scope of interior design problems, and to understand the different materials and technologies, as well as space planning, furniture design, and other interior design specific tasks.
- vi. The capacity to deal innovatively with projects of different types and scales.
- vii. The capacity to elaborate projects with innovative structural systems, detailing, and material.
- viii. The ability to engage in critical thinking and problem solving.
- ix. The capacity to operate in a multi-disciplinary environment.
- x. The capacity to serve the community in organizations of both public and private sectors.

B.A. IN INTERIOR ARCHITECTURE CURRICULUM

Year I - 36 credits
See *Foundation Program*

Year II

Fall Semester (16 credits)

DES331	Design Studio III	6
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DES351	Computer Graphics I	2
DES341	Technical Graphics II	3
DES371	History of Architecture I	3
DES361	Theory I	2

Spring Semester (15 credits)

DES332	Design Studio IV	6
DES352	Computer Graphics II	2
DES342	Technical Graphics III	3
DES372	History of Architecture II	2
—	Professional Elective***	2

Summer Modules I and II (10 credits)

—	Art Elective*	3
HLT201	Basic Health	1
—	LAC Elective****	3
—	LAC Elective****	3

Year III

Fall Semester (16 credits)

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
—	LAC Elective****	3

Spring Semester (14 credits)

DES432	Design Studio VI	5
DES402	Interior Design Workshop II	1
DES422	Design Technology II	2
DES524	Environmental Systems II	3
—	LAC Elective	3

Summer Modules I and II (10 credits)

DES481	Construction Documents	4
DES583	Internship	1
—	LAC Elective****	3

Year IV

Fall Semester (13 credits)

DES531	Design Studio VII	5
—	Professional Elective***	2
—	LAC Elective****	3
—	LAC Elective****	3

Spring Semester (10 credits)

DES532	Design Studio VIII	5
—	Professional Elective***	2
—	LAC Elective****	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

COURSE DESCRIPTIONS

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 Theatre	3
COM345	Modern Drama	3
MUS201	Fundamentals of Music	3
PHO212	Photography II	3

**History and Theory Electives:

ARC363	Theory II	2
ARC471	Contemporary Trends	2
ARC472	Classical Art and Architecture	2
ARC473	Architecture of the Renaissance	2
DES375	Introduction to Islamic Art	2
DES376	Introduction to Islamic Architecture	2
DES475	Islamic Arch. in the Age of Empires	2
DES476	Art and Architecture of the Mamluks	2
DES477	Art and Architecture of the Umayyads	2
DES478	The Decorative Arts of Islam	2

***Professional Electives:

ARC363	Theory II	2
ARC381	Architectural Photography	2
ARC452	Computer Animation	3
ARC471	Contemporary Trends	2
ARC472	Classical Art and Architecture	2
ARC473	Architecture of the Renaissance	2
ARC482	Regional Architecture I	2
ARC483	Regional Architecture II	3
DES373	History of Landscape Design	2
DES375	Introduction to Islamic Art	3
DES376	Introduction to Islamic Architecture	3
DES403	Furniture Design Workshop	2
DES404	Landscape Design Workshop	2
DES405	Design Workshop-IAAD	1
DES435	Design Studio-IAAD	4
DES475	Islamic Arch. in the Age of Empires	2
DES476	Art and Architecture of the Mamluks	2
DES477	Art and Architecture of the Umayyads	2
DES478	The Decorative Arts of Islam	2
DES484	Furniture Design	2
DES585	Professional Practice	2
DES591	International Studio	3
DES592	International Workshop	2
DES 595	International Studio- IAAD	3
GRA301	Intermediate Computer Graphics	3
GRA302	Advanced Computer Graphics	3
GRA312	Printing Variables	3
GRA341	Art of Calligraphy	3
GRA342	Art of Illustration	3
GRA411	Advanced Typography	3
GRA431	History of Graphic Design	3
GRA484	Web Design	3

*LAC Electives

Refer to the list of University approved Liberal Arts Curriculum Electives

DES331 Design Studio III [3-6, 6 cr.]

This course builds upon 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 course places an emphasis upon the development of representational tools in translating ideas into architectural drawings and models, specifically 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, and DES234 Design Studio II-B.

DES332 Design Studio IV [3-6, 6 cr.]

This course further elaborates the process of theoretical investigation of space, with emphasis on the communication of ideas through different representational models and tools. Small to medium-scale projects are studied, 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 – encompassing plans, sections, and elevations, in addition to models, will be expected at this stage.

Prerequisite: DES331 Design Studio III.

DES341 Technical Graphics II [2-2, 3 cr.]

This course covers the specific application of technical drawing to architectural plans, and sections and elevations, with two-dimensional and three-dimensional representations, as well as 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.]

This course covers the translation of the technical drawings of canonical projects into three-dimensional architectural models, with different materials and techniques and the

development of the full set of corresponding architectural drawings, including plans, sections and 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 Introduction 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, and 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 the physical space in its aesthetic, social and cultural significance, examining the ideological frameworks behind paradigmatic changes, the 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. Important icons and landmarks in art and architecture, as well as the principles, technical developments and ideologies underlying these various movements will be analyzed. The course will also study the importance of cultural ideas and ideals and their relation to the development of aesthetic forms, and more broadly, of civilization.

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, by 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.]

This course is an 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.

DES375 Introduction to Islamic Art (650 - 1650) [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 distinctively 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.

DES376 Introduction to Islamic Architecture (650 - 1650) [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, madrasas, 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.

DES380 History of 20th Century Architecture in the Middle East [3cr]

This course will trace architectural developments in the Middle East from the end of the Nineteenth century to the Present. The

survey will cover the colonial period and the process of westernization in Middle Eastern countries, as well as the formation of National schools of architecture and the ensuing spread of Modernism. The problematic relationship between modernity and local traditions will be examined, in addition to the particular 'postmodern' reactions that followed. The impact of Modernism on urban development and the expansion of major cities such as Beirut, Cairo, Baghdad, Tehran, and Istanbul will also be discussed.

Pre-requisite ARC/DES 372 History of Architecture II

DES381 Architectural Photography [1-2, 2 cr.]

This course is an advanced photography course emphasizing specific photographic techniques, lighting and composition, dealing with architectural and design subjects.

Prerequisite: PH0211 Photography I.

DES401 Interior Design Workshop I [0-2, 1 cr.]

This course is 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.]

This course is an intensive workshop that introduces new theoretical and/or technical themes in support of the design sequence.

Prerequisite: DES332 Design Studio IV.

DES 403 Furniture Design Workshop [2 CR]

Furniture design with emphasis on construction techniques and the understanding of various materials used in the manufacturing of furniture. Studio exercises supported by workshop training to culminate in design and realization of a project in the wood shop.

DES404 Landscape Design Workshop [1-2, 2 cr.]

This course is a case study and application of an actual landscape design project or

competition to be worked as an intensive workshop project.

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 madrasah, or the restoration of a historic structure in the Islamic world.

Prerequisite: ARC332 Design Studio IV.

DES421 Design Technology I [2-0, 2 cr.]

This course gives an overview of the major components of a building – structural systems, envelopes, and foundation. It includes a basic survey of the 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.]

This course focuses on the interior design applications and explores the different finishing materials and techniques used in interiors with attention to problems of jointing, relation between different materials, insulation, finishes, and applications to specific design problems.

DES431 Design Studio V [3-4, 5 cr.]

This course will build upon the theoretical background of the previous studios, addressing interior design applications of small-to-medium scale in greater detail. By 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 course 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.

DES 435 Design Studio-IAAD [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.

DES 471 Contemporary Trends [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.

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 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: DES376 Introduction to Islamic Architecture.

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 17th and 18th centuries. Monuments and artifacts are examined in terms of their purpose and meaning, and are interpreted in the context of cultural history. Particular attention is afforded to the formation of Islamic art and to the discernment of what can be regarded as "Islamic" in the visual art forms of Islam. This involves exploring cross-cultural dialogues in the Levant in the first century of Islam, and the attempt to blend elements from the 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, are explored within their religious, political and socio-economic contexts, as well as in terms of meaning, function, aesthetics and emerging forms. Particular emphasis is given to the regional design vocabulary and the evolution of style, content and iconography. The course also investigates 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.

DES 480 Topics in Interior Architecture [3cr]

This series of courses will deal with specific topics of current importance, and which are not covered in the Interior Architecture &

Design curriculum. The topics and themes dealt with will vary depending on contemporary problematic with the purpose of enriching students' exposure to these issues. Every course in this series will be assigned a subtitle once the theme has been defined and listed in the course offering.

Pre-requisite: DES 332 interior Design Studio IV

DES481 Construction Documents [2-4, 4 cr.]

This course is a preparation of a detailed set of working drawings for the execution of an interior design project, beginning 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 the design codes applied regionally and internationally.

Prerequisite: DES432 Design Studio VI.

DES 482 Regional Architecture [2 cr]

Analytical & 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 Nineteenth and early Twentieth century.

DES 483 Regional Architecture II [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.

DES484 Furniture Design [2-0, 2 cr.]

This course is a 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, and modern and contemporary furniture design. The survey also covers the different technologies and transformation in design processes.

DES523 Environmental Systems I [3-0, 3 cr.]

This course covers the 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 such as solar energy and heating, insulated walls, and 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 the 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 a study of the properties of acoustical spaces, such as theaters or concert halls.

DES531 Design Studio VII [3-4, 5 cr.]

This course 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 problem which simultaneously addresses 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.]

This course is an introduction to the professional practice, with introductory lectures that outline the basics of job search, applications, 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 introduces the business aspects of the design practice through the exploration of the financial, legal and managerial aspects, such as 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.]

This course is a study abroad of the 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.]

This course is a workshop abroad at a host school, revolving around specific and intensive interior design projects.

Prerequisite: DES432 Design Studio VI.

DES595 International Studio-IAAD [1-4, 3 cr.]

This studio offers an opportunity for the students to gain a first-hand experience of the wealth and breadth of the material heritage of the Arab and Islamic worlds. The knowledge gained through the design history and theory courses will be complemented by field trips and site visits that offer direct exposure to and 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 will be required to analyze and document specific works and study their relationship with the urban history and culture of the area. This will then be documented and presented in a portfolio.

Prerequisite: ARC432 Design Studio VI.



BACHELOR OF ARCHITECTURE (B. ARCH.)

The curriculum leads to the professional degree of Bachelor of architecture, enabling graduates to practice architecture in its wide range of applications, or to pursue graduate studies in a range of fields including architecture, urban design, urban planning, landscape design, construction management, or other related fields.

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 the 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 Bachelor of Architecture degree is 176 credits, which can be completed in a minimum of five academic years after the Freshman year, including Summer modules.

MISSION

The mission of the architecture program is to give students a comprehensive education, based on a humanistic approach to the discipline, preparing them to pursue a professional career or graduate studies.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Architecture is to:

- i. Offer students, who successfully complete their studies, the professional degree of Bachelor of Architecture.
- ii. Provide a platform for graduate specializations in architecture, urban planning, urban design, landscape design, digital design, and other fields in design.
- iii. Develop a broad base of theoretical knowledge and the necessary practical skills.
- iv. Assert the role of an architect as a synthesizer of the different factors which affect the built environment.
- v. Expose students to the current issues in theory and practice and to the latest technology in the field.

LEARNING OUTCOMES

Graduates of the Bachelor of Architecture program will acquire the following skills:

- i. The ability to practice architecture in various contexts and cultures.
- ii. A capacity for critical thinking and problem solving skills.
- iii. The ability to identify design issues, conduct research, and to provide solutions.
- iv. An understanding of the urban dimension of architecture and the consequences of building activities on the environment.
- v. The capacity to deal innovatively with projects of different types and scales.
- vi. The capacity to elaborate projects with innovative structural systems, detailing and material.
- vii. The capacity to operate in a multi-disciplinary environment.
- viii. The capacity to serve the community in organizations of both public and private sectors.

B.ARCH. CURRICULUM

Year I - 36 credits

See *Foundation Program*

Year II

Fall Semester (16 credits)

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 credits)

ARC332	Design Studio IV	6
ARC352	Computer Graphics II	2
ARC342	Technical Graphics III	3
ARC372	History of Architecture II	2
ARC363	Theory II	2

Summer Modules I and II (11 credits)

ARC311	Building Systems I	3
—	Professional Elective**	2
—	LAC Elective***	3
—	LAC Elective***	3

Year III

Fall Semester (15 credits)

ARC431	Design Studio V	6
ARC421	Building Technology I	2
ARC312	Building Systems II	3
HLT201	Basic Health	1

Department of Architecture and Interior Design

—	LAC Elective	3
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Spring Semester (15 credits)

ARC432	Design Studio VI	6
ARC422	Building Technology II	2
ARC411	Building Systems III	3
—	Professional Elective**	3
PED__	Physical Education	1

Summer Modules I and II (10 credits)

ARC481	Construction Documents	4
—	LAC Elective***	3
—	LAC Elective***	3

Year IV

Fall Semester (16 credits)

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 (16 credits)

ARC412	Building Systems IV	3
ARC532	Design Studio VIII	5
ARC502	Design Workshop II	1
ARC522	Building Technology IV	2
ARC524	Environmental Systems II	3
ARC561	Seminar	2

Summer Modules I and II (7 credits)

ARC538	Internship	1
—	Professional Elective**	3
—	LAC Elective***	3

Year V

Fall Semester (9 credits)

ARC631	Design Studio IX	5
ARC601	Final Project Research	1
ARC584	Building Codes and Laws	1
—	Professional Elective**	2

Spring Semester (10 credits)

ARC632	Design Studio X	5
—	Professional Elective**	2
—	LAC Elective***	3

*History and Theory Electives:

ARC375	Introduction to Islamic Art	3
ARC376	Introduction to Islamic Architecture	3
ARC461	Topics in Architecture Theory	2
ARC471	Contemporary Trends	2
ARC472	Classical Art and Architecture	2
ARC473	Architecture of the Renaissance	2
ARC475	Islamic Arch. 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
ARC 404	Landscape Design Workshop	2
ARC 405	Design Workshop- IAAD	1
ARC 435	Design Studio- IAAD	4
ARC451	Digital Modeling	3
ARC452	Computer Animation	3
ARC454	Dynamic 3D Modeling	3
ARC461	Topics in Architecture Theory	2
ARC471	Contemporary Trends	2
ARC472	Classical Art and Architecture	2
ARC473	Architecture of the Renaissance	2
ARC475	Islamic Arch. 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
ARC482	Regional Architecture I	2
ARC483	Regional Architecture II	3
ARC484	Regional Urbanism	3
ARC551	Computer Graphics Studio	4
ARC582	Urban Planning II	2
ARC585	Professional Practice	2
ARC591	International Studio	3
ARC592	International Workshop	2
ARC 595	International Studio- IAAD	3
DES403	Furniture Design Workshop	2
DES484	Furniture Design	2
GRA301	Intermediate Computer Graphics	3
GRA302	Advanced Computer Graphics	3
GRA484	Web Design	3
GRA487	3D Animation Techniques	3
PKG570	Introduction to Packaging	3
PKG572	Packaging Dynamics and Permeation	3
PKG573	Packaging Types and Processes	3
PKG574	Paper and Paperboard Packaging	3
PKG575	Corrugated Packaging	3
PKG576	Rigid Plastic Packaging	3
PKG577	Pac. for Food, Drug and Cosmetics	3
PKG578	Food Preservation Packaging	3
PKG579	Special Topic: in Packaging Eng.	3
PKG580	Packaging Design	3
PKG582	Structural Packaging	3
PKG584	Package Branding	3
PKG586	Computer Graphics for Packaging	3
PKG588	Packaging Applications	3
PKG589	Special Topic: in Packaging Design	3

*LAC Electives

* Refer to the list of University approved Liberal Arts Curriculum Electives

MINOR IN DIGITAL MEDIA

The Minor in Digital Media 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.

EDUCATIONAL OBJECTIVES

The objective of the Minor in Digital Media program is to prepare students to lead in the development and application of information technology tools, for a wide variety of uses in design.

LEARNING OUTCOMES

Graduates of the minor in Computer Graphics program will acquire the following skills:

- a. The ability to use the computer to produce elaborate print and screen presentations for the design profession.
- b. The ability to use computers to generate a complete set of working drawings for construction.
- c. The ability to develop 3D computer generated models and animations for the design profession.
- d. The ability to use specific software as a means to architectural design problem-solving.

Required Courses (11 credits)

ARC351	Computer Graphics I	2
ARC352	Computer Graphics II	2
ARC551	Computer Graphics Studio	4
GRA301	Intermediate Computer Graphics	3

Two Electives (6 credits) to be selected from the following courses:

ARC451	Digital Modeling	3
ARC452	Computer Animation	3
ARC454	Dynamic 3D Modeling	3

One Elective (3 credits) to be selected from the following courses:

GRA302	Advanced Computer Graphics	3
GRA484	Web Design	3
GRA487	3D Animation Techniques	3

MINOR IN ISLAMIC ART ARCHITECTURE AND DESIGN (I.A.A.D)

The Minor in Islamic Art and Architecture 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.

MISSION

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, the minor offers 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.

EDUCATIONAL OBJECTIVES

The objective of the Minor in Islamic Arts and Architecture is to introduce design students to the rich traditions of Islamic Art and Architecture, and to prepare them to respond better to the challenges of practice in the Islamic world.

LEARNING OUTCOMES

Graduates of the minor in Islamic Arts and Architecture program will acquire the following skills:

- i. An understanding of the role and breadth of the arts in the various Islamic cultures.
- ii. Basic knowledge of the historic development of Islamic Art and Architecture in the Islamic world, and the major highlights of these developments.
- iii. Development of basic analytical and interpretative skills in examining the Islamic Art traditions, and in formulating contemporary interpretations of these rich traditions.

Required Courses (14 credits)

ARC375	Introduction to Islamic Art	3
ARC376	Introduction to Islamic Architecture	3
ARC405	Design Workshop-IAAD	1
ARC435	Design Studio-IAAD	4
ARC 595	International Studio-IAAD	3

Two Electives (4 credits) to be selected from the following courses:

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

COURSE DESCRIPTIONS

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 such as solid object, beams, frames, trusses, and 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 uni-axial 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.]

This course is an 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 the resulting deformations are covered. 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 course 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, and ARC234 Design Studio II-B.

ARC332 Design Studio IV [3-6, 6 cr.]

This course further elaborates the process of theoretical investigation of space with emphasis on the communication of ideas through different representational models and tools. The course covers the study of small to medium scale projects, with emphasis on the basic principles of spatial design. References and case studies of canonical works in modern design may serve as a theoretical background in the continuing development of a theoretical foundation. In addition to the models, the elaboration of a complete set of architectural drawings for the final design, encompassing plans, sections, and elevations in addition to the models will also be expected at this stage.

Prerequisite: ARC331 Design Studio III.

ARC341 Technical Graphics II [2-2, 3 cr.]

This course covers the specific application of technical drawings 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.]

This course covers the translation of the technical drawings of canonical projects into

three-dimensional architectural models with different materials and techniques, and the development of the full set of corresponding architectural drawings (plans, sections, and elevations) at appropriate scales.

Prerequisite: ARC341 Technical Graphics II.

ARC351 Computer Graphics I [1-2, 2 cr.]

This course specifically addresses the 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 the 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 is an in depth examination of the ideologies behind modern and post-modern culture and the influence of contemporary theories on the architectural and design cultures, with a thematic approach that deals with the specific aspects of contemporary practice.

Prerequisite: ARC361 Theory I.

ARC371 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. Important icons and landmarks in art and architecture, as well as the principles, technical developments and ideologies

underlying these various movements will be analyzed. The course will also study the importance of cultural ideas and ideals and their relation to the development of aesthetic forms, and more broadly, of civilization.

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, by 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.]

This course is an 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 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 distinctively 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 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, madrasas, 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.

ARC 380 History of 20th Century Architecture in the Middle East [3cr]

This course will trace architectural developments in the Middle East from the end of the Nineteenth century to the Present. The survey will cover the colonial period and the process of westernization in Middle Eastern countries, as well as the formation of National schools of architecture and the ensuing spread of Modernism. The problematic relationship between modernity and local traditions will be examined, in addition to the particular 'postmodern' reactions that followed. The impact of Modernism on urban development and the expansion of major cities such as Beirut, Cairo, Baghdad, Tehran, and Istanbul will also be discussed.

Pre-requisite ARC/DES 372 History of Architecture II

ARC 381 Architectural Photography [2 CR]

Advanced photography course emphasizing specific photographic techniques, lighting and composition, dealing with architectural and design subjects.

ARC404 Landscape Design Workshop [1-2, 2 cr.]

This course is an 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.

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 madrasah, or the restoration of a historic structure in the Islamic world.

Prerequisite: ARC332 Design Studio IV.

ARC411 Building Systems III [3-0, 3 cr.]

This course is an introduction to the different soil-structural systems, and the multiplicity of ways that 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 the introduction of the current and applicable engineering structural models will be covered.

Prerequisite: ARC312 Building Systems II.

ARC412 Building Systems IV [3-0, 3 cr.]

This course covers the selection of specific applications for the design of structural systems in conjunction with architectural design projects, or as applicable to a real life situation. Comparisons between computer/empirical simulation for design and code compliance, as well as the selection of one structural system (Concrete/ACI, Steel/AISC, or other) for detailed design, are covered.

Prerequisite: ARC312 Building Systems II.

ARC421 Building Technology I [2-0, 2 cr.]

This course is an 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, are covered.

ARC422 Building Technology II [2-0, 2 cr.]

This course is an analysis of the 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 are covered.

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 the 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.]

This course involves the development of projects of greater complexity in terms of functional and programmatic constraints with specific attention to the structural dimension in design according to the 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 – IAAD [2-4, 4 cr.]

This course investigates projects pertaining to contemporary design issues in the Islamic world, for example the design of religious centers, housing, schools, cultural compounds and libraries, 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 3D digital modeling through generation, manipulation and total control of complex geometrical and free form objects as related to design issues and applications, enabling students to explore new tools for design.

Prerequisite: ARC352 Computer Graphics II.

ARC452 Computer Animation [2-2, 3 cr.]

An advanced visualization of space to user-defined lighting and materials, in order to generate realistic 3D rendered walk-through, parts in motion and animation techniques.

Prerequisite: ARC352 Computer Graphics II.

ARC454 Dynamic 3D Modeling [2-2, 3 cr.]

An introduction to building information modeling with the understanding of real time modeling including spatial relationship and

properties of building components.

Prerequisite: ARC352 Computer Graphics II.

ARC461 Topics in Architecture Theory [2-0, 2 cr.]

This course will address the architectural theories with a focus on the specific themes of contemporary relevance and importance. The course will be run as an advanced theory seminar.

Prerequisite: ARC363 Theory II.

ARC471 Contemporary Trends [2-0, 2 cr.]

This course is a study of the 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.]

This course is a thorough investigation of the classical art and architecture of the Greek and Roman periods, with specific studies of important artistic and architectural works. The course highlights 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.]

This course is a thorough investigation of the art and architecture of the Italian Renaissance and the Late Renaissance, with specific studies of important artistic and architectural works and the theoretical framework of these works as well as their role within the cultural history of the periods in which they were created. The course also covers 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 evolved.

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 examine 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. The course will also employ a range of methodologies and 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 17th and 18th 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 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 1st Century of Islam, and the attempt to blend the 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.]

This course entails a 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 Design Studio IV.

ARC482 Regional Architecture I [2-0, 2 cr.]

This course covers the 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 as well as other factors on the development of regional architecture in the 19th and 20th Centuries.

Prerequisite: ARC332 Design Studio IV.

ARC483 Regional Architecture II [2-2, 3 cr.]

This course covers an 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.]

This course entails students preparing a case study of a regional town, supported by a field survey of the urban structure and its historical development, as well as 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.]

This course is a workshop in conjunction with Design Studio VII, to introduce new computer modeling and rendering techniques, and/or to explore the new technologies in structural and environmental design.

Prerequisite: ARC432 Design Studio VI.

ARC502 Design Workshop II [0-2, 1 cr.]

This course is a workshop in the 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 the detailing in design and the role of the detail in the generation of design, from brick to wood and steel detailing, with actual drawings, and/or actual construction exercises, at 1:1 or 1:2 scale of wall sections in different materials, as well as in fixture details, windows and other architectural components.

ARC522 Building Technology IV [2-0, 2 cr.]

This course covers an analysis of the 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. The course will 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.]

This course covers the 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 such as 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 the basic

electric circuits, with emphasis on energy management, electric ratings and capacity, wiring and lighting systems and different lighting equipment, and the methods for building electrical systems. The second part is a survey of the basic acoustical systems, theories, the acoustic properties of different materials used in buildings and their consequences on noise reduction, as well as a study of the properties of acoustical spaces, such as theaters or concert halls.

ARC531 Design Studio VII [3-4, 5 cr.]

This course is an elaboration of projects with continuing emphasis on technical, structural and environmental parameters in design. This is covered through the investigation of complex building types, stressing the necessity of adapting computer-aided means as a design tool in the early phases of the design process, namely from the analysis to design production. The studio will also investigate the 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 [2-4, 4 cr.]

A design studio oriented towards investigating and conceptualizing design problems through computer-aided tools from their initial stages to the design development, by means of new digital methodologies.

Prerequisite: Any two of the following courses: ARC451 Digital Modeling, ARC452 Computer Animation, ARC 454 Dynamic 3D Modeling

ARC561 Seminar [2-0, 2 cr.]

This course involves a series of lectures and/or presentations that focus discussions around ideas, theories and projects that

influenced classical, modern or contemporary developments in architecture.

Prerequisite: ARC432 Design Studio VI.

ARC 580 Topics in Architecture [3cr]

This series of courses will deal with specific topics of current importance, and which are not covered in the Architecture curriculum. The topics and themes dealt with will vary depending on contemporary problematic with the purpose of enriching students' exposure to these issues. Every course in this series will be assigned a subtitle once the theme has been defined and listed in the course offering.

Pre-requisite ARC 432 Design Studio VI

ARC581 Urban Planning I [3-0, 3 cr.]

This course is a 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. It involves a broad overview of the 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.]

ARC582 Urban Planning II [2-0, 2 cr.] This course is a study of the actual planning processes, issues and problems, urban and regional zoning, and demographical projections, with comparative studies of regional, or international, planning cases.

Prerequisite: ARC581 Urban Planning I.

ARC583 Internship [0-0, 1 cr.]

This course is an introduction to the professional practice, with introductory lectures that outline the basics of job search, application and practical training. The course involves 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.]

This course is a study of the local and regional building codes, with an introduction to other codes (USA, Europe, the Arab World) as

comparative tools and an 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 of the client and contractor relationships, with an introduction to the economic and management principles of design projects, financing, cost-estimate and budgeting.

ARC591 International Studio [1-4, 3 cr.]

This course involves a study abroad, covering the specific works of the classical or modern architecture, supported by a preparatory series of lectures/presentations on the subject of study. Students will be required to study, analyze and document specific works including their relationship to the urban history and culture of the area, which will be presented in a portfolio.

Prerequisite: ARC432 Design Studio VI.

ARC595 International Studio-IAAD [1-4, 3 cr.]

This studio offers an opportunity for the students to gain a first-hand experience of the wealth and breadth of the material heritage of the Arab and Islamic worlds. The knowledge gained through the design history and theory courses will be complemented by field trips and site visits that offer direct exposure to and 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 will be required to analyze and document specific works and study their relationship with the urban history and culture of the area. This will then be documented and presented in a portfolio.

Prerequisite: ARC432 Design Studio VI.

ARC592 International Workshop [1-2, 3 cr.]

This course is a 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.]

This is a research course supervised by the selected advisor for the final project studio,

Department of Architecture and Interior Design

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 will analyze problems of practical relevance to contemporary urban settings, with an investigation of the social and ideological aspects of the urban design process. Projects in this studio will deal with a comprehensive study of a city or a section of a large city, as a prelude to the development of a final project and as an elaboration to the studies developed in this studio.

Prerequisite: ARC532 Design Studio VIII.

ARC632 Design Studio X [3-4, 5 cr.]

The final studio in this sequence is an opportunity for students to develop an individual project through the formulation of a critical problem. This must simultaneously address the various factors in the design process, and lead to a synthesis that demonstrates a thorough understanding and resolution of the different issues analyzed in the design of a building, from the understanding of context, to structural and environmental systems, down to the details of construction.

Prerequisites: ARC601 Final Project Research, and ARC631 Design Studio IX



Department of Graphic Design

UNDERGRADUATE PROGRAM

- Bachelor of Science (B.S.) in Graphic Design

MINOR IN ADVERTISING

- Advertising

BACHELOR OF SCIENCE (B.S.) IN GRAPHIC DESIGN

MISSION

The Mission of the Graphic Design Department is to educate competent designers with proficient skills, an appreciation of arts and a broad cultural knowledge that would allow them to become effective design leaders, good visual communicators and critical thinkers in the design field.

EDUCATIONAL OBJECTIVES

1. The profession of Graphic Design is one that is in constant flux. Our aim is to maintain a discipline, which is up-to-date in both technological and artistic innovations within the profession.
2. To encourage the creation of aesthetic and effective design solutions. Students may choose to work not only in print-based media, but also on screen-based designs, which incorporate motion and sound. Emphasis is placed on communication skills, work ethics and motivation.
3. To create works that are both ethically sound and culturally aware, in turn, having a positive impact on their society and community. From record labels to road signs, film titles to beer bottles, textbooks to websites, students are capable of creating a diversity of professional-level designed materials.
4. Upon graduation, to be competitive in numerous career opportunity options: design firms, advertising agencies, web-site developers, publishing companies, print houses, television studios, or the pursuit of independent design work.

LEARNING OUTCOMES

1. Promote specialist studies relevant to progression pathways for employment.
2. Provide knowledge and relevant skills as the toolkit for career progression.
3. Nurture the student's abilities in a specialist art and design discipline.
4. Enable students to develop personal qualities, linked to generic skills, for successful performance in the working life.
5. Promote a stimulating, supportive and creative, learning environment in which students can maximize their potential as individuals.
6. Involve professional bodies and employers in the delivery of the programs, in order to maintain currency.
7. Offer learning experiences which foster independence of thought, and which encourage analytical and imaginative enquiry.
8. Nurture the designer's obligation to their social and moral responsibilities.

The Graphic Design program prepares accomplished graphic designers with critical minds to evaluate their own work.

The curriculum provides a comprehensive education in offering a range of theoretical and practical courses tackling various design experiences.

After having explored the visual principles of form, image, color and typography, the students choose to either specialize in print or digital media.

The use of multilingual typography in layouts is studied in depth throughout the program. Students develop custom Arabic typefaces for various applications in class.

During the senior year, students have the choice between print emphasis and digital emphasis. The concentration of each emphasis is conveyed in the final senior project - a challenging, self-defined experience that will help students identify their professional interests. Creating visual systems and information design as integral in the final project. Students are required to complete an internship class that allows them to work for credits in a design studio of their choice depending on their specific area of interest.

A multi-faceted discipline, graphic design offers wide opportunities in working for advertising

Department of Graphic Design

agencies, design studios, publishing houses, television production houses, or as freelancers designing websites, typefaces, animated sequences, interface systems, packaging, identities, posters and exhibitions.

The program curriculum consists of 118 credits.

B.S. IN GRAPHIC DESIGN CURRICULUM

Year I - 36 credits

See *Foundation Program*

Year II - 37 credits

Fall Semester (13 credits)

GRA 212	Introduction to Typography	3
ART 222	Drawing II	3
GRA 301	Intermed. Computer Graphics	3
GRA__	Graphic Design Elective*	3
HLT 201/ ETH201	Basic Health or moral reasoning	1

Spring Semester (15 credits)

GRA 351	Graphic Design I	3
GRA 342	Art of Illustration	3
GRA 431	History of Graphic Design	3
ENG 202	Sophomore Rhetoric	3
GRA 302	Advanced Computer Graphics	3

Summer Term (6 credits)

ENG 203	Oral Communication	3
MKT 201	Introduction to Marketing	3

Digital Design Emphasis

Year III - 35 credits

Fall Semester (15 credits)

GRA 352	Graphic Design II	3
GRA 432	Visual Perception	3
GRA 484	Web Design	3
GRA 487	3D Animation Techniques	3
ART 431/332	History of Art II or Modern Art	3

Spring Semester (14 credits)

GRA 482	Motion Design	3
GRA 486	Advanced Interactive Design	3
GRA 462	Graphic Design Seminar	3
--	LAC Elective**	3
PED --	Physical Education	1
CSC201	Computer applications	1

Summer Term (6 credits)

---	LAC Elective**	3
ARA 201	Appr. Arabic Lit.	3

Year IV - 13 credits

Fall Semester (13 credits)

GRA 499	Senior Project	3
GRA 490	Graphic Design Internship	1
--	LAC Elective**	3
--	LAC Elective**	3
--	LAC Elective**	3

Print Design Emphasis

Year III - 35 credits

Fall Semester (15 credits)

GRA 352	Graphic Design II	3
GRA 432	Visual Perception	3
GRA 411	Advanced Typography	3
ART431/332	History of Art II or Modern Art	3
--	LAC Elective**	3

Spring Semester (14 credits)

GRA 451	Graphic Design III	3
GRA 455	Advertising Design	3
GRA 462	Graphic Design Seminar	3
--	LAC Elective**	3
PED__	Physical Education	1
CSC201	Computer applications	1

Summer Term (6 credits)

---	LAC Elective**	3
ARA 201	Appr. Arabic Lit.	3

Year IV - 13 credits

Fall Semester (13 credits)

GRA 499	Senior Project	3
GRA 312	Printing Variables	3
GRA 490	Graphic Design Internship	1
--	LAC Elective**	3
--	LAC Elective**	3

* Graphic Design electives:

Print Design Emphasis

GRA341	Art of Calligraphy,
GRA345	Silk Screen & Binding
GRA484	Web Design
GRA486	Advanced Interactive Techniques
GRA487	3D Animation Techniques

Digital Design Emphasis

GRA341	Art of Calligraphy
GRA345	Silk Screen & Binding
GRA411	Advanced Typography
GRA312	Printing Variables
GRA455	Advertising Design

**LAC Electives

Refer to the list of University approved Liberal Arts Curriculum Electives

COURSE DESCRIPTIONS

GRA301 Intermediate Computer Graphics [2-2, 3 cr.] - Lab course

This intermediate level computer graphics lab course teaches applications that are fundamental to the field of graphic design. Emphasis is placed on technical proficiency and creativity through the manipulation of vector graphics, raster graphics, color, text, layout, grid and die-cuts through an advanced understanding of Adobe Illustrator, Adobe Photoshop and Adobe InDesign. The division of the course is based on demonstrations, presentations, exercises, discussions and critiques.

Prerequisites: GRA 251 Introduction to Computer Graphics, GRA 233 Design Studio IIA, GRA 234 Design Studio IIB

GRA302 Advanced Computer Graphics [2-2, 3 cr.]

This advanced level computer graphics lab course teaches various animation techniques and software. Animation development is explored through the manipulation and integration of image, graphics, sound, and typography in motion. The division of the course is based on demonstrations, presentations, projects, discussions and critiques.

Prerequisite: GRA301 Intermediate Computer Graphics

GRA312 Printing Variables [3-0, 3 cr.]

Various printing processes, principles and techniques are integral to print media studies in graphic design. This course is taught through lectures, assignments, and fieldtrips to print industries. Emphasis is placed upon the vocabulary of the print industry and hands-on experience through the study of printing specification, quotations and pricing, file preparation and professional printing.

Prerequisite: GRA352 Graphic Design II

GRA341 Art of Calligraphy [2-2, 3 cr.] GRA Elective studio course

This elective studio course teaches the art of beautiful handwriting. Simultaneously, the study, research and history of calligraphy as well as its development into a contemporary art form is explored. Importance is placed on the understanding of proportions to enhance legibility combined with the ability to communicate a feeling. This course is taught through projects, discussions and critiques.

GRA342 Art of Illustration [2-2, 3cr.] studio course

This studio course teaches drawing skills through the use of diverse media and assigned research on the history of illustration. Emphasis is placed on the development of personal style in illustration through research, projects, discussions and critiques.

Prerequisite: ART222 Drawing II

GRA345 Silkscreen and Binding [2-2, 3cr.] studio course

This elective studio course introduces the students to silkscreen, printmaking and book binding methods. Through hand-drawn separations, photographic film, digital separations and Xeroxed images, a range of silkscreen techniques are implemented. Various book binding techniques including Japanese binding; accordion folds and signature binding are explored. This course is taught through project development, demonstrations, studio sessions, discussions and critiques.

GRA351 Graphic Design I [2-2, 3cr.] studio course

This studio course explores the principles, problem solving methodology and techniques of graphic design. It investigates visual identity systems applied to printed materials that integrate typography, image, graphics, color and composition for logo and promotional materials design. Emphasis placed on the process of graphic design, research, concept development and the production of bilingual designs. This course is taught through projects, discussions and critiques.

Prerequisites: GRA212 Introduction to Typography, GRA301 Intermediate Computer Graphics

GRA352 Graphic Design II [2-2, 3cr.] studio course

This studio course is an in-depth exploration of publication and editorial concept design. Emphasis is placed on grid system development, composition and the integration of color, illustration, photography, and typography for bilingual publications. This course is taught through projects, discussions and critiques.

Prerequisites: GRA301 Intermediate Computer Graphics, GRA351 Graphic Design I

Co-requisite: GRA431 History of Graphic Design

GRA411 Advanced Typography [2-2, 3cr.]

This advanced level studio course explores the intricacies of typography. Typeface development and typographic experimentation, typography as an expressive visual form and as a functional vehicle of communication is taught. Emphasis is placed on bilingual typography the structural differences between Arabic and Latin typography. This course is taught through projects, discussions and critiques.

Prerequisites: GRA212 Introduction to Typography, GRA351 Graphic Design I

GRA431 History of Graphic Design [3-0, 3 cr.]

This course serves as a comprehensive survey of the history of graphic design from prehistoric visual communications to the proliferation of digital technology and contemporary design. This course teaches the evolution of graphic design through the impact of technological advancements, critical events and innovations by historical figures in the field of graphic design. Emphasis is placed on the analysis linking historical events to current graphic design debates. The course is taught through presentations, research paper, writing, readings and discussions.

Co-requisite: ENG102 English II

GRA432 Visual Perception [2-2, 3 cr.]

How designers decode visual information and audiences encode them is fundamental to the discipline of graphic design. This course approaches the study of visual culture and its theoretical framework. It investigates the production, form and reception of images as well as introduces theoretical strategies to understand how meaning is produced by and through images within their historical context. This course is taught through presentations, discussions, projects and critiques.

Prerequisites: GRA271 History of Design, ENG 102 English II

GRA451 Graphic Design III [2-2, 3 cr.]

The generation of three-dimensional package design solutions is an integral component within print media. This course examines the multi-faceted problem solving methodology of three-dimensional graphic design. Importance is placed on the development of innovative, economical, sustainable, functional and aesthetic package design. This course is taught through exercises, demonstrations, projects, discussions and critiques.

Prerequisites: GRA352 Graphic Design II, GRA

431 History of Graphic Design

Co-requisites: GRA411 Advanced Typography, GRA462 Graphic Design Seminar

GRA455 Advertising Design [2-2, 3 cr.]

This advanced level studio course investigates the relationship between creativity and sales. Emphasis is placed on new directions of creative, intelligent, ethical and persuasive skills for the layout of advertisement and copywrite. This course is taught through projects, discussions and critiques.

Prerequisites: GRA352 Graphic Design II, MKT201 Introduction to Marketing

GRA462 Graphic Design Seminar [2-2, 3cr.]

This course serves as an in-depth seminar on subjects of current interest in graphic design and new media. The integration of theories from related disciplines in recent graphic design debates are introduced and critical thinking is encouraged. Emphasis is placed on methodological research and the role of the graphic designer. This course is taught through presentations, exercises, research paper, writing, readings and discussions.

Prerequisites: GRA432 Visual Perception, ENG102 English II, GRA431 History of Graphic Design, GRA352 Graphic Design II

GRA482 Motion Design [2-2, 3 cr.]

This advanced level studio course explores the conceptualization, methodological procedures and applications of design in motion. Emphasis is placed on time-based media combining typography, image, sound and video. This course is taught through projects, discussions and critiques.

Prerequisite: GRA302 Advanced Computer Graphics, GRA484 Web Design

Co-requisite: GRA462 Graphic Design Seminar

GRA484 Web Design [2-2, 3 cr.]

Web design is integral to digital media studies in graphic design. This course introduces web design development and serves as an extensive exploration of website navigation and interactivity. This course is taught through projects, discussions and critiques.

Prerequisite: GRA302 Advanced Computer Graphics

GRA486 Advanced Interactive Design [2-2, 3 cr.]

This advanced interactive computer graphics lab course teaches the concepts and techniques of interactive media design.

Multimedia, navigation systems and information design are introduced. Emphasis is placed upon advanced Flash scripting, advanced interactive web design, interactive media and video game development. This course is taught through projects, discussions and critiques.

Prerequisites: GRA302 Advanced Computer Graphics, GRA484 Web Design

GRA487 3D Animation Techniques [2-2, 3 cr.]

This advance level animation course explores various animation techniques of three-dimensional modeling and rendering. Emphasis is placed on virtual design environments, imaging for animation and character development. This course is taught through projects, discussions and critiques.

Prerequisite: GRA301 Intermediate Computer Graphics

GRA490 Graphic Design Internship [1 cr.]

This internship course introduces the students to the professional world of graphic design. The students have to choose a printing press and a design firm, a web design firm or an advertising agency to complete the required hours.

Prerequisite: GRA352 Graphic Design II

GRA499 Senior Study [2-2, 3 cr.]

In this senior course level students develop their final year project based upon a previously approved topic proposed in GRA462 Seminar course. Emphasis is placed on students' ability to translate their cumulative knowledge into effective visual communication developed by a team working in digital and print media. This course is taught through a multi-faceted in-depth design project, critique sessions, a series of juries and culminates in an end-of-year exhibition.

Prerequisites: GRA482 Motion Design, GRA484 Web Design, GRA432 Visual Perception, GRA462 Graphic Design Seminar

Co-requisite: GRA486 Advanced Interactive Design

Pre-requisites for digital students: GRA482 Motion Design, GRA484 Web Design, GRA432 Visual Perception, GRA462 Graphic Design Seminar, GRA486 Advanced Interactive Design

Pre-requisites for print students: GRA411 Advanced Typography, GRA432 Visual Perception, GRA451 Graphic Design III, GRA455 Advertising Design, GRA462 Graphic Design Seminar

MINOR IN ADVERTISING

The Minor in Advertising prepares students to compete successfully in an environment where knowledge of business practices and a professional appreciation of the creative arts are required.

EDUCATIONAL OBJECTIVES

- Offer a working acquaintance of marketing practices
- Offer an appreciation of media effects, and media diversity
- Introduce an understanding of the differences between public relations advertising and marketing
- Allow students to appreciate the business dimension of the creative arts

LEARNING OUTCOMES

Students completing this minor will be able to:

- Develop a media/advertising plan
- Develop a PR plan, write press releases, create a media kit, produce brochures, and assist in organizing events
- Present an advertising plan to a client
- Do preliminary market research
- Develop and integrate the artistic component of advertising

Required courses (18 credits)

COM213	Introduction to Public Relations
COM222	Introduction to Radio/TV/Film
MKT201	Introduction to Marketing
MKT301	Promotion Management & Integrated Marketing Communications
GRA431	History of Graphic Design
GRA432	Visual Perception





The School of Arts & Sciences

The School of Arts & Sciences

DEAN

Frossard, Philippe

ASSOCIATE DEANS

Harmanani, Haidar
Salloukh, Bassel

ASSISTANT DEANS

Bacha, Nahla
Rizk-Jamati, Sandra

The School of Arts and Sciences is the heart of the Lebanese American University and its oldest school. The School is the home of the liberal arts core, which is central to the mission of the University, and is the major provider of service courses to all LAU Schools. Indisputably, LAU's pioneering and reputable programs in Computer Science, International Affairs, Molecular Biology, in addition to its history in Arts, Humanities and Communication, makes it the leader in the field - a fact that the University's graduates and their employers keep reaffirming. The School houses the Departments of Communication Arts, Computer Science and Mathematics, Education, Humanities, Natural Sciences, and Social Sciences. The school administers the Institute for Diplomacy and Conflict Transformation, the Institute for Media Training and Research, the Institute for Migration Studies, the Institute for Peace and Justice Education, the Software Institute, the Teacher Training Institute, and the Early Childhood Center.

MISSION

In keeping with the Mission of the University, the School of Arts and Sciences offers a rigorous and high quality education that emphasizes student research and inquiry while upholding the tradition of liberal arts education. The School strives to promote excellence in teaching and to nurture creative, scholarly endeavors. The School aims at developing informed citizens who will leave a mark as scholars and leaders in a complex world.

OBJECTIVES

The objectives of the School of Arts and Sciences are to:

- Integrate and synthesize knowledge across disciplines;
- Encourage and foster research, discovery and independent inquiry;
- Prepare competent, inquisitive, life-long learners, and critical thinkers;
- Inculcate an understanding of scientific and quantitative, as well as qualitative, principles;
- Foster respect for diverse viewpoints;
- Celebrate diversity;
- Respond to local and global needs by modifying existing programs and developing new ones that are in line with the needs and requirements of the communities that it serves;
- Instill high standards of integrity and ethics.

CENTERS AND INSTITUTES

INSTITUTE FOR MEDIA TRAINING & RESEARCH (IMTR)

Providing an interactive platform for media practitioners and students in Lebanon and the region, the IMTR offers leading training programs and coordinates research projects in journalism, film, communication studies, public relations and advertising. As part of LAU's effort to improve the environment in which it operates, the institute actively seeks to promote a more ethical and professional media practice and a better understanding of the field.

INSTITUTE FOR PEACE AND JUSTICE EDUCATION (IPJE)

This institute is housed in the School of Arts and Sciences. Its aim is to forward the culture of peace through courses, training programs, publications and research, which involve both LAU students and the wider community. Some of the issues addressed include, among others, human rights, conflict resolution, inter-faith dialogue, and peace education pedagogy.

SOFTWARE INSTITUTE

This institute seeks to disseminate modern software engineering practices and recent software technology, and to promote the Lebanese software industry. It also aims to provide advanced and continuing education, and support research and development on software engineering and innovative applications.

TEACHER TRAINING INSTITUTE (TTI)

The Teacher Training Institute at the Lebanese American University, School of Arts and Sciences, was established in 1991 and has been active in providing professional development activities for educators in Lebanon and the region as well as in providing community involvement and service activities in line with LAU's mission and vision. Its programs include conferences, in-service workshops and consultation for local and regional educators.

The vision of the TTI is to become the leader in the nation in teacher training and development through becoming a resource center for educators who need support for improving their practice, providing an electronic database including all the workshops and seminars that were offered during the previous years, serving

as a resource in increasing social justice and student engagement in schools.

INSTITUTE FOR DIPLOMACY & CONFLICT TRANSFORMATION (IDCT)

This institute's mission includes the dissemination of knowledge about diplomacy and conflict management, and its role in international relations. IDCT aims at providing current and aspiring diplomats, as well as individuals who are working (or seeking work) at international agencies and civil society, with training on a wide range of issues related to the goals and functions of international diplomacy, protocol, negotiation, decision making, human rights, bargaining strategies and techniques of resolving conflict, and effective representation of political, economic and cultural interests. Moreover, the institute aims to train members of the business community, and the not-for-profit sector (e.g. NGOs and cultural and academic centers and institutes), to communicate effectively with the representatives of foreign governments, and international and regional organizations.

INSTITUTE FOR MIGRATION STUDIES (IMS)

This institute's vision is to become a multidisciplinary institute on migration in Lebanon and the Arab world, with the aim of publishing scholarly works on the subject, and offering a graduate program on migration studies, with a special emphasis on Lebanese migration. In tune with LAU's vision, IMS seeks to offer a superior education, as well as opportunities for rigorous research.



Department of Communication Arts

ACTING CHAIR

Knio, Mona

ASSOCIATE CHAIR

Bouse, Derek

ASSOCIATE PROFESSORS

Mohsen, Raed

ASSISTANT PROFESSORS

Dabbous-Sensenig, Dima

Dabbous, Yasmine

Nassar, Lina

INSTRUCTORS

Adony, Maalouf

Bobrow, Andrew

Farjallah, Tony

STAFF

Anka, Fouad, Senior Theatre Technician

Boustani, Farid, Radio/TV/Film Studio Supervisor

Chdid, George, Senior Theatre Technician

Fayyad, Sami, Senior Studio Technician

Gostanian, Houry, Academic Assistant

Masri, Hala, Theatre Coordinator

Mirdas, Rima, Studio Technician

Salameh, Bechara, Theatre Technician

Tabakian, Annie, Studio Technician

DEGREES OFFERED

- BA in Communication Arts
- Minor in Advertising

FACILITIES

The Department houses the following facilities: A newsroom; TV/Film studios; a radio studio, and three theatres.

BACHELOR OF ARTS (B.A.) IN COMMUNICATION ARTS

MISSION

The Mission of the Communication Arts Program is to generate, through a liberal arts education, communicators with extensive cultural, artistic, and technical, proficiency and versatility, so as to enable them to compete in the local, global, and regional media market, as well as in graduate schools.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Communication Arts is to:

1. Give our students the knowledge, and proficiency, that makes them qualified for a rapidly growing variety of jobs such as script writing, editing, directing, producing, reporting, acting, casting, dubbing, and documentary film making;
2. Train students who are interested in pursuing a teaching career in drama, and audio visual arts, at the high school level in Lebanon;
3. Offer students a well-rounded education that will enable them to contribute to the ongoing development of the media, and cultural industries, in the region;
4. Provide students with a research background that enables them to continue their education.

LEARNING OUTCOMES

Graduates in the Bachelor of Arts in Communication Arts will be able to:

1. Develop a critical appreciation of the audio and visual arts, and will be able to express this in writing;
2. Demonstrate a balanced grasp of the theoretical, and practical, aspects of the field;
3. Understand the ethical, legal, and social, issues related to media;
4. Display a firm grasp of research methods, leading them to the production of videos, films, articles, plays, radio/TV programs, or research papers;
5. Demonstrate the ability to operate state of the art equipment in a studio, theater, and newsroom;

Department of Communication Arts

6. Provide evidence of great managerial competence, in any communication arts based environment;
7. Perform effectively in any production team, and to function as leaders, whenever the need arises;
8. Engage in creative production responsibilities, and/or creative scholarly research.

CURRICULUM REQUIREMENTS

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 all developments in those fields.

The Program strikes a balance between the carefully crafted theoretical and practical courses in the three emphasis areas: Journalism, Radio/TV/Film and Theater. The Program offers the proper blend of intellectual, cultural, and technical components needed to create well-rounded dramatists, reporters, broadcasters, and movie makers.

Students learn to write, edit, layout, and design publications in computer equipped journalism newsrooms. Radio and TV studios provide professional video and audio facilities that authentically simulate real life broadcasts and productions, 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 the Major courses, which are split into the Core and Emphasis Requirements, as follows:

RADIO/TV/FILM

Core Requirements

COM210	Communication Media and Society
COM222	Introduction to Radio/TV/Film
COM225	The Art of Film
COM242	Introduction to the Art of Theater
COM329	Media Law and Ethics
COM451	Media Research Methods
COM499	Internship

Emphasis Requirements

COM235	Studio TV Production
COM236	Radio Production
COM324	History & Theory of Film
COM326	Script Writing

COM335	Advanced TV Production
COM342	Play Production I
COM428	Film Making
COM486	Topics in Media Studies

Suggested Electives

COM213	Public Relations
COM241	Introduction to Acting
COM238	Drama Workshop
COM251	Interpersonal Communication
COM255	Current Affairs in Lebanese Media
COM332	Editing
COM368	Radio/TV/Film Workshop
PH0212	Photography II
WOS412	Representation of Women in the Arts & Media

JOURNALISM

Core Requirements

COM210	Communication Media and Society
COM222	Introduction to Radio/TV/Film
COM225	The Art of Film
COM242	Introduction to the Art of Theater
COM329	Media Law & Ethics
COM451	Media Research Methods
COM499	Internship

Emphasis Requirements

COM214	News Writing & Reporting
COM218	Arabic News Writing & Reporting
COM221	Arab and International Media
COM325	Feature & Magazine Writing
COM327	Journalism Workshop I
COM361	Broadcast Journalism
COM422	Journalism Workshop II
COM485	Topics in Current Affairs

Suggested Electives

COM213	Public Relations
COM241	Introduction to Acting
COM238	Drama Workshop
COM251	Interpersonal Communication
COM255	Current Affairs in Lebanese Media
COM332	Editing
COM368	Radio/TV/Film Workshop
PH0212	Photography II
WOS412	Representation of Women in the Arts & Media



Department of Communication Arts

THEATER

Core Requirements

COM210	Communication Media and Society
COM222	Introduction to Radio/TV/Film
COM225	The Art of Film
COM242	Introduction to the Art of Theater
COM329	Media Law and Ethics
COM451	Media Research Methods
COM499	Internship

Emphasis Requirements

COM241	Introduction to Acting
COM244	Introduction to Technical Stagecraft
COM247	Theater in Performance
COM326	Script Writing
COM342	Play Production I
COM343	Advanced Acting
COM487	Topics in Drama & Theater
COM442	Play Production II

Suggested Electives

Same list in addition to following

COM213	Public Relations
COM238	Drama Workshop
COM251	Interpersonal Communication
COM255	Current Affairs in Lebanese Media
COM332	Editing
COM368	Radio/TV/Film Workshop
PHO212	Photography II
WOS412	Representations of Women in the Arts & Media

SUGGESTED THREE YEAR STUDY PLAN:

COMMUNICATION ARTS - JOURNALISM EMPHASIS:

Year I

Fall

COM222	Intro to R/TV/Film	3cr
ENG201		3cr
ARA201		3cr
	Social Science course	3cr
	LAC Elective	3cr
Total		15cr

Spring

COM210	Communication Media & Society	3cr
ENG202		3cr
STA202		3cr
	Social Science course	3cr
	LAC Elective	3cr
CSC201	Computer Applications	1cr
Total		16cr

Year II

Fall

COM214	News Writing & Reporting	3cr
COM218	Arabic News Writing	3cr
COM225	Art of Film	3cr
	Social Science course	3cr
	Free Elective	3cr
Total		15cr

Spring

COM242	Introduction to Art of Theater	3cr
COM329	Media Law & Ethics	3cr
	LAC Elective	3cr
	Free Elective	3cr
ETH201	Moral Reasoning	1cr
COM325	Feature & Mag. Writing	3cr
Total		16cr

Year III

Fall

COM451	Media Research Methods	2cr
COM327	Journalism Workshop I	3cr
COM361	Broadcast Journalism	3cr
	Free Elective	3cr
	Free Elective	3cr
HLT201	Basic Health	1cr
Total		15cr

Spring

COM221	Arabic & Int. Media	3cr
COM422	Journalism Workshop II	3cr
COM485	Topics in Current Affairs	3cr
COM499	Internship	1cr
	Free Elective	3cr
	Free Elective	1cr
PED---	Physical Education	1cr
Total		15cr



Department of Communication Arts

COMMUNICATION ARTS - RADIO/TV/FILM EMPHASIS:

Year I

Fall

COM222	Introduction to R/TV/F	3cr
ENG201		3cr
ARA201		3cr
	LAC Elective	3cr
	Social Science course	3cr
ETH201	Moral Reasoning	1cr
Total		16cr

Spring

COM210	Communication Media & Society	3cr
COM242	Introduction to Art of Theater	3cr
ENG202	Sophomore Rhetoric	3cr
STA202	Applied Statistics	3cr
	LAC Elective	3cr
CSC201		1cr
Total		16cr

Year II

Fall

COM225	Art of Film	3cr
COM326	Script writing	3cr
COM235	Studio TV Production	3cr
	LAC Elective	3cr
	Social Science course	3cr
	Free Elective	1cr
Total		16cr

Spring

COM324	History & Theory of Film	3cr
COM236	Radio Production	3cr
COM335	Advanced TV Production	3cr
	Social Science course	3cr
	Free Elective	3cr
Total		15cr

Year III

Fall

COM329	Media Law & Ethics	3cr
COM451	Media Research Methods	2cr
COM342	Play Production I	3cr
	Free Elective	3cr
	Free Elective	3cr
	Basic Health	1cr
Total		15cr

Spring

COM499	Internship	1cr
COM486	Topics in Media Studies	3cr
COM428	Film Making	3cr
PED--		1cr
	Free Elective	3cr
Total		14cr

COMMUNICATION ARTS - THEATER EMPHASIS:

Year I

Fall

COM244	Introduction to Technical Stagecraft	3cr
ARA201		3cr
ENG203		3cr
	Social Science course	3cr
	LAC Elective	3cr
ETH201	Moral Reasoning	1cr
Total		16cr

Spring

COM242	Introduction to Art of Theater	3cr
COM210	Communication Media & Society	3cr
ENG202		3cr
STA202		3cr
	LAC Elective	3cr
CSC201		1cr
Total		16cr

Year II

Fall

COM222	Introduction to R/TV/F	3cr
COM241	Introduction to Acting	3cr
COM342	Play Production I	3cr
	LAC Elective	3cr
	Social Science course	3cr
	Free Elective	1cr
Total		16cr

Spring

COM225	Art of Film	3cr
COM326	Script writing	3cr
COM247	Theater in Performance	3cr
	Social Science course	3cr
	Free Elective	3cr
	Free Elective	1cr
Total		15cr

Year III

Fall

COM329	Media Law & Ethics	3cr
COM451	Media Research Methods	2cr
COM442	Play Production II	3cr
	Free Elective	3cr
	Free Elective	3cr
	Basic Health	1cr
Total		15cr

Spring

COM499	Internship	1cr
COM487	Topics in Drama & Theater	3cr
COM343	Advanced Acting Tech.	3cr
	Free Elective	3cr
	Free Elective	3cr
PED--		1cr
Total		14cr

MINOR IN ADVERTISING

MISSION

The Advertising Minor prepares students to compete successfully in an environment where knowledge of business practices and a professional appreciation of the creative arts are required.

PROGRAM OBJECTIVES

1. Offer a working acquaintance of marketing practices,
2. Offer an appreciation of media effects, and media diversity,
3. Introduce an understanding of the differences between public relations, advertising and marketing, and
4. Allow students to appreciate the business dimension of the creative arts.

LEARNING OUTCOMES

Students completing this minor will be able to:

1. Develop a media/advertising plan,
2. Develop a PR plan, write press releases, create a media kit, produce brochures, and assist in organizing events,
3. Present an advertising plan to a client,
4. Do preliminary market research, and
5. Develop and integrate the artistic component of advertising.

Six courses (3 credits each) are required for the minor. They are:

COM213	Introduction to Public Relations
COM222	Introduction to Radio/TV/Film
MKT201	Introduction to Marketing
MKT301	Promotion Management & Integrated Marketing Communications
GRA431	History of Graphic Design
GRA432	Visual Perception

COURSE DESCRIPTIONS

COMMUNICATION ARTS

COM210 Communication Media and Society [3-0, 3 cr.]

This course studies forms of communication, especially mass communication, as elements of cultural and social processes. It is interdisciplinary, drawing on a variety of theories and methods of media studies such as semiotics, linguistics, textual studies, philosophy, political economy, and cultural studies.

Co-requisite: ENG202 Sophomore Rhetoric.

COM213 Public Relations [3-0, cr.]

This course details the principles of public relations, PR ethics, corporate social responsibility, public affairs, promotional campaigns, and media relations.

Prerequisite: ENG102

COM214 News Writing and Reporting [3-0, cr.]

This course covers the principles of news gathering, writing, and judgment, for all the media: newspapers, magazines, wire services (news agencies), radio, TV. The course also covers the study of news sources, field work/assignments, research and interview techniques, and editing. The course involves writing assignments on the substance and styles of reporting.

Prerequisite: COM210 Communication Media & Society, or concurrently.

COM215 Photojournalism [3-0, 3 cr.]

This course covers 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, is also covered.

Prerequisite: None (PH0211 Photography I or COM235 Studio TV Production would be helpful).

COM218 Arabic News Writing and Reporting [3-0, 3 cr.]

This course covers the principles of news gathering and writing for the Arabic-language media. It includes the different styles of writing for news agencies, newspapers, magazines, radio, TV, and editorials.

Prerequisite: ARA201 Appreciation of Arabic Literature or any equivalent Arabic course.

COM221 Arab and International Media [3-0, 3 cr.]

This course covers the development, operation, and analysis of Arab and world communication systems. Problems of cross cultural communication, and the influence of new technologies, particularly satellite television and the internet, on traditional societies, as well as the relationship between Arab and international communication and politics, are covered.

Prerequisite: COM210 Communication Media and Society.

COM222 Introduction to Radio/TV/Film [3-0, 3 cr.]

This course is 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.]

This course is a study of the formal, and esthetic, fundamentals of the film medium. It covers the viewing and analysis of important films in the development of this art.

Prerequisite: ENG202 Sophomore Rhetoric.

COM235 Studio Television Production [3-0, 3 cr.]

This course covers the theory, practice, and technical aspects of studio television production, including basic program types, such as news, talk shows, and commercials (studio and on location).

Prerequisite: COM222 Introduction to Radio/TV/Film.

COM236 Radio Production [3-0, 3 cr.]

This course covers radio production as a means of communication and influence. The basic principles and production techniques are studied.

Prerequisite: COM222 Introduction to Radio/TV/Film.

COM238 Drama Workshop [1-3, 3 cr.]

This course covers the various aspects of theatrical activities, including building, scenery, properties, lighting, costumes, design, construction, etc...

This course can be taken more than once.

COM241 Introduction to Acting [3-0, 3 cr.]

This course is an introduction to the actor's technique and the performer's skills, exploring the elements necessary to begin training as an actor. The course focuses on the physical and vocal exercises, improvisations, and scene study.

COM242 Introduction to the Art of Theater [3-0, 3 cr.]

This course is an introduction to the theater, from its ancient origins to the present, its history, production, design, acting, direction, etc...

Prerequisite: ENG101 English I, can be taken concurrently.

COM244 Introduction to Technical Stagecraft [3-0, 3 cr.]

This course is an 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.

COM247 Theater in Performance [3-0, 3 cr.]

Students taking this course can earn credits by participating in the productions of plays in major roles as an actor, or as a technician under the direction of Faculty members.

COM249 Theater in Lebanon and the Arab World [3-0, 3 cr.]

This course is an overview of the history of theater in Lebanon, and the Arab World, from Maroun Naccache to the present. The course involves a study of selected Arabic plays, in text and performance, as well as the emergence of theater companies, and the development of theater organizations and festivals.

Prerequisite: COM242 Introduction to the Art of Theater.

COM251 Interpersonal Communication [3-0, 3 cr.]

This course helps to increase students' understanding, and implementation, of effective interpersonal communication behaviors. The course examines the basic verbal, and nonverbal, elements affecting communication among individuals, within the family, peer group, and work contexts. Topics include strategy development, relationship and conversation management, defensive communication, and cultural and gender issues in communication style.

COM255 Current Affairs in the Lebanese

Media [3-0, 3 cr.]

This course is offered in Arabic, and taught by a visiting instructor who is a practicing journalist, or a political TV talk-show host. It surveys current, national, and/or international issues, making the headlines in Lebanon's media. The course looks at the variety of ways different media treat these issues, and creates forums such as talk shows, news broadcasts, or short documentaries, where students report, analyze, and present, their contribution to the debate on these issues.

COM324 History and Theory of Film [3-0, 3 cr.]

This course is a study of the development of film from its beginnings.

Prerequisite: COM225 The Art of Film.

COM325 Feature and Magazine Writing

[3-0, 3 cr.]

This course is designed to give the student extensive practice in writing different types of feature articles and interviews for newspapers and magazines. Students will develop ideas and assess their market viability; produce query letters attempting to sell those articles, carry out the necessary research and, finally, write the articles.

Prerequisite: COM214 News Writing and Reporting

COM326 Script Writing [3-0, 3 cr.]

This course covers the principles and techniques of writing radio, television, and film scripts.

Prerequisites: COM222 Introduction to Radio/TV/Film, and ENG202 Sophomore Rhetoric.

COM327 Journalism Workshop I [3-0, 3 cr.]

This course is an intensive, computer-assisted, writing-oriented, course in a laboratory setting. It covers re-writing wire service copy into straight news, as well as magazine articles, editorials, and features. It involves the production of three issues of a student newspaper.

Prerequisite: COM214 News Writing and Reporting.

COM328 Performance for TV & Film [3-0, 3 cr.]

This course involves the application of the principles of acting in performing for TV and film. It involves exercises in announcing, interviewing, and hosting TV programs, as well

as performing in commercials, and acting in dramatic TV programs and films.

COM329 Media Law & Ethics [3-0, 3 cr.]

This course explores legal and ethical principles, case studies, and the historical development, of the mass media regulation in Lebanon. The course includes comparative regional, and international, perspectives, whereby the development of media law and ethics in Lebanon is compared to developments in the Arab world, the United States, and Europe.

Prerequisite: COM210 Communication Media and Society. Senior Standing, or the consent of the Instructor.

COM332 Editing [3-0, 3 cr.]

This course covers the use of computer technology to edit video footage in creating documentary and dramatic TV programs.

Prerequisite: COM222 Introduction to Radio/TV/Film.

COM335 Advanced TV Production [3-0, 3 cr.]

This course covers the advanced aesthetical aspects of TV production in the studio, and on location. The course emphasizes the planning, and directing, of documentaries and TV drama.

Prerequisite: COM235 Studio TV Production, and COM326 Script Writing.

COM337 Creative Dramatics [3-0, 3 cr.]

This course is 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, 3cr.]

This course covers the recreation of prose, poetry, and drama, through oral readings. The course emphasizes the principles and vocal techniques of reading aloud for an audience.

Prerequisite: Junior Standing.

COM342 Play Production I [3-0, 3cr.]

This course covers the script and play analysis of various theatrical genres, and the principles and techniques of producing a theatrical performance. It involves exercises in staging selected scenes, and studying the structure and presentation of a one-act play.

Prerequisite: COM242 Introduction to the Art of Theater.

COM343 Advanced Acting Techniques [3-0, 3 cr.]

This course covers the advanced scene study. It includes multiple scenes to clarify character development throughout a single script.

Prerequisite: 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.]

This course involves theory and exercises in editing, transferring, and merging of text, graphics, and photographs. It involves the use of computer programs to create, design, and print, various types of publications.

Prerequisite: Knowledge of computer operations, and the consent of the Instructor.

COM361 Broadcast Journalism [3-0, 3 cr.]

This course trains students in report writing while on assignment. It is an introduction to the equipment utilized at the different stages of production and transmission. The different aspects of producing news programs for broadcast media, including news gathering, writing, and reporting for radio and television, are covered.

Prerequisites: COM222 Introduction to Radio/TV/Film, and COM214 News Writing & Reporting.

COM368 Radio/TV/Film Workshop [3-0, 3 cr.]

This course deals with the different technical aspects in the field of Radio/TV/Film. The course may be repeated, and taken more than once, if the topics differ.

Prerequisite: COM235 Studio Television Production.

COM422 Journalism Workshop II [3-0, 3 cr.]

This course is an intensive, computer-assisted, writing-oriented, course in a laboratory setting. It covers re-writing wire service copy into straight news, magazine articles, and features. As well, it covers writing LAU-related news briefs and features, taking photographs, and designing four issues of the student newspaper, the LAU Tribune.

Prerequisite: COM327 Journalism Workshop I.

COM424 Digital Images [3-0, 3 cr.]

This course is a survey of all the aspects of digital technology, such as multimedia, 2-D, 3-D, animation, etc...

Prerequisites: COM222 Introduction to Radio/TV/Film.

COM426 Computer Animation [3-0, 3 cr.]

This course is an introduction to 2-D effects on Alias software.

Prerequisites: Senior Standing, and the consent of the Instructor.

COM427 Corporate Video/Film Production [3-0, 3 cr.]

This course covers the theory and production practices in creating and producing video/film documentary programs, for the use in business, industry, government, and education.

Prerequisite: COM235 Studio TV Production

COM428 Film Making [3-0, 3 cr.]

This course covers the 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, and COM326 Script Writing.

COM442 Play Production II [3-0, 3cr.]

This course is a study of the theatrical major movements. It covers the analysis of the structure of the three-act play, and involves the production of a full-length play.

Prerequisite: COM342 Play Production I.

COM451 Media Research Methods [2-0, 2 cr.]

This course introduces students to the major research methodologies, communication theories, and topics of study, within media research. Theories, models, and methods are applied toward the development of a research paper. Students examine qualitative, (mainly discourse analysis and semiotics) and quantitative (i.e., content analysis) methods of media research employed when studying the media.

Prerequisite: COM210 Communication Media and Society.

COM487 Topics in Drama and Theater [3-0, 3 cr.]

This course explores ideas of form, convention, style, and context in drama and theater. It focuses on the different dramaturgical and theatrical approaches to specified topics, theater trends, or schools (Modern Drama, Postmodernism, Documentary Drama, Gender and Theater, Popular Theater...).

This course may be repeated if topics differ.

COM488 Topics in Radio/TV/Film [3-0, 3 cr.]

This course covers the theoretical aspects of selected topics in Radio/TV/Film. The course may be repeated, and taken more than once, if the topics differ. Any additional registration to the core is to be considered as an elective.

Prerequisite: COM326 Script Writing. Senior Standing, or the consent of the Instructor.

COM485 Topics in Current Affairs [3-0, 3 cr.]

This course will provide students with the opportunity to become more mature consumers of current affairs topics, and critical thinkers of the print, internet, and broadcast media. With a more thorough review of the current, local, and international events, students will develop their story selection, investigative, interviewing, and analytical, reporting skills. They will be expected to keep abreast of the latest breaking news stories, covering a wide spectrum of fields such as political, economic, human interest, music, and the visual arts.

Prerequisite: COM210 Communication Media & Society. Senior Standing, or the consent of the instructor.

COM486 Topics in Media Studies [3-0, 3 cr.]

This course presents diverse theoretical, and methodological, perspectives on selected topics relevant to the field of media studies. The course may offer an in-depth analysis of the relevant topics (e.g. ethnic and gender representation, identity politics, minority issues, etc...) related to one medium, or explore one relevant issue across several media.

This class may be repeated if topics differ.

Prerequisite: COM210 Communication Media & Society. Senior Standing, or the consent of the instructor.

COM499 Internship [1-0, 1 cr.]

The Internship course covers 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.

Prerequisite: Senior Standing.

MUSIC

MUS201 Fundamentals of Music [0-3, 3 cr.]

This course covers the basic principles of note values, clef-reading rhythms, scales, writing on the music staff, sight-singing, and dictation. It entails a practical experience through playing of the recorder.

MUS202 Chorale [0-3, 1 cr.]

This course is an experience in singing the sacred and secular music of all the Periods. It entails three rehearsals per week, and public performances, on and off-campus. Up to three credits may be earned, in three separate semesters. Admission to this course is by audition.

This course is offered every semester.

MUS301 Music Education [3-1, 3 cr.]

This course covers 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.]

This course is a 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, styles, and characteristics of the Periods and composers. Emphasis on the place and the influence of music as a part of general culture are covered.

MUS312 Survey of Middle Eastern Music [0-3, 3 cr.]

This course is a survey of the historical sources, and the development of the underlying principles, forms, modes, and rhythms, of Middle Eastern music. CDs and tapes, and, whenever possible, live vocal or instrumental performances, illustrate important styles, modes, and instrumentation. Music is studied in the context of the general Middle Eastern culture.

Department of Computer Science and Mathematics

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Azar, Danielle

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Khalifeh, Joseph

STAFF

Alaywan, Ali, Assistant Academic Center
Supervisor, Beirut
Dana, Tarek, Academic Center Supervisor,
Beirut
Kada, Fouad, Academic Computer Center
Systems Administrator, Byblos
Moujabber, Bassam, Academic Center
Supervisor, Byblos
Shebaro, Dania, Academic Assistant, Beirut
Wehbe, Gioia, Academic Assistant, Byblos

DEGREES OFFERED

- Bachelor of Science in Computer Science
- Bachelor of Science in Mathematics
- Master of Science In Computer Science
- Minor in Actuarial Studies
- Minor in Computer Science
- Minor in Mathematics

COMPUTER FACILITIES

The Department of Computer Science and Mathematics houses modern state-of-the art computing and networking technologies that are continually updated and expanded.

The facilities include approximately 250 high-end computing workstations that run both Linux and Microsoft operating systems, Apple Macintosh computers, two high-performance Beowulf Linux Clusters used for teaching and research, and a GPU Computing Center. All workstations and peripherals are networked and served using an IBM BladeCenter.

The computer centers are also equipped with a variety of computing software that are continuously updated, such as programming environments, cluster computing, simulation software, mathematical software and research software tools.



Computer Science programs

MISSION

The mission of the Computer Science Program is to provide students with the ability to integrate the theory and practice of computing in the representation, processing, and use of information while upholding tradition of the liberal arts education.

ACCREDITATION

The Bachelor of Science in Computer Science is the first such program in Lebanon to earn ABET accreditation. The Computing Accreditation Commission of ABET, Inc. 111 Market Place, Suite 1050, Baltimore, MD 2120-4012, tel: (410) 347-4400, <http://www.abet.org> is a recognized accreditor of college and university programs in applied science, computing, engineering, and technology. ABET accreditation demonstrates that a program's standards meet or surpass high quality standards established by the profession.

UNDERGRADUATE PROGRAMS

BACHELOR OF SCIENCE (B.S.) IN COMPUTER SCIENCE

The Bachelor of Science in Computer Science at LAU provides a fundamental understanding of the theoretical principles of software and digital systems within the context of current technology. The program provides students with a strong background in the fundamentals of mathematics and computer science, and is balanced between theoretical and applied courses that prepare students for a professional career in the area of computer science. Furthermore, in addition to developing computer science skills, the program helps the students obtain an understanding of the human and social aspects of computer systems, and how computer science relates to other disciplines.

EDUCATIONAL OBJECTIVES

The educational objectives of the Bachelor of Science in Computer Science Program are:

1. Prepare graduates for computer science related careers, locally and abroad, with a broad knowledge of the computing field, related principles, tools, and theories.

2. Develop graduates who are committed to life-long learning, capable to work effectively in teams, and who possess good communication skills.

3. Prepare graduates who are aware of cultural, social, legal, and ethical issues inherent in the discipline of computing.

LEARNING OUTCOMES

The outcomes of the Bachelor of Science in Computer Science Program are:

1. Students shall be able to apply their computational and mathematical knowledge in order to solve computational problems.
2. Students shall develop the ability to analyze a problem, identify, define, and verify the computing requirements appropriate to its solution.
3. Students shall have the ability to design, evaluate, and implement an efficient and a correct algorithm, computer-based system, process, component, or program that meets desired needs.
4. Students shall learn to work effectively and interactively in teams in order to accomplish a common goal.
5. Students shall develop an understanding of the ethical and social issues related to computing.
6. Students shall have the ability to effectively present, transmit, and communicate their work, written as well as orally, to colleagues and to clients.
7. Students shall develop the ability to analyze the local and global impact of the computing field on individuals, organizations, and society.
8. Students shall have an understanding of current technology trends as well as future directions and shall recognize the need and develop the necessary skills for continued professional development.
9. Students shall develop the ability to use current techniques, skills, and tools necessary for computing practices.
10. Students shall develop the ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
11. Students shall be able to model, analyze and design computer-based software systems including requirements elicitation,

Department of Computer Science and Mathematics

specification, prototyping, design, implementation, tradeoffs analysis, testing and documentation.

CURRICULUM REQUIREMENTS

The Program requirements consist of a minimum of 92 credits. The Program requires students to complete core requirements that provide a sound mathematical and computer science foundation. In addition, students are required to take elective courses that provide advanced knowledge and skills.

I. Core Requirements (32 credits)

CSC243	Introduction to Object Oriented Programming	3
CSC245	Objects and Data Abstraction	3
CSC310	Algorithms and Data Structures	3
CSC320	Computer Organization	3
CSC322	Computer Organization Lab	1
CSC326	Operating Systems	3
CSC375	Database Management Systems	3
CSC430	Computer Networks	3
CSC447	Parallel Programming for Multicore and Cluster Systems	3
CSC490	Software Engineering	3
CSC491	Professional Experience	1
CSC599	Capstone Project	3

II. Computer Science Electives (15 credits)

CSC323	Digital Systems Design	3
CSC415	Introduction to Bioinformatics	3
CSC420	Computer Architecture	3
CSC435	Computer Security	3
CSC440	Advanced Object Oriented Programming	3
CSC443	Web Programming	3
CSC460	Artificial Intelligence	3
CSC450	Computer Graphics	3
CSC458	Game Programming	3
CSC495	IT Project Management	3
CSC498	Topics in Computer Science (may be repeated)	3

III. Mathematics (12 credits)

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

IV. Mathematics Electives (3 credits)

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

V. Science Requirements (3 credits)

BIO200	Basic Biology	3
CHM200	Essentials of Chemistry	3

VI. Other Requirements (3 credits)

CSC480	Social and Ethical Issues in Computing	3
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SUGGESTED THREE-YEAR STUDY PLAN:

Year I

Fall

CSC243	Introduction to Object Oriented Programming	3
ENG202	Sophomore Rhetoric	3
MTH207	Discrete Structures I	3
ARA2-/3-	Arabic Language/Literature	3
PED2-	Physical Education	1
	Free Elective	3
Total		16cr

Spring

MTH201	Calculus III	3
CSC245	Objects and Data Abstraction	3
CSC320	Computer Organization	3
CSC322	Computer Organization Lab	1
ENG203	Fundamentals of Oral Communications	3
	LACC Arts Elective	3
Total		16cr

Year II

Fall

CSC310	Algorithms and Data Structures	3
CSC375	Databases Management Systems	3
CSC326	Operating Systems	3
MTH305	Probability and Statistics	3
ETH201	Moral Reasoning	1
HLT201	Basic Health	1
	LACC Social Sciences Elective	3
Total		17cr

Spring

CSC490	Software Engineering	3
CSC430	Parallel Programming for Multicore & Cluster Systems	3
	3	3
MTH307	Discrete Structures II	3
CSC---	Technical Elective	3
	Science Elective1	3
CSC491	Professional Experience2	16cr

¹ Choose either BIO 200 or CHM 201

² Internship must be completed in the Summer following the registration. It is equivalent to 120 hours of professional experience spread over a Summer Term.

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Year III

Fall

CSC430	Computer Networks	3
CSC480	Social & Professional Issues in Computing	3
CSC	Technical Elective	3
CSC	Technical Elective	3
	LACC Philosophy, Religion, History Elective	3
Total		15cr

Spring

CSC599	Capstone Project	3
CSC---	Technical Elective	3
CSC---	Technical Elective	3
	Mathematics Elective	3
	LACC Literature LACC Elective	3
Total		15cr



Graduate Programs

MASTER OF SCIENCE IN COMPUTER SCIENCE

The Master of Science in Computer Science aims at encouraging the discovery and transmission of knowledge, the education of students, the training of future faculty, and the general well-being of society. The program provides a broad foundation of study in Computer Science while offering an in-depth study in four concentration areas.

EDUCATIONAL OBJECTIVES

The purpose of the M.S. in Computer Science Program is to:

1. Prepare students for advanced graduate education.
2. Prepare students to be innovative leaders in their profession at the local, regional, and international level.
3. Enhance research and discovery.
4. Introduce outreach and engagement, by allowing Computer Science Faculty, and students, to contribute to the community at large.

LEARNING OUTCOMES

Graduates in the M.S. in Computer Science Program will:

1. Have an understanding of the advanced concepts in computer algorithms design, and analysis.
2. Be armed with a broad computer science education that includes theory, computer systems, hardware principles, computer networks, and software engineering.
3. Have a deep understanding of the fundamental knowledge prerequisite for the practice of, or for advanced study in, computer science, including its scientific principles and rigorous analysis.
4. Have a deep understanding of one of the following computer science areas: Theory and Algorithms, Computer Systems, Hardware Principles and Computer Networks, and Software Engineering.
5. Develop basic, and applied, research and innovation skills, and learn how to investigate the recent developments in the computing field that are not found in

textbooks, by properly utilizing professional literature and academic journals.

6. Develop the skills of oral presentation, research documentation and technical writing, and independent study.

ADDITIONAL ADMISSIONS REQUIREMENTS

In addition to the admissions requirements that are explicitly stated in the Graduate Programs Academic Rules, Algorithms and Data Structures (CSC 310) is a required course from all students who have finished a non-computer science degree and apply for MS in Computer Science at LAU. The course may be taken as a remedial course after admission.

CURRICULUM REQUIREMENTS

Students need 30 credits for graduation, with one required 3-credit course (CSC711) and three additional courses, one from each concentration area. The remaining courses may be chosen from any of the four areas without restrictions.

I. Core Requirements (12 credits)

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

II. Project or thesis option (3 or 6 credits)

CSC798	Project Option	3
CSC799	Thesis Option	6

III. Electives from four concentration areas (12 or 15 credits)

A. Algorithms, Theory & 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
CSC736	Networks Security	3
CSC737	Pervasive Computing and Wireless Networking	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)	3
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Mathematics programs

BACHELOR OF SCIENCE (B.S.) IN MATHEMATICS

MISSION

The mission of the Mathematics program is to offer quality and broad education in mathematics, supported by a foundation in the liberal arts. The program aims at providing its students with the knowledge and skills to teach at all school levels and/or pursue higher degrees in mathematics and other related fields.

EDUCATIONAL OBJECTIVES

The Mathematics program provides the students with a strong background in the skills of logic, reasoning, critical thinking, and relevant technology. More particularly, the curriculum:

1. Covers the traditional aspect of a mathematics major and supplements it with courses covering contemporary mathematical topics;
2. Provides students with a broad exposure to those fields of mathematics that are useful in the physical sciences, engineering, and others;
3. Provides specific courses designed for students who plan to become teachers of mathematics (in case they plan to complete a Teaching Diploma);

4. Provides the appropriate mathematical background for students who wish to pursue graduate studies in mathematics or other related fields.

LEARNING OUTCOMES

Students who successfully complete the mathematics program will be able to:

1. Exhibit an understanding of the nature of mathematics;
2. Reason with abstract concepts;
3. Follow complex mathematical arguments and develop mathematical arguments of their own;
4. Understand and assess mathematical proofs and construct appropriate mathematical proofs of their own;
5. Communicate mathematical ideas, proofs and conclusions successfully;
6. Understand the branches of mathematics and how they are related;
7. Demonstrate knowledge of fundamental areas in mathematics such as algebra, analysis, and probability and statistics, with the opportunity to become acquainted with the fields of number theory, mathematical logic, combinatorics, geometry, topology, and others;
8. Relate the different branches of mathematics;
9. Demonstrate knowledge of areas of applied mathematics such as dynamical systems, numerical analysis, graph theory, and others;
10. Perform symbolic and numeric computations using appropriate mathematical tools.

CURRICULUM REQUIREMENTS

The Program requirements consist of a minimum of 92 credits. The major core requirements consist of 9 mathematics courses (27 credits), 6 additional mathematics courses (18 credits) to be chosen from a list of elective courses, one course in computer science (3 credits), and 2 courses chosen from a list of restricted electives (6 credits), and 4 credits of free electives.

I. Mathematics Core Courses (27 credits)

MTH201	Calculus III	3
MTH207	Discrete Structures I	3
MTH301	Linear Algebra	3
MTH305	Probability and Statistics	3
MTH311	Abstract Algebra	3
MTH401	Real Analysis I	3
MTH403	Introduction to Complex Analysis	3
MTH409	Introduction to Topology	3

Department of Computer Science and Mathematics

Choose one of:

MTH410	Real Analysis 2	3
MTH411	Advanced Topics in Abstract Algebra	3

II. Mathematics Electives Choose 6 courses (18 credits)

MTH206	Calculus IV	3
MTH302	Geometry	3
MTH303	Numerical Methods	3
MTH304	Differential Equations	3
MTH306	Nonlinear Dynamics and Chaos	3
MTH308	Number Theory	3
MTH309	Graph Theory	3
MTH310	Set Theory	3
MTH400	Advanced Linear Algebra	3
MTH410	Real Analysis 2	3
MTH411	Advanced Topics in Abstract Algebra	3
MTH498	Topics in Mathematics	3

III. Computer Science Requirement (3 credits)

CSC 243	Object Oriented Programming	3
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IV. Restricted Electives (total 9 credits)

Students are required to complete nine credits numbered 200 and above from Actuarial Science, Natural Sciences, Computer Science, Engineering, and Business. The following is a suggested list of courses: MTH402, MTH406, MTH408, CSC245, CSC332, BIO200, ENV200, CHM200, PHY301, FIN, MIS211, MIS212, CIE200, CIE202, ELE201, ELE202; INE302, MEE241 and MEE320.

SUGGESTED THREE-YEAR STUDY PLAN:

Year I

Fall

MTH201	Calculus III	3
MTH207	Discrete Structures I	3
CSC201	Computer Applications	1
CSC243	Object Oriented Programming	3
ARA2-/3-		3
ENG202	Sophomore Rhetoric	3
Total	16cr	

Spring

MTH301	Linear Algebra	3
MTH305	Probability and Statistics	3
MTH--	Math Elective	3
	Liberal Arts Elective	3
	Restricted Elective	3
Total	15cr	

Summer

ENG 203	Oral Communication	3
ETH 201	Moral Reasoning	1
PED--		1
Total	5cr	

Year II

Fall

MTH401	Real Analysis 1	3
MTH311	Abstract Algebra	3
HLT201	Basic Health	1
MTH--	Math Elective	3
MTH--	Math Elective	3
Total	13cr	

Spring

MTH403	Introduction to Complex Analysis	3
MTH409	Introduction to Topology	3
MTH--	Math Elective	3
	Liberal Arts Elective	3
	Liberal Arts Elective	3
Total	15cr	

Summer

	Liberal Arts Elective	3
	Free Elective (PED...)	1
Total	4cr	

Year III

Fall

MTH410	Real Analysis 2	3
MTH--	Math Elective	3
	Liberal Arts Elective	3
	Liberal Arts Elective	3
Total	12cr	

Spring

MTH--	Math Elective	3
	Liberal Arts Elective	3
	Restricted Elective	3
	Free Elective	3
Total	12cr	



MINOR IN COMPUTER SCIENCE

EDUCATIONAL OBJECTIVES

The objectives of the minor in computer science are to:

1. Provide graduates with computing skills to be better prepared for the job market;
2. Provide graduates with basic knowledge of the computing field, related principles, and tools.

LEARNING OUTCOMES

Students who successfully complete the Minor in Computer Science shall:

1. Develop the ability to analyze a problem, identify, define, and verify the computing requirements appropriate to its solution;
2. Develop the ability to use current techniques, skills, and tools necessary for computing practices;
3. Develop programming skills using modern languages;
4. Apply their computational and mathematical knowledge in order to solve computational problems.

CURRICULUM REQUIREMENTS

The Computer Science minor consists of five Computer Science courses, and one Mathematics course that are directly related to computing. The courses include 9 core credits, and 9 credits of elective courses that can be chosen from a list of courses. A cumulative GPA of 2.0 is required for the 18 required credits in order to earn a minor in Computer Science.

I. Core Courses (9 credits)

CSC243	Introduction to Object Oriented Programming	3
CSC245	Objects and Data Abstractions	3
MTH207	Discrete Structures I	3

II. Elective Courses (9 credits)

CSC310	Algorithms and Data Structure	3
CSC320	Computer Organization	3
CSC326	Operating Systems	3
CSC375	Database Management Systems	3
CSC430	Computer Networks	3
CSC490	Software Engineering	3

Any approved Computer Science elective at the 400 level or above.

MINOR IN MATHEMATICS

EDUCATIONAL OBJECTIVES

The objective of the mathematics minor is to provide students with a strong background in the skills of logic, reasoning, and critical thinking. More precisely the objectives aim to:

1. Cover basic topics of a major in mathematics and supplements the students with elective courses from various mathematical fields.
2. Provide courses designed for students who plan to pursue a graduate degree in Mathematics or in Education with an emphasis in Mathematics.

LEARNING OUTCOMES

Students who successfully complete the Mathematics minor will be able to:

1. Exhibit an understanding of the nature of mathematics;
2. Reason with abstract concepts;
3. Follow complex mathematical arguments and develop their own mathematical arguments.

The following courses totaling 21 credits are recommended for the Minor in Mathematics. The Minor can be taken by students from any major.

I. Mathematical Core Requirements (12 credits)

MTH201	Calculus III	3
MTH207	Discrete Structures I	3
MTH301	Linear Algebra	3

MTH311	Abstract Algebra	3
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or

MTH401	Real Analysis 1	3
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II. Mathematics Electives (9 credits)

Students ought to complete successfully at least one course from each of the following two lists of courses:

List 1:

MTH302	Geometry	3
MTH308	Number Theory	3
MTH409	Introduction to Topology	3
MTH303	Numerical Methods	3
MTH305	Probability and Statistics	3

MTH311	Abstract Algebra	3
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or

MTH401	Real Analysis 1	3
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List 2:

MTH206	Calculus IV	3
MTH304	Differential Equations	3
MTH306	Nonlinear Dynamics & Chaos	3
MTH307	Discrete Structures II	3
MTH309	Graph Theory	3

MINOR IN ACTUARIAL STUDIES

EDUCATIONAL OBJECTIVES

The objective of the Minor in Actuarial Studies is to provide students with the knowledge to work in the general area of actuarial science, mainly life and health insurance, pension funds, and financial security.

LEARNING OUTCOMES

Graduates in the Minor in Actuarial Studies will attain:

1. The ability to understand basic actuarial problems;
2. The ability to model basic actuarial problems using mathematical, probabilistic and statistical methods;
3. The ability to solve actuarial problems by applying actuarial mathematics in life contingencies and to apply the concepts of actuarial science in solving problems related to financial security.

The following courses totaling 21 credits are recommended for the Minor in Actuarial Sciences. This Minor can be taken by students from any major.

I. Mathematics Requirements (6 credits)

MTH201	Calculus III	3
MTH305	Probability and Statistics	3

II. Business Requirements (6 credits)

ECO201	Microeconomics	3
ECO202	Macroeconomics	3

III. Actuarial Mathematics Courses (9 credits)

MTH402	Theory of Interest	3
MTH406	Life Contingencies I	3
MTH408	Life Contingencies II	3

COURSE DESCRIPTIONS

UNDERGRADUATE COMPUTER SCIENCE

CSC201 Computer Applications [1-0, 1 cr.]

The course ensures that all students will acquire the basic internationally recognized computer proficiency skills. Teaching and learning will be hands-on, in a computer-equipped classroom. The topics include the concepts of information technology, using the computer and its operating system and managing files, word processing, spreadsheets, and presentation software.

CSC241 Introduction to Computing [3-0, 3 cr.]

This course provides a lengthy first coverage where students would acquire a holistic understanding of computing, and an appreciation of 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.]

This course introduces students to the 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.]

This course introduces the fundamental concepts, and techniques, of programming and problem solving, from an object-oriented perspective. Topics include the introduction to computer systems (hardware, software, compilation, execution), fundamental programming constructs, (variables, primitive data types, expressions, assignment), program readability, simple I/O, conditional constructs, iterative control structures, structured decomposition, method call and parameter passing, basic program design using algorithms, algorithm stepwise refinement, pseudo-code,

introduction to the object-oriented paradigm (abstraction, objects, classes, entity and application classes, class libraries, methods, encapsulation, class interaction, aggregation), inheritance, error types, simple testing and debugging, 1-D and 2-D arrays, basic searching, and sorting algorithms.

CSC245 Objects and Data Abstraction [3-0, 3 cr.]

This course presents further techniques of object oriented programming and problem solving, with emphasis on abstraction and data structures. Topics include: object oriented concepts, such as, composition, inheritance, polymorphism, information hiding, and interfaces; basic program design and correctness, such as, abstract data types, preconditions and post conditions, assertions and loop invariants, testing, basic exception handling, and the application of algorithm design techniques. The course also covers: basic algorithmic analysis, time and space tradeoffs in algorithms, big-O notation; fundamental data structures and applications, such as, collections, single- and double-linked structures, stacks, queues, and trees; performance issues for data structures; recursion, more sorting algorithms.

Prerequisite: CSC243 Introduction to Object Oriented Programming.

CSC310 Algorithms and Data Structures [3-0, 3 cr.]

This course presents the fundamental computing algorithms and data structures, with emphasis on design and analysis. Topics include the asymptotic analysis of upper and average complexity bounds, the best, the average, and the worst, case behaviors. Recurrence relations, sets, hashing and hash tables, trees and binary trees (properties, tree traversal algorithms), heaps, priority queues, and graphs (representation, depth- and breadth-first traversals and applications, shortest-path algorithms, transitive closure, network flows, topological sort). The course also covers the sorting algorithms and performance analysis which include mergesort, quicksort and heapsort. As well, the course details the fundamental algorithmic strategies (divide-and-conquer approach, greedy, dynamic programming, and backtracking). Introduction to NP-completeness theory.

Prerequisites: CSC245 Objects and Data Abstraction and MTH207: Discrete Structures I.

CSC320 Computer Organization [3-0, 3 cr.]

Overview of the history of the digital computer,

representation of numeric data, introduction to digital logic, logic expressions and Boolean functions, logic functions minimization. Processor and system performance, Amdahl's law. Introduction to reconfigurable logic and special-purpose processors. Introduction to instruction set architecture, and microarchitecture. Processor structures, instruction sequencing, flow-of control, subroutine call and return mechanism, structure of machine-level programs, low level architectural support for high-level languages. Memory hierarchy, latency and throughput, cache memories: operating principles, replacement policies, multilevel cache, and cache coherency. Register-transfer language to describe internal operations in a computer, instruction pipelining and instruction-level parallelism (ILP), overview of superscalar architectures. Multicore and multithreaded processors.

Co-requisite: CSC245 Objects and Data Abstraction, MTH207: Discrete Structures I.

CSC322 Computer Organization Lab [3-0, 1 cr.]

Students gain experience with computer organization techniques by designing and implementing actual circuits using a high-level language, Verilog HDL and FPGAs. Course culminates in the design and simulation of a complete pipelined CPU.

Co-requisite: CSC320 Computer Organization.

CSC323 Digital Systems Design [3-0, 3 cr.]

The course introduces students to the organization, and architecture, of computer systems. Topics include the 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, and the hierarchical and modular design of digital systems (simple data paths and hardwired control unit realization) as well as the 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; process scheduling; interprocess communication; process synchronization (semaphores and monitors); mutual exclusion problem; deadlock handling mechanisms; concurrent execution; multithreading; interrupt handling in a concurrent environment; mutual exclusion; virtual memory; page placement and replacement policies; caching; fundamental concepts of file systems.

Prerequisite: CSC245 Objects and Data Abstraction and CSC320 Computer Organization.

CSC331 Business Data Communication [3-0, 3 cr.]

This course presents the fundamental concepts of data communications, networking, distributed applications, and network management and security, related specifically to the business environment and business management. The course provides an up-to-date coverage of key issues for the business student such as the high-speed networks, asynchronous transfer mode (ATM) and TCP/IP, and the use of the Internet, intranets, and extranets to 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, an 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, and 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.]

This course covers the theory of a Database Management System, 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.]

This course is an 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 transactions at the SQL level.

Prerequisite: CSC245 Objects and Data Abstraction and MTH201: Calculus III.

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 a structure design technology to solve business data processing problems.

Prerequisite: CSC242 Introduction to Computer Programming.

CSC398 Selected Topics in Computer Science [3-0, 3 cr.]

This course may be repeated for credits.

CSC415 Introduction to Bioinformatics [3-0, 3 cr.]

This course provides an introduction to modern computational practices in bioinformatics. Topics include computational methods for: fragment assembly; sequence alignment; modeling evolution; gene finding; gene expression; protein structure and function.

Prerequisite: CSC310 Data Structures & Algorithms.

CSC420 Computer Architecture [3-0, 3 cr.]

This course deals with the architecture of computers, with an emphasis on the architecture of the general purpose computers, using modern concepts such as pipeline design, memory hierarchies, IO systems, and parallel processing. The course tackles advanced computer architecture concepts which include pipelining and pipelined processors, instruction level parallelism, VLSI

architectures, superscalar architectures, code scheduling for ILP processors, storage systems and RAID, memory systems, and multiprocessing and cache coherency problem, as well, the course tackles parallel processing.

Prerequisite: CSC323 Digital Systems Design.

CSC430 Computer Networks [3-0, 3 cr.]

This course introduces the structure, implementation, and theoretical underpinnings of computer networks. Topics include network structure, performance metrics, circuit switching and packet switching, the Internet protocol stack, physical layer networking concepts, data link layer technologies and protocols, internetworking and routing, transport layer protocols, application layer protocols, client-server programming, and emerging technologies.

Prerequisite: CSC326 Operating Systems

CSC435 Computer Security [3-0, 3 cr.]

Introduction to computer security including formal models of security, security goals and fundamentals (confidentiality, integrity, availability, etc.), introduction to risk assessment and management, security standards in government and industry (e.g., Common Criteria, Orange Book, etc.), corporate and institutional security policies, evaluation process and levels, computer system protection principles, access controls, cryptography fundamentals, authentication, security operations, software attacks including malicious code and buffer overflows, social engineering, injection attacks, and related defense tools, network attacks including denial of service, flooding, sniffing and traffic redirection, defense tools and strategies, web sites attacks including cross-site scripting, IPSec, Virtual Private networks and Network Address Translation, and ethics. Hands-on experience is part of the class.

Prerequisite: CSC326 Operating Systems.

CSC440 Advanced Object Oriented Programming [3-0, 3 cr.]

This course presents advanced object oriented programming concepts, and techniques, using modern programming languages and frameworks. Topics include the review of object oriented programming concepts, graphics, graphical user interface components, event-based programming, applets, strings and characters, bit manipulation, exception handling, files and streams, collections, multimedia, multithreading, accessing databases, and design patterns.

Prerequisite: CSC245 Objects and Data Abstraction.

CSC443 Web Programming [3-0, 3 cr.]

This course introduces advanced concepts in web programming, and focuses on the development of dynamic web pages that incorporate both client-side and server-side programming. Topics include web scripting using JavaScript, VBScript, and PHP, as well as Java Beans, and server side components such as CGI, ASP, and PHP, and the installation and configuration of web servers. The course also discusses accessing databases through web applications. Hands-on experience is part of the class.

Co-requisite: CSC375 Database Management Systems.

CSC447 Parallel Programming for Multicore and Cluster Systems [3-0, 3 cr.]

This course provides an introduction to parallel programming with a focus on multicore architectures and cluster programming techniques. Topics include relevant architectural trends and aspects of multicores, writing multicore programs and extracting data parallelism using vectors and SIMD, thread-level parallelism, task-based parallelism, efficient synchronization, program profiling, and performance tuning. Message-passing cluster-based parallel computing is also introduced. The course includes several programming assignments to provide students first-hand experience with programming, and experimentally analyzing and tuning parallel software.

Prerequisite: CSC310 Algorithms and Data Structures; CSC326 Operating Systems.

CSC450 Computer Graphics [3-0, 3 cr.]

This course is an introduction to computer graphics algorithms, programming methods, and applications. The course focuses on the 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.

CSC458 Game Programming [3-0, 3 cr.]

This course introduces the software technologies related to game development, as well as the art and design principles needed to create compelling games. Topics include game history and taxonomy; game play design and

the components of a video game experience; software architecture for games; intro to 3D graphics and stereoscopic computer graphics; hardware architecture of contemporary video game platforms; human physical and perceptual limits; game artificial intelligence; multiplayer game design; game physics, and intro to real time shading effects.

Prerequisite: CSC310 Data Structures & Algorithms.

CSC460 Artificial Intelligence [3-0, 3 cr.]

This course is a survey of knowledge-based artificial intelligence. Topics include the history, definition, philosophical foundations, search techniques, game playing, propositional logic, predicate logic, knowledge representation, planning, and the natural language processing and agents.

Prerequisite: CSC310 Algorithms and Data Structures.

CSC480 Social and Professional Issues in Computing [3-0, 3 cr.]

This 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 the history of computing, the legal and ethical responsibilities of professionals, the 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, whistle blowing, privacy, data security, and universal accessibility. The 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.]

This course presents the techniques for developing reliable, and cost-effective, medium-to-large-scale object-oriented and classical software. It also involves project development to implement these techniques. Topics include the software life-cycle and process models, the software requirements elicitation, specification, and validation techniques, the design techniques for object-oriented and classical software (architectural, and component, level design and the basic unified modeling language diagrams), software testing (black box and white box testing techniques), unit, integration, validation, and system testing, as well as the

basic software project management and quality issues, and the documentation and technical writing, and the use of CASE tools.

Co-requisite: CSC375 Database Management Systems.

CSC491 Professional Experience [0-3, 1 cr.]

Students participate in a project-based Professional Experience in the junior year. The department requires evidence of project-based work and relevant professional experience.

Co-requisite: CSC490 Software Engineering

CSC495 IT Project Management [3-0, 3 cr.]

This course introduces managing projects within an organizational context as well as managing the changes resulting from introducing or revising information technology systems. Topics include project lifecycle, project stakeholders, project management skills (leading, communicating, negotiating, influencing, and presenting), change control (scope, schedule, cost, quality, risk, project team, and senior management), project planning (definition, scope, schedule, costs, quality, resources, and risks), contingency planning, project reporting and controls (definition, scope, schedule, costs, quality, resources, and risks), the role of IT in organizational change, activities required to ensure the success of IT projects (training, job redesign, communication, etc.). Students are expected to develop detailed project plans, schedules, and budgets; estimate project resources; allocate/coordinate resources; and interface with management. Hands-on experience using project management software.

Co-requisite: CSC490 Software Engineering

CSC498 Topics in Computer Science [3-0, 3 cr.]

This course covers selected topics in computer science. This course may be repeated for credits.

CSC599 Capstone Project [3-0, 3 cr.]

This course is a standalone project course that allows students to integrate the many concepts, and skills, they have learned. The course requires the design, implementation, and oral presentation of a complete significant team project.

Prerequisite: CSC490 Software Engineering

GRADUATE COMPUTER SCIENCE

CSC711 Design and Analysis of Algorithms [3-0, 3 cr.]

This course covers the time and space complexity of algorithms, the models of computation techniques for efficient algorithm design, and the effect of data structure choice on the efficiency of an algorithm. The course covers the divide and conquer techniques, greedy methods, dynamic programming, amortized analysis, and the graph and network algorithms, as well as the NP-completeness, and a selected advanced algorithms.

CSC712 Automata Theory and Formal Languages [3-0, 3 cr.]

This course covers the Finite Automata and regular expressions, context-free grammars, pushdown Automata, properties of context-free languages, Turing machines, undecidability, computational complexity, and P and NP problems.

CSC713 Bioinformatics [3-0, 3 cr.]

This course covers the use of computer science tools to solve the problems related to biochemistry, and/or medicine. Topics include fundamental algorithmic methods in computational molecular biology, and bioinformatics, such as protein sequence analysis, pair wise 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 the basic heuristic optimization techniques in computing. This course describes a variety of heuristic search methods including serial simulated annealing, Tabu search, genetic algorithms, ant algorithms, de-randomized 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.]

This 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, and 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.]

This course is an advanced survey of modern topics of theory, foundations, and applications of modern cryptography. One-way functions, pseudo-randomness, encryption, authentication, public-key cryptosystems, and notions of security, are covered. The course also covers zero-knowledge proofs, multi-party cryptographic protocols, and practical applications.

CSC721 Transaction Processing Systems [3-0, 3 cr.]

This 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.]

This course is an introduction to distributed systems, distributed system models, network architecture and protocols, inter-process 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.]

This course covers the knowledge representation, search techniques, logical reasoning, and language understanding. It is an introduction to the methodology of design, and the implementation of expert systems. The emphasis of the course is on the 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.]

This course covers the 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, and the scalable and distributed data mining algorithms.

CSC725 System Simulation [3-0, 3 cr.]

This course covers the 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 to execute a computer simulation of the model, and finally analyze the results of the simulation.

CSC726 Compilers [3-0, 3 cr.]

This course covers the 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 generation, run time system design, and the implementation issues related to programming language design. A programming project is required.

CSC731 High Performance Computer Architecture [3-0, 3 cr.]

This course covers the concepts and examples

of advanced computer systems, especially scalable parallel computers. Topics include memory-system design, advanced processor design techniques, pipelined, vector, shared-memory, and distributed-memory computer systems, parallel algorithms, and 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 an 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.

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 and software co-design and diagnostics, system interfacing basics, communication strategies, sensors and actuators, and mobile and wireless technology. Projects use pre-designed hardware and software components. The course covers design case studies in wireless, multimedia, and/or networking domains.

CSC734 Advanced Computer Networks [3-0, 3 cr.]

The course covers the principles, design, implementation, and performance, of computer networks. Topics include Internet protocols, local area networks, advanced routing algorithms, TCP, performance analysis, congestion control, voice and video over IP, switching and routing, mobile IP, peer-to-peer overlay networks, network security, Simple Network Management Protocol, and other current research topics. The course entails programming assignments on protocol implementation, analysis, measurement, and simulation.

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. The course entails various case studies.

CSC737: Pervasive Computing and Wireless Networking [3-0, 3 cr.]

Covers the fundamental principles of pervasive and mobile computing in addition to the design of state-of-the-art wireless technologies and wireless networking protocols. Topics include pervasive and mobile computing fundamentals and challenges; pervasive and mobile computing services and application areas; mobile device technologies; mobile device platforms; mobile device application development challenges; mobile device programming; wireless network architectures; WLAN, WiMAX, GSM, UMTS, and Bluetooth wireless technologies; Mobile IP; Wireless TCP; pervasive computing and wireless networking research trends.

CSC791 Advanced Software Engineering [3-0, 3cr.]

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, software management and quality, and web engineering. Students will explore in depth current research work on a topic of their choice.

CSC792 Object-Oriented Software Engineering [3-0, 3 cr.]

Techniques, modeling languages, and processes for object-oriented (OO) software development. Topics include: unified modeling language: structural, behavioral, and architectural models; OO development process such as Unified Process; OO analysis and design; OO testing; OO metrics; design patterns.

CSC793 Software Testing and Analysis [3-0, 3 cr.]

This course is a survey of testing and analysis methods. It is an introduction to advanced 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 unique 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 applying appropriate quality control practices and procedures, conducting effective inspections, reviews and audits, defining 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 developing, and documenting, a quality assurance plan for large, small, and fast-track projects.

CSC795 Safety-Critical Systems [3-0, 3 cr.]

This course is an 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 the 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.]

This 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 the 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.

CSC788 Advanced Topics in Computer Science [3-0, 3 cr.]

This course covers selected topics in Computer Science. The course may be repeated for credits more than once.

CSC798 Project [3-0, 3 cr.]

This course entails an independent development, and documentation of substantial software, or computer-based system, using recent or significant techniques and/or tools.

CSC799 Thesis [6-0, 6 cr.]

This course entails an independent investigation of a topic of interest, in a basic or applied computer science area, with the objective of producing original results.

UNDERGRADUATE MATHEMATICS

MTH101 Calculus I [3-0, 3 cr.]

The course is an intuitive approach to the techniques of calculus and analytic geometry. Topics include functions, graphs, trigonometric functions, rates of change, limits and continuity, the derivative function, the derivative as a rate of change, differentiation rules, derivatives of trigonometric functions, the chain rule, implicit differentiation, extreme values of a function, the Mean Value and Intermediate Value Theorems, curve sketching, optimization, linearization and differentials, L'Hopital's rule, and an introduction to anti-derivatives.

MTH102 Calculus II [3-0, 3 cr.]

This course covers integration. Topics include indefinite integrals, integral rules, integration by substitution, estimating with finite sums, Riemann sums and definite integrals, the fundamental theorem of Calculus, substitution in definite integrals, applications of integrals (areas between curves and volumes by slicing, volumes by cylindrical shells, and lengths of plane curves), transcendental functions (logarithms, exponential functions, inverse trigonometric functions), and some basic techniques of integration (integration by parts, and trigonometric integrals). In addition, the course covers differential equations and modeling (first order separable differential equations, linear first order differential equations), vectors in the plane and in space, as well as dot and cross products, lines and planes in space, and conics (ellipse, hyperbola, parabola).

Prerequisite: MTH101 Calculus I.

MTH111 Basic Mathematics [3-0, 3 cr.]

This is 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.

MTH200 Mathematics for Life Sciences [3-0, 3 cr.]

This course is intended for students majoring in life sciences, and covers the following topics: linear, exponential, and logarithmic functions, systems of equations and matrices, methods of integration, Maclaurin series, maximization and minimization, introduction to linear programming, and introduction to differential equations.

Prerequisite: Sophomore Standing.

MTH201 Calculus III [3-0, 3 cr.]

This course covers hyperbolic functions, integration techniques and improper integrals. The course covers also infinite sequences and series: limits of sequences of numbers, bounded sequences, integral test for series, comparison tests, ratio and root tests, alternating series test, absolute and conditional convergence, power series, Taylor and Maclaurin series, and applications of power series. Polar functions, polar coordinates, and graphing of polar curves are also covered. In addition, topics from multivariable calculus are introduced: functions of several variables, partial derivatives, double integrals, applications to double integrals, and double integrals in polar form.

Prerequisite: MTH102 Calculus II.

MTH206 Calculus IV [3-0, 3 cr.]

This course covers the Fourier series, cylinders and quadric surfaces, vector-valued functions, arc length and the unit tangent vector, curvature and the unit normal vector, torsion and the binormal vector, partial derivatives and applications, the chain rule, directional derivatives, gradient vectors, tangent planes, linearization and differentials, extreme values and saddle points, Lagrange multipliers, triple integrals, triple integrals in cylindrical and spherical coordinates, integration in vector fields, line integrals, circulation and flux, potential functions and conservative fields, the Fundamental Theorem of Line Integrals, Green's theorem, surface integrals, parametric surfaces, Stokes and divergence theorems.

Prerequisite: MTH201 Calculus III.

MTH207 Discrete Structures I [3-0, 3 cr.]

This course covers the foundations of discrete mathematics as they apply to computer science. The course is an introduction to propositional logic, logical connectives, truth tables, normal forms, validity, predicate logic, universal and existential quantification, and the limitations

of predicate logic. Also, the following topics are covered: the number system, the Euclidean algorithm, proof techniques, mathematical induction, counting arguments, permutations and combinations, binomial coefficients, sets, functions, relations, matrices, and Boolean Algebra.

MTH301 Linear Algebra [3-0, 3 cr.]

This is an introductory course in linear algebra where students are exposed for the first time to a balance of computation, theory, and applications. Topics include the 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 is also 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, the machine precision concepts, inexactness of computational approximations, the design, code, test, and debug programs that implement numerical methods, floating-point arithmetic, convergence, iterative solutions for finding roots (Newton's Method), curve fitting, function approximation, numerical differentiation and integration, explicit and implicit methods, differential equations (Euler's Method), and finite differences.

Prerequisite: MTH201 Calculus III.

MTH304 Differential Equations [3-0, 3 cr.]

This course covers the topics of first order ordinary differential equations and applications, linear higher order differential equations and applications, systems of linear differential equations, series solutions 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, discrete probability, 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.]

This course covers the topics of 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.]

This course covers computational complexity and order analysis, recurrence relations and their solutions, graphs and trees, elementary computability, classes P and NP problems, NP-completeness (Cook's theorem), NP-complete problems, reduction techniques, automata theory including deterministic and nondeterministic finite automata, equivalence of DFAs and NFAs, regular expressions, the pumping lemma for regular expressions, context-free grammars, Turing machines, nondeterministic Turing machines, sets and languages, uncomputable functions, the halting problem, implications of uncomputability, Chomsky hierarchy, and the Church-Turing thesis.

Prerequisites: MTH207 Discrete Structures I, and MTH201: Calculus III.

MTH308 Number Theory [3-0, 3 cr.]

Topics covered are: The history of number representation systems, divisibility, greatest common divisor and prime factorization, linear Diophantine equations, congruences, and condition congruences.

MTH309 Graph Theory [3-0, 3 cr.]

This course covers the fundamental concepts and methods of graph theory, and their applications in various areas of computing. Topics include graphs as models, representation of graphs, trees, distances, matching, connectivity, and flows in networks, graph colorings, Hamiltonian cycles, traveling salesman problem, and planarity.

Prerequisite: MTH201 Calculus III.

MTH310 Set Theory [3-0, 3 cr.]

Operations on sets and families of sets, ordered sets, transfinite induction, axiom of choice and equivalent forms, and ordinal and cardinal numbers.

Prerequisite: MTH207 Discrete Structures I.

MTH311 Abstract Algebra [3-0, 3 cr.]

This course studies the algebra of sets, the definition and basic properties of groups, rings, and fields, and the divisibility theorems for integers and polynomials.

Prerequisite: MTH207 Discrete Structures I, and Junior Standing.

MTH400: Advanced Linear Algebra [3-0, 3 cr.]

A thorough treatment of vector spaces and linear transformations over an arbitrary field; the Hamilton-Cayley Theorem, similarity, the Jordan Normal form, the dual of a linear transformation, direct sums, canonical forms, orthogonal and unitary transformations, normal matrices, and selected applications of linear algebra.

Prerequisite: MTH301 Linear Algebra.

MTH 401 Real Analysis I [3-0, 3 cr.]

Topics covered are: Metric spaces, basic topics in topology, numerical sequences and series, continuity and uniform continuity of functions, differentiation, the mean-value theorem, Taylor's theorem, and the Riemann-Stieljes integral.

Prerequisite: MTH201 Calculus III, MTH207 Discrete Structures I, MTH301 Linear Algebra.

MTH402 Theory of Interest [3-0, 3 cr.]

This course is an intensive study of interest including the measurement of interest, the accumulation and discount of money, the present value of a future amount, the forces of interest and discount, equations of value, annuities (simple and complex), perpetuities, amortization and sinking funds, yield rates, bonds, and other securities, installment loans, depreciation, depletion and capitalized cost.

Prerequisite: MTH102 and junior standing.

MTH403 Introduction to Complex Analysis [3-0, 3 cr.]

Topics covered are: The algebra of complex numbers, analytic functions, complex integration, Cauchy's integral formula, singularities, residues, poles, Taylor and Laurent series.

Prerequisite: MTH401 Real Analysis I.

MTH406 Life Contingencies I [3-0, 3 cr.]

This course covers single life functions, the measurement of mortality, life annuities, life insurance, net annual premiums, and net level premium reserves.

Prerequisite: MTH305 Probability and Statistics, MTH 402 Theory of Interest.

MTH408 Life Contingencies II [3-0, 3 cr.]

This course is a continuation of Life Contingencies I. It covers multiple life functions, multiple decrement models, advanced multiple life theory, and population theory.

Prerequisite: MTH406 Life Contingencies I.

MTH409 Introduction to Topology [3-0, 3 cr.]

Topics covered are: General topological spaces, connectedness, compactness, continuity, and product spaces.

Prerequisite: MTH401 Real Analysis I.

MTH410 Real Analysis 2 [3-0, 3 cr.]

This course will continue to cover the fundamentals of real analysis, concentrating on the Riemann integral, convergence of sequences and series of functions, functions of several variables, integration of differential forms, curl, divergence and Stoke's theorem.

Prerequisite: MTH206 Calculus IV and MTH401 Real Analysis I.

MTH411 Advanced Topics in abstract Algebra [3-0, 3 cr.]

This course is a continuation of Abstract Algebra and topics covered include ring theory, Galois Theory, unique factorization, Principal Ideal Domain, Unique Factorization Domain, and some Diophantine Equations.

Prerequisite: MTH311 Abstract Algebra.

MTH498 Topics in Mathematics [3-0, 3 cr.]

This course covers selected topics in mathematics. It may be repeated for credits.

MTH499 Senior Study [3-0, 3 cr.]

Prerequisite: Senior standing.

UNDERGRADUATE STATISTICS

STA202 Applied Statistics [3-0, 3cr.]

This course is an introduction to the descriptive and inferential statistics, to the measures of central tendency and description, to correlation and regression, and to estimation probability and hypothesis testing.

No student may receive credit for both STA202 Applied Statistics and BUS210 Business Statistics.

STA205 Biostatistics [3-0, 3cr.]

This course introduces the 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 is placed on the statistical concepts, and their application to the critical appraisal of clinical and experimental data.



Department of Education

CHAIR

Bahous, Rima

PROFESSOR

Majdalani, Mona

ASSOCIATE PROFESSORS

Nabhani, Mona

Oueini, Ahmad

Osta, Iman

ASSISTANT PROFESSORS

Amin, Tamer

Kaloustian, Garene

STAFF

Noueiri, Dina, Academic Assistant

DEGREES OFFERED

- BA in Education with two emphases:
 - i. Early Childhood Education
 - ii. Elementary Education
- MA in Education
- Teaching Diploma in
 - i. Elementary Education
 - ii. Early Childhood Education
 - iii. Various subject matters at the Intermediate and Secondary Education: (Math, Science, Social Studies, English Language)

SUPPORTING FACILITIES

Early Childhood Center (ECC)

LAU's Early Childhood Center is a modern-day regular preschool that caters to children between 2.5 and 5 years of age. It adopts an integrated, holistic, and child-centered approach to learning and development. The preschool is fully equipped with laboratory facilities consisting of two observation booths overlooking the two classrooms, with one-sided mirrors, video cameras, sound systems, dimmer lights, and computers, all connected to the classrooms to allow for uninterrupted observations for parents, students, visiting teachers, faculty, and staff.

The role of the LAU ECC is many-fold:

- It provides quality care for the children, in a nurturing and child-centered environment
- It uses, from an academic perspective, a multidisciplinary educational approach: while its primary purpose is to serve as a professional learning platform for students majoring in Early Childhood Education, it also benefits students majoring in education, psychology, music, drama, nursing, among others
- It serves as a training hub for ECE professionals both nationally and internationally, thus supporting positive growth, recognition and reputation
- It provides a rich environment for research in early childhood development and education as well as promotes collaborative research between faculties locally, regionally and internationally
- It encourages involvement on the part of the community



BACHELOR OF ARTS (B.A.) IN EDUCATION

MISSION

Under the umbrella of LAU's Vision, the Mission of the BA in Education (ECE & Elementary) is to prepare professional teachers who are academically well grounded in both their subject matter, and pedagogy, and to enable experienced educators to update their knowledge and skills.

EDUCATIONAL OBJECTIVES

The BA in Education (ECE & Elementary) aims to prepare teachers who demonstrate:

A. Relevant Knowledge – This includes:

- Depth and breadth in subject and content
- General pedagogical knowledge
- Specific pedagogical content knowledge
- Awareness of professional standards
- Awareness of developmentally appropriate practice (in early childhood education)
- Awareness of national curriculum objectives and standards

B. Practical Skills

- Diverse approaches to instruction, and assessment
- Effective classroom management strategies
- Motivational strategies
- Strategies to promote higher-level thinking
- Guidance and discipline methods

C. Appropriate Attitude

- Readiness to develop authentic relationships with students
- Readiness to establish a democratic and socially just learning environment
- Readiness to reflect on one's practice
- Readiness to pursue continuous learning

LEARNING OUTCOMES

Graduates in the BA in Education (ECE & Elementary) will be able to:

- Develop clear and measurable instructional objectives
- Prepare yearly, term, and unit plans to adequately address curriculum content
- Prepare plans for effective instructional cycles, using a variety of approaches appropriate to the content/skill
- Employ effective instructional practices that optimize learning opportunities
- Use appropriate assessment methods, both formative and summative
- Plan and implement effective classroom management strategies
- Implement effective instructional strategies

Particularly, the Early Childhood Education Program prepares students to:

- Establish strong foundations in early childhood education theory and practice
- Plan and administer all the 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

Particularly, the Elementary Education Program prepares students to:

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

CURRICULUM REQUIREMENTS

The BA in Education requires a total of 95 credits, which includes:

- *The Core Requirements - These include the LAC courses and core Education courses.*

Department of Education

- The Emphasis Requirements – These include courses in the chosen content area, such as English, Arabic, Social Studies, Math, and Science, Drama, etc..., and Methods courses, such as teaching of social studies, Art Education, etc...

- Practicum and Methodology

I. Liberal Arts Curriculum Requirements

(34 Credits)

II. Educational Requirements

A. Core Course for all Education Majors (24 credits)

EDU201	Fundamentals of Education	3
EDU301	School Counseling	3
EDU319	Teaching Reading	3
EDU321	Children's Literature	3
EDU331	Educational Technology	3
EDU332	Educational Measurement	3
EDU499	Senior Study	3
PSY295	Theories of Learning	3

B. Methods Courses (6 credits)

COM337	Creative Dramatics	3
ART333	Art Education	3
MUS301	Music Education	3
EDU312	Teaching English as a Foreign Language	3
EDU313	Teaching of Science and Math	3
EDU314	Teaching of Social Studies	3
EDU414	Methods and Materials in ECE**	3

** Required for Early Childhood Education.

C. Practicum (12 credits)

EDU202	Observation and Curriculum	3
EDU419	Internship	3

And one Practice Teaching course:

EDU420	Practice Teaching, Early Childhood Education	6
EDU421	Practice Teaching, Elementary Education	6
EDU422	Practice Teaching, Elementary Mathematics, and Science	6

D. Subject Matter Area Electives (12 credits)

For Early Childhood Education:

EDU205	Safety and Health	3
EDU213	Introduction to Language	3

Choose another 6 credits from the following list

EDU211	Math for Elementary Teachers	3
EDU212	Science for Elementary Teachers	3
EDU303	Language Arts	3
MUS301	Music Education	3
COM337	Creative Dramatics	3
ART 333	Arts Education	3

For Elementary Education:

- English Subject Matter:

Choose 12 credits from the following list:

ENG213	Introduction to Language	3
EDU303	Language Arts	3
ENG214	English Grammar	3

Choose 3 more credits from:

ENG211	Literature I	3
ENG212	Literature II	3
ENG306	Introduction to Phonetics and Phonology	3
ENG336	Romantic and Victorian Poetry	3

- Math & Science Subject Matter:

Choose 12 credits from the following list:

EDU 211	Math for Elementary Teachers	3
EDU 212	Science for Elementary Teachers	3

Choose 6 more credits from:

EDU310	Computers in Education	3
MTH207	Discrete Structures I	3
NUT201	Fundamentals of Human Nutrition	3
CHM201	Chemical Principals	3
BIO201	General Biology I	3
BIO202	General Biology II	3

III. Free Electives (7 credits)

SUGGESTED THREE-YEAR STUDY PLAN:

FIRST YEAR

Fall Semester (15 credits)

EDU201	Fundamentals of Education	3
ARA2... /3		3
ENG101	English I	3
PSY201	Intro to Psychology	3
	One LAC Arts Course	3

Spring Semester (15 credits)

EDU331	Educational Technology	3
	One Subject Matter Course	3
PSY202	Child Psychology	3
HLT201	Basic Health	1
ETH201	Moral Reasoning	1
ENG102	English II	3
PED2...	Physical Education	1

Summer Module

1 science course	3
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Total Year One 33

SECOND YEAR*Fall Semester (14 credits)*

EDU321	Children's Literature	3
EDU301	School Counseling	3
	One Methods Course	3
	LAC elective	3
CSC201	Computer Applications	1
	Free elective	1

Spring Semester (15 credits)

PSY295	Theories of Learning	3
EDU319	Teaching of Reading	3
	One Subject Matter Course	3
ENG202	Sophomore Rhetoric	3
	Free elective	3

Summer Module

One Elective Course		3
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Total Second Year **32**

THIRD YEAR*Fall Semester (15 credits)*

EDU202	Curriculum & Observation	3
EDU419	Internship	3
	One Methods Course	3
	One Subject Matter Course	3
ENG203	Fundamentals of Oral Communication	3

Spring Semester (15 credits)

EDU420-421	Practice Teaching	6
EDU499	Senior Study	3
EDU332	Educational Measurement	3
	One Subject Matter Course (EDU 205; EDU 213) or other subject matter area courses)	3

Total Third Year **30**

TEACHING DIPLOMA**THE PROGRAM PROVIDES TWO OPTIONS:**

TD in Elementary Education and TD in teaching various subject matters at the Intermediate and Secondary Education

MISSION

Under the umbrella of LAU's Vision, the Mission of the Education Program, as well as the Teaching Diploma, is to prepare teachers who are academically and personally qualified to promote

LAU as a first class institution, and to demonstrate leadership in their places of employment.

EDUCATIONAL OBJECTIVES

The Teaching Diploma at LAU aims to prepare teachers who demonstrate:

A. Relevant Knowledge

- Depth and breadth in subject and content
- General pedagogical knowledge
- Specific pedagogical content knowledge
- Awareness of professional standards
- Awareness of developmentally appropriate practices
- Awareness of curriculum objectives and standards

B. Practical Skills

- Diverse approaches to instruction and assessment
- Motivational strategies
- Strategies to promote higher-level thinking

C. Appropriate Attitude

- Readiness to develop authentic relationships with students
- Readiness to establish a democratic and socially just learning environment
- Readiness to reflect on one's practice
- Readiness to pursue continuous learning

LEARNING OUTCOMES

Graduates of the Teaching Diploma program will be able to:

- Distinguish between different theories of education and understand their impact on the curriculum
- Develop clear and measurable instructional objectives
- Plan units, lessons, curricular materials, and activities for teaching
- Select and implement strategies for teaching specific subjects at the early, elementary, or secondary level
- Organize learning environments so as to create a positive classroom atmosphere
- Act as problem solvers teaching/learning situations using critical thinking, and analysis

- Plan strategies and prepare tools for assessing students' achievement (formal as well as informal assessment)
- Pursue professional development opportunities as lifelong learners

CURRICULUM REQUIREMENTS

The Teaching Diploma consists of 21 credits, to be taken over and above the 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
EDU202	Observation and Curriculum	3
EDU331	Educational Technology	3
EDU332	Educational Measurement	3

1 course from the Practice Teaching – Elementary:

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

One Methods course from the following (As recommended by the student's 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
MUS301	Music Education	3
COM337	Creative Dramatics	3

Required Courses for Intermediate and Secondary Level T.D.

EDU201	Fundamentals of Education	3
EDU202	Observation and Curriculum	3
EDU310	Computers in Education	3
EDU332	Educational Measurement	3

1 course from the 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 the student's advisor):

EDU312	TEFL	3
EDU314	The Teaching of Social Studies	3
EDU315	The Teaching of Math-Intermediate & Secondary	3
EDU316	The Teaching of Science-Intermediate & Secondary	3
ART333	Art Education	

* Required for ECE

MASTERS OF ARTS IN EDUCATION

The educational sector in Lebanon has undergone major changes since the inception of the new curriculum. These changes have raised a debate about the purpose and quality of education, overhauled the delivery modes and practices in the field, and created new positions in educational settings (school counselors, special educators, technology teachers, etc.). The need for qualified professionals has become greater than ever.

MISSION

The Mission of the M.A. Program in Education is to respond to the educational change, and to fulfill the needs created by educational reforms. The Program prepares qualified professionals in the field of Education who can assume leadership positions in schools and educational institutions, as well as promote change and innovations, guide and mentor teachers, and develop their knowledge and skills in a life-long learning process.

EDUCATIONAL OBJECTIVES

The M.A. Program in Education provides knowledge, practical training, and 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 subject coordinators, supervisors, officers for teacher professional development, curriculum specialists, or school administrators.

LEARNING OUTCOMES

As a result of their work in the Program, students will be able to:

1. Identify major political, social, psychological, and philosophical foundations of education and curricula
2. Recognize, compare, and contrast, major instructional theories and approaches
3. Evaluate/develop curricula, and curriculum materials, for specific content, or for special groups of students
4. Use technology efficiently in performing instructional and educational tasks
5. Set and implement plans for educational professional development
6. Design, conduct, and evaluate educational research
7. Reflect on research results and evaluate their implications on educational practices

CURRICULUM 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 credits)

EDU802	Curriculum Design	3
EDU803	Methods of Educational Research	3
EDU806	Advanced Educational Psychology	3

One of the following two courses:

EDU805	Educational Technology	3
EDU872	Special Education***	3

***Required for Special Education emphasis

II. Electives (3 credits)

One of the following courses:

EDU812	Literacies across the Curriculum	3
EDU814	Comparative Education	3
EDU873	Psycho educational Assessment	3
EDU874	Behavior Modification Techniques	3
EDU888	Topics in Education	3
EDU8--	Any non-required education course	3

III. Track courses depending on emphasis:

A. General Professional Development Track (12 credits)

Choose any three EDU courses at the graduate level	9
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B. Emphasis

Choose ONE emphasis from the following:

Specialist 1: Educational Management (9 credits)

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

Specialist 2: TESOL (9 credits)

EDU852	Trends and Issues in TESOL	3
EDU853	Sociolinguistics and Social Context of Language	3
EDU857	Discourse and Materials Development	3

Specialist 3: Mathematics Education (9 credits)

EDU822	Trends and Issues in Mathematics Education	3
EDU823	Technology in Mathematics Education	3
EDU825	Mathematical Language, Representations and Modeling	3

Specialist 4: Science Education (9 credits)

EDU862	Trends and Issues in Science Education	3
EDU863	Technology in Science Education	3
EDU8--	A third EDU course	3

Specialist 5: Early and Middle Childhood (9 credits)

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

Specialist 6: Special Education (9 credits)

EDU875	Dyslexia and Reading Difficulties	3
EDU876	Teaching Students with LD in the Regular Classroom	3
EDU877	Special Education Practicum	3

Specialist 7: School Counseling (9 credits)*

EDU883	Counseling Theories and Techniques	3
EDU885	Counseling Children and Adolescents in School Setting.	3
EDU887	Practicum in School Counseling	3

*Currently frozen

Research Work (6 credits)

Students may choose one of the following two options:

Option 1:

EDU898 Project in Education (3 credits) + one elective course (3 credits)

Option 2:

EDU899 Thesis in Education (6 credits)

COURSE DESCRIPTIONS

EDUCATION (UNDERGRADUATE)

EDU201 Fundamentals of Education [3-0, 3 cr.]

This course is 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.]

This course covers the integration of the study of curriculum development along with a field experience. Emphasis is on the strategies and techniques for observing and recording students' behaviors in the classroom where the student teacher spends 60 semester hours.

EDU205 Safety and Health [3-0, 3 cr.]

This course is a review of the integrated holistic approach of health and safety practices recommended for childcare, including information on common diseases, health problems, nutrition, and safety issues.

EDU211 Mathematics for Elementary Teachers [3-0, 3 cr.]

This course is a comprehensive review of the mathematics needed by teachers, and the mathematics taught at the elementary level (grades 1 through 6). The course entails an insightful understanding of the mathematical concepts, the nature and stages of the development of mathematical knowledge, the impact of new technologies (calculators and computers) on elementary math curricula, critical thinking and problem solving strategies, etc...

EDU212 Science for Elementary Teachers [3-0, 3 cr.]

This course is a comprehensive review of the sciences taught at the elementary level (grades 1 through 6). The course entails an insightful understanding of the scientific concepts, the learning cycle of the 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.]

This course is a study of the theory and practice of school counseling. Emphasis is on communication skills and basic intervention techniques that assist educators in dealing with a range of behavioral, emotional and vocational concerns at school.

EDU303 Language Arts [3-0, 3 cr.]

This is a training course designed to give students practice in the effective use of classroom English, and to extend their language teaching skills and techniques, with special emphasis on the communicative approach.

EDU305 Applied Phonology* [3-0, 3 cr.]

This course 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. The course includes examples from a wide variety of languages, with special emphasis on the sound systems of English and Arabic. The course develops basic skills in comparative phonological analysis.

EDU310 Computers in Education [3-0, 3 cr.]

This course is designed to provide prospective teachers with broad knowledge, and practical activities, of the various instructional applications of computers. Topics include general knowledge about computers and their educational uses, simple computer programming as a means to enhance students' higher-order thinking, the evaluation, selection, and integration of educational software in teaching, and the learning of various subjects, as well as the use of the Web resources in teaching and learning. The course covers an overview of the new Lebanese Informatics curriculum.

EDU311 Teaching Arabic as a Foreign Language [3-0, 3 cr.]

This course is a study of the problems and methods of teaching Arabic as a foreign language, based on the findings of modern linguistic science. The course covers all the aspects of Arabic teaching including 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 the consent of the Instructor.

EDU312 Teaching English as a Foreign Language [3-0, 3 cr.]

This course is 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 the aspects of English teaching including basic language skills, sub skills, literature, and cultural orientation.

Prerequisite: ENG213 Introduction to Language.

EDU313 Teaching Science and Mathematics (Elementary) [3-0, 3 cr.]

This course is a study of the methods and materials used in teaching science and mathematics, in elementary education.

Senior Standing.

EDU314 Teaching Social Studies [3-0, 3 cr.]

This course is designed to equip students with the knowledge and the 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 Teaching Mathematics in Secondary Schools [3-0, 3 cr.]

This course is a study of the objectives, concepts, and classroom procedures, in secondary education, with emphasis on the selection, preparation, and use of teaching materials, including lesson plans and multimedia aids.

Senior Standing.

EDU316 Teaching Science in Secondary Schools [3-0, 3 cr.]

This course is a study of the objectives, problems, and procedures, appropriate for the secondary school, with emphasis on preparing plans, the use of demonstrations, experiments, science curriculum projects, and reference materials.

Prerequisites: EDU201 Fundamentals of Education, and Junior Standing.

EDU319 Teaching Reading [3-0, 3 cr.]

This course is a study of the 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 to improve their competency in these skills.

EDU321 Children's Literature [3-0, 3 cr.]

This course is an exploration of the various types of children's literature. It aims at developing critical analysis of the purposes, and the strategies for teaching, and the evaluation of literature for children.

EDU331 Educational Technology [3-0, 3 cr.]

This course is a study of the 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.]

This course is 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.]

This course involves 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.]

This field experience course introduces concept problems and skills common to prospective teachers. Students assist cooperating teachers 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. It requires students to spend 60 semester hours in their assigned classrooms.

EDU420 Practice Teaching–Early Childhood Education [1-2, 3 cr.]

This course is a field-based practicum, in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. The course includes one seminar per week and requires a minimum of 60 hours of practice in the area of emphasis. Continuous evaluation is provided by the supervising faculty and the cooperating teacher, to enhance the student teacher's professional growth.

Senior Standing.

EDU421 Practice Teaching–Elementary Education: Language, Arts and Social Studies [1-2, 3 cr.]

This course is a field-based practicum, in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. The course includes one seminar per week and requires a minimum of 60 hours of practice in the area of emphasis. Continuous evaluation is provided by the supervising faculty and the cooperating teacher, to enhance the student teacher's professional growth.

Senior Standing.

EDU422 Practice Teaching–Elementary Math and Science [1-2, 3 cr.]

This course is a field-based practicum, in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. The course includes one seminar per week and requires a minimum of 60 hours of practice in the area of emphasis. Continuous evaluation is provided by the supervising faculty and the cooperating teacher, to enhance the student teacher's professional growth.

Senior Standing.

EDU425 Practice Teaching–Secondary Math Education [1-2, 3 cr.]

This course is a field-based practicum, in which schools serve as laboratories for student teachers to gradually assume the obligations of

the classroom teacher. The course includes one seminar per week and requires a minimum of 60 hours of practice in the area of emphasis. Continuous evaluation is provided by the supervising faculty and the cooperating teacher, to enhance the student teacher's professional growth.

Senior Standing.

EDU426 Practice Teaching–Secondary Science Education [1-2, 3 cr.]

This course is a field-based practicum, in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. The course includes one seminar per week and requires a minimum of 60 hours of practice in the area of emphasis. Continuous evaluation is provided by the supervising faculty and the cooperating teacher, to enhance the student teacher's professional growth.

Senior Standing.

EDU427 Practice Teaching–Secondary English Education [1-2, 3 cr.]

This course is a field-based practicum, in which schools serve as laboratories for student teachers to gradually assume the obligations of the classroom teacher. The course includes one seminar per week and requires a minimum of 60 hours of practice in the area of emphasis. Continuous evaluation is provided by the supervising faculty and the cooperating teacher, to enhance the student teacher's professional growth.

Senior Standing.

EDU499 Senior Study [1-2, 3 cr.]

This is a capstone course that involves research work on a topic chosen by the student, and related to his/her emphasis of study.

EDUCATION (GRADUATE)

EDU802 Curriculum Design [3-0, 3 cr.]

The aim of this course is to review the history of curriculum development, to analyze the current curricular issues, including the impact of new technological advancement on curricula, and to 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 [3-0, 3 cr.]

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, and 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.

EDU805 Educational Technology [3-0, 3 cr.]

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 which include the 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.

EDU806 Advanced Educational Psychology [3-0, 3 cr.]

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 implications to schooling, learning processes, teaching techniques, and other educational issues.

EDU812 Literacies across the Curriculum [3-0, 3 cr.]

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 literacy including reading, writing, information, computer, math, and science literacy.

EDU814 Comparative Education [3-0, 3 cr.]

This course examines education in its socio-cultural 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.

EDU822 Trends & Issues in Math Education [3-0, 3 cr.]

This course aims to discuss the 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 a review of research, and a critical evaluation of math curricula, aiming at identifying, comparing, and contrasting, major trends of mathematics education.

EDU823 Technology in Math Education [3-0, 3 cr.]

This course investigates the effects of new technologies on school mathematics, and on 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 the different types of calculators (simple, scientific and graphic), and computer software (e.g. dynamic geometry, spreadsheets as math learning tools, computer algebra systems, and math education web-sites).

EDU825 Mathematical Language, Representations, and Modeling [3-0, 3 cr.]

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 a review of research on related processes, such as problem solving, modeling, representations, proof, logic, and mathematical reasoning.

EDU832 Leading & Managing Schools/ Education Institutions [3-0, 3 cr.]

This course deals with the major topics of 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 and allocating resources.

EDU833 Trends & Issues in Educational Management [3-0, 3 cr.]

This course covers the 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 [3-0, 3 cr.]

This course is part seminar and part practicum. First, 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. Second, the seminar component focuses on the instructional supervision and the personnel management. Special attention is given to research in the field.

EDU842 Trends & Issues in Early and Middle Childhood Education [3-0, 3 cr.]

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 trends impacting early and middle childhood education. Topics may include the 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 [3-0, 3 cr.]

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.

EDU852 Trends & Issues in TESOL [3-0, 3 cr.]

This course will cover the 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 such as web-sites, Internet search, language laboratory facilities, etc...

EDU853 Sociolinguistics & Social Context of Language [3-0, 3 cr.]

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 to apply to their professional understanding, and pedagogic practice.

EDU855 Multilingualism in Education [3-0, 3 cr.] *

This course explores both the theoretical and practical issues in multilingual education. Topics include the patterns of bilingual and multilingual language acquisition, the consequences of bilingualism for cognitive development, the mother tongue attrition, and the 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.

*Currently frozen

EDU857 Discourse and Materials Development [3-0, 3 cr.]

This 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.

EDU862 Trends and Issues in Science Education [3-0, 3 cr.]

This 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 the elements of the history of science education, the minimum requirements for a science literate

citizen, the theories of science education, and how to evaluate methods, materials, curriculum, or reform projects, in science education.

EDU863 Technology in Science Education [3-0, 3 cr.]

This 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 probe-ware, simulations, and the Internet.

EDU872 Special Education [3-0, 3 cr.]

This course takes an in-depth look at the learning, social, and behavior characteristics of students with learning disabilities, and focuses on the current practices in identification, diagnosis and intervention programs, in the field of special education.

EDU873 Psychoeducational Assessment [3-0, 3 cr.]

This course examines the assessment procedures, techniques, and instruments, used in screening and evaluating, psychological, cognitive abilities, and the achievement of students with learning disorders. It combines lectures and hands-on sessions, and acquaints students with various formal, and informal, assessment materials. Ethical issues in testing are equally addressed.

EDU874 Behavior Modification Techniques [3-0, 3 cr.]

This course focuses on the principles and applications of behavior theory, as they apply to the 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.

EDU875 Dyslexia and Reading Difficulties [3-0, 3 cr.]

This umbrella course focuses on reading difficulties, the main challenge that students with reading difficulties 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 [3-0, 3 cr.]

This course investigates the foundations of effective teaching for students with learning difficulties. It proposes evidence-based learning-teaching approaches, and materials that are effective in educating learning-disabled, and mildly developmentally delayed students in the areas of reading, spelling, writing and mathematics.

EDU877 Special Education Practicum [3-0, 3 cr.]

This course deals with the applied aspect of the Special Education emphasis. 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 [3-0, 3 cr.] *

This course emphasizes counseling and consultation theories, and presents philosophical underpinnings of theories of personality, and those incorporated into counseling practice. It is an overview of the field, with emphasis on understanding the nature of counseling, and the counselor's role in a school setting. Basics of interviewing skills, and counseling assessment techniques, are presented, as well counseling special needs students, and relevant ethical issues, are discussed.

*Currently frozen

EDU885 Counseling Children and Adolescents in School Setting [3-0, 3 cr.] *

This course covers the examination of models of therapeutic interventions from infancy to adolescence. Students become familiar with the 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 the basic developmental issues from infancy to adolescence that under-gird counseling practice. Typical psychosocial tasks are explored, with special consideration for counseling in a school context.

*Currently frozen

Department of Education

EDU887 Counseling Practicum [3-0, 3 cr.] *

This course is a semester of supervised counseling practice in a school setting, consistent with the student's professional goals. This pre-professional experience allows students to implement counseling strategies while receiving structured and intensive feedback about their strengths, and weaknesses. Students will meet with LAU Faculty for weekly seminar classes throughout the practicum.

*Currently frozen

EDU888 Topics in Education [3-0, 3 cr.]

This course deals with the current issues and concerns in education. It is alternatively taught by various Faculty to cover a wide range of specialty areas.

EDU898 Project in Education [3 cr.]

This course entails producing an original contribution in the students' area of specialty, typically in the form of educational materials (educational kit, curriculum or sections of a curriculum, guidebooks, etc.) or a field study that is smaller in scale than a thesis.

EDU899 Thesis in Education [6 cr.]

This course entails producing an original contribution in the students' specialty domain. It may be field research, qualitative or quantitative, descriptive or experimental, case study, document analysis, or action research.



Department of Humanities

CHAIR

Behmardi, Wahid

ASSOCIATE CHAIR

Khachan, Victor

PROFESSORS

Aghacy, Samira

Bacha, Nahla

Zeitouni, Latif

ASSOCIATE PROFESSORS

Abdo, Antoine

Aercke, Kristiaan

Diab, Rula

Dodigovic, Marina

Ghosn, Irma-Karina

Khuri, Richard

Malik, Habib

ASSISTANT PROFESSORS

Abboushi, Jenine

Badran, Dani

Balaa, Luma

Daccache El-Amyouni, Nidale

Diab, Nuwar

Langerwerf, Lydia

Marroum, Marianne

Mouawad, Ray

Saab, Nada

LECTURERS

Bazzi, Tarif

El Hussari, Ibrahim

Haraty, Nabelah

Moujaes, Samar

Vassilenko, Larissa

INSTRUCTORS

Abu-Teen, Samir

Acra, Usama

Assaf, Nadra

Azzi, Reine

Chatila, Evelyn

Dakakni, Deema

Darwish, Orpha

Dasouki, Suhail

Habre, Paula

Hage, Nermine

Hodeib-Eido, Dana

Ibrahim, Raghida

Makarem, Wassila

Mohsen, Nadim

Nasrallah, Therese
Pempedjian, Giselle
Prescott-Decie, Brian
Rahme, Suraya
Sadaka, George
Shahine, Mona
Shami, Samira
Shweiry, Zein
Yusuf Karamah, Amy

ASSISTANT INSTRUCTOR

Salman, Nabil

DEGREES OFFERED

- Bachelor of Arts in English
- Bachelor of Arts in History
- Bachelor of Arts in Philosophy
- Master of Arts in Comparative Literature
- Minor in Arabic Language and Literature
- Minor in English

FACILITIES

The Department houses the following facilities:
Language Laboratory; Writing Center



BACHELOR OF ARTS (B.A.) IN ENGLISH

The B.A. in English 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.

MISSION

The Mission of the Bachelor of Arts in English Program is to offer a superior English Program which appeals to students, and which offers the widest range of career possibilities after graduation.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in English Program is to:

1. Provide our students with the interdisciplinary background, and the expertise in speaking, and to provide them with the analytical and writing skills needed to make them fully qualified for the various career paths including, but not limited to, advertising, banking, business, journalism, NGO work and publishing.
2. To prepare our students for today's interdisciplinary Graduate Studies Programs in English, Comparative Literature, Cultural Studies, or any field of the Humanities.
3. To give our students wishing to pursue a career in high school education a level of literary and cultural proficiency, which will qualify them for the best jobs in Lebanon, and the Region (assuming they also acquire the Teaching Diploma).

LEARNING OUTCOMES

Graduates in the Bachelor of Arts in English will:

1. Enhance their writing proficiency through literary and linguistic assignments.
2. Acquire both literary and linguistic content in various areas, and become aware of the cultural, political, and social perspectives of different societies

3. Analyze and critique different topics, and develop their research methods.
4. Reflect upon the different aspects of today's global issues, in a literary and linguistic framework.

LEARNING OUTCOMES OF THE LITERATURE EMPHASIS

Graduates in the Bachelor of Arts in English with Literature Emphasis will:

1. Develop a high level of proficiency through written assignments and reports.
2. Demonstrate a well-developed oral proficiency, through oral reports, and/or a question-and-answer teaching strategy.
3. Demonstrate the ability to subtly appreciate the allusive qualities of literature, film, and other arts (through cross-listed and team-taught courses).
4. Acquire a solid knowledge of the thematic content, and the formal features of the English literary tradition, from the Middle Ages to the present, through the coursework which emphasizes the constructiveness of meaning.
5. Recognize, examine, compare, analyze, and evaluate the principal theoretical assumptions in literature and culture, through coursework in theory.
6. Acquire a sense of, and reflect upon, the relevance of literature and culture in the social and political life of a people, through courses that focus on the connections between literature and social issues.
7. Acquire a firm grasp of research methods, through the emphasis on the written component of coursework.

LEARNING OUTCOMES OF THE LANGUAGE EMPHASIS

Graduates in the Bachelor of Arts in English with Language Emphasis will:

1. Identify and explain the different subcategories related to language, namely: morphology, syntax, semantics, and pragmatic.
2. Describe and distinguish the major grammatical functions related to language.
3. Analyze language, and its social context, and explain the linguistic differences encountered within a society.
4. Identify and summarize the different reading and writing approaches, and the strategies related to the English language.

5. Explain and critique the different topics related to the English language.

CURRICULUM REQUIREMENTS

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 requirement, he/she must take the equivalent number of courses/credits, in any field, to be awarded the Teaching Diploma. The B.A. in English requires 92 credits.

1. Liberal Arts Curriculum Requirements (34 credits)

2. Major Core Requirements (18 credits)

ENG303	Literary Linguistics	3
ENG319	History of the English Language	3
ENG354	Theories of Literature and Culture	3
ENG366	Creative Writing	3
ENG372	Comparative and World Literatures	3
ENG499	Senior Study	3

3. 1. Literature Emphasis Requirements (24 credits)

Choose 6-9 credits from:

ENG323	Renaissance Drama	3
ENG324	Medieval Literature	3
ENG325	Renaissance Poetry	3
ENG326	Restoration and Neoclassical Literature	3
ENG328	Early Novel	3

Choose 3 credits from:

ENG336	Romantic and Victorian Poetry	3
ENG339	Nineteenth-Century British Novel	3

Choose 6-9 credits from:

ENG342	Modernism and Beyond	3
ENG345	Twentieth-Century British Novel	3
ENG346	Contemporary Culture	3
ENG348	Postcolonial Anglophone Literatures	3
ENG487	Topics in Drama and Theater	3
ENG479	Topics in Literature and Culture	3

Choose 3 credits from:

ENG351	Early American Literature	3
ENG352	Twentieth-Century American Novel	3

Choose 3 credits from:

ENG325	Renaissance Poetry	3
ENG336	Romantic and Victorian Poetry	3
ENG342	Modernism and Beyond	3

Suggested Electives (16 credits)

3.2. Language Emphasis Requirements (24 credits)

ENG213	Introduction to Language	3
ENG214	Grammar	3
ENG306	Introduction to Phonetics & Phonology	3
ENG307	Introduction to Psycholinguistics or	3
ENG310	Sociolinguistics	3
ENG308	Semantics and Pragmatics	3
ENG473	Topics in English Language	3
	Literature courses electives other than ENG211/212	6

Suggested Electives (16 credits)

SUGGESTED THREE YEAR STUDY PLAN: B.A. ENGLISH LITERATURE

Year I - 32 credits

Fall

ENG202	Sophomore Rhetoric	3
ENG319	History of the English Language	3
ENG323	Renaissance Drama	3
ENG366	Creative Writing	3
HLT201	Basic Health	1
COM229	History and Theory of Film	3
Total		16cr

Spring

ENG203	Oral Communication	3
ENG303	Literary Linguistics	3
ENG342	Modernism and Beyond	3
ENG372	Comparative and World Literature	3
ETH201	Moral Reasoning	1
COM325	Feature & Magazine Writing	3
Total		16cr

Year II - 31 credits

Fall

ENG325	Renaissance Poetry	3
ENG351	Early American Literature	3
ENG354	Theories of Literature & Culture	3
ARA201	Appreciation of Arabic Literature	3
ENG328	The Early Novel	3
Total		15cr

Spring

ENG346	Contemporary Culture	3
PHL210	Critical and Creative Thinking	3
BIO201	General Biology I	4
ART431	Modern Art	3
REL412	History of Religious Thought in the M. East	3
Total		16cr

Year III - 29 credits

Fall

ENG348	Postcolonial Anglophone Literatures	3
CSC201	Computer Applications	1
PHL322	Existentialism in Literature	3
COM326	Script Writing	3
WOS412	Representations of Women in Arts and Media	3
SOC488	Topics in Sociology	3
Total		16cr

Spring

ENG336	Romantic and Victorian Poetry	3
ENG479	Topics in Literature & Culture	3
ENG499	Senior Study	3
PED231	Modern Dance	1
MUS312	Survey of Middle Eastern Music	3
Total		13cr

Year III - 29 credits

Fall

ENG342	Modernism & Beyond	3
ENG345	The 20th-Century British Novel	3
ENG473	Topics in English Language	3
COM326	Script Writing	3
HST221	History of Lebanon	3
CSC201	Computer Applications	1
Total		16cr

Spring

ENG346	Contemporary Culture	3
ENG348	Postcolonial Angloph Literatures	3
ENG336	Romantic and Victorian Poetry	3
ENG499	Senior Study	3
PED231	Modern Dance	1
Total		13cr

Total Program		92cr
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SUGGESTED THREE YEAR STUDY PLAN: BA ENGLISH LANGUAGE

Year I - 32 credits

Fall

ENG202	Sophomore Rhetoric	3
ENG213	Intro to Language	3
ENG214	Grammar	3
ENG319	History of the English Language	3
ENG366	Creative Writing	3
HLT201	Basic Health	1
Total		16cr

Spring

ENG203	Oral Communication	3
ENG303	Literary Linguistics	3
ENG306	Intro to Phonetics & Phonology	3
ENG372	Comparative & World Literatures	3
COM210	Communication Media & Society	3
ETH201	Moral Reasoning	1
Total		16cr

Year II - 31 credits

Fall

ENG328	Early Novel	3
ENG307	Intro to Psycholinguistics	3
ENG354	Theories of Literature & Culture	3
ARA201	Appreciation of Arabic Literature	3
HST201	Historical Tools	3
Total		15cr

Spring

ENG308	Semantics & Pragmatics	3
BIO201	General Biology I	4
COM325	Feature & Magazine Writing	3
PHL210	Critical & Creative Thinking	3
WOS412	Representations of Women in Arts & Media	3
Total		16cr

BACHELOR OF ARTS (B.A.) IN HISTORY

MISSION

The History Program at LAU aims to instill in students an in-depth appreciation of the past by exposing them to a global focus on both Eastern and Western civilizations through a consideration of the complex interactions across cultures over designated spans of time—interactions that collectively constitute the sum total of the human experience. Learning about the past has the dual purpose of helping students to acquaint themselves with the accumulated wisdom of the ages, while at the same time allowing them to discern the errors of eras gone by in order to avoid repeating them. A proper and systematic grounding in history therefore becomes the surest way to form character, cultivate perspective, illuminate context, and refine an understanding of what it means to belong to the human family.

EDUCATIONAL OBJECTIVES:

1. To develop in students a healthy intellectual curiosity about other cultures as well as their own and how these have fared over the centuries.
2. To offer students a rich and wide selection of interpenetrating historical narratives with a view to having them discover those thematic threads with which they can most closely identify in order to help reveal to them who they are.

- To nurture in students the love of reading and thinking critically about the past so as to better understand the present and plan intelligently for the future.
- To provide students with a sufficiently solid cultural background to enable them to pursue productive careers in any field by making it possible for them to refer with ease to meaningful and relevant precedents in order to uncover latent yet at times subtle connections between such precedents and complex current situations.

LEARNING OUTCOMES:

These are to be attained by students at the end of their years of undergraduate training and measured through a combination of both oral and written exercises, independent supervised research and in-class examinations, and substantive discussions with peers and instructors. They include:

- A comparative perspective on leading historical events and personalities.
- An acquaintance with the principal themes and arguments that have informed the weighty historical disputes and conflicts.
- The ability to draw perceptive analogies between what happened in the past and what is occurring today, or what might unfold tomorrow.
- Distinguishing periods of gradual and steady progress from others of stagnation, or even occasional regression.
- Perfecting the skill to converse maturely and influentially about matters of historical substance that continue to have a decisive bearing on our lives in the present.
- Appreciating the intricate and cumulative nature of positive human experience over time in order to fathom the factors and decipher the purposes of change in the political, social, cultural, intellectual, and personal spheres of humankind's grand overall story.

CURRICULUM REQUIREMENTS

The B.A. in History requires 92 credits, of which 34 are University Course Requirements, 42 are History courses and 16 are free electives.

The History B.A. program features 9 distinct areas of course work. Within each area there are required courses for those majoring in History as

well as other courses that can be taken either as electives or as part of the Liberal Arts Core. The 9 areas are the following:

HST205 Historical Tools (required, 3 Credits):
Ancient World History (one course required, 3 Credits):

HST220	Pre-History to Pericles
HST221	Greece and Rome

History of Lebanon (HST231 required, 3 Credits):

HST230	From Antelias Man to the Ottoman Conquest of 1516
HST231	From the Imarah to the 1975-1990 War

Arab and Middle Eastern History: (two courses required including either HST240 or HST241, 6 Credits):

HST240	History of the Arab Peoples Conquest of 1516
HST241	History of Islam in the Middle East
HST242	Europe and the Middle East 1798-1956
HST243	Economic History of the Middle East
HST244	History of the Arab-Israeli Conflict

European History (any two courses required, 6 Credits)

HST301	Europe in Late Antiquity 410-1066;
HST302	Medieval Europe 1066-1453;
HST303	Early Modern Europe 1450-1750;
HST304	Modern Europe 1750-1945;
HST305	Contemporary Europe 1945-1989;

World History (any three courses required, 9 Credits):

HST330	History of Byzantium
HST331	History of Russia
HST332	History of China
HST333	History of South Asia
HST334	History of North America
HST335	History of Central and South America
HST336	History of Africa

Thematic History (any two courses required, 6 Credits):

HST340	Topics in the History of Ideas
HST341	Topics in the History of Science
HST342	Topics in the History of Religion
HST343	Topics in Economic History

HST401 Special Topics in History (one topics course required, 3 Credits);

HST499 Senior Study (required, 3 Credits).

SUGGESTED THREE-YEAR STUDY PLAN:

Year I - 32 credits

Fall

HST205	Historical Tools (prerequisite for all history courses)	3
HST221	Greece and Rome (Required)	3
ENG202	Sophomore Rhetoric	3
PHL201	Ancient Philosophy	3
- LAC	Arts	3
HLT201	Basic Health	1
Total		16cr

Spring

HST231	Lebanon Imarah to 1975-90 War (Required)	3
HST240	History of the Arab Peoples (Required)	3
ENG203	Fundamentals of Oral Communication	3
ARA201	Appreciation of Arabic Literature	3
- LAC	Social Science	3
CSC201	Computer Applications	1
Total		16cr

Year II - 32 credits

Fall

HST242	Europe and the Middle East	3
HST302	Medieval Europe (Required)	3
HST330	History of Byzantium	3
- LAC	Literature	3
- LAC	Science	3
PED101	Physical Education elective	1
Total		16cr

Spring

HST331	History of Russia	3
HST303	Early Modern Europe	3
HST340	Topics in History of Ideas	3
- LAC	Humanities	3
ETH201	Moral Reasoning	1
	Free Elective	3
Total		16cr

Year III - 28 credits

Fall

HST499	Senior Study	3
HST342	Topics in History of Religion	3
HST334	History of North America	3
- LAC	Humanities	3
	Free Elective	3
Total		15cr

Spring

HST408	Comparative Nationalisms	3
	Free Elective	1
Total		13cr

Total Program		92cr
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BACHELOR OF ARTS (B.A.) IN PHILOSOPHY

MISSION

The philosophy program at LAU intends to offer a course of study that will produce outstanding graduates prepared to approach life's challenges, interpersonally and professionally, with the greatest possible variety of supple and far reaching frameworks for reflection, thought, decision, and action.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Philosophy program is to

1. Produce graduates who have: superior critical and analytical capacities; the ability to read and understand some of the most difficult and profound texts ever written; excellent writing abilities; and courageous proclivities for truly independent thinking.
2. Not merely to help students acquire a particular set of skills (although this will be one outcome of the sustained practice of closely reading and thinking about extremely difficult texts, and attempting to write clearly, penetratingly, and persuasively about them), but also to foster an open-minded, tolerant, and receptive outlook on what it is to be human.
3. Help students to develop the ability to think clearly and reflect deeply about their individual lives, their communities, the world around them, and what it all means. The emergence of a substantial number of such individuals could have a meaningful and highly constructive impact on the relevant cultural, social, and political surroundings.
4. Prepare our students to enter the job market with corporations and other large international organizations who have been clamoring for better educated and more cultured employees capable of thinking for themselves, strong in their communication and comprehension skills. Experience has taught those employers that majors in fields such as philosophy, English, and history that such individuals have repeatedly excelled at their jobs in banking, finance, law, economics, and international relations.

LEARNING OUTCOMES

Graduates in the Bachelor of Arts in Philosophy will:

1. Become critical thinkers with a strong moral awareness.
2. Acquire broad knowledge of ancient and contemporary texts.
3. Acquire the dispositions and skills required of an active and responsible citizenry.
4. Acquire adaptive abilities particularly suited to a rapidly changing job market.
5. Acquire broad insight into the human condition.

CURRICULUM REQUIREMENTS

The B.A. in Philosophy requires 92 credits, of which 34 are University Course Requirements, 42 are Philosophy courses and 16 are free electives.

The Philosophy course requirement consists of 7 areas of course work, distributed as follows:

1. Logic Requirement (6 Credits):

PHL210	Critical and Creative Thinking;
PHL211	Symbolic Logic

2. History of Philosophy Requirement (12 Credits):

PHL201	Ancient Philosophy: From the pre-Socratics to the Epicureans and The Stoics
PHL202	Medieval Philosophy: From Plotinus to Ockham
PHL203	Early Modern Philosophy: From Montaigne to Kant
PHL204	Modern Philosophy: From Hegel to Heidegger and/or Frege to Wittgenstein

3. Twelve core courses in philosophy (Any three of the 12 are required, 9 Credits):

PHL301	Ethics
PHL302	Theory of Knowledge
PHL303	Metaphysics
PHL311	Philosophy of Religion
PHL321	Philosophy of Art
PHL322	Philosophy in Literature and Film
PHL323	Philosophy of History
PHL324	Philosophy of Science
PHL325	Philosophy of Mind
PHL326	Social and Political Philosophy
PHL327	Philosophy and Mythology
PHL328	Arab and Islamic Philosophy

4. PHL350 Courses on the individual philosophers (Any two required, 6 Credits)
5. Special Topics (Any two courses required, 6 Credits):
6. PHL499 Senior Study (Required, 3 Credits)

SUGGESTED THREE-YEAR STUDY PLAN:

Year I - 32 credits

Fall

PHL210	Critical Thinking	3
PHL201	Ancient Philosophy	3
ENG202	(Core)	3
	General University Requirement (Elective)	3
	General University Requirement (Elective)	3
ETH201	(Core)	1
Total		16cr

Spring

PHL202	Medieval Philosophy	3
PHL211	Symbolic Logic	3
ENG203	(Core)	3
	General University Requirement (Elective)	3
ARA201	(Core)	3
CSC201	(Core)	1
Total		16cr

Year II - 32 credits

Fall

PHL203	Early Modern Philosophy	3
PHL351	Aristotle	3
PHL302	Theory of Knowledge	3
	General University Requirement (Elective)	3
	General University Requirement (Elective)	3
HLT201	(Core)	1
Total		16cr

Spring

PHL204	Modern Philosophy	3
PHL35	Hegel	3
PHL301	Ethics	3
	General University Requirement (Elective)	3
PED101	(Core)	1
	Free Elective	3
Total		16cr

Year III - 27 credits

Fall

PHL324	Philosophy of Science	3
PHL391	Heidegger and the Pre-Socratics	3
	General University Requirement (Elective)	3
	Free Elective	3
	Free Elective	3
Total		15cr

Spring

PHL390	Philosophy of the Environment	3
PHL499	Senior Study	3
	Free Elective	3
	Free Elective	3
Total		12cr

MINOR IN ARABIC LANGUAGE AND LITERATURE

A Minor in Arabic Language and Literature complements our students' major study in fields such as journalism and education. It gives them an extra edge in the hiring process and enhances their career opportunities. It also proves crucial to students who wish to pursue careers related to translation. Students who major in Communication Arts and focus on areas such as Film, Drama will find that a Minor in Arabic Language and Literature offers them an excellent interdisciplinary education and training, and will prepare them to compete for the best employment opportunities.

MISSION

The mission of the proposed program is to offer a quality Arabic Program that will appeal to a range of student interests and attract graduate students with a strong liberal arts background who hope to enhance their role as well-rounded individuals.

LEARNING OBJECTIVES

The objective of the Minor in Arabic Language and Literature is to equip students with a solid background in Arabic language and literature. This Minor includes language, poetry and prose in modern and ancient Arabic literature. This Minor can be taken by students from any major.

LEARNING OUTCOMES

Readings in primary and secondary sources, oral participation and written assignments will enable students to:

1. Acquire a good level of mastery of the Arabic language.
2. Acquire knowledge of the sequential development of Arabic literature and become acquainted with major trends of Arabic literary production in both medieval and modern times.
3. Receive intensive training in the analysis of literary texts.
4. Demonstrate ability to write and express the outcome of their learning in a scholarly manner.

CURRICULUM REQUIREMENTS

Six courses (18 credits) are required for the Minor in Arabic Language and Literature.

Three courses are mandatory: ARA301, ARA332, and ARA341.

The three remaining courses can be selected from: ARA201, ARA302, ARA322, ARA333, and ARA342.

Fall

ARA201	Appreciation of Arabic Literature
ARA302	Arabic Rhetoric
ARA321	Creative Writing
ARA322	Principles of Translation
ARA342	Arabic Drama

Spring

ARA201	Appreciation of Arabic Literature
ARA321	Creative Writing
ARA322	Principles of Translation
ARA333	New Trends in Modern Arabic Literature
ARA341	Modern Arabic Novel and Short Story

MINOR IN ENGLISH

MISSION

The Minor in English supports the Lebanese American University's core mission, vision and values by: a commitment to education with a strong liberal arts foundation and a continuous improvement in the overall quality of teaching, research, writing and educational service. The intent of the Program is thus to advance an academic understanding of English literature and language and address its complexities. It should be noted that many students over the years have expressed interest in language and literature but do not necessarily want to pursue a B.A. degree in it.

Specifically, the minor in English would offer our students

1. more opportunity and a more solid and rounded background for their future careers,
2. a program that would better prepare the already enrolled B.A. English students as well as other graduates from other majors to pursue a graduate degree in English at LAU if they may choose,
3. a fuller liberal arts background fulfilling the mission of the university,

4. a program that would allow students who are interested in English language and literature and who are following other majors to take another degree,
5. an interdisciplinary degree which is in line with many US accredited universities.
6. a minor in either language or literature to the students enrolled in the current B.A. Language/Literature Program in which they are following one track
7. the opportunity to best use their free electives and LAC requirements to obtain their degrees in business, education, social sciences, engineering, architecture, design, computer or the natural and medical sciences business, with a minor in English. In this context, it is worthwhile to mention the following which, in the proposers' views, is applicable to other majors.

LEARNING OBJECTIVES

The Minor

1. Prepares the students for the job market by adding to their majors through a Minor in English
2. Enhances the literary and linguistic knowledge of students who are not majoring in English
3. Develops students' research and writing skills through active learning and the promotion of critical thinking
4. Prepares students who are not majoring in English to join the MA program in English at LAU after completing the BA.
5. Expands outreach and engagement by encouraging faculty and students to contribute to the community at large.

LEARNING OUTCOMES

Graduates in a Minor in English will:

1. Enhance their writing proficiency through literary and linguistic assignments.
2. Acquire both literary and linguistic content in various areas, and become aware of the cultural, political, and social perspectives of different societies.
3. Analyze and critique different topics, and further develop their research methods.
4. Reflect upon the different aspects of today's global issues in a literary and linguistic framework.

CURRICULUM REQUIREMENTS

A Minor in English seeks to provide quality education to our students and enrich their knowledge of English and American Literature and Language. This is done through a selection of courses already available in the English Department. These courses underscore a number of pedagogical and analytical skills: familiarity with major literary works and their social and cultural context; critical analysis of major literary work; and improving their analytical and writing skills. A minor in English prepares the students for a variety of professions as well gives them the opportunity to have a prerequisite education that qualifies them to pursue a postgraduate degree in English literature or linguistics.

For a Minor in English, students must choose 18 credits of the following courses:

Minor Core Requirements (9 credits):

ENG351	Early American Literature
ENG213	Introduction to Language
ENG319	History of the English Language

The rationale for the three courses (9 credits) minor core requirements is to give the student a wide perspective on what the English language is and how it evolved, along with a general view of American Literature which will give students insight and awareness of the language and literature so that they may better develop their speaking, listening, reading and writing skills.

Minor Elective Requirements (9 credits): Students may select the 9 credits from literature or language or either.

English 102 (II) is a pre-requisite for all courses. It is recommended that the core courses be taken first, but students may take 18 credits of courses toward the minor in any order.

Literature

ENG325	Renaissance Drama
ENG326	Restoration and Neoclassical Literature
ENG336	Romantic and Victorian Poetry
ENG339	20th Century American Novel
ENG474	Topics in Literature and Culture

Language

ENG214	English Grammar
ENG308	Semantics and Pragmatics
ENG310	Sociolinguistics
ENG307	Introduction to Psycholinguistics
ENG473	Topics in English Language

The rationale to give a choice of three courses (9 credits) of minor core requirements is to allow students to choose where their interests lie, either in the language per se or in literature or a mixture of both. The literature and language courses are those which already exist in the B.A. English Program and are good representations of the course offerings. The selection of courses has been made in order to offer the student a comprehensive overview of what can be called a 'miniature B.A. English degree'.

MASTER OF ARTS DEGREE PROGRAMS

M.A. IN 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.

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

MISSION

The Mission of the Graduate Program in Comparative Literature is to teach, train, and conduct research in literature and trans-cultural studies, with special attention to Lebanon and the Middle East. The Program offers coursework in English, Arabic, Persian and French, in response to the students' needs and capacities. The aim is to explore the role of culture in a multi-ethnic globalizing world.

EDUCATIONAL OBJECTIVES

The purpose of the Graduate Program in Comparative Literature is to:

1. Offer students linguistic and cultural training in more than one cultural zone.
2. Offer students a highly individualized curriculum, through close cooperation with other disciplines in the humanities, arts, and social sciences.
3. Allow students to acquire an exceptional degree of expertise in regional intercultural relations, and a broadened perspective on the variety, and complexity, of the Middle Eastern cultures, combined with advanced training in critical and poststructuralist theories.
4. Explore a range of literary, and cultural, theories, and demonstrate significant mastery of one or two.
5. Achieve broad intercultural competence in genre, period, and theme.
6. Receive advanced training in written and oral communication through working with experienced researchers.

LEARNING OUTCOMES

Graduate students in Comparative Literature will be able to:

1. Develop a high level of specialization in methodology, theory, periods, themes and literary genres that constitute the framework within which they can pursue their study and research.
2. Develop the skills to teach, train, and to conduct research in literature and transcultural studies, with special attention to Lebanon and the Middle East in general.
3. Acquire an exceptional degree of expertise in regional intercultural relations.
4. Obtain advanced standing in secondary school teaching, work as literary translators, or work as specialists in literature and culture for the press, for international publishers, in diplomacy, and in international organizations.
5. Acquire the knowledge and the skills which qualify them to pursue their education in the field at the Ph.D. level.

CURRICULUM REQUIREMENTS

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 at least one.
- 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.

Graduate students in Comparative Literature must complete 30 credit hours in three areas:

A. 18 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. 6 credits of coursework in one of the following:

6. A national literature and culture.
7. A non-literature cognate (graduate-level courses in a field of interest such as anthropology, film, history, music, philosophy, psychology, etc...).

C. A written Preliminary Exam, and a 6-credit Master's Thesis, CLT899

The Preliminary Exam in Comparative Literature tests the student's capacity to deal with specific topics rather than address very general areas. A reading list that consists of 5-10 texts prepared by the examining committee in consultation with the student takes into consideration the field/s of research related to the thesis topic for each student. The Preliminary Exam takes the duration of three hours. Each member of the Examining Committee will receive a copy of the answering sheets, and will correct the exam independently. The result, which is either a Pass or Fail, is communicated to the Director of the Program. If the three examiners give a Pass to the examinee, the student will be notified about the result. If one of the examiners fails

the student, the Director will call for a meeting where the examiners decided on whether the student should pass or fail. Students who fail are given a second chance within a month from the date of the first exam. Those who fail in the second comprehensive preliminary exam will be suspended from the Program. The students are expected to pass the Preliminary Exam prior to commence working on their thesis.

COURSE DESCRIPTIONS

ARABIC STUDIES

ARA101 Essay Reading and writing I

[3-0, 3 cr.]

This course concentrates on essay reading and writing. Through selected readings that represent different types of essays, students will receive training on literary analysis and essay writing skills. This course also includes a review of essential grammatical rules of the Arabic language.

ARA102 Essay Reading and writing II

[3-0, 3 cr.]

This course, being complementary to ARA101, focuses on the study of the development of the "Essay" as a literary genre. It focuses on articles on literary criticism, newspaper articles, and articles that deal with autobiography, memoirs and travel. It also tackles the Western influence on the evolution of essay writing in Arabic. In this course, students receive training on skills of writing articles.

ARA201 Appreciation of Arabic Literature

[3-0, 3 cr.]

This course is divided into two parts. First, the theoretical part, which deals with the essential characteristics of literature, as well as literary themes, schools, and genres, and second, the practical part, which includes the intensive analysis of selected excerpts illustrating important literary forms, and trends.

ARA301 Advanced Arabic Grammar

[3-0, 3 cr.]

This course covers the fundamental principles of the Arabic language, and deals with the grammatical and syntactic mistakes commonly made by students in writing. It includes written exercises.

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.

ARA321 Creative Writing [3-0, 3 cr.]

This course seeks to train students to write correctly in Arabic, in several styles, especially the styles that are proper to literature and the mass media.

ARA322 Principles of Translation [3-0, 3 cr.]

This course deals with the principles of translation, and the translation from English into Arabic, and vice versa.

ARA332 Ancient Arabic Literature [3-0, 3 cr.]

This course covers the representative authors of pre-Islamic, Omayyad and Abbassid periods. Extracts from their main works in poetry and prose are read, and analyzed.

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 the leading authors.

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.

ARA342 Arabic Drama [3-0, 3 cr.]

This course is 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.

SPECIAL ARABIC

SAR105 Colloquial Arabic I [3-0, 3 cr.]

This course is designed for non-native speakers beginning their study of colloquial Arabic. It progresses methodically, aided by materials that are based on a comparative linguistic analysis of English and Arabic. The course follows an aural-oral approach.

The course is only open to students exempted from Arabic.

SAR106 Colloquial Arabic II [3-0, 3 cr.]

This course is designed to establish a mastery of the colloquial Arabic sound system, and a practical efficiency in the use of colloquial Arabic grammatical structures, with an expanded vocabulary.

Prerequisite: SAR105 Colloquial Arabic I, or equivalent.

The course is only open to students exempted from Arabic.

SAR111 Standard Arabic I [3-0, 3 cr.]

This course is 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. It covers a limited vocabulary, and basic standard grammatical structures.

The course is only open to students exempted from Arabic.

SAR112 Standard Arabic II [3-0, 3 cr.]

This course is 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 its equivalent.

The course is only open to students exempted from Arabic.

SAR221 Developmental Arabic [3-0, 3 cr.]

This course 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.

CHINESE

CHN201 Beginning Chinese [3-0, 3 cr.]

This course is designed for students with no previous knowledge of Mandarin Chinese, the official language of China. It aims at providing them with spoken and written knowledge of the language at the basic survival level. At the listening/speaking level, emphasis is placed on the phonological subtleties of intonation in Chinese and how these affect meaning. At the reading/writing level, both a phonological based system (Pinyin) and a logographic

system will be simultaneously adopted. An interactive, communicative approach to teaching will be used in order for students to actively experience the language in as authentic and functional a context as possible.

CULTURAL STUDIES

CST101 Civilizations [3-0, 3 cr.]

This course provides a preliminary survey of the origins of ancient cultures ending up with the Greek and Roman civilizations, by emphasis on Mesopotamia, Egypt, Phoenicia, and India. The survey includes a study of the birth of civilization that comes along with the development of human tools that mark the conquest over the powers of nature. Cultural texts, artifacts, rituals, and other practices (medicine, hunting, clan grouping, loyalty to leaders, etc.) will be explored as contributing to the formation of a civil identity specific to these different cultures and peoples.

CST201 Cultural Studies I [3-0, 3 cr.]

This course 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.]

This course 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: ENG101 English I.

CST203 Cultural Studies III [3-0, 3 cr.]

This course traces the major developments in the global human experience 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: ENG101 English I.

ENGLISH (INTENSIVE)

ENG002 Intensive English II [12-2, 0 cr.]

This is 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: English Entrance Exam (EEE) 400–449 or its equivalent.

ENG003 Intensive English III [12-2, 0 cr.]

This is 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.

Notes:

- To pass from ENG002 to ENG003: A minimum grade of "D" is required, or a score between 450–499 or its equivalent, on the EEE.
- To pass from ENG002 to ENG009: A minimum grade of "C+" is required or a minimum score of 500, or its equivalent, on the EEE.
- To pass from ENG003 to ENG009: A minimum grade of "C" is required, or a minimum score of 500, or its equivalent, on the EEE.
- However, a student must get a minimum grade of "D" in the Intensive English course to be eligible to sit for the Intensive English Comprehensive Exam.
- 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.
- Students, who pass from Intensive English into the University English, are placed in the University English courses according to their EEE scores, or equivalent. Intensive English students who have passed the LAU Intensive English and do not have an EEE, or an equivalent score, before entering the University, will be placed into ENG009.

ENGLISH LANGUAGE AND LITERATURE

ENG009 Remedial English II [3-0, 0 cr.]

This course is designed to develop effective reading and writing skills. Emphasis is placed on the paragraph and essay formats. Basic grammar and mechanical skills are revisited. Laboratory sessions reinforce listening, speaking and study skills. The course emphasizes academic style and task-based work.

Prerequisite: EEE score 500 - 549 or its equivalent.

ENG101 English I [3-0, 3 cr.]

This course is designed to reinforce effective and critical reading and writing skills, with emphasis on summarizing, paraphrasing, citing sources, and study skills. The course emphasizes academic style and task-based work.

Prerequisites: ENG009, or EEE score 500 - 549, or its equivalent.

ENG102 English II [3-0, 0 cr.]

This course is designed to develop advanced reading and writing skills associated with academic work. Emphasis is on the analytical and critical reading of texts, as well as on writing in a variety of modes. Students develop a research paper and learn to formulate researchable questions through locating appropriate resources in the library, the community, and the electronic media. Students also learn to organize their findings, to develop their manuscript, and to cite their sources following the academic conventions.

Prerequisite: ENG101 English I, or EEE score between 600–649, or its equivalent.

ENG202 Sophomore Rhetoric [3–0, 3 cr.]

This course is for practice in reading and writing, both formal and creative. It covers critical analysis, evaluation, formulation, and the presentation of verbal and written opinions based on the best possible evidence. It also covers the methods of formal argumentation.

Prerequisite ENG102 English II, or EEE score of 650 and above, or its equivalent.

ENG203 Fundamentals of Oral Communication [3–0, 3 cr.]

This course covers the fundamentals of oral communication, along with a 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 the different types of oral presentations.

Prerequisite ENG102 English II, or EEE score of 650 and above, or its equivalent.

ENG 211 Literature I [3-0, 3 cr.]

Offers a critical study of literature from the ancient world through the Renaissance with emphasis on the European and Mediterranean traditions. Readings chosen emphasize themes that continue to resonate in the present. Topics and writers studied may include: Greek mythology, Homer, Sappho, Virgil, Petronius, Dante, Rabelais, Anna Bijns.

ENG 212 Literature II [3-0, 3 cr.]

Offers a critical study of Western literature from the seventeenth century through the twentieth century as a continuation of ENG211. Topics and writers may include: Montaigne, Cervantes, Baroque poetry, Molière, Goethe, German romanticism, Chekhov, Kafka.

ENG213 Introduction to Language [3-0, 3 cr.]

This course is a survey of the theoretical bases of language study, emphasizing theories of language origins and developments. Topics include semantics, syntax, pragmatics, writing systems, dialects, phonology, and the contrast between communication, true language, and artificial language.

Prerequisite: ENG102 English II.

ENG214 English Grammar [3-0, 3 cr.]

This course is a study of the grammatical structures, and a critical analysis of the descriptive uses of grammar.

Prerequisite: ENG102 English II.

ENG303 Literary Linguistics [3-0, 3 cr.]

This course offers a systematic linguistic approach to literary analysis, utilizing such linguistic tools as transitivity and voice, deixis, tense, modality, etc... It aims at consolidating students' knowledge of both literature and linguistics, by drawing on their interconnectedness.

Prerequisite: ENG102 English II.

ENG306 Introduction to Phonetics and

Phonology [3-0, 3 cr.]

This course deals with phonetics, 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. It includes examples from a wide variety of languages, with special emphasis on the sound systems of English and Arabic. Students develop basic skills in comparative phonological analysis.

Prerequisite: ENG102 English II.

ENG307 Introduction to Psycholinguistics [3-0, 3 cr.]

This course examines the influence of psychological factors on the development, use, and interpretation of language, and investigates the relationship between language and thought. The course also surveys experimental and empirical studies of linguistic usage, and the development of language.

Prerequisite: ENG102 English II.

ENG308 Semantics and Pragmatics [3-0, 3 cr.]

This course introduces theoretical and empirical approaches to linguistic semantics and pragmatics, in relation to language encoded meanings, as part of the language syntactic structures, and language choice in a social interaction/context.

Prerequisite: ENG102 English II.

ENG310 Sociolinguistics [3-0, 3 cr.]

This course introduces language in its social context. Special areas of interest would include interactional, variational, and cultural linguistics, across speech communities, mainly in relation to class, gender, ethnicity, and multilingualism.

Prerequisite: ENG102 English II.

ENG319 History of the English Language [3-0, 3 cr.]

This course focuses on 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.

ENG323 Renaissance Drama [3-0, 3 cr.]

This course examines the plays of Shakespeare, and his contemporaries, with attention to their social context and later reception. Close readings of texts and film versions are directed toward discerning elements of dramatic technique, characterization, and theme.

Prerequisite: ENG102 English II.

ENG324 Medieval Literature [3-0, 3 cr.]

This course surveys the medieval origins of the English literature until the late 15th Century, across the genres of lyric, epic, romance and drama. Writers and texts studied may include Beowulf, La Mort D'Arthur, Chaucer, Langland and Everyman.

Prerequisite: ENG102 English II.

ENG325 Renaissance Poetry [3-0, 3 cr.]

This course examines the genres of lyric, and epic, poetry from the 16th and 17th Centuries. Students study the work of poets such as Wyatt, Sidney, Spenser, Shakespeare, Donne, and Milton.

Prerequisite: ENG102 English II.

ENG326 Restoration and Neoclassical Literature [3-0, 3 cr.]

This course places the genres of poetry, drama, and the prose essay, within their historical contexts. Writers studied may include Dryden, Bunyan, Pope, Johnson, and Congreve.

Prerequisite: ENG102 English II.

ENG328 Early Novel [3-0, 3 cr.]

This course focuses on the emergence and early development of the novel in English, in light of its historical and literary contexts. Writers studied may include Defoe, Richardson, Fielding, and Sterne.

Prerequisite: ENG102 English II.

ENG336 Romantic and Victorian Poetry [3-0, 3cr.]

This course examines lyric and narrative poetry throughout the 19th Century. Students study the work of poets such as Blake, Coleridge, Keats, Tennyson, and Arnold.

Prerequisite: ENG102 English II.

ENG339 19th-Century British Novel [3-0, 3 cr.]

This course explores the novel of the 19th Century England according to how it addresses major thematic, and aesthetic, concerns of the period. Writers studied may include Austen, Dickens, Eliot, and Hardy.

Prerequisite: ENG102 English II.

ENG342 Modernism and Beyond [3-0, 3 cr.]

This course explores the concept of Modernism and Modernist art forms from the late 19th Century to the 1960s. Through selected poetry, prose, film, and plastic arts, the course seeks to convey an artistic, social, and intellectual climate. Writers studied may include Yeats, Eliot, Woolf, Stevens, Auden, and Pynchon.

Prerequisite: ENG102 English II.

ENG345 The 20th-Century British Novel [3-0, 3 cr.]

This course tracks the British novelistic production throughout the 20th Century. Issues explored may include the ways in which these narratives relate to colonialism, and its legacies, or to social contexts of textual production. Writers studied may include Woolf, Forster, Waugh, Ishiguro, Barnes, and Drabble.

Prerequisite: ENG102 English II.

ENG346 Contemporary Culture [3-0, 3 cr.]

This course explores the contemporary culture through literature, film, and other media, using a British, or American, cultural studies approach. Topics may include the ways in which culture intersects with politics, race, class, religion, gender, or globalization.

Prerequisite: ENG102 English II.

ENG348 Postcolonial Anglophone Literatures [3-0, 3 cr.]

This course explores the English language literary production from areas outside of Europe and North America. Intercultural encounter, Diaspora, and indigeneity, may be among the objects of study. Writers may include Achebe, Soyinka, Naipaul, Rushdie, and Lessing, in addition to postcolonial theorists.

Prerequisite: ENG102 English II.

ENG351 Early American Literature [3-0, 3 cr.]

This course chronicles the formation of a national literature from its Puritan beginnings to the late 19th Century. In tracing the emergence of an American "voice," coursework may span a variety of genres such as autobiography, poetry, the novel, essays, and speeches.

Prerequisite: ENG102 English II.

ENG352 20th-Century American Novel [3-0, 3 cr.]

This course tracks the American novelistic production throughout the 20th Century. Issues explored may include war, race, the Great Depression, the Cold War, and neo-imperialism. Writers studied may include James, Dos Passos, Faulkner, Barthes, Morrison, and Franzen.

Prerequisite: ENG102 English II.

ENG354 Theories of Literature and Culture [3-0, 3 cr.]

This course examines the theories of literary, and cultural, production and reception. The course may be arranged chronologically, or according to schools and approaches.

Prerequisite: ENG102 English II.

ENG366 Creative Writing [3-0, 3 cr.]

This course examines the techniques of fiction, poetry writing, and creative non-fiction writing, based on the study of selected models. Free-writing exercises, and discussion of writing assignments, will be emphasized.

Prerequisite: ENG102 English II.

ENG372 Comparative and World Literatures [3-0, 3 cr.]

This course concentrates on the particular insights and problems of literature from a cross-cultural perspective. Questions of genre, period, and cultural relativism may be examined through primary texts drawn from two or more language traditions.

Prerequisite: ENG102 English II.

ENG473 Topics in English Language [3-0, 3 cr.]

This course deals with an area of language study, or a topic that is not usually dealt within

the other language offerings. It aims at helping students understand and analyze concepts associated with language. It may be repeated once for credit by English Majors, if the course content is different.

Prerequisites: ENG102 English II, Senior standing, or the consent of the Instructor.

ENG479 Topics in Literature and Culture [3-0, 3 cr.]

This course explores a literary-theoretical topic in some depth. Topics might include philosophy and literature, psychological and Marxist approaches to literature, narrative theory or postmodernism.

Prerequisites: ENG102 English II, Senior Standing, and the consent of the Instructor.

ENG487 Topics in Drama and Theater [3-0, 3 cr.]

This course is cross-listed with COM487. The course explores the ideas of form, convention, style and context, in drama and theatre. It focuses on the different dramaturgical, and theatrical, approaches to specified topics, or theater trends or schools (Modern Drama, Postmodernism, Documentary Drama, Gender and Theater, Popular Theater, etc...). The Course may be repeated if topics differ. Students may take it more than once.

Prerequisites: COM342 Play Production, or the consent of the Instructor, Senior Standing.

ENG499 Senior Study [3-0, 3 cr.]

This course is 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 or language.

Prerequisites: ENG102 English II, Senior Standing, and the consent of the Instructor.

ETHICS

ETH201 Moral Reasoning [1-0, 1cr.]

This course explores ways to approach moral decisions individuals encounter in their daily life, with a focus on critical thinking and the importance of personal integrity. The course attempts to promote productive dialogue, tolerance for diverse points of view on ethical issues, and skills of responsible citizenship.

ETH205 Ethics in Leadership [3-0, 3cr.]

This course is an introduction to ethics in leadership. It provides analysis and discussion on how ethics and leadership theories evolved over time, how they are applied today, and how they influence modern thinking and behavior. The course is highly interactive, supported by empirical analysis and class discussions. The student will engage actively in case analysis and debates. Cases are selected from popular literature, research journals, textbooks, and audiovisual media.

GERMAN

GER201 Beginning German [3-0, 3 cr.]

A beginning course in standard German designed for students who have no previous knowledge of the language. The course aims at basic proficiency in the language skills: listening, speaking, reading and writing focusing on the use of the German sound system, acquisition of vocabulary and developing standard grammatical structures, reading of short texts and writing at the paragraph level. Emphasis is placed on students' use of the language in authentic situations of everyday life cultivating an appreciation for the richness and diversity of the culture of the peoples. A communicative content task-based approach is used and opportunities are given to participate in activities and events

GER202 Beginning German II [3-0, 3cr.]

For students with prior knowledge of German grammatical structures, some comprehension and speaking skills. The aim of this course is to firstly consolidate the knowledge of German and then extend it through written texts, audio-visual material, role-play and lots of speaking practice focusing on everyday situation. Students will be able to write short, simple letters. Topics covered: orientation in the city, sights and attractions in German-speaking cities, talking about what happened in the past. A communicative content task-based approach is used and opportunities are given to participate in activities and events

HISTORY

HST101 20th Century History of Lebanon and the Region [3-0, 3cr.]

This course examines the situation of Lebanon during and in the aftermath of World War I, the proclamation of Greater Lebanon after the war, and the French mandate until the independence of the country in 1943. The course also

encompasses the modern history of Lebanon in relation with the history of its neighboring Arab countries: Egypt, Syria, Palestine, Iraq, and Saudi Arabia.

HST205 Historical Tools (required) [3-0, 3cr.]

This course introduces the discipline of history and its centrality for the Humanities. It acquaints the students with different ways of reading, writing, and interpreting historical texts and documents. It also offers a broad overview of historical methodologies and informs students about the rudiments of historiography. Through lectures, close readings of texts (both primary and secondary), and written exercises the course emphasizes the proper scholarly approaches to historical research and writing.

HST220 The Ancient World, Pre-History to Pericles [3-0, 3cr.]

Provides an overview of pre-historical human existence during the bronze and iron ages (2000-1000 BC) mainly around the major river systems of the ancient world: Pharaonic Egypt and the Nile; Mesopotamia and the Tigris and Euphrates; ancient settlements on the Indian subcontinent and the Indus river valley; and comparable early human settlements in other parts of the ancient world. Sumerian, Babylonian, Egyptian, Phoenician, Semitic, and other peoples of the ancient Near and Middle East will be the main focus of investigation, as will the earliest Greek settlements throughout the islands of the Aegean Sea and western Asia Minor. Such events as the Trojan War and the destruction of Troy c. 1193 BC and the Persian Wars (490-449 BC) will also be covered. The course culminates with an introduction to the rise of the ancient Greek city states and concentrates on one of Hellenism's high civilizational achievements: Pericles' Athens.

HST221 The Ancient World, Greece and Rome [3-0, 3cr.]

An introduction to the great Western civilizations of classical antiquity that centered around Greece and Rome. The course roughly covers the period from the foundation of Rome in 753 BC to the sack of the city by the Visigothic king Alaric in 410 AD. Landmark events and developments include: the Peloponnesian War (431-404 BC); Alexander the Great's conquests (356-323 BC); the Punic Wars (264-146 BC); the challenge of Hannibal of Carthage (246-182 BC); the rise of Christianity; the Roman invasion of Britain in 43 AD and Hadrian's Wall (122-127 AD); and the conversion of Constantine the Great after 313

AD and the Edict of Milan. Texts from Herodotus, Homer, Thucydides, Plato, Aristotle, Cicero, Virgil, Horace, Lucretius, Ovid, Seneca, Marcus Aurelius, Plotinus, and others will be analyzed in conjunction with the unfolding historical narrative. The Harvard Loeb Classical Series will be the main repository of primary sources in English translation for this course. The interplay between the highpoints of imperial achievements and the factors of inevitable decline will be emphasized.

HST230 History of Lebanon, from Antelias Man to the Ottoman Conquest (1516) [3-0, 3cr.]

This course surveys the history of Lebanon from prehistoric times through the Phoenician and Roman periods and on to the Middle Ages and the Crusades, ending with the Ottoman conquest at Marj Dabiq in 1516. The emphasis is on those features that define the peoples of Mount Lebanon and the Mediterranean coastal settlements throughout this span of time, and how the foundations for the later emergence of a distinct Lebanese polity and culture were laid. Among the themes explored by the course are the pre-Christian era, the coming of Christianity, the immigration into the Lebanese mountains of a variety of peoples including the early Maronites, the coming of Islam, the arrival of the Druze, rivalries and precarious balances, external factors, and the economic viability or lack thereof of the mountains.

HST231 History of Lebanon, from the Imarah to the 1975-1990 War [3-0, 3cr.]

The course covers the rise of the Imarah and the pivotal figures of Fakhr Ed-Deen and Emir Bachir, Lebanese—specifically Maronite—relations with France and the Vatican, Ottoman Mount Lebanon through the early modern period up to the 18th century, the impact of the Tanzimat on the delicate balance in the mountains, the 1860 massacres, the rise of the Mutasarrifiyya, Lebanon during the First World War, Lebanon under the French Mandate, independence in 1943, the National Pact, the 1958 events, the years of prosperity, the seeds of eventual collapse, the outbreak of war in 1975 ending with the November 1989 Ta'if agreement. The approach is one that weaves historical developments and raw events with an analysis of their significance as regards the evolution of the Lebanese polity and identity, the intricate relations between internal factions and communities and outside powers both near and far, and the impact on Lebanon of the wider Arab region's problems and conflicts and ambitions.

HST240 History of the Arab Peoples [3-0, 3cr.]

The focus of this course is on the Arabs as a people and their achievements throughout history. From their Semitic origins in Arabia to their many successive sub-variations throughout the Middle East the course traces the development of the Arabs and their civilization into modern times. The rise of Islam and the revelation of the Koran in the Arabic language to an Arab Prophet made the Arabs special in their own eyes and in those of all Muslims. Whether it is the life of the courts and cities under the Umayyads, the Abbasids, and in Arab Spain, or the everyday existence of the countryside and the ordinary people, the course will attempt to provide students with as rich a portrait of Arab culture and history as possible. Critiques such as those of Ibn Khaldun and some of the later writers of the Nahda period starting in the second half of the 19th century will be germane to the presentation. How the Arabs interacted with Turks, Persians, and Europeans, and how these outsiders perceived the Arabs, will be central to the course's thematic approach.

HST241 History of Islam in the Middle East [3-0, 3cr.]

The course begins with an introduction about the Jahiliyya period and the dawn of Islam in the 7th century AD and proceeds as far as a convenient cutoff point in the 20th century to be determined by the instructor. Covered in this historical survey of Middle Eastern Islam are the rise of the new creed in Arabia, the life and message of the Prophet Mohammad, the first four wise Caliphs, the Sunni-Shiite split, schools of Islamic jurisprudence, shari'a, the five pillars, the Umayyad Empire, the early Islamic conquests, the Arabs in Spain, the Abbasid Empire, the flowering of Islamic culture in the Middle Ages, Ayyubids, Fatimids, Seljuks, the Crusades, Saladin, the Mongol invasion, the conversion of Iran to Shiism, the emergence of the Ottomans, Wahhabism, Abdu and Afghani, Qutub and Banna, and Khomeini and Bin Laden. Topics such as the historical evolution of the concept of Jihad, the two abodes dualism, dhimmitude, and others will be explored from a historical perspective. The purpose of the course, in addition to acquainting students with the history of one of the world's major religious faiths, is to examine Islam's development as both a creed and a complete way of life, and to assess the challenges it posed to the non-Muslim world as well as how it was in turn challenged by its surroundings.

HST242 Europe and the Middle East (1798-1956) [3-0, 3cr.]

This course aims to provide the students with an overview of European-Middle Eastern relations during the 19th and first half of the 20th centuries—essentially from Napoleon's invasion of Egypt in 1798 to the 1952 officers' revolution in Egypt led by Nasser. It deals mainly with the political, diplomatic, and military events and developments of the period as well as the changing socio-economic, cultural, and intellectual trends and attitudes. The objective is to acquaint the students with the highlights of the complex and often stormy interactions between the various European powers on the one hand and the peoples and states of the Middle East including the Ottoman Empire on the other. The period reveals both Europe and the Middle East evolving rapidly, but not always in tandem. Key themes to be covered include the Ottoman Tanzimat, the Crimean War of 1854, the fate of non-Muslim minority communities under Ottoman rule, the Millet system, the "Eastern Question" and the "Sick Man of Europe," reasons for Ottoman decline and eventual collapse, British-French rivalry in the Middle East, Russian quest for access to the warm waters of the Mediterranean, German-Turkish relations and the First World War, Mustafa Kemal Ataturk and the creation of modern Turkey, European colonialism and Arab liberation from the Ottoman yoke, and the rise of the Arab state system.

HST243 Economic History of the Middle East [3-0, 3cr.]

The course follows the development of economic growth and potential throughout the Middle East and North Africa regions mainly in early modern and modern times. The treatment is usually country by country and the emphasis is on shifts from early cottage industries to the tax farming Iltizam system under the Ottomans to the beginnings of rudimentary irrigation schemes and cotton cultivation in Mohammad Ali's Egypt. The gradual collapse of Ottoman finances and growing dependence on foreign creditors as well as increased foreign competition in the textile and cotton domains are covered in conjunction with the importance of the region in terms of the passage of the major trade routes between Europe and Asia. The regional significance of the opening in 1869 of the Suez Canal is analyzed. Attempts at industrialization in the 20th century and grand schemes like the High Dam project in Egypt and the discovery of oil in Arabia are discussed extensively. Charles Issawi's classic work on the economic history of the region is used as a guide for basic readings along with other more recent authoritative treatments of specific economic issues.

HST244 History of the Arab-Israeli Conflict [3-0, 3cr.]

This course focuses on the emerging clash between the nascent Zionist project starting in the 19th century and the gradual dispossession of the Arab inhabitants of Palestine culminating in the 1948 creation of the state of Israel. The approach is historical concentrating on the genesis of Zionism in parts of eastern Europe, the 1897 Basel conference, relations between Herzl and the Ottoman sultan and Wieszmann and the British, the Balfour Declaration, early Jewish immigration into Palestine, the impact of the two world wars and the Holocaust, the career of Jabotinsky, Arab attitudes and divisions, the rise of Arab nationalism, the series of Arab-Israeli wars, the emergence of the Palestinian Fedayeen and the Palestine Liberation Organization, Palestinian nationalism, impacts on the surrounding Arab states, American and Western support for Israel, revisionist Zionism and post-Zionism, and the Islamist factor. The course attempts to shed light on the historical progression of the conflict and the external players impacting its development. It also assesses the often faulty Arab responses to Israel as well as the internal evolution of the Jewish state from frontier kibbutzim to nuclear power.

HST301 Europe in Late Antiquity 410-1066 [3-0, 3cr.]

This course is a survey of European history from the fall of Rome to the beginning of the Norman Conquest of Britain. Topics to be covered include conditions in Europe throughout Late Antiquity and the Early Middle Ages; the nature and spread of the Germanic tribes—Goths, Vandals, Franks, Huns, and others—and a critical look at labels like “Barbarians” and “Dark Ages;” the rise of Western monasticism; the Iconoclastic Controversy and early Christological disputes; the Merovingians and Carolingians; Clovis and Charlemagne; the eastern and western empires; the clashing authorities of popes and kings; and the ecclesiastical schism of 1054. Primary works to guide the discussion include the writings of Tacitus, St. Augustine’s City of God, Boethius’ Consolation of Philosophy, the writings of John Scotus Eriugena, St. Gregory of Tours’ History of the Franks, the Rule of St. Benedict, the mystical writings of Dionysius the Areopagite (Pseudo-Dionysius), Pope Gregory the Great’s Pastoral Care, Venerable Bede’s Ecclesiastical History, and more.

HST302 Medieval Europe 1066-1453 [3-0, 3cr.]

This course is a study of medieval European history from the Norman Conquest of Britain

to the fall of Constantinople at the hands of Mohammad the Conqueror. Major topics include the Crusades, the founding of Europe’s great universities, the rise of scholasticism, Gothic architecture and the great cathedrals, the medieval guilds, the Concordat of Worms of 1127, the Magna Carta of 1215, Marco Polo’s Venice, the Hundred Years War, and the Council of Florence in 1439. Philosophical and religious figures like Abelard and Heloise, Peter Lombard, Anselm, Bonaventure, Albertus Magnus, Thomas Aquinas, Roger Bacon, Meister Eckhart, Moses Maimonides, Thomas Becket, Duns Scotus, William of Ockham, Nicholas of Cusa, and Thomas a Kempis, as well as literary figures like Boccaccio, Dante, and Chaucer will be covered through readings in their original texts and/or through authoritative scholarly investigations. The emergence of the Franciscan and Dominican monastic orders, St. Bernard of Clairvaux, Petrarch, and Gutenberg are also some of the themes that will be stressed, as will the latest scholarship on everyday life in medieval Europe.

HST303 Early Modern Europe 1450-1750 [3-0, 3cr.]

This course concentrates on the Italian and Dutch Renaissance, the Protestant Reformation, and the Catholic Counterreformation in Europe. It covers the period from the outbreak of the Wars of the Roses in 1455 to the beginnings of the Industrial Revolution in the mid-eighteenth century. It also treats the Age of Discovery that brought Europeans to the New World starting in 1492 and sent them to the far corners of Africa and Asia. Renaissance humanism and its monumental achievements in art, architecture, and literature will be emphasized. The great intellectual encounter among Christians, Muslims, and Jews in Andalusia and the termination of Arab rule there in 1492 at the hands of Ferdinand and Isabella of Spain will be an important sub-theme, as will the start in 1481 of the Spanish Inquisition. Socio-economic conditions in early modern Europe and the rise of mercantilism will be investigated as well and related to broader political and cultural developments. The beginnings of the scientific revolution at the hands of Copernicus, Kepler, Galileo, Tycho Brahe, Newton, and Leibniz will also be covered. Tudor and Stuart England, the reigns of Queen Elizabeth and Henry VIII, the Wars of Religion ending with the Edict of Nantes in 1598, the Thirty Years War (1618-1648) ending with the Treaty of Westphalia, and the Glorious Revolution of 1688 are crucial milestones for the cumulative narrative of this course. Naturally, figures like Ignatius of Loyola, Erasmus, Shakespeare, Bacon, Descartes,

Pascal, Hobbes, Locke, Milton, More, Spinoza, Vico, and others will be an integral part of the historical narrative.

HST304 Modern Europe 1750-1945 [3-0, 3cr.]

This course treats the period starting with the Industrial Revolution in Britain and ending with the culmination in 1945 of the Second World War. Crucial events of special focus entail the American Revolution of 1776 and the French Revolution of 1789, both approached comparatively but also with a view to showing the intricate historical connections between the two related transatlantic upheavals; the Napoleonic era; the 1815 Vienna settlement; the 1848 revolutions throughout Europe; The Crimean War of 1854; the unifications of both Italy and Germany; Whigs and Tories; Victorian England; the era of the New Imperialism; the 1917 Bolshevik Revolution; and the First and Second World Wars and the inter-war period. Culturally, the treatment will include discussions of the Age of Reason and the French Encyclopedists; romanticism; socialism; the idea of progress; nationalism; evolutionism; anticlericalism; impressionism; existentialism; fin-de-siecle Vienna; cubism; symbolism; surrealism; the absurd; and the "Social Gospel" and NeoThomist responses of the Catholic Church beginning with Pope Leo XIII and the First Vatican Council of 1870. Figures whose thoughts and achievements are relevant to any history of modern Europe include: Hume, Rousseau, Paine, Sade, Herder, Kant, Goethe, Tocqueville, Hegel, Feuerbach, Marx, Schopenhauer, Comte, Ibsen, Andersen, Kierkegaard, Dostoevsky, Darwin, Newman, Dickens, Mill, Nietzsche, Dilthey, Weber, Emerson, James, Whitehead, Sartre, Heidegger, Wittgenstein, Freud, Einstein, Picasso, and others.

HST305 Contemporary Europe 1945-1989 [3-0, 3cr.]

This course covers the period from the end of World War II to the fall in 1989 of the Berlin Wall and the beginning of the end of communist rule in Eastern Europe and Russia. Its main focus is on the post-war ascendancy of both the United States and the Soviet Union and the developing rivalry between them known as the Cold War. Main flashpoints of the Cold War include Korea, Cuba, Vietnam, the Middle East, and Afghanistan. Containment and the arms race will also be discussed. Other themes include the Universal Declaration of Human Rights of 1948, McCarthyism of the 1950s, the nonaligned movement and the Bandung Conference of 1955, the civil rights movement,

the rise of feminism, the Catholic Church's Second Vatican Council in the early sixties, the Hippie phenomenon and the drug culture of the 1960s, Sputnik and the race to the Moon, the 1968 student upheavals in Paris and elsewhere, Watergate, the technological and information revolutions, and globalization. Some key figures of interest in the contemporary period include Stalin, Churchill, Castro, Eisenhower, De Gaulle, Ho Chi Minh, Kissinger, Nixon, Reagan, Lech Walesa, Gorbachev, Pope John Paul II, Gates, Solzhenitsyn, Habermas, Cioran, Baudrillard, and others.

HST330 History of Byzantium [3-0, 3cr.]

The course traces the history of the Byzantine Empire from Emperor Constantine the Great (324-337 AD) to the fall of Constantinople during the reign of Constantine XI Palaeologus (1449-1453). Important imperial periods include the reigns of Theodosius I (379-395), Justinian I (527-565), Empress Theodora (1042 and 1055-1056), and then the Comneni and Palaeologi lines. Relations of Byzantium with Rome and the West, the east-west split and the Schism of 1054, Orthodoxy versus heresy, Germanic incursions, and the Crusades (particularly the devastating Fourth Crusade) will be covered in detail. Also relations with the Slavs in Russia and the Balkans, the Persians, and the Muslims will be investigated closely. In addition to political and institutional history, the course will focus on crucial elements of the Byzantine cultural achievement: Constantinople the city (Byzantium), diplomacy, law, the arts, architecture, iconography, spirituality, Patristics, monasticism, music, social structures, and everyday life. The aborted attempts in the 15th century to heal the rupture between the eastern and western churches and the internal divisions that plagued the Empire on the eve of its subjugation will be treated.

HST331 History of Russia [3-0, 3cr.]

The course surveys Russian history beginning with the early peoples: the Scythians, Huns, Ruthenians, and Slavs. It starts with Rurik, Novgorod, and the rise of Kievan Rus, and dwells on the mission of Cyril and Methodius to Christianize the Slavs culminating with St. Vladimir and the conversion in 988 of the Slavs to Christianity. Also covered are the establishment of Moscow, the institution of the Czar, relations with the Russian Orthodox Church and the Crimean Tatars, and key Czars and their achievements like Ivan IV (the Terrible), Peter I the Great, Catherine II the Great, and the Romanovs

ending in 1917 with Nicholas II. Important stations in the narrative include the “Time of Troubles,” the revolts of Stenka Razin (1667-71) and Pugachev in 1773, serfdom and the emancipation of the Serfs in 1861, the opening of Siberia, Slavophiles and Westernizers, Eurasia, Pan-Slavism, pogroms, Lenin and Bolshevism, Rasputin, the October 1917 revolution, the USSR, Stalin, the post-Stalin years, and the collapse of Soviet communism. Russia’s relations with Catholic Poland and Lithuania, with the other European powers, with the Ottoman Empire, with the Balkan Slavs, and with Japan, as well as how the Russians faced both Napoleon and Hitler—all constitute an integral part of the course. The thoughts and writings of leading Russian thinkers like Dostoevsky, Tolstoy, Turgeniev, Herzen, Chernyshevsky, Bakunin, Solovyov, Berdiayev, Khomyakov, Bulgakov, Gorky, Trotsky, Pasternak, Solzhenitsyn, and others will figure in the historical discussions.

HST332 History of China [3-0, 3cr.]

This course is a survey of Chinese history from the Han dynasty (202 BC-221 AD) to the Ming (1368-1644) and Ch’ing (1644-1912) dynasties. An introduction to the philosophy of Confucius is offered after which the historical survey is undertaken. The Opium War (1839-1842 and 1856-1860) between Britain and China is covered as are the Boxer uprising of 1900, Christian missionaries, the overthrowing of the Manchus in 1912, the rape of Nanking, China during the two world wars, nationalism versus communism, Chiang Kai-shek and the Kuomintang, Mao Zedong, the Long March, the communist revolution and the creation of the Peoples Republic of China, the Cultural Revolution, and the role of Chou En-lai. Also the 99-year lease of Hong Kong to Britain in 1898; the situation in Tibet; and China’s relations with Japan, Britain, Russia, the United States, and Taiwan are discussed. Themes such as China’s traditional insularity and Western influences, the evolution of Chinese communism, and the phenomenal growth of the Chinese economy in recent decades will also be treated.

HST333 History of South Asia [3-0, 3cr.]

This course focuses on the Indian Subcontinent, which includes India, Pakistan, Bangladesh, and Sri Lanka as well as occasional forays into Central Asia. A survey is offered of the origins and main doctrines of Hinduism and Buddhism as well as the arrival on the Subcontinent of Christian missionaries (beginning with St. Thomas), and of Islam. The common Sanskrit past and Indo-European origins of the peoples

and their languages are investigated, these in conjunction with the basic belief traditions of the Vedic period and the highlight texts: the Mahabharata, The Upanishads, and the Bhagavad Gita. The narrative then continues with the rise of Delhi, the Muslim period and the Mogul Empire beginning at the end of the 15th century, Akbar (reigned from 1556-1605), Shah Jahan and the Taj Mahal, Vasco da Gama in 1498 and the Portuguese and Dutch arrivals, and the English East India Company and the start of British rule in India. From Clive to Macaulay, Canning, and beyond, British administration and foreign policy with respect to the “jewel in the crown” of the British Empire are analyzed in detail as well as local reactions including the Indian Mutiny of 1857 and the rise of the Indian nationalist movement leading up to Gandhi and Nehru; the 1947 independence and partition; Jinnah and the founding of Pakistan; the rise of East Pakistan (later Bangladesh); the problem of Kashmir; Hindus, Sikhs, and Muslims; Tamils and Sinhalese; the Indian-Pakistani wars; and finally the nuclear standoff on the Subcontinent.

HST334 History of North America [3-0, 3cr.]

The course opens with a background treatment of Pre-Columbian America and the original native inhabitants. There follows a consideration of Columbus’ discovery of the New World in 1492 and the arrival of the early European settlers including Jamestown, the Pilgrims, the Mayflower, and Plymouth Rock. Colonial America is then covered with a concentration on the emerging French-British rivalry over North America—for example, the French and Indian War known in Europe as the Seven Years’ War of 1756-1763. The events leading up to the 1776 American Revolution, the Revolution itself, the birth of the United States, the Declaration of Independence, the Constitution, and the Bill of Rights, along with an analysis of the Founding Fathers’ writings and policies (The Federalist Papers), are all discussed extensively. The Antebellum period, the Lewis and Clark expedition of 1804-1806, the Monroe Doctrine of 1823, the 1849 California Gold Rush, the problem of slavery, and the background to the Civil War come next. The Civil War itself (1860-1865), the defeat of the Confederacy, Abraham Lincoln, the abolition of slavery, and the post-war reconstruction are then treated. Further developments and themes include the growth of the US economy and the US navy, the Spanish-American War of 1899, isolationism versus interventionism, Republicans and Democrats, World War I, Wilsonianism, the 1929 Stock Market Crash and the Great Depression, FDR and the New Deal, World War II, the Cold War, Korea, Vietnam, the Civil Rights movement, and Watergate.

HST335 History of Central and South America [3-0, 3cr.]

The course surveys South American and Central or Meso-American history from Pre-Columbian times—including the native Andean civilization of the Incas, the Mayans of Central America, and the Aztecs of Mexico—to the second half of the 20th century. Columbus' third voyage in 1498 marks the start of Spanish involvement in South America and the era of the Conquistadores. Catholic missions (mainly Jesuits, but also Franciscans, Dominicans, and Augustinians) soon followed. Philip II of Spain set up the Inquisition in South America in 1569. The Portuguese colonized Brazil and Portuguese-Spanish relations are investigated as well as both their relations with the indigenous populations. The Spanish colonies achieved independence between 1810 and 1825, while Brazil became independent of Portugal in 1822-1823. The careers of Simon Bolivar, Cortes, and other prominent figures are assessed. Highlights in the histories of individual countries are studied and issues such as exploration and depletion of the Amazon rainforest, mining, agriculture, oil, and drug cultivation are analyzed from a historical perspective. The rise in the 20th century of both militarism and communist agitation is discussed as are the achievements of Ernesto Che Guevara and Fidel Castro. Church-state relations, whether with right-wing authoritarian regimes or communist ones, are chronicled. The narrative ends with the 1982 Falklands War between Britain and Argentina.

HST336 History of Africa [3-0, 3cr.]

Africa as the home of the oldest known human settlements ("Lucy" in East Africa) saw Phoenician, Greek, and Roman colonies in Carthage and along the Barbary coast of North Africa. After 430 AD the Vandals crossed into North Africa and occupied Hippo, the bishopric of St. Augustine. The course then surveys the Byzantine, Muslim, Berber, Ottoman, and European periods of political and colonial control in the north. In Sub-Saharan Africa Dutch settlers arrived in 1650 to the Cape and clashed with the Bantus and Zulus. In the 19th century European exploration of the Congo and Upper Nile river basins took place and the careers of Stanley and David Livingstone are discussed. British-French colonial rivalry throughout the continent culminating in the late 19th century "Scramble for Africa" is closely analyzed. British adventures in Sudan, the death of Gordon at the hands of the Mahdi, and the Fashoda incident between Kitchener and Marchand are treated. French colonization of Algeria starting in 1830 and the exploits of British imperialist Cecil Rhodes are

also covered. Belgian Congo, Italian Ethiopia and Libya, and a scattered German presence particularly in South-West Africa (Namibia) are also a part of the narrative. The 1899-1902 Boer War between the Afrikaans and the British is analyzed as an important turning-point. Other themes include the slave trade in Zanzibar, the Cape to Cairo railway, and African nationalism leading to decolonization and independence after World War II.

HST340 Topics in the History of Ideas [3-0, 3cr.]

This course aims to offer students a glimpse into the exciting world of intellectual history. The intricate thematic interplay between history, philosophy, theology, literature, and the arts in any given period comprises the subject matter for this course. Cross sections of particular ages like for instance Victorian England, or nineteenth century Russia, or Renaissance Italy are treated as to the complex interconnections between a host of prevailing ideas and their embodiment in specific philosophical, literary, religious, and other forms of human creative output. The objective of the course is to immerse students in the unique intellectual tenor of an age and provide them with a firsthand feel for any peculiar intellectual signature it might manifest.

HST341 Topics in the History of Science [3-0, 3cr.]

This course can provide students with a general overview of scientific progress throughout human history, or it can choose to limit the period covered to a shorter and more coherent span. Possible examples might include the history of Arabic science, science during the Renaissance, developments in physics since Newton, the rise of modern science, and others. The course can also concentrate on historical developments within a specific domain of the natural sciences and confined to a designated period. Examples include the history of astronomy, history of chemistry, history of medicine, history of evolutionary biology, history of physics, history of mathematics, and so on.

HST342 Topics in the History of Religion [3-0, 3cr.]

This course can concentrate on a specific world religion and trace its development over time, or it can follow the comparative approach with respect to two or more religions, or, alternatively, it can choose a religious theme such as mysticism, for example, and follow its unfolding threads in one or more religious tradition. Obversely, the course can decide to focus on a history of atheism.

Whichever approach is chosen there have to be a couple of introductory lectures that define the religious animus, briefly survey its earliest manifestations in human history, and then zero in on the specific topic at hand. The major world religions usually provide the subject matter for various permutations of this course: Judaism, Christianity, Islam, Mormonism, Buddhism, Hinduism, Confucianism, Shinto, Taoism, Sikhism, and varieties of animism.

HST343 Topics in Economic History [3-0, 3cr.]

This course surveys the main developments in economic theory during the modern period. It begins with an introductory background about the medieval guilds and crafts and the feudal agrarian-based economies of the early modern period. Then it covers systematically as major figures the contributions of Adam Smith, David Ricardo, T. R. Malthus, J. M. Keynes, M. Friedman, and J. K. Galbraith. The differing evolutions of free-enterprise and command economies, and how they manifested themselves in capitalism and socialism, are investigated in some detail. The intricate interplay between the often antagonistic forces of freedom and poverty is emphasized, as is the rise of the modern banking and investment systems. The influence of an increasingly globalized world on production, labor, distribution of wealth, north-south dynamics, access to natural resources, and development is a central theme.

HST401 Special Topics in History [3-0, 3cr.]

Some possible topics could include: social history, oral history, history of slavery, history of architecture, history of changing tastes, history of ideologies, history of revolutions, comparative nationalisms, comparative empire building, cases of historical decline, and much more. Specific periods to be covered can also be designated.

HST499 Senior Study [3-0, 3cr.]

Every student majoring in history will be required to take this course in his/her senior year. It is a 3-credit course run seminar-style and entailing the interactive sharing of independent research by students working on the topics for their Senior Studies that have been agreed upon individually with the professor. Students write a supervised 40-page Senior Study on a topic formulated in consultation with a member of the history faculty.

ITALIAN

ITA 201 Beginning Italian [3-0, 3 cr.]

A beginning course in standard Italian designed for students who have no previous knowledge of the language. The course aims at basic proficiency in the language skills: listening, speaking, reading and writing focusing on the use of the Italian sound system, acquisition of vocabulary and developing standard grammatical structures, reading of short texts and writing at the paragraph level. Emphasis is placed on students' ability to participate in authentic situations of everyday life beginning to cultivate an appreciation for the richness and diversity of the culture. A communicative content task-based approach is used and opportunities are given to participate in activities and events.

LATIN

LAT201 Beginning Latin I [3-0, 3cr.]

A beginning course in Classical Latin designed for students who have no previous knowledge of the language. The course aims at basic proficiency in the language skills: reading, writing, listening and speaking focusing on the use of Classical Latin, acquisition of vocabulary and developing standard grammatical structures, reading of short texts and writing at the paragraph level. Emphasis is placed on students' ability to read passages from simple authentic texts such as Horace, Caesar, Livy and Catullus, while cultivating an appreciation for the richness and diversity of the culture of Rome. A communicative content task-based approach is used and opportunities are given to participate in activities and events.

LAT202 Beginning Latin II [3-0, 3cr.]

A second beginning level course in Classical Latin designed for students who already have a primary contact with Latin grammatical structures, together with some comprehension and speaking skills. The aim of this course is to consolidate the initial knowledge of Latin gained in Beginning Latin I and then extend it through written texts, audiovisual material, role-play and speaking practice, together with a broader knowledge of the grammar of Latin, and exposure to a range of simple classical literature. There will also be an emphasis on the culture of Republican and Imperial Rome. A communicative content task-based approach is used and opportunities are given to participate in activities and events.

PHILOSOPHY

PHL101 Introduction to Philosophy [3-0, 3 cr.]

This course introduces the major issues and outlooks in ancient, modern, and contemporary philosophy.

PHL201 Ancient Philosophy: From the pre-Socratics to the Epicureans and the Stoics [3-0, 3 cr.]

This course examines the roots of Western philosophy in Ancient Greece, and serves as a broad introduction to philosophy. While emphasis will be placed on the works of Plato and Aristotle, the renewed appreciation of the depth of pre-Socratic thought and the value of post-Aristotelian thought will also be given their due. In the process, themes such as the origins of the universe, the nature of reality, the basis of our knowledge, the good life and society, and the handling of misfortune will be discussed.

PHL202 Medieval Philosophy: From Plotinus to Ockham [3-0, 3 cr.]

An examination of the works of major Medieval thinkers. Special attention will be paid to the origins of modern philosophy in Medieval thought, and how Medieval thinking stands in contrast to Ancient thinking. Also, the theological character of scholastic thought will be emphasized, for example: attempts to reconcile each of Christian and Islamic teachings with the authority of Aristotle; attempts to reconcile the benevolence of God with the existence of evil; attempts to reconcile the omnipotence of God with presumed limits placed on his power by "natural laws"; and attempts to reconcile the omniscience of God with free will.

PHL203 Early Modern Philosophy: From Montaigne to Kant [3-0, 3 cr.]

Emphasis will be given to (1) early modern theories of knowledge (epistemology) against the backdrop of the Scientific Revolution and (2) the roots of early modern philosophy in Renaissance humanism and the outstanding individuals such as Montaigne who had contributed to several areas of human endeavour. In parallel with (1) and (2), two contrasting approaches to acquiring knowledge will be studied, one based on experience (empiricism), the other on reason (rationalism). Finally, attention will be given to the significant role of skepticism.

PHL204 Modern Philosophy: From Hegel to

Heidegger and/or Frege to Wittgenstein [3-0, 3 cr.]

Two variants of the course will be offered to reflect recent realities. The first variant of the course traces a development from Hegel through Marx, Kierkegaard, Schopenhauer, and Nietzsche into 20th Century Phenomenology and Existentialism. The second variant of the course will look at the work of Frege and Russell, and some of their influential 20th century successors. Within the second variant, special attention will be given to Wittgenstein, who was a unique and unclassifiable thinker of great importance.

PHL210 Critical and Creative Thinking [3-0, 3 cr.]

Students will be taught how to read out arguments in ordinary language – for instance in opinion pieces in newspapers and magazines or in short philosophical passages – and to identify the kind of argument, and to analyze and evaluate those arguments. Students will also be introduced to formal modes of reasoning in categorical and symbolic logic. Finally, students will be trained in thinking creatively about certain passages from the established great figures in the philosophical tradition.

PHL211 Symbolic Logic [3-0, 3 cr.]

This course introduces the concepts and principles of symbolic logic, in particular the distinction between valid and invalid arguments, the determination of logical relations between sentences, the formal analysis of sentences so that the logical relations between them can be determined, the definition and construction of a formal language, the evaluation of truth, truth-functions, quantifiers and their use in the analysis of arguments, and predicate logic.

PHL301 Ethics [3-0, 3 cr.]

Ethics is classically the study of what is right, just, appropriate, or desirable, all of which are among the various meanings given to "the good", the central concern of ethics. Typically, this course will have historical, theoretical, and applied dimensions: the historical dimension will provide acquaintance with the various kinds of ethical and moral theory that have emerged over the last two and half millennia; the theoretical dimension will examine the content of these ideas closely; and the applied dimension will sharpen the student's ability to think through distinctively ethical and moral problems.

PHL302 Theory of Knowledge [3-0, 3 cr.]

Theory of knowledge, known as “epistemology”, is a fundamental and enduringly significant branch of philosophy. Despite many historical transformations (some of which will be examined), it has had stable aims, among which are the definition of knowledge, the distinction between knowledge and belief, the methodologies and procedure by which knowledge is acquired, and how to deal with skepticism. These issues will be raised and explored with reference to both ancient and modern texts.

PHL303 Metaphysics [3-0, 3 cr.]

Metaphysics is the broad philosophical study of the basic form, structure, essence, and elements of reality or “being”, and in its classical form it tries to provide a unified account of how the cosmos hangs together and what makes the cosmos what it is. This course may variously emphasize metaphysical topics in religion, physics, and/or mind. Overall, the course will survey philosophers’ quest to grasp the basic nature of reality (perhaps with that of some physicists and biologists who have recently joined philosophers in their timeless quest).

PHL311 Philosophy of Religion [3-0, 3 cr.]

This course will address fundamental philosophical questions arising from all major religions in the worlds, including the three Abrahamic faiths as well as the older Asian traditions such as Hinduism, Buddhism, Confucianism, and Daoism. The course will deal with common religious themes such as Transcendence (or the Sacred or Mystery), religious experience, religious language, symbolism, the relationship between faith and reason, the relationship between science, mythology, and religion, and religious pluralism.

PHL321 Philosophy of Art [3-0, 3 cr.]

The course deals with (1) how we can discern whether something qualifies as art, in what sense our aesthetic judgments are subjective or objective, what qualifies as a good, bad, correct, or an incorrect interpretation of an artwork, and whether we can learn from art (epistemological issues); (2) the nature of art and artworks and the kinds of experience associated with them, how art relates to reality, the creative process, and aesthetic experience (metaphysical issues); and (3) the moral dimension of art (moral issues).

PHL322 Philosophy in Literature and Film

(already exists as Existentialism in Literature) [3-0, 3 cr.]

Modern novels and films have often been far more effective than the work of philosophers in engaging readers with some of the most important questions of life, such as the existence of God, the meaning of life, the role of art in shaping human beings, the nature of time, truth, and reality, our relationship to nature, and so on. This course will therefore turn to literature and/or film to immerse students in situations that bring urgent philosophical issues to the foreground with great power and conviction.

PHL323 Philosophy of History [3-0, 3 cr.]

The principal aim of this course is a critical consideration of the claim that there has been genuine progress in global history, especially morally. Typically this course will study the work of G.W.F. Hegel and use it as a departure point, but other variations are possible. These variations will be based on the work of Hegel’s critics, such as Marx, Nietzsche, Adorno, and Foucault. A byproduct of such criticism has been the rediscovery of the value of pre-Hegelian philosophy of history, and so the worldly and deeply cultured approach taken by Vico, Herder, and von Humboldt will also be covered.

PHL324 Philosophy of Science [3-0, 3 cr.]

Traditionally, this course has consisted in an examination of how philosophers have regarded science, especially the natural sciences: physics, chemistry, and biology. However, it has also become important to consider how scientists themselves regard their own work, especially since this often disagrees with what philosophers say about science. Readings will therefore be taken from well known philosophers of science such as Popper, Kuhn, Lakatos, Feyerabend, Holton, and A. W. Moore, and from the writings of scientists themselves, such as Darwin, Maxwell, Mach, Poincaré, Einstein, Heisenberg, Eiseley, Schrödinger, and Hawking.

PHL325 Philosophy of Mind [3-0, 3 cr.]

Themes to be discussed are the nature of mind, the argument between materialists and non-materialists, artificial intelligence, and the resistance of mental states such as beliefs, intentions, values, norms, thoughts, perceptions, and judgments to physical interpretation. Positions canvassed will be chosen from the following: dualism, behaviourism, identity theory, and functionalism. Special consideration will be given to philosophers (like Hegel, Nietzsche, and

Wittgenstein) mindful of how traditional theory distorts our ability to appreciate the elusive “nature” of mind.

PHL326 Social and Political Philosophy [3-0, 3 cr.]

Through a selection of works by leading thinkers from Plato onwards, issues addressed include the basic theoretical approaches (social contract theories, utilitarianism, political realism, politics guided by the idea of the Good and other ideas that are metaphysically grounded), the nature of power, good vs. bad governance, the role of reason in social and political life, ideology, the relation of ethics to politics (including a look at how ethical theories like utilitarianism and pragmatism can be utilized in political theory), and the recent liberalism vs. communitarianism debate.

PHL327 Philosophy and Mythology [3-0, 3 cr.]

In conjunction with the recent success of popular works, this course attempts to revive interest in and appreciation of mythology. Emphasis will also be made on the realization that mythology has played an even greater role in shaping philosophical thought in ancient Greece, India, and China than previously recognized. Readings will include classic general works about mythology as well as works that illustrate how mythology has influenced some of the greatest thinkers of the ancient world. The aim is to portray a more “living” or “concrete” notion of what later became metaphysics and ethics. The implications for the philosophy of religion will also be discussed.

PHL328 Arab and Islamic Philosophy [3-0, 3 cr.]

A look at key Arab and Islamic figures, past and present, such as al-Kindi, al-Farabi, Ibn Sina, al-Ghazzali, Ibn Rushd, and Mulla Sadra; and René Habachi, Charles Malik, Muhammad Abed al-Jabiri, Hassan Hanafi, Seyyed Hossein Nasr, Muhammad Arkoun, and Abdelkarim Surush. These works will be discussed in relation to how broad philosophical themes have been treated, including questions of metaphysical, moral, epistemological, political, and religious interest.

PHL350 Individual Philosophers [3-0, 3 cr.]

The course is an in-depth study of the work of a particular philosopher, and reflects the sustained rigor and depth of the approach of the philosopher to universal questions. It also examines the work of scholars who have studied

the thought and works of individual philosophers. This helps students to appreciate the nature and virtue of the scholarly tradition. Primary as well as secondary sources are examined in order to provide a comprehensive overview of the life, works, thought and influence of the philosopher.

PHL401 Special Topics [3-0, 3 cr.]

This course focuses on specific topics in the philosophical tradition; classical and modern. It may cover topics such as contemporary philosophy, interactive combinations among individual philosophers, specific philosophical themes, Arabic and Islamic philosophy, world philosophy, Phenomenology and Analytical Philosophy.

PHL499 Senior Study [3-0, 3 cr.]

Students must complete a supervised substantial paper (or an approved equivalent) on a topic formulated in consultation with a member of the philosophy faculty. This course provides the opportunity for seniors to share with one another their work in progress in a collegial seminar setting. Students present their work and receive feedback from their peers and their instructor.

PEACE AND JUSTICE EDUCATION

PJE201 Cross-Cultural Communication for Peace [3-0, 3 cr.]

This course examines the basic concepts, theories and issues, of intercultural communication, and cross-cultural human relations. The course explores how these relate to interpersonal, and group conflict, and conflict transformation.

RELIGION

REL312 Interpretation of Religious Literature [3-0, 3 cr.]

This course studies the 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.]

This course 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.]

This course introduces the thinkers, and the 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.]

This course critically studies the works of some modern Christian thinkers.

REL414 Representatives of Islamic Thought in the Modern Period [3-0, 3 cr.]

This course critically studies the works of some modern Muslim thinkers.

SPANISH

SPA 201 Beginning Spanish [3-0, 3 cr.]

A beginning course in standard Spanish designed for students who have no previous knowledge of the language. The course aims at basic proficiency in the language skills: listening, speaking, reading and writing focusing on the use of the Spanish sound system, acquisition of vocabulary and developing standard grammatical structures, reading of short texts and writing at the paragraph level. Emphasis is placed on students' use of the language in authentic situations of everyday life cultivating an appreciation for the richness and diversity of the culture of the peoples. A communicative content task-based approach is used and opportunities are given to participate in activities and events.

SPA202 Beginning Spanish II [3-0, 3 cr.]

A beginning level-2 course in standard Spanish designed for students who have already a primary contact with the language. The course aims at strengthening the vocabulary, the accent, and especially the grammar. The course gives a broader perspective on the reading, writing, and listening, on a higher and more sophisticated level. Past and future times will be included to give the students the opportunity to understand and communicate in various situations and moments. Emphasis is placed on students' use of the language in a faster reflex and response when it comes to "thinking in Spanish". Completing this course will open new horizons for students in different fields who are seeking jobs, not only in Latino America and Spanish speaking countries, but in all the cosmopolitan cities in the world.

COMPARATIVE LITERATURE (GRADUATE)

CLT801 Methodologies of Comparative Literature [3-0, 3 cr.]

This course introduces fundamental concepts and approaches of comparative practice. Its objective is to expose students to key debates in literary and cultural studies today, and to provide an overview of some of the methods currently used in the profession.

CLT803 Literary Theory I [3-0, 3 cr.]

This course examines the theories of literature, and the 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 [3-0, 3 cr.]

This course examines the 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 [3-0, 3 cr.]

This course explores the fundamental critical concepts related to periods, through the close attention to primary texts supplemented with theoretical readings. The aim of the course is to kindle awareness and interests in the history of literature.

CLT830 Themes [3-0, 3 cr.]

This course explores particular themes through the close attention to primary texts, supplemented with theoretical readings. This broadly construed course is designed to allow the instructor, and students, an opportunity to explore thematic interests in some depth.

CLT840 Genre [3-0, 3 cr.]

This course explores the fundamental critical concepts related 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 [3-0, 3 cr.]

CLT899 Thesis [6 cr.]

CHAIR

Daher, Costantine

ASSOCIATE CHAIR

Abi Habib, Ralph

PROFESSORS

Bogharian, Krikoris
Hashwa, Fouad
Kabbani, Ahmad

ASSOCIATE PROFESSORS

Baroody, George
Houri, Ahmad
Khalaf, Roy
Korfali, Samira
Na'was, Tarek
Rizk-Jamati, Sandra
Semaan, Mars

ASSISTANT PROFESSORS

Abu-Safe, Hussam Hamzeh
Bassil, Maya
El-Sibai, Mirvat
Tokajian, Sima
Wex, Brigitte
Zeeni, Nadine

INSTRUCTORS

Garabedian, Sami
Naous, Ghada
Obeid, Samir

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El-Hajj Suleiman, Zaed, Athletic Coordinator
Farah, Maya, Senior Science Laboratory Technician, Biology, Byblos
Haidar, Ahmad Diala, Senior Science Laboratory Technician, Physics, Beirut
Jabi, Sawsan, Science Laboratory Supervisor, Biology, Byblos
Jamhour, Katia, Senior Academic Assistant, Byblos
Mustafa, Rasha, Science Laboratory Supervisor, Chemistry, Byblos
Naccashe, Hanan, Senior Academic Assistant, Beirut
Wehbeh, Marwan, Senior Science Laboratory Technician, Chemistry, Beirut

DEGREE OFFERED

- Bachelor of Science (B.S.) in Biology
- Bachelor of Science (B.S.) in Chemistry
- Bachelor of Science (B.S.) in Nutrition
- Minor in Biology
- Minor in Chemistry
- Minor in Environmental Science
- Master of Science (M.S.) in Molecular Biology

RESOURCES

1. Beirut Campus

A. Biology Laboratories:

a. *Teaching Biology laboratory:*

It is located in Sage Hall – First Floor, are modern and up to date. One of the labs, which serve undergraduate students majoring in Biology, Pharmacy as well as freshman students, is equipped with sophisticated instrumentation supporting all disciplines of biology, with emphasis on the field of contemporary molecular biology. The main equipment includes: teaching microscopes, high speed centrifuges, incubators, UV-Visible spectrophotometers, deep freeze facilities (80°C), Rotoevaporator, concentrator, hybridization oven, thermal cycler, autoclaves, Fluorometer, Electroporator, Isoelectric Focusing, pulse-field gel electrophoresis, different types of electrophoresis setups. It is also fully equipped with audiovisual systems including videomicroscopy and LCD projector for continuous demonstration and experimental purposes. Also the lab contains a set of advanced kits for the newly implemented Genetics Lab.

b. *Cell Culture Lab:*

It is mainly used by Professor and graduate students, with state -of-the art equipment including Elisa Plate Reader and Washer, CO2 incubator, research Fluorescent microscope, Thermal cycler, inverted microscope, Imaging system, and a Biological safety cabinet. Annexed to the Biology labs are storage facilities.

B. Chemistry laboratories:

They are located in Sage Hall, second floor, are adequately equipped with the state-of-the-art instrumentation, for teaching practical undergraduate and graduate courses. The Chemistry majors as well as the Pharmacy

students are equipped with PC- controlled Viscosity meters, Osmometers, BOD analyzers, Turbidimeters, Refractometers and Polarimeters. The advanced system of Instrumentation supporting all branches of Chemistry include a wide range of spectrophotometers UV- Visible; Infrared FTIR; highly advanced PC-controlled Chromatography systems, GC and HPLC and Ion Chromatography; Total Organic Carbon and NCHS Elemental analyzers systems; Atomic Absorption. Annexed to the Chemistry laboratories are the storage facilities with the latest safety equipment of gas detection, chemical spill and fire alarm systems, with the waste treatment facilities with the new standards of waste treatment and waste management methods. The Chemistry labs are equipped with audiovisual systems including video microscopy for continuous demonstration and experimental purposes.

2. Byblos Campus

The laboratories are equipped with both basic and latest technology instruments that enable students to conduct basic and highly specialized research. In addition, to facilities available in the department, students have access to laboratory facilities in the School of Pharmacy. Furthermore, students have access to all physical and electronic resources provided by the LAU library as well as necessary IT support.

A. Biology Labs

a. *Biology Teaching Labs:*

The two teaching labs are located in the science building rooms 307 and 308: Each lab accommodates around 20 students and is equipped with all necessary facilities for undergraduate lab teaching (microscopes with or without cameras, incubators, centrifuges, balances, pH meters, UV-Vis spectrophotometers, spirometers, kymographs, Environmental chamber ...). Annexed to the lab in Sci 308 are two relatively smaller rooms, one serves as a store room for chemicals, glass and plastic-wares, the other contains a High speed centrifuge, an Ultracentrifuge, 2 refrigerators and other minor equipment.

b. *Core Molecular Microbiology research Lab:*

It is located in the Science building room 306: This lab is specifically equipped to fit the research needs in basic Molecular Microbiology. It provides a space for graduate students working in Molecular Microbiology

and Biotechnology. This lab is equipped with a DNA Sequencer, 3 Thermal cyclers, a Real-Time PCR, a UV/visible spectrophotometer, a Biolog bacterial identification system, a PCR preparation unit as well as 2 air incubators and other minor instruments.

c. *Two Core Molecular Biology Labs:*

Two labs located in the Science building rooms 303 and 305. Each Lab consists of three benches serving as working area for graduate students. These labs are equipped specifically to fit the research needs in Molecular Biology. These labs are equipped with thermal cyclers, DNA sequencer, Pulse-Field gel electrophoresis unit, 2-D Gel Electrophoresis system, Gel documentation systems, Fermenters, CO2 incubator, radioactive/fluorescent microplate counter, vacuum concentrator, vacuum blotter, sonicators, homogenizers, Gel electrophoresis apparatus, Western blot apparatus, automated gel stainer/destainer, Rotary evaporator, autoclaves, hybridization oven/UV cross linker, deep freeze, refrigerators, inverted and regular microscopes, laminar flow hood, and many other small instruments. Each lab has several computer terminals accessible to Graduate students and linked to the university network and high speed internet

d. *The Genomics and Proteomics Research Labs:*

The Genomics and Proteomics Research Labs are located in room Sci 302 and 309. These labs are equipped with state of the art machines needed in genomics and proteomics research. Most importantly, you can find high throughput genotyping and sequencing instruments as well as a state of the art proteomic analyzer (MALDI TOF TOF), FTIR, Real-Time PCR

e. *The Cell Culture IVF/Epifluorescent microscopy lab*

This is a dry lab located in Science building room 310 and contains the following instruments: an inverted Epifluorescent microscope equipped with a micromanipulating system for in vitro fertilization, a laminar flow hood and a CO2 incubator.

B. Nutrition Teaching Lab:

It is located in the Science building room 304. The lab is equipped with the necessary machines for food analysis including a muffle furnace, a protein digestion and distillation apparatus, a fiber analyzer and fat extraction units.

C. Animal Room:

The animal room is located on the roof of the Science Building. It contains two animal species (Spague Dawley rats and BALB/c

mice) that are inbred with a consistent average stock of more than 500 rats and 300 mice.

D. The Chemistry Lab:

It is located in the Science building room 508. It consists of a spacious area with necessary machines needed for almost all kind of chemistry lab work, for students registering in chemistry courses. Annexed to it, there is a descent research lab facility, an office space and a store room. Just facing the chemistry lab there is an additional store room and a cold room. On the same floor, student may have access to other sophisticated instrument used in research and advanced courses such as 300Mhz NMR, GCMS, HPLC, GC, rotary evaporator, deep freezer, freeze dryer...

Undergraduate Programs

BACHELOR OF SCIENCE (B.S.) IN BIOLOGY

Biology is among the most diverse and exciting of the Sciences. It deals with the structure of the molecules essential for life, with the development and physiology of living organisms, and with the genetic structure of natural populations of organisms. Recent discoveries are enabling biologists to understand life at the molecular level. These findings promise to unleash knowledge that will affect health, nutrition, and the environment, in beneficial ways.

This Program is tailored not only to students planning to enter the M.S. or Ph.D. Programs, but also for Pre-Pharmacy, and Pre-Medical, students. It also prepares students for an eventual career in biology-related fields (e.g. pharmaceuticals, cosmetics or food processing industries, medical laboratories, etc.).

MISSION

The Bachelor of Science in Biology Program is committed to academic excellence providing a comprehensive learning experience in Biological Sciences in preparation for advanced studies and careers in Biological, Biomedical, Environmental and Health-related Sciences, while maintaining the tradition of the liberal arts education.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Science in Biology is to:

1. Instill understanding of biological concepts.
2. Integrate knowledge across biological sub-disciplines.
3. Foster critical thinking.
4. Provide insights into scientific methodology, advances in biological research and ethical issues.
5. Prepare students for leadership roles and careers in biological sciences.
6. Impart interest in lifelong learning.

LEARNING OUTCOMES

Graduates in the Bachelor of Science in Biology will be able to:

1. Integrate concepts of physicochemical processes underlying metabolic pathways and homeostasis.
2. Relate structure to function at the molecular and subcellular levels.
3. Distinguish different functions of cells, tissues, organs, organ systems and whole organisms.
4. Integrate mechanisms of molecular genetics, heredity and evolution.
5. Relate the dynamic interactions of components at any one level of biological organization to the functional properties that emerge at higher organizational levels.
6. Conduct a basic research project using retrieval of scientific literature, experimental planning, data collection and interpretation.
7. Value ethical issues in biological sciences.
8. Assess advances in biological sciences and their impact on society.
9. Develop scientific literacy and skills for continued professional development as an individual and as part of a team.

CURRICULUM REQUIREMENTS

The program requires 96 credits. The department has prepared a three-year study plan. Students are advised to observe the three-year plan carefully, to avoid any undue delay in graduation. Based on the proposed plan, students should be able to graduate in three years, including two summer modules, and to complete all the requirements, including 41 credits in Biology and Biochemistry.

Department of Natural Sciences

Biology (35 credits)

BIO201	General Biology I	4
BIO202	General Biology II	4
BIO311	Microbiology	3
BIO312	Microbiology Lab	1
BIO321	Genetics	3
BIO322	Genetics Lab	1
BIO331	Ecology	4
BIO343	Anatomy and Physiology	3
BIO344	Anatomy and Physiology Lab	1
BIO345	Cell and Molecular Biology	4
BIO499	Senior Study	3
BCH301	Introduction to Biochemistry	4

Biology Electives (6 credits)

Choose two Biology Elective courses

BIO401	Developmental Biology	3
BIO341	Plant Physiology	3
BIO410	Biotechnology	3
BIO420	Virology and Immunology	3

Chemistry (16 credits)

CHM201	Chemical Principles	3
CHM202	Analytical Chemistry	3
CHM204	Quantitative Analysis	2
CHM311	Organic Chemistry I	3
CHM313	Organic Chemistry I Lab	1
CHM312	Organic Chemistry II	3
CHM314	Organic Chemistry II Lab	1

Mathematics and Computer Science (7 credits)

MTH200	Mathematics for Life Sciences	3
STA205	Biostatistics	3
CSC201	Computer Literacy	1

Physics (8 credits)

PHY301	Classical Physics for Life Sciences	3
PHY302	Classical Physics for Life Sciences Lab	1
PHY305	Modern Physics for Life Sciences	3
PHY306	Modern Physics for Life Sciences Lab	1

SUGGESTED THREE-YEAR STUDY PLAN:

Year I

Fall

BIO201	General Biology I	4
ENG--	English Course (LAC)	3
CHM201	Chemical Principles (LAC)	3
MTH200	Mathematics for Life Sciences (LAC)	3
ETH201	Moral Reasoning	1
PED2--	Physical Education	1
Total		15cr

Spring

BIO202	General Biology II	4
ENG--	English Course (LAC)	3
HLT201	Basic Health	1
STA205	Biostatistics (LAC)	3
CHM202	Analytical Chemistry	3
CHM204	Quantitative Analysis	2
Total		16cr

Summer Module I and/or Summer Module II

ENG/LAC		3
CSC201	Computer Application	1
LAC		3
Total		7cr

Year II

Fall

BIO321	Genetics	3
BIO322	Genetics Lab	1
CHM311	Organic Chemistry I	3
CHM313	Organic Chemistry I LAB	1
PHY301	Classical Physics for Life Sciences	3
PHY302	Classical Physics for Life Sciences LAB	1
BIO343	Anatomy & Physiology	3
BIO343	Anatomy & Physiology LAB	1
Total		16cr

Spring

BCH301	Introduction to Biochemistry	4
BIO311	Microbiology	3
BIO312	Microbiology Lab	1
CHM312	Organic Chemistry II	3
CHM314	Organic Chemistry II LAB	1
PHY305	Modern Physics for Life Sciences	3
PHY306	Modern Physics for Life Sciences LAB	1
Total		16cr

Year III

Fall

BIO345	Cell & Molecular Biology	4
BIO--	Biology elective	3
BIO499	Senior Study-Biology	3
LAC		3
Total		13cr

Spring

BIO--	Biology elective	3
BIO331	Ecology	4
LAC		3
LAC		3
Total		13cr

BACHELOR OF SCIENCE (B.S.) IN CHEMISTRY

The Chemistry Program at LAU provides a high quality education, to satisfy all the required courses, for a solid Bachelor of Science in Chemistry, covering the main chemistry disciplines, (analytical, organic, inorganic, and physical) as well as satisfying the chemical information needed in the other scientific programs, within the framework of a liberal arts program. Chemistry is also the "Central Discipline" needed in science oriented programs: science education, engineering, pharmacy, biology and pre-medicine. The Chemistry Program is designed to prepare students for careers in chemical industry, medical and scientific laboratories, and the education sectors. In addition, it will allow B.S. holders to pursue their Graduate study in any chemistry discipline, chemical engineering, medicine or other health professions, and environmental science.

MISSION

The Bachelor of Science in Chemistry program parallels the mission of the university in commitment to academic excellence within the framework of a liberal arts tradition. The program is a marquee, broad-based chemical experience designed to challenge undergraduates intellectually, experimentally and interactively. The unique latitude inherent to the chemistry curriculum matures students to well-rounded individuals prepared to face and meet the challenges encountered in their chosen careers and ready to embrace professional and ethical responsibility.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Science in Chemistry is to:

1. Graduate students who are able to organize and present chemical information coherently and who can appropriately apply the knowledge studied to general scientific problems in various fields of science and emerging technologies.
2. Graduate students who are well rounded graduates with professional and ethical responsibility to meet the challenges in their future careers in education, research, analysis, industry and health sciences.
3. Develop the graduate's critical thinking, oral and written communication skills as an individual and in a team.
4. Prepare graduates who are familiar with research design methodology and are able

to use the appropriate tools of computer, information technology, laboratory techniques and safety standards.

LEARNING OUTCOMES

Graduates in the Bachelor of Science in Chemistry will:

1. Demonstrate knowledge relevant to Analytical, Organic, Inorganic, Physical, and interdisciplinary topics.
2. Investigate theoretical principles through proficient application of laboratory techniques both at the bench, instrumental and modeling levels.
3. Relate the contribution of chemistry to the advancement of science and technology.
4. Exhibit the ability to use the power of computers in empirical and theoretical chemical applications and demonstrations.
5. Demonstrate problem-solving skills through the application of scientific methods in literature survey, research design, and implementation of experimental plan, data acquisition, analysis and interpretation.
6. Evaluate critically scientific information.
7. Demonstrate effective written and oral presentation, transmission and communication of chemical concepts to colleagues and groups of diversified audience.
8. Acquire safety awareness in a laboratory in order to foster a safe working environment.
9. Develop an understanding of ethical and professional responsibility as chemists and as a member of society.
10. Appraise the importance of team work to perform a task collectively.
11. Develop a culture of lifelong, independent learning, advancement and creation of career opportunities.

CURRICULUM REQUIREMENTS

Students interested in the Bachelor of Science Chemistry Major must complete 92 credits of the following requirements.

Liberal Arts Curriculum Requirements (34 credits)

Chemistry Requirements (42 credits)

CHM201	Chemical Principles	3
CHM202	Analytical Chemistry	3
CHM203	Qualitative Analysis	2
CHM204	Quantitative Analysis	2
CHM311	Organic Chemistry I	3
CHM313	Organic Chemistry I Lab	1
CHM312	Organic Chemistry II	3
CHM314	Organic Chemistry II Lab	1

Department of Natural Sciences

CHM330	Physical Chemistry I	4
CHM332	Physical Chemistry II	3
CHM334	Physical Chemistry Laboratory	2
CHM420	Inorganic Chemistry	4
CHM499	Senior Study	3

Elective courses (minimum 6 credits)

Choose two of the following

BCH 301	Introduction to Biochemistry	4
PHA312	Medicinal Chemistry (I)	3
NUT312	Food Chemistry	3
CHM340	Environmental Chemistry	3
CHM401	Instrumental Analysis	3
CHM402	Chemistry of Materials	3
CHM403	Polymer Science	3
CHM404	Forensic Chemistry	3
CHM405	Statistical Mechanics	3

Elective laboratory course (minimum 2 credits) Choose one of the following

CHM412	Synthesis and Identification of Organic Compounds	2
CHM423	Synthesis and Identification of Inorganic Compounds	2
CHM424	Synthesis and Identification of Nanomaterials	2
CHM425	Computational Chemistry	2

Other Requirements

Mathematics Requirements (6 credits)

MTH201	Calculus III	3
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Choose one of the following (3 credits)

MTH301	Linear Algebra	3
MTH303	Numerical Methods	3
MTH304	Differential Equation	3
MTH305	Probability and Statistics	3
STA205	Biostatistics	3

Physics Requirements (7 credits)

PHY201	Electricity and Magnetism	4
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Choose one of the following (3 credits)

CIE200	Statics	3
PHY321	Introduction to Modern Physics	3
PHY301	Class. Phys. Life Sci.	3

Free Electives (6 credits)

SUGGESTED THREE-YEAR STUDY PLAN:

Year I

Fall

CHM201	Chemical Principles	3
CHM203	Qualitative Analysis	2
MTH201	Calculus III	3
	English (LACC)	3
	ARA (LACC)	3
CSC201	Comp Application	1
Total		15cr

Spring

CHM202	Analytical Chemistry	3
CHM204	Quantitative Analysis	2
PHY201	Electricity & Magnetism	4
	English (LACC)	3
	Social Science (LAC) Elective	3
Total		15cr

Year II

Fall

CHM311	Organic Chemistry I	3
CHM313	Organic Chemistry I L	1
CHM330	Physical Chemistry I	4
MTH	Elective	3
PED2-		1
HLT201	Basic Health	1
	Philosophy (LAC) Elective	3
Total		16cr

Spring

CHM312	Organic Chemistry II	3
CHM314	Organic Chemistry II L	1
CHM332	Physical Chemistry II	3
CHM334	Physical Chem. Lab.	2
PHY-	Elective	3
	Lit. (LAC) Elective	3
Total		15cr

Year III

Fall

CHM420	Inorganic Chemistry	4
CHM	Course elective	3
CHM499	Senior Study	3
	Free elective	3
	Art (LAC) Elective	3
Total		16cr

Spring

CHM	Course Elective	3
CHM	Lab Elective	2
	Art (LAC) Elective	3
LAC	Elective	3
	Free Electives	3
ETH201	Ethics and Moral Reasoning	1
Total		15cr

BACHELOR OF SCIENCE (B.S.) IN NUTRITION

Nutrition is the application of knowledge about food and its healthy consumption to help people achieve and maintain health in their lives. Dietetics involves helping people meet their nutritional needs in health and disease through diet counseling and nutrition support.

MISSION

The mission of the Nutrition Program is to prepare graduates for food and nutrition careers by providing them with the ability to integrate didactic and practical education in order to improve the health and well-being of individuals and groups while upholding tradition of the liberal arts education.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Science in Nutrition is to:

1. Prepare qualified entry-level professionals by providing high quality didactic education and supervised practice.
2. Produce competent graduates with inter-professional competencies engaged in the health profession and the improvement of human well-being.
3. Produce life-long learner graduates who are able to incorporate new evidence-based technology and knowledge into practice.

LEARNING OUTCOMES

Student will demonstrate the ability to:

1. Integrate evidence-based guidelines and research findings in nutrition practice and care.
2. Conduct research projects using the appropriate indicators, measures and methodology.
3. Demonstrate counselling and communication skills sufficient for entry in pre-professional practice.
4. Demonstrate professional and inter-professional teamwork skills.
5. Comply with the principles supported by the governance of Dietetics practice.
6. Develop professional attributes and a portfolio that are adapted to serve in diverse professional and community organizations.
7. Perform the nutrition care process and use standardized nutrition language.
8. Apply health education and behaviour changes theories and techniques.
9. Demonstrate successful management of available resources and integrate promotion of nutritional well-being with cultural needs.
10. Implement quality management and business theories in the provision of services.

11. Successfully manage food service establishments and apply principles of food safety.
12. Perform activities related to public policy and health care systems
13. Defend the support knowledge underlying nutritional sciences

CURRICULUM REQUIREMENTS

Students must complete a total number of 94 credits. These are broken down to 34 credits of LAC requirements and 60 credits of major and other requirements.

Major Requirements (39 credits)

NUT201	Fundamentals of Human Nutrition*	3
NUT301	Community Nutrition	3
NUT312	Food Chemistry	3
NUT323	Food Analysis	2
NUT356	Nutrition Status Assessment	2
NUT367	Food Processing	2
NUT345	Industrial Food Production	2
NUT334	Food Management	3
NUT378	Food Microbiology	2
NUT389	Nutrition in Life cycle	3
NUT401	Advanced Human Nutrition	3
NUT423	Medical Nutrition Therapy	4
NUT445	Counseling Communication Skills	2
NUT467	Hospital Administration	2
NUT499	Senior Study in Nutrition	3

School Requirements (21/27 Credits)

BIO201	General Biology I	4
BIO311	Microbiology	3
BIO343	Anatomy and Physiology	3
BIO344	Anatomy and Physiology Lab	1
BCH301	Introduction to Biochemistry	4
CHM201	Chemical Principles*	3
CHM204	Quantitative Analysis	2
CHM310	Basic Organic Chemistry	3
CHM313	Organic Chemistry I Lab	1
STA205	Biostatistics*	3

* These can be taken as part of LAC (Liberal Arts Requirements)

SUGGESTED THREE YEAR STUDY PLAN:

Year I

Fall

BIO201	General Biology I	4
ENG--	English Course (LAC)	3
CHM201	Chemical Principles	3
LAC		3
CHM204	Quantitative Analysis	2
PED2--	Physical Education	1
Total		16cr

Spring

BIO343	Anatomy & Physiology	3
BIO344	Anatomy & Physiology LAB	1
CHM310	Basic Organic Chemistry	3
CHM313	Organic Chemistry I LAB	1
NUT201	Fundamentals of Human Nutrition	3
HLT201	Basic Health	1
ENG---	English Course (LAC)	3
Total		15cr

Summer Module I and/or Summer Module II

LAC		3
CSC201	Computer Application	1
Total		4cr

Year II

Fall

NUT301	Community Nutrition	3
NUT312	Food Chemistry	3
NUT323	Food Analysis	2
ETH201		1
LAC	Arabic	3
LAC		3
Total		15cr

Spring

BCH301	Introduction to Biochemistry	4
BIO311	Microbiology	3
NUT345	Industrial Food Production	2
NUT334	Food Management	3
STA205	Biostatistics	3
Total		15cr

Year III

Fall

NUT401	Advanced Human Nutrition	3
NUT356	Nutrition Status Assessment	2
NUT367	Food Processing	2
NUT378	Food Microbiology	2
NUT499	Senior Study in Nutrition	2
LAC		3
Total		15cr

Spring

NUT389	Nutrition in Life cycle	3
NUT423	Medical Nutrition Therapy	4
NUT445	Counseling Communication Skills	2
NUT467	Hospital Administration	2
LAC		3
Total		14cr

MINOR IN BIOLOGY

Nowadays, knowledge of biology is highly attractive as an adjunct to many other majors and professional fields. Combining biology with other area gives a valuable expertise in cross-disciplinary areas and makes academic preparation more distinctive. Pursuing a biology minor program help introducing students to core concepts in biological areas and at the same time complement premedical requirements for students interested in medicine and gives a solid background for those concerned in other health science fields as well as those who wish to pursue careers in the chemical and biochemical industry. With a comprehensive, well-rounded education, student may attain a wider and deeper knowledge and become more competitive in the job market.

MISSION

The mission of the Biology Minor is to offer a general but coherent program, providing students with basic knowledge in different fields of Biology.

EDUCATIONAL OBJECTIVES

The purpose of the Minor in Biology:

1. To provide students with basic general information in Biology through lecture and laboratory courses.
2. To prepare students interested in pursuing further education in health-related fields such as Medicine, medicinal chemistry, nutrition, public health and medical laboratory.
3. To offer students with wider scope of job opportunities.

STUDENT LEARNING OUTCOMES

Students with a Minor in Biology will:

1. Show acquisition of basic knowledge of biological sciences.
2. Demonstrate adequate experience in lab and basic research techniques.
3. Demonstrate problem-solving abilities in biological science.
4. Acquire adequate preparation for careers in biological sciences or entrance into professional studies.

MINOR'S REQUIREMENTS

Students interested in Minor in Biology must complete the following requirements

Biology requirement (19 credits)

BIO201	General Biology I	4
BIO202	General Biology II	4
BIO321	Genetics	3
BIO345	Cell and Molecular Biology	4
BCH301	Introduction to Biochemistry	4

MINOR IN CHEMISTRY

Chemistry is the basis for many fields of engineering, biology and other sciences. Therefore, a minor in chemistry attempts at teaching students about the relationship between chemistry and the world around them and allows students to gain a broad introduction to the basics of theoretical and applied chemistry. Combining chemistry with other areas gives a valuable expertise in cross-disciplinary areas and makes academic preparation more distinctive. Pursuing a minor in chemistry would widen student's choices of further studies such as health professional schools, chemical engineering, environmental chemistry and technical chemistry fields including cosmetics, textile and polymers. At the same time, the chemistry Minor complements premedical requirements for students interested in Medicine.

MISSION

The mission of the Chemistry Minor program is to offer a consistent general program, providing students with a supportive environment to learn the general basic principles in chemistry and the different laboratory skills and instrumental techniques.

EDUCATIONAL OBJECTIVES

The purpose of the Minor in Chemistry:

1. To provide students with basic general information in Chemistry through lecture and laboratory courses.
2. To provide students with the ability to work effectively and safely in laboratory environment.
3. To provide student access to modern instrumental analytical techniques and applications.
4. To prepare students interested in pursuing further education in health-professional

fields, chemical engineering, technical and industrial chemistry fields, environmental science and scientific communication fields.

5. To offer students with a wider scope of job opportunities.

LEARNING OUTCOMES

Students with a Minor in Chemistry will:

1. Successfully show acquisition of basic concepts in chemistry.
2. Demonstrate adequate experience in laboratory and instrumental modern techniques.
3. Be able to identify and solve applied chemical problems.
4. Attain adequate preparation for any career related to chemistry or entrance into professional studies such as health and chemical engineering; and technical advanced fields.

MINOR'S REQUIREMENTS

Students interested in Minor in Chemistry must complete 18 credits of the following:

Core Courses (12 Credits)

CHM201	Chemical Principles	3
CHM202	Analytical Chemistry	3
CHM204	Quantitative Analysis	2
CHM311	Organic Chemistry I	3
CHM313	Organic Chemistry I Lab	1

Elective Courses (6 Credits)

Choose two courses out of the following selection

CHM312	Organic Chemistry II	3
CHM331	Thermodynamics	3
CHM421	Inorganic Chemistry I	3
CHM401	Instrumental Analysis	3

MINOR IN ENVIRONMENTAL SCIENCE

The minor in Environmental Science is an interdisciplinary program, which gives students the opportunity to examine environmental issues from a variety of perspectives. The knowledge of environmental science major issues is central to theories and research in chemistry, biology, civil engineering, as well as social science, and public policy.

MISSION

The mission of the environmental science minor is to introduce students to environmental issues by increasing their competence and ability to address and analyze environmental issues, their origins, ramifications, and resolutions.

EDUCATIONAL OBJECTIVES

The purpose of the Minor in Environmental Science is to:

1. Provide students with an understanding of the social, economic, political and legal framework of environmental issues
2. Provide students with enough background to be able to collect, analyze and formulate possible solutions to environmental problems.
3. Provide students with understanding of the intertwining effects and impacts of human activities on the world vital natural resources.
4. Better prepare students for the job market.

LEARNING OUTCOMES

Students with a Minor in Environmental Science will be able to:

1. Understand the underlying concepts and principles associated with environmental science.
2. Identify sources of water, soil and air pollutants.
3. Demonstrate familiarity with the practical/ field dimensions of a range of environmental problems and issues.
4. Understand the interrelationships between society, economy and environment.
5. Ability to critically review environmental impact assessment reports.
6. Discuss remediation strategies of a variety of environmental contaminants.
7. Recognize potential harmful role of human being in shaping the environment.

MINOR'S REQUIREMENTS

For a Minor in Environmental Science students must complete a minimum of 18 credits

Core Courses (9 Credits)

ENV200	Introduction to Environmental Science	3
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ENV402 CIE525	Environmental Policy and Management	3
ENV422	Environmental Impact Assessment	2

Elective courses (minimum 9 Credits)

CHM340	Environmental chemistry	3
BIO203*	Introduction to Ecology	3
ENV423	Environmental Microbiology	3
CIE424	Water Distribution and Treatment	3
CIE 520	Solid Waste Management	3
CIE585	Risk and Natural Hazard Management	3
ENV426	Environmental Remediation	3
ENV427	Environmental Physics	3

**May replace ENV200 for engineering students only. Also, it can be substituted with BIO 331 (Ecology) for biology students. CIE course are considered as CIE technical electives for civil engineering students.*

Graduate Programs

MASTER OF SCIENCE IN MOLECULAR BIOLOGY

The overwhelming developments and advances in the fields of medicine, biotechnology, and the environment are mostly due to the recent achievements and breakthroughs in the field of molecular biology, basically through a better understanding of genetic systems. Molecular biology methodologies are now employed in environmental studies, and in remediation of polluted ecosystems. They have direct applications in the fields of infertility, hormonal and immune disorders, and genetic diagnosis and therapy. They are employed in the production of new therapeutic drugs, growth factors, vaccines, foods, and much needed novel bio-molecules.

MISSION

The M.S. in Molecular Biology Program at the Lebanese American University gives its students advanced knowledge and tools for basic molecular biology investigations and applications.

EDUCATIONAL OBJECTIVES

The purpose of the M.S. in Molecular Biology Program is to provide students with:

1. Expertise education in molecular and diagnostic microbiology, nutrition, physiology, and affiliated medical disciplines.

2. An opportunity, through biotechnology, to meet the challenges of the future in the various fields of applied Biology.
3. Basic research efforts on molecular biology problems that will advance our understanding of disease processes, and the methods for therapy or cure.
4. Updated revolutionary molecular technologies, and to train them to deal with the increasing man-made degradation of the environments.

LEARNING OUTCOMES

Graduates in the M.S. in Molecular Biology will be able to:

1. Choose appropriate experimental strategy for research in basic and molecular biology.
2. Collect, quantify, summarize, interpret, and present biological data.
3. Perform laboratory techniques in basic biology, molecular biology, and biotechnology (protein purification, centrifugation, chromatography, ELISA, gel electrophoresis, DNA purification, PCR based methods, methods for introduction of genes in cloning vectors, DNA fingerprinting, analysis of DNA sequence information with bioinformatics tools, immunodetection, etc...).
4. Use computers, and other available technology, in the study of molecular biology.
5. Use the library databases, and access the Internet, to conduct literature searches to complete the required class Project and Thesis.
6. Explain and integrate biological principles, as applied to basic and molecular biology.
7. Show a fundamental body of knowledge in basic and molecular biology.
8. Develop a strong diversified background in modern biology, appropriate to the individual student goals.
9. Develop critical-thinking, and problem based learning skills.
10. Develop the ability to communicate scientific ideas in both written, and oral, formats.
11. Understand the current trends in molecular and genetic research, and critically appraise published work.
12. Demonstrate an ability to design, undertake, and interpret, a research project, presented in the form of a dissertation.

CURRICULUM REQUIREMENTS

The M.S. in Molecular Biology degree requires a total of 30 credits, comprised of the following requirements: Core graduate courses (9 credits); Elective graduate courses (15 credits); Thesis (6 credits).

I. M.S. Core Courses (9 credits)

BI0805	Protein Research Methods	3
BI0806	Genomics Research Methods	3
BI0822	Advanced Molecular Biology	3

II. M.S. Elective Courses (15 credits)

BI0841	Molecular Physiology	3
BI0820	Applied and Industrial Microbiology	3
BI0825	Diagnostic Microbiology and Immunology	3
BI0850	Genomics and Proteomics	3
BI0826	Advances in Cell Biology	3
BI0829	Endocrinology and Metabolism	3
BI0834	Environmental Health and Toxicology	3
BI0852	Nutrition and Diet Therapy	3
BI0848	Fungal Genetics and Pathogenicity	3
BI0845	Diagnostic and Applied Physiology	3
BI0835	Microbial Pathogenesis	3
BI0888	Current Topics in Microbiology	3
BI0881	Special Topics in Biology	3

III. Thesis (6 credits)

BI0899	Thesis	6
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COURSE DESCRIPTIONS

BIOCHEMISTRY

BCH301 Biochemistry [4-0, 4 cr.]

This course covers 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.

Prerequisites: BI0201 Biology I

Pre or Co-requisite: CHM312 Organic Chemistry II.

BIOLOGY (UNDERGRADUATE)

BI0101 Introduction to Biological Science [3-3, 4 cr.]

This course covers the general biology for Arts' students. It is a simplified presentation of the basic biological concepts, with emphasis on the

human biology. Arts' students may choose the BIO201-202 bi-semester sequential course, after seeking the approval of the advisor, and the course's instructor.

BIO200 Basic Biology [3-0, 3 cr.]

This course introduces basic principles of human biology. It focuses on cell and tissue structure and function, classification, evolution, modern genetics and molecular biology. It also provides a brief coverage of organs and systems in relation to diseases.

BIO201 General Biology I [3-3, 4 cr.]

This course is an introductory, yet comprehensive, study of the chemical, cellular, and the tissue organization of life, the transfer of energy through living systems, the expression of genetic information, essential microbiology principles, as well as a discussion of the major characteristics of viruses, bacteria, fungi, protists, and plants.

BIO202 General Biology II [3-3, 4 cr.]

This course is an introduction to the classification of the Animal Kingdom, and an in depth discussion of animals and plants, with particular emphasis on the study, and a comparison, of structures and functions, and of tissues and the organ system, all within the context of diversity of life as shaped by evolution.

Prerequisite: BIO201 General Biology I.

BIO203 Introduction to Ecology [3-0, 3 cr.]

This course introduces the organization of individual organisms into populations, communities, and ecosystems. It focuses on the interactions between living organisms and their physical environment. Concepts such as diversity, competition, natural selection, adaptation, climate changes, migration, extinction and deforestation are covered. Additionally the course tackles concepts of environmental microbiology in relation to pollution, remediation and recycling of liquid and solid wastes.

BIO311 Microbiology [3-0, 3 cr.]

This is a course intended for the Biology Major, and covers principles of microbiology, and the impact these organisms have on man and the environment. Topics include the history of microbiology, a survey of the different types of microorganisms, prokaryotic cell structure and function, microbial nutrition and growth, control of microorganisms and microbial metabolism, physiology, genetics, interaction of microorganisms with other forms of life, role

of microorganisms in disease, immunity, and other selected applied areas.

Prerequisite: BIO201 General Biology I.

BIO312 Microbiology Lab [0-3, 1 cr.]

This course explores the ubiquitous nature of microbes. The overall objective is to implement exercises which allow students to obtain a hands-on experience in many of the microbiological techniques routinely employed, with emphasis on the methodological, and clinical, relevance of the procedures. Students connect theoretical lectures to the practical applications in medicine, environment, and other related fields.

Prerequisite: BIO201 General Biology I.

Pre-or Co-requisite: BIO311

BIO321 Genetics [3-0, 3 cr.]

This course is a study of the 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.

Prerequisites: BIO201 General Biology I.

BIO322 Genetics Lab [0-3, 1 cr.]

This course familiarizes students with topics ranging from DNA structure and organization, to cellular division, through meiosis and mitosis, and karyotype analysis. Students will acquire a hands-on laboratory experience in Mendelian genetics, by performing experiments with *Drosophila melanogaster* and *Zea mays*. It also includes problem solving sessions in Mendelian and non-Mendelian population, and in bacterial and yeast genetics that will help the students to understand the theoretical portion of the course.

Pre or Co-requisite: BIO321 Genetics.

BIO331 Ecology [3-3, 4 cr.]

This course covers the study of the relationships between living organisms and their environment. Major concepts related to the structure, function, organization, and regulation, at various levels (population community, ecosystems, and biomes), are covered via theory, laboratory work, and field trips.

Prerequisites: BIO201 General Biology I, and BIO202 General Biology II.

BIO341 Plant Physiology [3-0, 3 cr.]

This course covers 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 Anatomy and Physiology [3-0, 3 cr.]

This course entails an anatomical, and physiological, approach to the study of the cardiovascular, nervous, endocrine, muscular, respiratory, excretory, digestive, and reproductive systems, with emphasis on homeostasis.

Prerequisites: BIO201 General Biology I, and BIO202 General Biology II.

BIO344 Anatomy and Physiology Lab [0-3, 1 cr.]

This course includes experimental activities designed to enhance students' ability to both visualize anatomical structures, and to understand most physiological topics. All laboratory sessions focus on human and other higher vertebrates.

Pre or Co-requisite: BIO343.

BIO345 Cell and Molecular Biology [3-3, 4 cr.]

This course is 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, BIO321 Genetics, and CHM312 Organic Chemistry II, or the consent of the Instructor.

BIO401 Developmental Biology [3-0, 3 cr.]

This course covers 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 BIO321 Genetics.

BIO410 Biotechnology [3-0, 3 cr.]

This course will examine all the biological principles underlying current biotechnology in the fields of human genetics, and genetic engineering. Methods of basic scientific

research, the impact of technology on society, and the ethical problems in human genetics, will be explored. Topics include gene structure, function, expression, and manipulation in both the prokaryotes and eukaryotes principles of recombinant DNA technology, microbial biotechnology, animal and plant biotechnology, medical biotechnology, DNA profiling, forensics, and the regulation of biotechnology and patenting.

Prerequisite: BIO201 General Biology I.

BIO420 Virology and Immunology [3-0, 3 cr.]

This course provides an introduction to the immune response, the cells and tissues of the lymphoid system, lymphocyte activation and specificity, humoral and cell-mediated immunity, the concept of immunity to diseases, and immunodeficiency, and AIDS autoimmune diseases and transplantation. It examines the interactions between pathogens and host defense mechanisms (innate and specific immunity), as well as the problems in pathogenesis. The student will be also exposed to the principles of virology, with topics covering the fundamental properties of viruses, including their structure, replication, molecular biology, pathogenesis, epidemiology, and the medical importance of major virus groups and their interaction with host cells.

Prerequisite: BIO201 General Biology I.

BIO499 Senior Study [3-3, 3 cr.]

This course is 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 Protein Research Methods [1-6, 3 cr.]

This course is a laboratory course in molecular biology. The course aims at familiarizing students with the basic techniques currently used in this field, and supplies them with the necessary tools to carry on independent research that is needed for their Master's Thesis. Techniques include protein isolation and purification, protein handling and quantification, gel electrophoresis, western immunoblot, ELISA, column chromatography (gel filtration, ion exchange chromatography, and affinity chromatography), HPLC, GCMS,

NMR, and lipoprotein separation, using density gradient ultracentrifugation, and other advanced laboratory techniques in protein research.

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

This course is a laboratory course in molecular biology which aims at familiarizing students with the basic techniques currently used in this field, and supplies them with the necessary tools to carry on independent research needed for their Master's Thesis. Techniques include DNA and RNA extraction, PCR, RT-PCR, southern blotting, DIG probe labeling, micro-satellite typing, DNA sequencing, DNA sub-cloning coupled with bacterial transformation, transcriptional expression techniques using galactosidase reporter gene assays, and identification of bacterial species using the Biolog®System.

BIO820 Applied and Industrial Microbiology [2-3, 3 cr.]

This course deals with industrial microorganisms and their application in the industrial process for the large scale production of antibiotics, vitamins, amino-acids, enzymes, and organic acids. It also deals with microbial bioconversions, and the production of food from microorganisms, sewage, and wastewater microbiology, as well as the applications of genetically engineered microorganisms to obtain novel products.

BIO822 Advanced Molecular Biology [3-0, 3 cr.]

This course emphasizes the principles and information which form the contemporary basis for molecular biology. The course covers the subjects of 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, and two-component regulatory systems.

BIO825 Diagnostic Microbiology and Immunology [2-3, 3 cr.]

This course covers the biochemical, serological, and automated, methods used in the laboratory diagnosis of infectious diseases. The laboratory part of the course allows for a better understanding through application. Topics include the 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 Advances in Cell Biology [3-0, 3 cr.]

This course deals mainly with the most recent advancement in cell biology, i.e. stem cell research, and its applications in therapy. The course deals with embryonic stem cells, adult stem cells, and the umbilical cord stem cells. It discusses the potential fate of such cells, their molecular characteristics, and their isolation, culturing, and identification techniques. Stem cell application in animal and human tissue and organ repair, such as in the brain, heart, blood, and pancreas, are thoroughly investigated. Student presentations on the most recent case studies on stem cell applications are covered.

BIO829 Endocrinology and Metabolism [3-0, 3 cr.]

This course covers 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.]

This course is an introduction to the methodology of practical control of the environmental factors that affect disease, disorders, and health. It deals with the physical environmental stresses, and relates to biological factors and vectors. It covers an overall view of the general principles of toxicology: environmental contamination, pollution, and their routes and pathways.

BIO835 Microbial Pathogenesis [3-0, 3 cr.]

This course focuses on model microbial systems, to comprehensively illustrate the mechanisms of microbial pathogenesis. It aims at providing a thorough understanding of bacterial physiology, host defense mechanisms, general principles of microbial pathogenesis, adhesion and invasion strategies, intracellular survival strategies, antibiotic resistance, and bacterial toxins.

BIO841 Molecular Physiology [3-0, 3 cr.]

This course is an in-depth consideration, and a theoretical analysis, of the physiological aspects of body organization, regulation, integration, maintenance, and continuity, with

special emphasis on the modern application of knowledge in the domain of physiology, as related to the normal and upset homeostasis.

BI0845 Diagnostic and Applied Physiology [3-0, 3 cr.]

This course covers an in-depth application of molecular physiology, as utilized in a practical way to better understand, and approach, the physiology and diagnosis of diseases on one hand, and for practical analyses of research projects, as needed by the applicable physiological hypothesis, on the other.

BI0848 Fungal Genetics and Pathogenicity [3-0, 3 cr.]

This course introduces students to two important eukaryotic organisms: *Candida Albicans*, an opportunistic human fungal pathogen, and *Saccharomyces Cerevisiae*, a model eukaryotic organism easily amenable to modern genetic analysis. Topics to be covered include their life cycle, morphology, virulence, and pathogenicity, alongside the basic molecular mechanisms that govern them. The course will also feature a laboratory portion where students familiarize themselves with these two important microorganisms.

BI0850 Genomics and Proteomics [3-0, 3 cr.]

This course provides an in depth introduction to using genome and proteome sequences to unravel problems of interest to biomedical researchers. Sessions include a combination of technical lectures, scientific testimonials, and hands-on solving problems, where students will be able to put the theoretical concepts into practice.

BI0852 Nutrition and Diet Therapy [3-0, 3 cr.]

This course is designed to provide the basics of human nutrition, and its relation to health. It covers all aspects of the macro and micro nutrients needed throughout the human life cycle. It also deals with the pathology, treatment, and nutritional therapy of acute and chronic diseases, nutrition and physical fitness, as well as other aspects of nutrition.

BI0881 Special Topics in Biology [3-0, 3 cr.]

This course covers the selected, recent, and contemporary, advances in the various applied fields of the biological sciences, and affiliated disciplines.

BI0888 Current Topics in Microbiology [3-0, 3 cr.]

This course will engage students, and foster discussion on the current research in the field of Microbiology. Participants will review and discuss research papers. In addition, each

student will present two or three peer reviewed papers during the semester. Research topics will include, but are not limited to, virology, molecular biology, bacterial genetics, microbial ecology, and host-microbe interactions.

BI0899 Thesis [6 cr.]

As the Master of Science in Molecular Biology is considered a Research Degree, candidates must present a Thesis that should contain the 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 the student's 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.]

This course is an introduction to atomic structure, chemical bonding, gases, stoichiometry, aqueous solution, chemical kinetics, and chemical equilibrium.

CHM200 Essentials of Chemistry [3-0, 3 cr.]

This is one semester course for health science students. The course is an introduction to basic concepts of general, organic and biochemistry, and basic nuclear chemistry. The course includes basic: stoichiometric chemical calculations, bonding concepts, solution chemistry, acid/base and redox reactions, basic nuclear reactions, organic compounds properties, structure and reactivity of hydrocarbons, alcohols, ethers, carbonyls, carboxylic acids, amines, carbohydrates, amino acids, lipids enzymes and biochemical energy

Prerequisite: CHM101 General Chemistry or equivalent.

CHM201 Chemical Principles [3-0, 3 cr.]

This course covers the principles and theories of atomic structure, chemical bonding, stoichiometry, mass spectrum, properties of gases, basic thermodynamics, kinetic theory, solids and liquids, solutions, acids and bases, and chemical equilibrium.

Prerequisite: CHM101 General Chemistry or equivalent.

CHM202 Analytical Chemistry [3-0, 3 cr.]

An introduction to principles and methods of analytical chemistry including statistical analysis, aqueous solution equilibrium, heterogeneous equilibrium, equilibria in terms of molarity and activity, effect of electrolytes, electrochemical and gravimetric, titrimetric, complexometric, electrochemical, and kinetic methods of analysis.

Prerequisite: CHM201 Chemical Principles.

CHM203 Qualitative Analysis [0-4, 2 cr.]

This course is an introduction to experimental chemistry, emphasizing properties of gases, colligative properties and qualitative chemical analysis.

CHM204 Quantitative Analysis [0-4, 2 cr.]

This laboratory is an introduction to quantitative chemical analysis that involves gravimetric, volumetric, and spectrophotometric methods and techniques.

Prerequisite or co-requisite: CHM201 Chemical Principles or concurrently

CHM310 Basic Organic Chemistry I [3-0, 3 cr.]

This course is for pre-health professionals. Materials covered include electronic structure, and bonding; acid/base in organic chemistry; organic compounds and their nomenclature; physical properties, structures, reactions and reactivity of alkanes, alkenes, alkynes, alkyl halides, alcohols, amines, ethers, and epoxides; aromatic systems and their reactions; substitutions (nucleophilic, electrophilic) and eliminations; central role of carbonyl compounds and their reactions, structure determination and the chemistry of biomolecules.

Prerequisite: CHM200 Essentials of Chemistry or CHM201 Chemical Principles.

CHM311 Organic Chemistry I [3-0, 3 cr.]

This course is an introduction to concepts of organic chemistry with an emphasis on the relation between structure and properties. It also includes properties, reactions and synthesis of aliphatic and aromatic hydrocarbons, alkyl halides and alcohols with an emphasis on mechanistic and stereochemical aspects of organic reactions.

Prerequisite: CHM201 Chemical Principles.

CHM312 Organic Chemistry II [3-0, 3 cr.]

This course covers in depth organic structure determination by spectroscopic methods, properties, reactions, and synthesis including alcohols, ethers, aldehydes, ketones, carboxylic acids and derivatives, amines, phenols, carbohydrates, and proteins. Emphasis will be placed on reaction mechanism and stereochemistry, as well as the design of multi-step synthesis.

Prerequisite: CHM311 Organic Chemistry I.

CHM313 Organic Chemistry I Lab [0-3, 1 cr.]

This laboratory is designed to provide students with the basic skills for conducting organic reactions through basic laboratory techniques such as melting point, boiling point, simple and fractional distillation, gravity and vacuum filtration, drying solids and liquids, extraction, evaporation, reflux, recrystallization, as well as column and thin layer chromatography.

Prerequisite: CHM311 Organic Chemistry or concurrently.

CHM314 Organic Chemistry II Lab [0-3, 1 cr.]

This is an advanced organic chemistry laboratory course that utilizes the techniques learned in CHM313, in order to study, synthesize, and identify and interconvert functional groups. Electrophilic aromatic substitutions, aldol condensation, and polymerization reactions are among the experiments carried out. Physical properties and reactions of biomolecules (fats, oils, carbohydrates and proteins) are also covered.

Prerequisites: CHM312 Organic Chemistry II or concurrently, CHM313 Organic Chemistry I Lab.

CHM330 Physical Chemistry I [4-0, 4 cr.]

This course covers the basic principles of chemical thermodynamics and chemical dynamics; including heat, work and energy; the three laws of thermodynamics and their application to chemical systems and thermodynamic solutions, kinetic theory of gases, rate law, mechanism, Bodenstein approximation, fast reactions, photochemistry, and reaction rate theories.

Prerequisites: MTH201 Calculus III, CHM201 Chemical Principles.

CHM332 Physical Chemistry II [3-0, 3 cr.]

This is a course that covers Quantum theory, postulates, Schrödinger equation of hydrogen, H⁺2 and H₂, atomic and molecular orbitals, Huckel approximation, and atomic and molecular spectra.

Prerequisites: CHM201 Chemical Principles and MTH201 Calculus III.

CHM334 Physical Chemistry Laboratory [0-4, 2 cr.]

This is a laboratory course that covers principles and experimental techniques in thermochemistry, kinetic, and electrochemistry.

Prerequisites: CHM203 Qualitative Analysis; CHM330 Physical Chemistry I or concurrently.

CHM340 Environmental Chemistry [3-0, 3 cr.]

This course is a study of natural and non-natural chemical substances in the environment and their chemical transformations. It involves chemistry of energy resources, atmosphere, hydrosphere, biosphere, and, lithosphere (natural and in polluted environment). Principles of chemical reactions, chemical equilibrium and reaction kinetics are applied in this course. Other covered topic is waste treatment and chemical processes. Parallel with these is learning the methods of environmental chemical analysis.

Prerequisite: CHM202 Analytical Chemistry and CHM310 Basic Organic Chemistry or CHM311 Organic Chemistry I.

CHM401 Instrumental Analysis [1-4, 3 cr.]

This course in an introduction to modern physical methods of analysis, with theoretical and practical concepts of instrumentations, including radiant energy interaction with matter, emission, and absorption spectroscopy, nuclear magnetic resonance spectroscopy, polarography and chromatography.

Prerequisites: CHM202 Analytical Chemistry, CHM204 Quantitative Analysis.

CHM402 Chemistry of Materials [3-0, 3 cr.]

This course is an introduction to the materials of emerging technologies as explored in the chemistry of the solid-state, conducting, semiconducting, inorganic and organic materials, nanomaterials, as well as the design, preparation, processing and array

of characterization methods for material performance.

Prerequisite: Senior standing.

CHM403 Polymer Science [3-0, 3 cr.]

This course is an introduction to Polymer Science involving classification of polymers, preparative methods of polymerization, characterization, mechanical properties, fabrication techniques, thermodynamics and kinetics of polymers, commercial importance and applications.

Prerequisites or Co-requisite: CHM312 Organic Chemistry II.

CHM404 Forensic Chemistry [2-3, 3 cr.]

This course is a general overview of the fundamental principles, methods, and instrumentation involved in the forensic analysis of physical evidence such as hair, fiber, bodily fluids, glass, paint, soil, finger prints, and documents. The laboratory applies the learned methodologies.

Prerequisites: CHM202 Analytical Chemistry.

CHM405 Statistical Mechanics [3-0, 3 cr.]

This course involves probability laws and distribution, statistical mechanics, postulates, fundamental equations, statistical mechanics calculations, Bose-Einstein statistics, transition state theory, as well as isotope effect from statistical perspective.

Prerequisite: CHM332 Physical Chemistry II.

CHM412 Synthesis and Identification of Organic Compounds [0-4, 2 cr.]

This course is an experimental chemistry course that explores synthetic transformation, separation and identification of organic compounds by wet chemical techniques, spectroscopic tools, elemental analyzer and NMR.

Prerequisites: CHM314 Organic Chemistry II Lab.

CHM420 Inorganic Chemistry [4-0, 4 Cr.]

This course is a study of hydrogen-like orbitals, multi-electron atoms, ionic bonding and crystals, symmetry point groups, symmetry adapted orbitals, Berry pseudo-rotation, fluxional molecules, acids and bases, chemistry

of the main group elements, coordination compounds and organometallic compounds.

Prerequisites: CHM332 Physical Chemistry II.

CHM423 Synthesis and Identification of Inorganic Compounds [0-4, 2 cr.]

This course is an experimental chemistry course that explores a wide variety of synthetic methodologies and characterization techniques of inorganic compounds such as main group, transition metals and organometallics. Several characterization techniques are used to analyze the synthesized products such as conventional spectroscopy, magnetic susceptibility, thermal analysis and XRD. The special laboratory skills of air-free manipulation of chemicals will also be introduced.

Prerequisite or co-requisite: CHM420 Inorganic Chemistry.

CHM424 Synthesis and Characterization of Nanomaterials [0-4, 2 cr.]

This course is an experimental course that explores a wide variety of synthetic and characterization techniques for nanomaterials using advanced instrumental techniques such as AA, SEM and XRD.

Prerequisites or co-requisite: CHM314 Organic Chemistry II lab.

CHM425 Computational Chemistry [0-4, 2 cr.]

This is a laboratory course that introduces students to computer methods and software used in computational chemistry. Emphasis is on quantum computer simulation methods including molecular orbital methods and density functional theory; statistical calculations; molecular dynamics and Monte Carlo; and Newton-Raphson techniques in solving thermodynamic equations.

Prerequisites or co-requisite: CHM332 Physical Chemistry II.

CHM499 Senior Study [3-0, 3 cr.]

This research course is designed to teach research methods and literature survey. The course requires work on a research project topic and presentation of the findings in a research paper.

Prerequisite: Senior standing.

ENVIRONMENTAL SCIENCE

ENV200 Introduction to Environmental Science [3-0, 3 cr.]

This is 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 includes field trips.

ENV402/CIE525 Environmental Policy and Management [3-0, 3 cr.]

This course explores human made problems in the environment parallel with concepts in environmental ethics, management and policies so as solutions are provided concerning preservation of the environment. Topics covered are toxic and solid wastes, pollution of air, water, food and soil, international and national environmental ethics, management and policies. Prerequisite: senior standing

ENV422/CIE722 Environmental Impact Assessment [3-0, 3 cr.]

This course is the study and evaluation of the impacts of large scale projects on the quality of the physical, biological, and socio-economical environment taking into account environmental laws and regulations and EIA guidelines. Identification of impacts, quantification methods, mitigation measures, and monitoring plans. Case study involving the preparation of an EIA REPORT. Prerequisite consent of instructor or senior standing.

ENV423 Environmental Microbiology [2-3, 3 cr.]

This ecologically based course discusses the relationship of microorganisms with one another and with their environment. It stresses the three major domains of life – Eucaryota, Archaea and Bacteria and studies their diversity, interactions and physiology in their natural environments. Biodegradation of organic matter, bio-geo-cycling of minerals and waste bio-treatment are emphasized. The course also deals with metagenomic, metaproteomic techniques and applications as well as the use of microarrays in Microbial Ecology.

ENV426/CIE526 Environmental Remediation [3-0, 3 cr.]

This course deals with processes employing microorganisms, fungi, plants or their enzymes to return contaminated environments, such as polluted waters and soils, to their natural conditions. The control, optimization and monitoring of bioremediation is discussed as well as the environmental factors and microbial populations involved. In-situ, ex-situ applications and genetic engineering approaches are emphasized. Prerequisite: senior standing

ENV427 Environmental Physics [3-0, 3 cr.]

The course comprises aspects of atmospheric physics, soil physics and many aspects of applied physics. It introduces the essentials in environmental physics, and describes the basics in environmental spectroscopy e.g. black body radiation and the solar UV and Life. It also addresses the global climate, energy balance, energy available for human use, transport of pollutants, and noise pollution. The course also discusses risk estimations, energy saving and nature and future thinking in the context of the global society.

HEALTH

HLT201 Basic Health [1-0, 1 cr.]

This course covers the basic knowledge of general health and fitness, first aid, nutrition, mental health, disease, drugs, tobacco, and sex education.

NUTRITION

NUT201 Fundamentals of Human Nutrition [3-0, 3 cr.]

This course is 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.

NUT301 Community Nutrition [3-0; 3 cr.]

This course deals with methods used to discover nutritional problems in the community and the different strategies and education programs that may be implemented in order to improve the nutritional status and health.

Prerequisite: NUT201 Fundamentals of Human Nutrition

NUT312 Food Chemistry [3-0; 3 cr.]

This course is designed to cover the chemical composition, physical and sensory properties of food.

Prerequisite: CHM310 Basic Organic Chemistry or CHM311 Organic Chemistry I

NUT323 Food Analysis [1-3; 2 cr.]

This course includes application of methodologies used in assessment of chemicals and nutrients in food.

Pre or corequisite: NUT312 Food chemistry

NUT334 Food Management [3-0; 3 cr.]

This course is designed to get an overview of the principles of functional operation of food services such as menu planning, purchasing and procurement, production, distribution and service, quality improvement, and layout and design. Emphasis will also be made on the HACCP approach.

Prerequisite: NUT201 Fundamentals of Human Nutrition

NUT345 Industrial Food Production [2-0; 2 cr.]

This course is designed to cover aspects of industry. It includes visits to different plants of food production and food industry. Students will be asked to write reports and discussions about the different visits.

Pre or Co-requisite: NUT334 Food Management

NUT356 Nutrition status Assessment [1-3; 2 cr.]

This course covers all theoretical aspects of nutritional status assessments such as anthropometric measurement, dietary assessment and screening, medical record reviews, care plan development and biochemical tests. Also, students will be exposed to practical experiments that make them familiar with the studied tools and techniques.

Prerequisite: Fundamentals of human nutrition

Pre or Co-requisite: NUT401 Advanced Human Nutrition

NUT367 Food Processing [1-3; 2 cr.]

This course covers changes observed in basic food constituents during food processing and preparation. It also deals with the different methods and principles of food processing,

preservation and possible food spoilage. The course includes laboratory applications of food processing.

Prerequisite: NUT312 Food Chemistry

NUT378 Food microbiology [1-3; 2 cr.]

This course covers all aspect of food preservation from microbiological contamination, detection of microbial food contamination and possible beneficial utilization of microorganisms in food industry.

Pre or Co-requisite: BIO311 Microbiology

NUT389 Nutrition in the Life cycle [3-0; 3 cr.]

This course is designed to cover all aspects of basic nutritional needs throughout the human life cycle: infancy, childhood, adolescence, adulthood, elderly people and the special requirements during pregnancy and lactation

Prerequisite: NUT401 Advanced Human Nutrition

NUT401 Advanced Human Nutrition [3-0; 3 cr.]

This course includes the latest advances in carbohydrate, protein, lipid, vitamin and mineral nutrition and metabolism in the human body.

Prerequisites: NUT201 Fundamentals of human nutrition, BIO343 Anatomy and physiology, Pre or corequisite: BCH301 Introduction to Biochemistry

NUT423 Medical Nutrition Therapy [3-3; 4 cr]

This course deals with the pathology, treatment and nutritional therapy of acute and chronic diseases. It is also designed to consider and discuss clinical case studies and reports of patients with different pathologic conditions.

Prerequisites: NUT401 Advanced Human Nutrition, NUT356 Nutrition Status Assessment

NUT445 Counseling Communication Skills [2-0; 2 cr.]

This course focuses on the necessary techniques used in collection and interpretation of dietary intake in addition to patient care and counseling in order to promote the required dietary changes.

Prerequisite: NUT356 Nutrition Status Assessment

NUT467 Hospital Administration [3-0, 3cr.]

The main purpose of this course is to prepare students to carry out a wide range of administrative, managerial and nutrition-related tasks within hospital institutes. The final goal is to achieve strong theoretical and technical comprehension on how to provide quality nutrition and healthcare to hospital patients.

NUT499 Senior Study in Nutrition [1-6, 3cr.]

This course is a well-designed research project in current hot nutritional topics during which the student will be familiarized with the latest research techniques and tools.

Prerequisite: Senior Standing

PHYSICAL EDUCATION

PED211 Beginning Swimming [0-2, 1 cr.]

This course is an introduction to the basic strokes in swimming, hence the freestyle, breaststroke, backstroke and butterfly. It covers the basic safety skills, and the elementary forms of rescue, and artificial respiration.

PED218 Beginning Table Tennis [0-2, 1 cr.]

This course covers the theory, practice, rules knowledge, and basic stroke techniques and skills including the forehand, backhand, serve, etc...

PED220 Beginning Tennis [0-2, 1 cr.]

This course covers the theory, practice, rules knowledge, and basic stroke techniques and skills including the forehand, backhand, serve, etc...

PED231 Modern Dance [0-2, 1 cr.]

This course emphasizes individual creativity.

PED232 Folk Dance [0-2, 1 cr.]

This course involves the development of coordination and grace, rhythmic awareness, and emphasis on international understanding.

PED251 Basketball [0-2, 1 cr.]

This course covers the theory, practice, rules knowledge, and development of the different skills in basketball which include passing, shooting, dribbling, teamwork, and game strategies.

PED261 Volleyball [0-2, 1 cr.]

This course covers the theory, practice, rules knowledge, and development of the different skills in volleyball which include overhead and underarm passing, spiking, serving, digging, blocking, etc...

PED271 Taekwondo [0-2, 1 cr.]

This course introduces students to the modern martial art, originating in Korea, which is characterized by its fast, high, and spinning kicks. It teaches discipline, self-control, and most importantly, self-defense. It is the "art of unarmed combat."

PED291 Physical Fitness [0-2, 1 cr.]

This course is a basic introduction to fitness, including anatomical and physiological considerations, and the latest research relating to fitness. This course aims at encouraging 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.]

This course is an introduction to essential concepts of astronomy, physics, chemistry, and geology for non-science majors.

PHY111 Mechanics [3-3, 4 cr.]

This course deals with the 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, and heat and thermodynamics.

Prerequisite: MTH102 Calculus II, or concurrently.

PHY201 Electricity and Magnetism [3-3, 4 cr.]

This course deals with 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, as well as optics including refraction, interference and diffraction.

Prerequisite: MTH201 Calculus III.

PHY211 Statics [3-0, 3 cr.]

This course is a review of vector algebra, forces, moment and couples, free body diagrams and application to beams, frames, arches, planes, trusses, center of gravity, and friction and virtual work.

Prerequisite: Sophomore standing.

PHY301 Classical Physics for Life Sciences [3-0, 3 cr.]

This course is divided into three main parts. The first part covers Newtonian Mechanics of a particle, Thermodynamics, and the study of Fluids and Solids. It begins with the study of Kinematics, (geometrical analysis of the motion of a particle), continues with Newton's Laws of motion (kinetics), and then proceeds to the study of Energy and Momentum (work/energy theorem). The second part deals with temperature and heat, leading to the definition of entropy and to the laws of thermodynamics. The last part defines fluids, and their density and pressure, leading to the Bernoulli Equation, then defines solids, and their stress and strain relationships, with regards to Young's modulus.

Prerequisite: MTH200 Mathematics for Life Sciences.

PHY302 Classical Physics for Life Sciences Lab [0-3, 1 cr.]

This course includes experiments covering linear momentum, such as: rotational motion, Newton's Law of Motion, equilibrium and elasticity, work and energy, temperature, heat and thermal properties of matter, laws of thermodynamics, collision, pendulum, Boyle's Law, fluid mechanics, coefficient of viscosity, and waves and optics.

Pre- or co-requisite: PHY301 Classical Physics for Life Sciences.

PHY305 Modern Physics for Life Sciences [3-0, 3 cr.]

This course covers Coulomb's Law of Electrostatics, the study of moving charges (electric current, DC or AC), electromagnetism, wave phenomena, light and optics, introduction to relativity, atomic energy levels, nuclear mass/energy relationship, and energy decay phenomena (radiation and nuclear physics). This course is designed in a way to show the application of some of the above fields in biological systems, and medicine, when possible.

Prerequisite: MTH200 Mathematics for Life Sciences.

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PHY306 Modern Physics for Life Sciences Lab [0-3, 1 cr.]

This course includes experiments covering Coulomb's Law, electric field for parallel plate, electric field for concentric cylinders, parallel plate capacitors, resistance, resistors in series and parallel, Wheatstone Bridge, basic oscilloscope operation, measurement of magnetic induction fields, solenoids and Faraday's Law, charge to mass ratio of the electron, Ohm's Law, and Plank's Constant and Atomic Spectroscopy.

Pre- or Co-requisite: PHY305 Modern Physics for Life Sciences.

PHY321 Introduction to Modern Physics [3-0, 3 cr.]

This course is 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.



CHAIR

Ouaiss, Makram

ASSOCIATE CHAIR

Baroudy, Sami

ASSOCIATE PROFESSORS

Ayyash-Abdo, Huda
Hammoud, Hassan
Jureidini, Ray
Moubarak, Walid
Rowayheb, Marwan
Salamey, Imad
Salloukh, Bassel
Sarouphim, Ketty
Tabar, Paul

ASSISTANT PROFESSORS

Ammar, Diala
Fakhoury, Tamirace
Skulte-Ouaiss, Jennifer
Zebian, Samar
Sánchez-Ruiz, María José

INSTRUCTORS

Kaloyeros, Loulwa
Samia, Elie

STAFF

Beyrouthy, Samantha-Joe
Haddad, Dunya

DEGREES OFFERED

- Bachelor of Arts (B.A.) in Political Sciences
- Bachelor of Arts (B.A.) in Political Sciences – International Affairs
- Bachelor of Arts (B.A.) in Psychology
- Bachelor of Arts (B.A.) in Social Work
- Masters of Arts (M.A.) in International Affairs
- Minor in Legal Studies
- Minor in Political Sciences & International Affairs
- Minor in Psychology
- Minor in Sociology

BACHELOR OF ARTS IN POLITICAL SCIENCE

MISSION

Basing itself on the university's mission, the Bachelor of Arts program in Political Science provides students with a high quality education that covers the main fields of political science, namely: comparative politics, international relations, and political theory, as well as the methodology of political analysis. The Bachelor of Arts program prepares students for graduate studies, and/or a variety of entry level careers.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Political Science is to:

1. Prepare students for the job market, locally and abroad, with business, industry, government, and non-governmental institutions.
2. Acquire entry level skills for careers in government, journalism, international organizations, legal professions, research, advertising agencies, and any of the business enterprises and proliferating organizations that maintain political and economic activities.
3. Attain knowledge of the nature of governmental processes, the functions of political systems, the structures and roles of institutions and constitutions, and the mechanism of the decision-making process at the local, national, and international levels.
4. Use research skills to foster scholarship and prepare students for graduate study.
5. Contextualize the material learned by outreach and community involvement with faculty supervision.
6. Integrate the cultural, social, legal, and ethical issues inherent in the discipline of political science, and international affairs, into their undergraduate education.

LEARNING OUTCOMES

Graduates in the Bachelor of Arts program in Political Science will:

1. Identify the nature of government processes, the functions of political systems, the structures and roles of institutions and constitutions, the political economy of Third World countries,

Department of Social Sciences

international relations and foreign policy, and the challenges of globalization.

2. Use theoretical and methodological tools essential for higher-level intellectual pursuits.
3. Examine the major issues pertaining to this field of study, and identify problems, conceptualize ideas, and communicate solutions, in various situations that emerge at the workplace.

CURRICULUM REQUIREMENTS

Students majoring in Political Science should meet the Liberal Arts curriculum requirements, all courses in the major, and the three courses listed under "Other Requirements." They need 92 credits for the major (28 credits Liberal Arts Curriculum, 39 credits for the major, 9 credits for the other requirements, and 16 credits of Free Electives).

Major Requirements (39 credits)

POL201	Introduction to Political Science	3
POL222	Comparative Political Systems	3
POL312	Politics of Developing Areas	3
POL321	American Government and Politics	3
POL240	Concepts of World Politics	3
POL322	Foreign Policy of Major Powers	3
POL331	International Organization	3
POL323	Middle East Governments & Politics	3
POL422	The Middle East in World Affairs	3
POL210	Introduction to Political Thought	3
POL314	Research Methodology	3
POL332	Public International Law	3
POL499	Senior Study	3

Other Requirements (9 credits)

POL203	Lebanese Government and Politics	3
ECO202	Macroeconomics	3
HST305	Contemporary Europe	3

Free Electives (16 credits)

SUGGESTED THREE YEAR STUDY PLAN

Year One

Fall (12 credits)

POL201	Introduction to Political Science	3
ECO202	Macro Economics	3
ARA2-/3-		3
	Remedial English course	
	Free Elective	3

Spring (15 credits)

POL210	Introduction to Political Thought	3
POL240	Concepts of World Politics	3
HST305	Contemporary Europe	3
	LAC Elective	3
ENG202	Sophomore Rhetoric	3

Summer (4 credits)

ENG203	Fund. Oral Communication	3
ETH201	Moral Reasoning	1

Year Two

Fall (15 credits)

POL203	Lebanese Government and Politics	3
POL222	Comparative Political Systems	3
	LAC Elective	3
	LAC Elective	3
POL331	International Organization	3

Spring (15 credits)

POL321	American Government and Politics	3
POL312	Politics of Developing Areas	3
POL322	Foreign Policy of Major Powers	3
	Free Elective	3
	Free Elective	3

Year Three

Fall (17 credits)

POL323	Middle East Government	3
POL332	Public International Law	3
POL314	Research Methodology	3
HLT201	Basic Health	1
CSC201	Computer application	1
	LAC Elective	3
	Free Elective	3

Spring (14 credits)

POL499	Senior Study	3
POL422	M.E. in World Affairs	3
PED	Physical Education	1
	LAC Elective	3
	Free Electives	4

BACHELOR OF ARTS (B.A.) IN POLITICAL SCIENCE – INTERNATIONAL AFFAIRS

PROGRAM MISSION STATEMENT

Basing itself on the University's mission, the Bachelor of Arts program in Political Science-International Affairs provides students with a high quality education that covers the main fields of political science, namely: comparative politics, international relations, and political theory, as well as the methodology of political analysis. The program also seeks to develop future leaders who will work to serve the country and the region and who recognize and value diversity in various forms. The Bachelor of Arts program prepares students for graduate studies, and/or a variety of professional careers.

PROGRAM EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Political Science-International Affairs is to:

1. Attain knowledge of facts, theories, and concepts in political science and international affairs at the local, national and international levels.
2. Enhance graduates' awareness of the diversity of perspectives and life experiences that structure the global political, social, and economic environment.
3. Integrate the cultural, social, legal, and ethical issues inherent in the discipline of political science and international affairs into their undergraduate education.
4. Acquire entry level skills for careers in government, media, international organizations, legal professions, research, advertising agencies and any of the business enterprises and proliferating organizations that maintain political and economic activities.
5. Prepare graduates committed to life-long learning, capable of working effectively in teams, and who possess strong oral and written communication skills.

PROGRAM LEARNING OUTCOMES

Upon successful completion of the program, students should be able to:

1. Describe the basic facts, concepts, and theories pertaining to political science and international affairs.
2. Comprehend the interrelationship among the political, economic, cultural, and

geographic dimensions in political science and international affairs.

3. Apply academic theories and concepts of international relations and relate them to contemporary global issues.
4. Ask relevant research questions pertaining to political science and/or international affairs orally and in writing.
5. Apply research skills to the design of research, description, analysis, interpretation and explanation of aspects of political science and international affairs in written and oral forms as well as through using information technology.
6. Work cooperatively to solve problems on topics related to political science and international affairs.

CURRICULUM

Students must complete 92 credits (excluding freshman requirements) for the major, of which 25 credits are from the Liberal Arts Curriculum (LAC), 39 in Political Science-International Affairs, 18 credits in a variety of related disciplines, and 10 credits in the free electives.

Major Core Requirements*	39
Issue Tracks	9
Area Studies	9
Liberal Arts Core (LAC) Curriculum	13
LAC Electives*	12
Free Electives	10
Total Credits	92

* POL201, ECO201 and ECO202 count as LAC-Social Sciences as well as core courses for the major

Core Requirements (39 credits)

ECO201	Microeconomics	3
ECO202	Macroeconomics	3
POL201	Introduction to Political Science	3
POL203	Government & Politics of Lebanon	3
POL210	Introduction to Political Thought	3
POL240	Concepts of World Politics	3
POL222	Comparative Political Systems	3
POL314	Research Methodology	3
POL312	Politics of Developing Areas	3
POL322	Foreign Policy of the Major Powers	3
POL331	International Organization	3
POL332	Public International Law	3
POL499	Senior Study	3

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ISSUE TRACKS Focus (9 credits)

Choose either 9 credits in one (1) of the following tracks (to complement the major requirements) OR take a total of 9 credits from this section overall:

A. Globalization

POL335	Politics of Multiculturalism	3
POL346	International Political Economy	3
POL357	Globalization & Political Change	3
ECO311	Economic Development	3
POL437	Topics in Political Science-International Affairs	3
*POL448	Internship	3

B. Diplomacy & Conflict Resolution

POL252	Fundamentals of Conflict Resolution	3
POL415	Negotiation & Bargaining	3
POL432	Diplomatic & Consular Service	3
POL437	Topics in Political Science-International Affairs	3
*POL448	Internship	3

**Internship can only be taken once for credit*

AREA STUDIES Focus (9 credits)

Choose any nine (9) credits of the following:

SOC321	Sociology of the Arab World	3
HST240	History of the Arab Peoples	3
HST241	History of Islam in the M.E.	3
WOS313	Women in the Arab World	3
POL323	Middle East Government & Politics	3
POL422	The Middle East in World Affairs	3
HST304	Modern Europe	3
HST305	Contemporary Europe	3
POL426	Politics of the European Union	3
HST334	History of North America	3
POL321	American Government and Politics	3
POL368	Political Parties and Elections in America	3
POL437	Topics in Political Science-International Affairs	3

Liberal Arts Curriculum Requirements (25 credits)

Free Electives (10 credits)

SUGGESTED THREE YEAR STUDY PLAN

Year One

Fall (12 credits)

POL201	Introduction to Political Science*	3
ARA2-		3

ECO201	Microeconomics	3
	Remedial English course (If any)	3
	Free Elective	3

**(ALSO COUNTS AS 1 LAC COURSE-SOCIAL SCIENCES)
Spring (15 credits)*

POL222	Comparative Political Systems	3
POL203	Government & Politics of Lebanon	3
	Issue Tracks Course	3
ENG202	Sophomore Rhetoric	3
	Sophomore Rhetoric	3
	LAC Elective	3

Summer (6 credits)**

ENG203	Fund. Oral Communication	3
ETH201	Moral Reasoning	1
PED-	Physical Education	1
CSC201	Computer Applications	1

***Students Who Do Not Need To Take Remedial English In Their First Year Could Avoid Taking Summer Courses By Taking Eng203 In Spring After Having Taken Eng202 In Year One Fall. Eth201 And Ped— Could Be Fit In Elsewhere During The Fall Or Spring Semesters.*

Year Two

Fall (15 credits)

POL240	Concepts of World Politics	3
POL210	Introduction to Political Thought	3
POL314	Research Methodology	3
PO331	International Organization	3
ECO202	Macroeconomics	3

Spring (15 credits)

POL312	Politics of Developing Areas	3
POL322	Foreign Policy of Major Powers	3
	Issue Tracks Course	3
	Area Studies Course	3
	LAC Elective	3

Year Three

Fall (16 credits)

POL322	Public International Law	3
	Area Studies Course	3
	Area Studies Course	3
	LAC Elective	3
	Free Elective	3
HLT201	Basic Health	1

Spring (13 credits)

POL499	Senior Study	3
	Free Electives	1
	Issue Track	3
	Free Electives	3
	Free Electives	3

TOTAL 92 CREDITS

BACHELOR OF ARTS IN PSYCHOLOGY

MISSION

The BA program in Psychology provides students with a broad based knowledge in the field of Psychology along with opportunities to explore their professional potential in a university committed to academic excellence, scholarship, and to the education of students as future leaders in the local and international sphere. Students will be provided with a foundational grounding in scientific psychology in diverse subfields, with some emphasis in the fields of Development and Counseling.

PROGRAM OBJECTIVES

The general objectives of the program are in line with the American Psychological Association's guidelines for undergraduate psychology Majors. Graduates of the BA in Psychology program shall be able to:

1. Demonstrate and communicate effectively a broad knowledge of psychological concepts and theories and apply them to individual, cultural, and social contexts.
2. Apply ethical principles and demonstrate competence in research practices in psychology.
3. Demonstrate competence in critical thinking and skeptical inquiry when applying psychological modalities to different contexts.

STUDENT LEARNING OUTCOMES

At the completion of this program, students are able to:

1. Demonstrate knowledge of the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
2. Demonstrate competence in research skills including research design and data analysis and interpretation.
3. Apply critical thinking to the study of psychological concepts, theories, and findings.
4. Apply psychological principles to the understanding of individual functioning, society, and culture.
5. Communicate effectively (orally and in writing) using APA guidelines.

6. Comply with established ethical guidelines of the profession of psychology.
7. Demonstrate ability to use information technology to study and present psychological material.

Students must complete 92 credits (excluding freshman requirements) for the major of which 34 credits are from the Liberal Arts Curriculum, (including 3 credits applied statistics) 45 in psychology credits and 10 credits in the Free Electives.

Total Credits(92 credits)

Major Core requirements (see below)	30
Psychology electives out of 24 PSY. CR	15
Total	45

Liberal Arts Core Curriculum *	13
LAC Electives	21
Total	34

STA202 Applied Statistics (no more part of LAC)	3
Free Electives	10

Major Requirements (30 credits)

PSY201	Introduction to Psychology	3
PSY234	Development across the Life Span	3
PSY295	Theories of Learning	3
PSY245	Research Methods I	3
PSY345	Research Methods II (prerequisite Research Methods I)	3
PSY425	Abnormal Psychology	3
PSY322	Mind & Behavior	3
PSY355	Biological Basis of Behavior	3
PSY466	Counseling Psychology	3
PSY499	Psychology Senior Study	3

**Potential courses: psychology of gender, positive psychology, cultural psychology, motor development, psychology in the community, human sexuality, Eating disorders...etc.*

Psychology Electives (Choose 5 courses or 15 credits, out of 9 courses or 27 credits)

PSY202	Child Psychology	3
PSY203	Psychology of Youth	3
PSY204	Social Psychology	3
PSY256	Sensation and Perception	3
PSY267	Cultural Psychology	3
PSY335	Industrial Organizational Psychology	3
PSY311	Exceptional Child	3
PSY320	Theories of Personality	3
PSY498	Topics in Psychology	3

Department of Social Sciences

Free Electives (16 credits)

SUGGESTED THREE YEAR Study Plan

Year One

Fall (17 credits)

PSY201	Introduction to Psychology (core)
PSY234	Development across the lifespan or Child Psychology
STA202	Applied Statistics
ARA2../3..	
CSC201	Computer applications
PED --	Physical Education
	Remedial English if any
	Free Elective

Spring (15 credits)

PSY295	Theories of learning core (previously PSY295 prerequisite PSY201)
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Choose one of the following:

PSY 204	Social Psychology (prerequisite PSY 201)
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Or

PSY 256	Sensation and Perception
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Or

PSY311	Exceptional Child
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ENG101	
	2 LAC Elective

Year Two

Fall (15 credits)

PSY245	Research Methods II
PSY355	Biological Basis of behavior) Prerequisite PSY201

Choose one of the following:

PSY267	Cultural Psychology
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Or

PSY203	Psychology of Youth
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Or

ENG202	Sophomore Rhetoric
	LAC Elective

Spring (15 credits)

PSY322	Mind and Behavior (core)
PSY345	Research Methods II

Any Psychology Elective e.g.

PSY320	Theories of Personality
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ENG203	Fundamentals of Oral Communication
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	LAC Elective
	Free Elective

Year Three

Fall (15 credits)

PSY425	Abnormal Psychology
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Choose one of the following:

	Psychology Elective
PSY498	Topics in Psychology

	2 LAC Electives
	Free Elective

Spring (15 credits)

PSY499	Senior Study Prerequisite Senior Standing and PSY204 Social Psychology (core)
PSY466	Counseling Psychology prerequisite PSY425
PSY204	Social Elective
	Free Elective

Any Psychology Elective e.g.

PSY355	Industrial/Organizational Psychology
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Summer (4 credits)

ENG202	Sophomore Rhetoric	3
ETH201	Moral Reasoning	1

Summer (4 credits)

	LAC Elective	3
HLT201	Basic Health	1

BACHELOR OF ARTS (B.A.) IN SOCIAL WORK

(offered in Beirut Campus)

MISSION

The Social Work Program at LAU seeks to prepare students for generalist social work practice, through the provision of a professional foundation curriculum. This curriculum contains the common body of the profession's knowledge, values, and skills that is transferable to group settings, and social problem areas. The Program endorses a liberal arts perspective, and a professional foundation content, which prepares students for direct services with client systems of various sizes and types.

EDUCATIONAL OBJECTIVES

The purpose of the Bachelor of Arts in Social Work is to:

1. Provide students with foundational knowledge in the field and to allow them to use bio psychosocial development across the life span, with an integrative multidimensional approach.
2. Instill in students the skills for assessing the social functioning of individuals and families, and design appropriate intervention strategies.
3. Contextualize the knowledge learned with the issues of practice.
4. Apply social work principles with client systems, including families.
5. Prepare graduates to work with diverse populations.
6. Recognize the social contexts of social work practice and the changing nature of those contexts,
7. Demonstrate the values and ethics that guide the profession social workers
8. Prepare graduates who are aware of their professional responsibility for continued professional growth.

STUDENTS LEARNING OUTCOMES

Graduates in Bachelor of Arts in Social Work will be able to:

1. Apply critical thinking skills, within the context of professional social work practice.
2. Practice within the values and ethics of the social work profession.

3. Demonstrate professional attitudes towards diverse populations and value the culture and sub-culture of various groups.

Students majoring in Social Work must complete 92 credits. The Program aims at acquainting students with the principles in the social sciences and humanities, as well as the basic skills in interpersonal and inter-group communication. Students are helped to understand, and to critically analyze, current and past social policies, with a focus on their social and economic dynamics. The Program prepares students for Graduate studies, and/or for careers in social work, based on the local and regional market demands.

Major Core Requirements (21 credits)

SOC301	Introduction to Social Work	3
SOC313	Family and Child Welfare	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

Social Science Requirements (18 credits)

SOC201	Introduction to Sociology	3
SOC311	Social Problems	3
SOC321	Sociology of the Arab World	3
PSY201	Introduction to Psychology	3
PSY204	Social Psychology	3
PSY311	The Exceptional Child	3

Free Electives (19 credits)

SUGGESTED THREE YEAR STUDY PLAN

Year One

Fall (14 credits)

SOC201	Intro to Sociology	
SOC301	Intro to Social Work	
ARA2-/3-		
CSC201	Computer Applications	1
	English course (based on the EEE score)	
HLT201	Basic Health	1

Spring (15 credits)

PSY201	Intro to Psychology	
SOC313	Family & Child Welfare	
ENG102		
ETH201	Moral Reasoning	1
PED---	Physical education	1
	Free Elective	1
	Free Elective	

Year Two

Fall (15 credits)

SOC402	Social Work Intervention I	
PSY204	Social Psychology	
SOC311	Social Problems	
PSY311	Exceptional Child	
ENG202	Sophomore Rhetoric	

Spring (18 credits)

SOC403	Social Work Intervention II	
	LAC Elective	
ENG203	Fundamentals of Oral Science	
	LAC Elective	
	Free Elective	
	Free Elective	

Year Three

Fall (18 credits)

SOC321	Sociology of the Arab World	
SOC404	Practicum I	
	LAC Elective	
	LAC Elective	
	Free Elective	
	Free Elective	

Spring (15 credits)

SOC499	Senior Study-Social Work	
SOC405	Practicum II	
	LAC Elective	
	LAC Elective	
	Free Elective	

Number of credits to be taken by Social Work major students:

* Pre-freshman and Freshman English: English 101 and English 102

1. Liberal Arts Core Curriculum: 13 credits
2. LAC Electives: 21 credits
3. Major Core Requirements: 21 credits
4. Social Sciences Requirements: 18 credits
5. Free Electives: 19 credits

MINOR IN LEGAL STUDIES

EDUCATIONAL OBJECTIVES

1. Introduce the students to the field of legal studies.
2. Provide a legal studies background for students majoring in many disciplines, such as Political Science, Psychology, Social Work, Business, etc.
3. Help students obtain a better understanding of law and the multiple functions it plays in a variety of societies.

4. Prepare the students for the job market by adding a competitive edge to their majors through a minor in legal studies.

LEARNING OUTCOMES

1. Apply complex system of law and regulations in different situations and contexts.
2. Identify creatively and independently major issues in legal studies.
3. Apply these skills to identify problems, conceptualize ideas and communicate solutions in various situations that emerge in the working place.
4. Interpret through legal reasoning different kinds of evidence through consideration of the concepts of rights and justice in any legal system.

REQUIREMENTS

For a Minor in Legal Studies students must take 18 credits as follows.

Core Courses

Students should take all the 4 courses (12 credits)

LEG201	Introduction to Legal Studies
LEG202	Law and Society-World Legal Traditions
LEG203	Laws in the Middle East
POL201	Introduction Political Science

Electives

Choose 2 of the following courses (6 credits)

BUS202	Business Law
POL221	Comparative governments of the major Powers
POL231	Introduction to Human Rights
POL321	American Government and Politics
POL332	Public International law
POL431	International Regional Organizations and Agencies

MINOR IN POLITICAL SCIENCE/ INTERNATIONAL AFFAIRS

MISSION

The Minor in Political Science-International Affairs supports the Lebanese American University's core mission, vision and values by a commitment to education with a strong liberal arts foundation and a continuous improvement in the overall quality of teaching, research, writing and educational service. The intent of the program is thus to advance an academic understanding of contemporary political science-international affairs and address its complexities.

EDUCATIONAL OBJECTIVES

1. Prepare the students for the job market by adding to their majors through a minor in political science/international affairs.
2. Enhance the political and global knowledge of students who are not majoring in political science-international affairs.
3. Develop students' research and writing skills through active learning and the promotion of critical thinking.
4. Provide a strong political science-international affairs background for students majoring in many disciplines, such as Education, Psychology, Social Work, English Literature, Communication Arts, etc.
5. Challenge students and faculty to improve the learning process.
6. Prepare students who are not majoring in political science/international affairs to join the MA program in International Affairs at LAU after completing the BA.
7. Expand outreach and engagement by encouraging faculty and students to contribute to the community at large.

LEARNING OUTCOMES

1. Understand the nature of government processes, the function of political systems, the structures and roles of institutions and constitutions, theories of international relations, the role and functions of international organizations, the nature of international law, foreign policy, and international relations.
2. Possess the necessary theoretical and research skills essential for high level intellectual pursuit.
3. Be able to think creatively and independently about major issues in international affairs and transfer these skills to identify problems, conceptualize ideas and communicate solutions in various situations that emerge in the working place.
4. Acquire the ability to find work in fields relevant to political science and international affairs.
5. Obtain a sufficient grasp of the complexities of modern societies.

REQUIREMENTS

For a minor in Political Science and International Affairs students must choose 18 credits of the following courses:

Minor Core Requirements (9 credits)

POL201	Introduction to Political Science
POL313	Concepts of International Relations
POL421	The Middle East in International Affairs

Minor Elective Requirements (9 credits)

POL221	Comparative Politics of the Major Powers
POL321	Politics of the Developing Areas
POL322	Foreign Policy of the Major Powers
POL323	Middle East Governments and Politics
POL331	International Organization
POL332	Public International Law

MINOR IN PSYCHOLOGY

PROGRAM MISSION STATEMENT

The mission of a minor in psychology is to complement students' major field of study with knowledge and experience that will enhance their understanding of human behavior and interdisciplinary inquiry.

PROGRAM OBJECTIVES

The general objectives of the minor are to:

1. Provide students with a general view of the discipline of psychology and its subspecialties.
2. Equip students from other majors with knowledge in major areas in psychological studies.

LEARNING OUTCOMES

Upon successful completion of the program:

1. Students will become familiar with the main approaches/subfields in psychology including, social, physical, organizational, learning, clinical, developmental, neurological and cultural.
2. Students will become aware of some of the following knowledge areas:
3. Developmental; as related to each major period of life, infancy, childhood, adolescence, adulthood, and old age.
4. Brain and learning; as related to biological bases of behavior and learning and as linked to three major theories of behaviorism, cognition, and social cognitive learning.
5. Social and Organizational; as applied to behavior of individuals in groups and in organizations.

6. Applied Psychology; as associated with symptomatology, possible etiology, and proposed treatment for the major categories of psychological disorders.
7. Become aware of how to transfer and apply knowledge and research findings to the Lebanese context.

CURRICULUM (18 CREDITS)

Core Courses (6 credits)

PSY201	Introduction to Psychology
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and

PSY 202	Child Psychology
or	
PSY 234	Development across the Life Span

Electives (12 credits)

Choose one course of the following:

PSY256	Sensation and Perception
PSY322	Mind and behavior
PSY295	Theories of Learning

Choose one course of the following:

PSY335	Industrial Organizational Psychology
PSY204	Social Psychology

Choose one course of the following:

PSY421	Theories of Personality
PSY425	Abnormal Psychology

MINOR IN SOCIOLOGY

A Minor in Sociology seeks to provide a quality education to students, and to enrich their knowledge of modern societies, with particular emphasis on Lebanon and other Arab countries.

The Minor aims at advancing a strong sociological understanding of contemporary society, addressing its complexities, and the individual's place within it.

EDUCATIONAL OBJECTIVES

The purpose of the Minor in Sociology is to:

1. Enhance students' ability to think critically about sociological theories and social issues.
2. Develop students' research and writing skills.

3. Develop students' professional and practical skills, so as to assist them in obtaining jobs in the local, regional, and international markets.
4. Provide a strong sociological grounding for students majoring in other disciplines.

LEARNING OUTCOMES

Graduates in the Minor in Sociology will:

1. Acquire the ability to apply sociological concepts, to better understand the social issues, and to overcome social problems.
2. Acquire the ability to find jobs in fields related to Sociology (social work, community development, social research, journalism, etc...)
3. Develop the ability to communicate effectively.
4. Lay the groundwork for the pursuit of graduate studies in Sociology.

REQUIREMENTS

For a Minor in Sociology, students have to choose three courses, in addition to SOC201, SOC401 and SOC488 from the following list (for a total of 18 credits):

SOC215	Introduction to Gender Studies
SOC212/ COM210	Media & Society
SOC303/ ARC 581	Urban Sociology/Urban Planning 1
SOC304	Sociology of Religion
SOC321	Sociology of the Arab World

M.A. IN INTERNATIONAL AFFAIRS

MISSION

Basing itself on the University's mission, and building on LAU's Bachelor of Arts programs in Political Science and Political Science-International Affairs, the M.A. program in International Affairs provides students with an in-depth understanding of the main theories, application of research methodologies and analysis of current debates and topics in international affairs.

EDUCATIONAL OBJECTIVES

The purpose of the M.A. in International Affairs program is to:

COURSE DESCRIPTIONS

1. Prepare graduates for Ph.D. work at reputable institutions of higher learning, mainly in the United States, Canada, and Western Europe.
2. Prepare graduates for careers in diplomacy, especially at the Lebanese Foreign Ministry, and the United Nations, and other professional careers at international, regional, and local governmental and non-governmental organizations, particularly organizations focusing on developmental, civil society, and post-conflict peace building activities.
3. Provide students with business-related majors with a comprehensive understanding of the workings of the international system and the policy making process.

STUDENT LEARNING OUTCOMES

Graduates in the M.A. in International Affairs Program will:

1. Acquire the analytical, methodological, and writing skills necessary to produce quality research papers, and one capstone Research Project (i.e. Thesis.).
2. Employ advanced research and critical thinking skills.
3. Acquire the necessary communicative skills to convey, persuasively, and lucidly, complex ideas and perspectives to different cohorts, namely diplomats, policy makers, public officials, and the media.
4. Apply the skills of diplomacy, negotiation and bargaining, as well as the techniques of conflict resolution.
5. Students need 30 credits for the Major (9 for the Core and 21 for Other Requirements).

Core Requirements

INA811	Theories of International Affairs	3
INA899	Thesis	6

Other Requirements

Choose 7 courses from the following:

INA812	Foreign Policy Analysis	3
INA813	Topics in International Relations	3
INA814	Topics in Middle East International Relations	3
INA815	Topics in International Organizations	3
INA821	Diplomacy and Bargaining	3
INA831	International Political Economy	3
INA841	Private International Law	3
INA842	Topics in International Law	3
INA851	International Conflict and Conflict Resolution	3

LEGAL STUDIES

LEG 201 Introduction to Legal Studies (3-0)

This course explores the ways “law shapes society and society shapes law.” This course introduces students to Legal Studies in the legal fields and topics. Legal lexis will be emphasized. Over the course of the semester, the students will be exposed to the definitions and concepts of law, the different forms of law and how they are shaped. It will explore how people understand law and the legal system, how injuries and disputes are understood and mediated. It will as well define the goals and purposes of trials. This course will also provide an overview of the role of paralegals in a work environment, while concentrating on the various regulations and ethical guidelines governing the work of paralegals.

LEG202 Law and Society-World Legal Traditions [3-0, 3 cr.]

This course is designed to introduce the relationship between legal systems and society. It will deal with the interaction between society and the different legal systems. The course will primarily compare different legal systems in the world, Civil law and the Common law. It will explore the different meanings of law, its functions, roles, and elements among different legal traditions and cultures. The course will venture into the rich theoretical jurisprudential debates. The first part of the course is a study of the structure of legal systems and the roles of the various actors. The second part of the course examines the role of the courts and the judicial system.

Prerequisite: LEG201: Introduction to Legal Studies

LEG203 Laws in the Middle East [3-0, 3 cr.]

This course provides an introduction to legal systems in the Middle East, defining the contours of a field of study that deserves to be called ‘Middle Eastern legal systems’. It introduces Middle Eastern law as a reflection of legal styles, many of which are shared by Islamic law and the laws of Christian and Jewish Near Eastern communities. This course will study as well the colonial legacy that shaped to a large extent the contemporary legal systems in the Middle East. It offers a detailed survey of the foundations of Middle Eastern law, using court archives and an array of legal sources from the earliest records of Hammurabi to the massive compendia of law in the Islamic classical age, through to the latest decisions

of Middle Eastern high courts. It focuses on the way legislators and courts conceive of law and apply it in the Middle East, especially in Lebanon.

Prerequisite: LEG201: Introduction to Legal Studies

PEACE AND JUSTICE EDUCATION

PJE201 Cross-cultural communication for Peace [3-0, 3 cr.]

This course examines the basic concepts, theories and issues of intercultural communication and cross-cultural human relations. The course explores how these relate to interpersonal and group conflict and conflict transformation.

POLITICAL SCIENCE

POL101 Introduction to Politics [3-0, 3 cr.]

A general introduction to the principal concepts of political science. In presenting the major political ideas, political behaviors, and governing institutions, the course investigates how political power is developed, preserved, and challenged.

POL201 Introduction to Political Science [3-0, 3 cr.]

This course introduces students to the basic concepts of and approaches to the study of political science. The course focuses on social science methodology, political ideologies, the state and state society relations, political parties, electoral systems, democracy, culture, institutions and international relations (IR). A significant emphasis is placed on the ability to use these concepts toward the analysis of current political issues, disputes and trends.

POL203 Government & Politics of Lebanon [3-0, 3 cr.]

A comprehensive survey of the political system in Lebanon from independence to the present. Detailed coverage of Lebanese politics and institutions.

Prerequisite: POL201

POL210 Introduction to Political Thought [3-0, 3 cr.]

The course surveys key political ideas primarily from the Renaissance through the Enlightenment up to the beginning of the 20th century. Analysis

and discussion of original texts and political ideas related to the general philosophy of each author's historical and political background.

Prerequisite: POL201 Introduction to Political Science.

POL222 Comparative Political Systems

[3-0, 3 cr.]

The course provides an overview of political systems in the world and compares the ways governments operate and people behave in political life. It examines why different countries in the world implement different forms of government and electoral systems. It compares the ways different governments interact with their respective citizens in both representation and policy making.

Prerequisite: POL201

POL231 Introduction to Human Rights

[3-0, 3 cr.]

This 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? Are some rights more fundamental than others, and what compelling interests, if any, justify their violation?

POL240 Concepts of World Politics [3-0, 3 cr.]

This course offers an introduction to the study of International Relations through discussion and analysis of: the growing relationship between conflict, security and development, the sources of foreign policy and international conflict, the political economy of national security, international organizations, global governance, and the gap between North and South, among other topics.

Prerequisite: POL201

POL241 - Model UN:Dipl.Skills & Simul

[3-0, 3 cr.]

The course explores the workings of the United Nations and expands the students' global awareness on issues ranging from international disputes to cooperation towards development. The course initiates students to international diplomacy by letting them simulate various UN member states and investigate multilateral issues from a national perspective. The students would develop public speaking, debating, and negotiation skills; all while engaging in consensus building

and learning prejudice reduction mechanisms.

POL252 Fundamentals of Conflict Resolution [3-0, 3 cr.]

This introductory course explores the nature of conflict and a variety of tools that can be used to analyze conflict at its different levels. Drawing from broad theoretical bases, the course examines the complex causes of conflict within the framework of human rights and needs. The course introduces students to models for analyzing conflict and practical ways for responding to conflict, including skills of interpersonal communication, negotiation and mediation.

POL312 Politics of Developing Areas [3-0, 3 cr.]

This course provides an introduction to the comparative politics of the developing world. It addresses many of the key themes, issues, and forces that have shaped socioeconomic and political developments in Africa, Asia and Latin America. These include the legacies of colonialism, the achievement of independence, challenges of state building and regime consolidation, economic policy choices, the politics of ethnicity and gender, revolution, and the role of the military, and democratization.

Prerequisite: POL201

POL314 Research Methodology [3-0, 3 cr.]

The course examines the various approaches to social and scientific inquiries. It explains the different methods social scientists utilize in order to construct and verify political theories. It provides the student with the analytical skills required to design scientific research, construct a theory, implement appropriate research methods, identify a required research sample, conduct research analysis, verify hypotheses, make generalizations, and write a research report.

Prerequisite: POL201, SOC201, PSY201 or SOC301.

POL321 American Government and Politics [3-0, 3 cr.]

The structure and processes of the American political system. Topics include the nature of American democracy; the constitutional framework; political attitudes; socialization and participation, political parties and elections; and the federal decision-making process.

Prerequisite: POL201

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 and Russia's revival; the continuing strength of the U.S.; the end of the cold war; Japan's and Germany's rise as economic giants; China's economic growth; European integration and the U.N.'s revival. Domestic and international influences on great power decision-making, notably security and economic matters.

Prerequisite: POL201

POL323 Middle East Governments and Politics [3-0, 3 cr.]

This course surveys the major issues and problems that dominate the political scene in the Middle East, paying special attention to a number of themes including the process of post colonial state formation; the rise of Arab nationalism and other forms of nationalism; variations in regime consolidation and state-society relations; the institutional structures of authoritarianism; the challenges of development; and the Islamist challenge, among others.

Prerequisite: POL201

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

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.

Prerequisite: POL201

POL335 Politics of Multiculturalism [3-0, 3 cr.]

Multiculturalism is a buzz word in current political debates and popular discussions of ethnicity and migrant communities. This course explores why multicultural policy

has become important, what kinds of minorities need to be accommodated and what kinds of policy contexts are important for multiculturalism in different countries. The course examines sociological evidence for cultural diversity, its linkages with inter-generational socio-economic disadvantage and the political arguments for and against multiculturalism.

Prerequisite: POL201 Introduction to Political Science.

POL346 International Political Economy [3-0, 3 cr.]

This course provides students an overview of International Political Economy (IPE). It introduces students to the making of the international political economy as well as the main themes and debates in IPE. Topics covered include the nature of the international political economy, theories of IPE, the role of international institutions, the politics of international trade, complex interdependence, and foreign direct investment.

Prerequisite: POL201 Introduction to Political Science.

POL357 Globalization and Political Change [3-0, 3 cr.]

This course introduces the phenomenon of globalization. It examines its historical roots and the different views associated with its universal impacts. Is globalization helping the integration of world cultures, economies, and states or further fragmentation and differentiation? How is globalization helping the improvement of the quality of life and how is it not? How is globalization undermining war and at other times fuelling its causes? This course will address these questions from various points of view.

Prerequisite: POL201 Introduction to Political Science.

POL368 Political Parties and Elections in America [3-0, 3 cr.]

This course focuses on two key elements of democratic politics using the case of the United States: political parties and elections. It explores elections, particularly presidential elections, as devices by which citizens may or may not control what their government does as well as analyzes political parties as selectors of candidates and organizers of political

choices. The role of money, advertising, political activists, and the mass media are also discussed.

POL415 Negotiation & Bargaining [3-0, 3 cr.]

This course explores negotiation and bargaining from the individual to the international level, including both public and private sector examples. It covers the context of negotiation, proceeds to the structure of negotiations and to the dynamics, strategy and tactics for persuading, coercing, and bargaining through to conclusion. Group and national differences and approaches will be highlighted and demonstrated using intra-cultural negotiating exercises.

Prerequisite: POL201

POL422 The Middle East in World Affairs [3-0, 3 cr.]

This course examines inter-state conflict in the modern Middle East. It examines contending theories of Middle East state behavior, and applies them to the main crises or events that have shaped regional dynamics. Special focus is given to the Arab-Israeli conflict, regional rivalries, the policies of the main international and regional actors, and domestic factors in shaping systemic dynamics, among other topics. The course also evaluates the causes of the different conflicts from contending theoretical perspectives.

Prerequisite: POL201

POL426 Politics of the European Union [3-0, 3 cr.]

This course examines both the domestic politics and international relations of European Union states as well as considers the policies and roles of the European Union as a supranational actor in world politics.

Prerequisite: POL201

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.

Prerequisite: POL201

POL488 Internship [3-0, 3 cr.]

Introduction to the world of politics, government and related career fields in order to put into practice skills and theories learned in the classroom. Internships will take place at government agencies, IGOs, or NGOs approved by the department. Valuable work experience and credit is gained in translating theoretical and analytical skills in political science/international affairs into professional practice.

Prerequisite: Consent of department.

POL448 Topics in Political Science- International Affairs [3-0, 3 cr.]

Courses designed to cover topical areas based on visiting instructors and/or current events.

POL499 Senior Study [3-0, 3 cr.]

The course aims at guiding senior standing students from the selection of an appropriate research design applicable to the analysis of a political question of interest through to the completion of an independent research paper. It teaches the student how to conduct independent study and write research papers and reports

Prerequisite: Senior Standing.

PSYCHOLOGY

PSY101 Introduction to Psychology [3-0, 3 cr.]

Psychology evolved out of both philosophy and biology. Discussions of these two subjects date as far back as the early Greek thinkers including Aristotle and Socrates. The word psychology is derived from the Greek word psyche, meaning 'soul' or 'mind.' Psychology is both an applied and academic field that studies the human mind and behavior. Research in psychology seeks to understand and explain thought, emotion and behavior. Applications of psychology include mental health treatment, performance enhancement, self-help, and many other areas affecting health and daily life.

PSY201 Introduction to Psychology [3-0, 3 cr.]

Provides students with a general overview of the subject matter of Psychology, which is defined as the scientific study of behavior and mental processes. The course aims to give students a better understanding of why people act, think, and feel the way they do. Among others, it covers topics on learning,

personality, emotions, psychological disorders, social interactions, and the biological bases of behavior. Knowledge will be drawn from the major approaches of psychology, namely psychoanalytic, behavioral, humanistic, cognitive, social and biological.

PSY202 Child Psychology [3-0, 3 cr.]

The course explores theories and research findings, on prenatal development, physical growth, emotional, social, and intellectual development, and cultural influences in children prior to adolescence.

PSY203 Psychology of Youth [3-0, 3 cr.]

This course focuses on the physical, cognitive and emotional changes experienced by young people and how these changes are affected by family, peers, dating, and the media. It also considers the challenges faced by adolescence, with a focus on drugs, and deviance.

Prerequisite: PSY201 Introduction to Psychology, or PSY202 Child Psychology.

PSY204 Social Psychology [3-0, 3 cr.]

Social Psychology focuses on how individual motives, cognitions, attitudes are affected by groups, organizations and institutes. These influences will be explored in domains such as interpersonal attraction, prejudice, conformity, attitudes, aggression and motivation.

Prerequisite: PSY201

PSY234 Development across the Life Span [3-0, 3 cr.]

Human Development Through the Lifespan is devoted to the study and understanding of constancy and change of human beings in the physical, cognitive, social and emotional domains interpreted through a variety of theoretical frameworks, contexts, and interdisciplinary research. The course will cover the periods of childhood, adolescence, adulthood, late adulthood and old age.

Prerequisite PSY201 for psychology majors.

PSY245 Research Methods I [3-0, 3 cr.]

Students will develop skills which prepare them to design, conduct and analyze research including a thorough knowledge of the following: literature searches, evaluation of research literature, critiquing and deconstructing an empirical article, developing research

questions and hypotheses, research ethics, scientific and APA writing style. There will be special emphasis on the need for psychological research in the Lebanese context.

Prerequisite: PSY201.

PSY256 Sensation and Perception [3-0, 3 cr.]

This course explores how multisensory mechanisms transform external stimuli into information that our brains can understand and reliably interpret. All senses will be examined with an emphasis on vision. Topics include perception of color, motion, form, depth, perceptual illusions, perceptual disorders such as inability to see motion or/ and identify objects or faces.

Prerequisite: PSY201

PSY267 Cultural Psychology [3-0, 3 cr.]

The course will give students an introduction to the scientific, theoretical and applied basis of cultural psychology. Students will develop an understanding of universal and culturally shaped psychological processes and how they shape morality, religious thought, emotions, psychological health, conformity and other hot topics in the field.

Prerequisite: PSY201

PSY295 Psychology of Learning [3-0, 3 cr.]

This course provides an analysis of the factors in learning, through a survey of the major theories of learning. Special emphasis is placed on the learning principles and their implications in the teaching process.

Prerequisite: PSY201

PSY311 Exceptional Child [3-0, 3 cr.]

This course provides an introduction to the concept of exceptionality and an overview of the various forms of atypical growth and development. Course work includes psychology and identification of exceptional children. Focus is on children classified as having learning disabilities and their implications for classroom life in both special classes and inclusion setting

PSY320 Theories of Personality [3-0, 3 cr.]

This course provides a comprehensive coverage of the most influential theories of personality. It also examines the interplay of forces that shape the individual's personality

throughout the course of life.

Prerequisite: PSY201

PSY322 Mind and behavior [3-0, 3 cr.]

This course is an interdisciplinary introduction to the problems, theories and research on the human mind and other cognitive systems. The following topics will be covered: perception, memory, attention reasoning, problem solving, language comprehension and production and cultural cognition.

Prerequisite: PSY201

PSY335 Industrial Organizational Psychology [3-0, 3 cr.]

Industrial psychology is the study of techniques and theories related to understanding, predicting, and managing human behavior within organizations in order to increase organizational effectiveness and individual well-being. Topics include selection, training, appraisal, job attitudes, work motivation, leadership, job design, organizational culture, and work environment.

Prerequisite: PSY201

PSY345 Research Methods II [3-0, 3 cr.]

This course covers advanced research designs as well as advanced statistical analyses in psychological research. Students will be introduced to advanced research designs and will to enter data and run descriptive and inferential analyses. The course combines both lectures and lab-based sessions.

PSY425 Abnormal Psychology [3-0, 3 cr.]

In this course students examine the field of abnormal psychology, surveying the major psychological disorders and their classification. Emphasis is on recognizing symptoms and exposure to some treatment approaches.

Prerequisite PSY 320: Theories of Personality.

PSY466 Counseling Psychology [3-0, 3 cr.]

This course is designed to provide an introduction to the field of counseling psychology. Topics related to the contemporary counseling psychology approaches will be discussed. The core of the course will focus on theory and application. Case studies will supplement theoretical material.

Prerequisite: PSY425 Abnormal Psychology

PSY498 Topics in Psychology [3-0, 3 cr.]

This course deals with an area of psychology, or a topic that is not usually dealt in other psychology courses. Topics will vary depending on contemporary issues in the field of psychology and students' needs as agreed upon by the faculty of the program. Senior level

Prerequisite PSY201 and approval of instructor

PSY499 Psychology Senior Study [3-0, 3 cr.]

This course is an independent scholarly work on a topic chosen by the student. 3 credits

Prerequisite senior standing and PSY204 Social Psychology

SOCIOLOGY/SOCIAL WORK

SOC101 Sociology and Society [3-0, 3 cr.]

This course introduces students to basic concepts in sociology. It is designed to make students understand what makes sociology a different discipline from other social sciences. It covers basic topics including, but not limited to: groups, communities and society, evolution of societies, social structure and social change, communication in society, social stratification, youth and subculture, family and kin relations, social inequality and social mobility, social integration and solidarity, culture and social values. Examples are drawn from Lebanon and elsewhere to clarify the discussion.

SOC201 Introduction to Sociology [3-0, 3 cr.]

This course introduces students to the basic concepts and processes governing social relationships, as well as scientific approaches dealing with and explaining social phenomena. Various social institutions are examined.

SOC212 Communication Media and Society [3-0, 3 cr.]

This course studies forms of communication, especially mass communication, as elements of cultural and social processes. It is interdisciplinary, drawing on a variety of theories and methods of media studies such as semiotics, linguistics, textual studies, philosophy, political economy, and cultural studies.

Co-requisite: ENG202 Sophomore Rhetoric.

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 explores the construction of masculinities and femininities in a variety of cultural contexts. Special attention is given to gender differences, and gender inequalities.

SOC301 Introduction to Social Work

[3-0, 3 cr.]

This 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.

SOC303 Urban Sociology [3-0, 3 cr.]

This course is a survey of the city as a historical development, in relation to economic, social, and political, factors from the early settlements to the development of contemporary urbanism. It deals with a broad overview of the current planning theories, from the context of modernist ideals to the social studies of planners and sociologists.

SOC304 Sociology of Religion [3-0, 3 cr.]

This course examines the historical and contemporary relationships between social groups, and their sacred symbols and objects, including the forms and functions of religion, religious beliefs and rituals, the politics and economics of religion, identity politics, as well as religious movements.

SOC311 Social Problems [3-0, 3 cr.]

This course provides an analysis of the various causes, and types of social problems in modern society, notably in the Middle East. Selected social problems are studied, including various theories related to such problems, and the appropriate solutions are designed and critically analyzed.

SOC313 Family and Child Welfare [3-0, 3 cr.]

This course provides knowledge of, and concern for, child welfare services through analyzing parents' and children's needs, and acquaint students with the existing services for parents and children in Lebanon .

SOC321 Sociology of the Arab World [3-0, 3 cr.]

This is 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.

SOC401 Sociological Theories [3-0, 3cr.]

This course is an advanced study of the classical and modern sociological theories including, but not limited to, the works of Durkheim, Marx, Weber, Bourdieu, Giddens, Hall, and Norbert Elias.

SOC402 Social Work Intervention I [3-0, 3 cr.]

This course emphasizes communication and interviewing skills in social work, building professional relationship, stages of the helping process, and need assessment methods and skills.

SOC403 Social Work Intervention II [3-0, 3 cr.]

This course examines various intervention roles, methods, and techniques in social work, which include planning, and contracting, identifying alternative interventions, selecting and implementing appropriate courses of action, monitoring, evaluating, and terminating.

SOC404 Social Work Practicum I [3-0, 3 cr.]

In this course students are provided with a 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, in this course, is on providing students with a field opportunity to working with groups in different social contexts. It covers the development of professional skills in dealing with different actors in a situation.

SOC488 [3-0, 3 cr.]

This course covers topics in Sociology.

SOC499 Senior Study [3-0, 3 cr.]

Prerequisite: Senior Standing.

WOMEN'S STUDIES

WOS311 Issues and Debates in Feminist Theory [3-0, 3 cr.]

This course is designed to explore the 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: ENG101 English I.

WOS312 Women and Economic Power [3-0, 3 cr.]

This course 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.

WOS313 Women in the Arab World: Sociological Perspectives [3-0, 3 cr.]

This course examines the roles and status of Arab women in relation to various societal factors, including a brief overview of the legal rights as stated in the personal status code. Class discussions will analyze the 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.

WOS411 Psychology of Women: A Feminist Perspective [3-0, 3 cr.]

This course 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: ENG101 English I, and PSY201 Introduction to Psychology or PSY202 Child Psychology.

WOS412 Representations of Women in the Arts and the Media [3-0, 3 cr.]

This course deals with the media, and the various art forms such as cinema, music, poetry, art, the novel, etc., from the Arab and other cultures.

Representations of women are examined from historical and sociological perspectives, and patterns are identified as a basis for evaluation of women's position in society.

Prerequisite: ENG101 English I

INTERNATIONAL AFFAIRS (GRADUATE)

INA811 Theories of International Relations [3-0, 3 cr.]

This course examines contending theoretical approaches to the study of international relations. Each theory is set in its own ideational and historical context. The explanatory value of the different theories is then compared with reference to their different levels of analysis. The course closes by evaluating contemporary themes and methods in international relations theorizing.

INA812 Foreign Policy Analysis [3-0, 3 cr.]

This course examines the various factors influencing foreign policy-making. These include systemic, domestic, idiosyncratic, bureaucratic, and constructivist variables. The course combines theoretical analysis as well as case studies.

INA813 Topics in International Relations [3-0, 3 cr.]

This course involves an analysis of salient historical or contemporary themes in international relations. The choice of a particular theme is left to the discretion of the instructor.

INA814 Topics in Middle East International Relations [3-0, 3 cr.]

This course examines alternative theoretical explanations of Middle East international relations and state behavior, reviews the transformations of regional geopolitics, and explains the state behavior of a select number of Middle East states.

INA815 Topics in International Organizations [3-0, 3 cr.]

This course consists of case studies on how international actors behave under the institutional constraints of the United Nations. The cases include collective security, disarmament, peaceful settlement, peace-keeping, humanitarian intervention, human security, social and technical cooperation, and international trade and financial management to promote economic development.

INA821 Diplomacy and Bargaining [3-0, 3 cr.]

This course focuses on the art and techniques of political and crisis bargaining among states. The course surveys alternative theories of diplomacy, crisis bargaining, and negotiations. It then simulates actual negotiations between states in an attempt to inject theories of diplomacy and bargaining with real world experiences.

INA831 International Political Economy [3-0, 3 cr.]

This course examines the making of the international political economy, and analyzes the impact of interactions between economic and political factors on the international system. Themes covered include the different ideologies of IPE, international financial and trade regimes, complex interdependency, dependency and economic development, the challenges of globalization, the role of governmental and international organizations on the IPE, and the crisis of capitalism.

INA841 Private International Law [3-0, 3 cr.]

This course includes such topics as "classification" to identify legal cases, the application of foreign law in national courts, resolution of different laws' contradictions, conflict of nationalities, and themes related to capacity, marriage, contracts, etc.

INA842 Topics of International Law [3-0, 3 cr.]

This course focuses on a pertinent contemporary topic in international law. Topics examined may include the individual in international law, international criminal law, extradition, recognition of states, governments, and belligerent communities, special tribunals, or any other topic deemed important by the instructor.

INA851 International Conflict and Conflict Resolution [3-0, 3 cr.]

This course examines the various causes and theories of war and international conflict from different levels of analysis. It then surveys critically different theories of conflict resolution and prevention. The course combines both theoretical and case-study analysis.

INA899 Thesis [6 cr.]

This course involves writing an original and extensive research project, under the supervision of an advisor, defended before a committee.



The School of Business

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OFFICERS OF THE FACULTY

DEAN

Dr. Said Elfakhani

ASSOCIATE DEAN – BYBLOS:

Dr. Salpie Djoundourian

ASSOCIATE DEAN – BEIRUT:

Dr. Abdallah Dah

STAFF

Georgina Gergi Elias, Senior Executive Assistant - Byblos
Imane Hayek Ibrahim, Executive Assistant – Beirut

SCHOOL MISSION STATEMENT

The School of Business mission is to focus on higher educational needs of a diverse group of students in Lebanon and the Middle East. It supports the mission of the University by offering quality undergraduate and graduate degree programs in business, emphasizing student active/experiential learning, scholarship, and service with commitment to elevated ethical standards and continuous improvement. The undergraduate programs provide business education, both general and specialized in many fields of concentration, within a liberal arts environment so as to endow students with the knowledge to become skilled professionals that contribute to the success of business organizations and to economic development in Lebanon and the region. The MBA and specialized programs highlight strategic development, whereas the Executive MBA is designed to sharpen the leadership skills of professionals. In fulfilling its scholarship mission, the School accentuates and supports intellectual contributions of faculty in applied, pedagogical and basic research.

SCHOOL VISION & CORE VALUES

The School of Business vision is to earn global recognition as a leading school of business in Lebanon and the Middle-East, and be recognized for excellence in teaching, research and community service.

The faculty, students and administrators in the School of Business are committed to academic integrity, and ethical and professional conduct.

LAU's School of Business core value system includes Ethics, Integrity and Mutual Respect for Diversity and Equality.

The school of Business encourages its faculty and students to follow this value system in all their endeavors.

OVERVIEW OF SCHOOL HISTORY

The Lebanese American University (LAU), formerly Beirut University College (BUC), is a non-profit Private University, established by the Presbyterian Church in 1924. In 1955 the College was chartered by the Board of Regents of the State University of New York. The college became a university in October 1992, and in 1994, the Board of Regents in New York approved BUC's request to change into the Lebanese American University (LAU). In 2009, the University was granted institutional accreditation by the New England Association of Schools and Colleges (NEASC). The School of Business is one of the seven independent Schools at LAU.

The School of Business at the Lebanese American University operates on two campuses located in Beirut and Byblos. LAU admitted the first batch of business students in 1979 in Beirut and since 1994 in Byblos. Prior to 1980, the business division was hosted under the umbrella of the social science department. As of Fall 1980, the Business Studies Division started to operate as an independent entity granting BA degrees in different concentration areas in business administration. The Masters of Science in Business (MS) was launched as a graduate business program in Fall 1981. The Business Program continued to be offered under the umbrella of the Division of Business Studies till Spring of 1992.

In 1992-1993, a full-fledged School of Business was established, with the appointment of two directors, one for each campus, and several chairs to manage the various programs. 1996-1997 witnessed the appointment of two deans one for each campus, and a Masters in Business Administration (MBA) replaced the existing MS degree program. The introduction of two new undergraduate programs leading to BS degrees in Economics and Hospitality and Tourism Management took place in 2000 followed by the Executive Masters in Business Administration (EMBA) Program in the same year. In 2001, the business school started to award a BS degree in business instead of the BA degree. In 2011, the School of Business appointed one dean for the School of Business.

There is a Building for the School of Business in Beirut and a shared building for the School of Business in Byblos. Buildings are equipped with: (1) state of the art classrooms (smart classrooms), (2) office facilities, (3) seminar rooms, (4) auditorium, (5) Business computer labs provide graduate assistants to provide students with technical help and are equipped with the state of the art desk top computers and high speed laser jet printers as well as updated business and statistical software, (6) a cooperative learning center (CLC) to support students who are experiencing academic difficulties, (7) hospitality management labs integrating classroom instruction with extensive hands-on experience in food production and restaurant and hotel services, (8) stock market rooms, and (9) lounges, among others.

SCHOOL ORGANIZATIONAL STRUCTURE

In 2012, the School of Business reorganized itself to have one dean, two associate deans, one assistant dean, five departments headed by chairs and assisted by associate chairs, chair for graduate programs, and directors for four institutes. The school staff includes executive assistants to the Dean, department secretaries, computer lab supervisors, CLC supervisor, accreditation and continuous improvement coordinator, assessment officer, career and placement officer, and web content editor.

CENTERS AND INSTITUTES

The School houses four institutes that cater to the local and regional community. Furthermore, the School sponsors and houses the internationally refereed journal the Review of Middle East Economics and Finance published by Berkeley Electronic Press, USA.

INSTITUTE FOR BANKING & FINANCE (IBAF)

The Institute of Banking and Finance serves as the hub for executive training in the country. The institute 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.

INSTITUTE OF FAMILY & ENTREPRENEURIAL BUSINESSES (IFEB)

The Institute of Family and Entrepreneurial Business services the family owned and operated businesses. This institute 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 OF HOSPITALITY & TOURISM MANAGEMENT STUDIES (IHTMS)

The institute for Hospitality and Tourism caters to the training and research needs of this sector. This institute conducts applied research to solve particular problems and identifies factors affecting hospitality and tourism development. IHTMS also determines what makes tourism possible and investigates how tourism can become an important contributor to the wealth of Lebanon.

HUMAN RESOURCE INSTITUTE

This institute seeks to provide high-quality human resource development programs to prepare Lebanese and regional employees, and human resource professionals and their employers, for the future. The institute's activities include research of current issues, professional development programs, and comprehensive publications' programs.

STUDENTS' ORGANIZATIONS:

The School of Business students are also engaged in extra-curricular activities. Here are some examples:

Finance Club: It aims at connecting the academic world with the investment community to give our students an opportunity to meet and network with alumni and professionals from major financial companies. It also provides a venue for our students to learn from the experts as to how to be successful in their future endeavors.

Economics Society Club: Its objective is to enhance the educational experience of all students. Furthermore, it is dedicated to promoting the knowledge of economics on campus as well as the community through its activities.

Hospitality Club: Its target is to create awareness and educate students on the diverse career opportunities available in the Hospitality & Tourism Management industry. Moreover, it organizes events, coordinates tours of hotels and restaurants, hosts Hospitality & Tourism Management speakers as well as attending hospitality conventions and trade shows.

Entrepreneurship Club: Its purpose is to nurture a culture of enterprise, promote an entrepreneurship mindset, to help students acquire the skills to turn their ideas into business, and facilitate access to funding.

Accounting Club (Inactive): Its aim is to introduce the accounting profession to students through field trips to accounting firms, lectures and participation in workshops and training sessions as well as introducing all students to the advantages of Accounting as a tool used by every day individual.

ACADEMIC PROGRAMS

In accordance with the University and School missions, the School of Business prepares students towards their professional or academic career through its undergraduate and graduate programs.

The general learning outcomes of the School of Business is to equip its students with:

- An understanding of the essential aspects of their respective fields of study.
- The abilities needed for success in an increasingly diversified global economy.
- The skills needed to utilize modern techniques and technologies and to solve real-world business problems.
- The capacity to think critically and to approach new problems with an open and analytical mind.
- The capability to communicate effectively in a global environment.
- An appreciation of the importance of participative decision-making and sound business ethics in all organizational relationships.

UNDERGRADUATE PROGRAMS

The undergraduate programs are: Bachelor of Science in Business with an opportunity to select a concentration area, Bachelor of Science in Economics, and Bachelor of Science in Hospitality & Tourism Management. For information on admission and academic rules and regulations, please refer to an earlier section of this catalogue. The School of Business is currently revising all its undergraduate programs and reserves the right to require the implementation of the new revised programs from all new admitted students starting fall 2012-2013.

Bachelor Of Science (B.S.) Degree Programs

BACHELOR OF SCIENCE (B.S.) IN BUSINESS

Bachelor of Science in Business: The student pursuing this program has the choice to select his/her area of emphasis from a variety of concentration areas (specialization studies) that includes: Accounting, Economics, Finance, Family & Entrepreneurial Business Management, International Business, Management, Management Information Systems and Marketing. The Bachelor of Science degree may be obtained at the Beirut and Byblos campuses. This program enables them to use the appropriate technology and decision making tools within their respective areas of concentration in addition to understanding of the global impact of economic conditions and cultural dimensions on their respective areas of concentration. The program also serves as a rigorous preparation for graduate study in business administration and other fields.

MAJOR LEARNING OUTCOMES FOR B.S. IN BUSINESS

Graduates in the Bachelor of Science in Business Studies will be able to:

- Work with their peers to solve relatively complex business problems, using the appropriate technologies and decision-making tools, within their respective areas of concentration, and communicate their decisions both written and orally.
- Possess an understanding of their ethical and social responsibilities in the global marketplace.
- Have an understanding of the global impact of economic conditions and cultural dimensions on their respective areas of concentration.

Core Requirements (30 Credits)

ACC201	Principles of Accounting I	3
ACC202	Principles of Accounting II	3
BUS203	Business Law	3
BUS210	Business Statistics	3
ECO201	Microeconomics	3
ECO202	Macroeconomics	3
FIN301	Managerial Finance	3
MGT201	Introduction to Management	3
MIS211	Management Information Systems I	3
MKT201	Introduction to Marketing	3

Bachelor of Science in Economics: The students targeting this degree can choose between different study paths in the field of Finance, Management, Mathematics and Political Science. This program aims to give students a good foundation in theoretical and applied economics. Students are prepared to start work immediately after graduation or to continue their academic career by pursuing their graduate studies in related fields. The program consists of 40 credit hours in Economic courses plus 15 to 18 credit hours in a chosen track. Students are advised that steps are being taken to require the business core and treat this program as one of the concentrations in the BS in business.

Bachelor of Science in Hospitality & Tourism Management: This program prepares students for positions in several food processing, travel and tourism related industries. The core program consists of 24 credit hours in Hospitality Management courses and 9 credits of Tourism Management courses, in addition to the remaining requirements in the BS degree in business.

In order to fulfill their graduation requirements, students are expected to complete 122 credits if they join the university at the freshman level, or 92 credits if they joined the business program at the sophomore level. Undergraduate students are advised to stick to the following degree plan to complete their graduation requirements in three years:

Study Plan - Regular Admission with no Remedial Courses

TERM 1 (15 credits)

ACC 201	Accounting I	(3 cr)
MGT 201	Intro to Management	(3 cr)
ECO 201	Microeconomics	(3 cr)
	Liberal Art Core	(3 cr)
	Liberal Art Elective	(3 cr)

TERM 2 (16 credits)

ACC 202	Accounting II	(3 cr)
MKT 201	Intro to Marketing	(3 cr)
ECO 202	Macroeconomics	(3 cr)
	Liberal Art Elective	(3 cr)
	Free Elective	(3 cr)
	Liberal Art Core (CSC 201) ^a	(1 cr)

TERM 3 (15 credits)

FIN 301	Managerial Finance	(3 cr)
STA 201	Business Statistics	(3 cr)
MIS 211	Mgt. Information Sys. I	(3 cr)
	Liberal Art Core	(3 cr)
	Liberal Art Elective	(3 cr)

TERM 4 (16 credits)

BUS 203	Business Law	(3 cr)
	Emphasis Core I	(3 cr)
	Emphasis Elective I ^b	(3 cr)
	Liberal Art Elective	(3 cr)
	Liberal Art Core	(3 cr)
	Liberal Art Core	(1 cr)

TERM 5 (16 credits)

	Emphasis Core II	(3 cr)
	Emphasis Core III	(3 cr)
	Emphasis Elective II ^c	(3 cr)
	Liberal Art Core	(1 cr)
	Liberal Art Elective	(3 cr)
	Free elective	(3 cr)

TERM 6 (14 credits)

	Emphasis Core IV	(3 cr)
	Emphasis Core V	(3 cr)
	Liberal Art Core	(1 cr)
	Liberal Art Elective	(3 cr)
	Free Elective ^d	(3 cr)
	Free Elective	(1 cr)

* b, c, and d should be replaced by 9 additional credits of emphasis core for the Hospitality Management emphasis only.

** b should be replaced by 3 additional credits of emphasis core for the International Business emphasis

*** CSC 201 should be replaced by a 1 credit free elective for MIS emphasis.

GRADUATE PROGRAMS

The graduate programs are: Master of Business Administration (MBA) and Executive Master of Business Administration (EMBA). The school is planning to offer few other specialized graduate programs in the near future. The academic rules and regulation of graduate studies can be found in an earlier section of this catalogue. The School of Business is currently revising all its graduate programs and reserves the right to require the implementation of the new revised programs from all new admitted students starting fall 2012-2013.

MASTER OF BUSINESS ADMINISTRATION DEGREE PROGRAM

In support of the School of Business mission the MBA program provides students with high quality education that managers seek to be able to solve complex problems in their organizations in a global business environment. The MBA program graduates business professionals with solid analytical, communication and leadership skills in an ethical framework. The program is developed to expose students to all functional areas in business such as management, finance, accounting, economics, statistics, MIS and marketing covered in six core courses and seven elective courses.

Since 1981, LAU has prepared men and women for key roles in managerial and professional positions in business and public organizations. In offering the Master of Business Administration (MBA) program, LAU draws on a substantial and growing experience in undergraduate business education to provide a significant opportunity for advanced education to seekers of a business career from business or non-business background. Thus, the curriculum has been adapted to meet their diverse needs. In order to make the program accessible to those already active in management, a provision has been made for part-time students with classes at conveniently scheduled times.

With regard to the admission criterion for MBA, applicants to the MBA program are expected to have sound academic background. Prospective student must have completed a bachelor's degree in business studies or equivalent from a recognized university. Admission is granted on a selective and competitive basis to students who have demonstrated distinct academic ability and motivation by meeting at least the minimum requirements described below.

In addition to a satisfactory proof of English language proficiency as per LAU rules and regulations, applicants to the MBA program are expected to meet the following admissions requirements:

1. A 3.0 GPA on a scale of 4.0 as per LAU rules, or its equivalent
2. A score of 500 on GMAT test or its equivalent on GRE test (taken within the past five years prior to joining the MBA)

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3. Satisfactory letters of recommendations
4. Successful interview, if required

Meeting these requirements, however, does not guarantee admission to the Program. Although work experience is not a prerequisite for admission, the Graduate Admissions Committee considers applicants' professional experience as an asset and welcomes the real world business experience that such students bring to the classroom. As such, "relevant work experience" is viewed favorably when studying an applicant's file.

The School Graduate Admission Council (SGAC) calculates a Composite Index (CI) of both the GPA and GMAT. Admission is considered only if the applicant meets the CI minimum requirement. At the discretion of the School Graduate Admission Council, applicants who are short of meeting the 3.0 GPA and/or the 500 GMAT score might be considered for "probationary" admission provided they have "significant relevant work experience," but have met the CI minimum requirement. Students admitted on probation will earn regular status upon the completion of 12 graduate credits with at least 3.0 in each course.

Qualified applicants with a BA/BS in areas of study other than Business will be required to complete remedial courses as a prerequisite for core courses.

To be considered to the MBA program at LAU, applicants must submit the following:

1. A completed application form.
2. Official transcript(s) from the undergraduate degree program(s) completed. Transcripts need to be sent directly to the Admissions Office. Failure to declare enrollment at other institutions could result in an invalidation of admission, and any credits or degrees earned.
3. Certified copies of all educational or professional degrees/certificates that the applicant has earned.
4. Recommendations from two professors who are familiar with the applicant's academic performance.
5. A certificate of current and/or previous employment if it applies.
6. Official scores on the Test of English as a Foreign Language (TOEFL), or the English

Entrance Exam (EEE) administered by LAU. Students may submit a minimum score of 90 on the Internet-based international TOEFL in lieu of taking the EEE. To register for the internet-based TOEFL, visit www.ets.org/toefl/ibt/about. Note: Applicants taking the TOEFL should sit for the international test. Institutional TOEFL is not accepted at LAU. The code for LAU is 2595.

7. Official score on the Graduate Management Admission Test (GMAT). To register for the GMAT, please visit www.mba.com. The code for LAU is 0954. Note: If you need help studying for the GMAT, contact the Continuing Education Program, which offers preparatory courses. Other programs may also be available in your area.
8. A photocopy of the Identity Card or Passport (should be the same as the nationality used in the registration process).
9. One recent passport-size colored photograph.
10. An interview, if required.
11. A non-refundable fee of \$50 (L.L. 75,000) payable to LAU either in cash or by a check drawn on a Lebanese or US bank.

MBA Students must complete a total of 39 credits (18 credits for the core and 21 credits for the elective and research requirements). Students with non-business background are required to take remedial courses as decided by the school.

MBA MAJOR LEARNING OUTCOMES

Graduates in the Master in Business Administration will be able to:

1. Utilize modern techniques and technologies to effectively deal with the complex managerial issues facing upper-level managers in today's global business environment.
2. Work as a team to solve complex business problems and to show evidence of highly professional oral and written communications skills when presenting their solutions.
3. Possess a thorough understanding of the ethical and social responsibilities of business executives in the global marketplace.

MBA core requirements (18 credits)

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

Students can choose to pursue one of the following remaining options for graduation:

1. Take seven courses from the following list.
2. Take six courses from the following list and BUS898 Project in Business.
3. Take five courses from the following list and BUS899 Thesis in Business.

BUS821	Financial Accounting	3
BUS822	Management Accounting	3
BUS832	Management Systems	3
BUS833	Personnel Management & 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*
BUS872	Business Policy and Planning	3
BUS874	Trends Management	3
BUS875	Business Strategy and Innovation Management	3
BUS876	Leadership	3
BUS898	Project in Business	3
BUS899	Thesis in Business	3

*This course may be taken more than once for credit, however, with different topics.

MBA COURSE DESCRIPTION

BUS811 Business Economics [3-0, 3 cr.]

This course is an overview of microeconomics from a managerial decision-making standpoint, emphasizing and applying the 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.]

This course is an introduction to financial accounting concepts from a managerial viewpoint, emphasizing the use of financial information in decision-making. Topics include recording economic events, basic accounting concepts, essential accounting standards, interrelationship of financial statement elements, and the analysis, interpretation and use of internal and external data.

BUS822 Management Accounting [3-0, 3 cr.]

This course entails a study of the cost accounting applications and related techniques to decision-making, emphasizing control, and the use of internally-generated accounting data. Topics include cost allocation, variance analysis, budgeting and cost control system, responsibility reporting, and capital budgeting.

BUS831 Management Theory [3-0, 3 cr.]

This course is an 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, and problem-solving processes.

BUS832 Management Systems [3-0, 3 cr.]

This course introduces students to recent practices in corporate information management. The course combines lectures and case studies, and encourages students to critically analyze the effects information technology has on most businesses and industries. Topics include email networking, telecommunication practices, EDI, executive information systems, and the concept of information resource management.

BUS833 Personnel Management and Human Resources Development [3-0, 3 cr.]

This course entails 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, and accident prevention and safety.

BUS834 Project Planning and Management [3-0, 3 cr.]

This course entails an examination of the techniques used to select, supervise and evaluate projects, emphasizing the application of project performance control methods. Topics include needs analysis, alternative courses of action, optimum alternatives, project organization, operation and control, and project completion and evaluation.

BUS835 Commercial Bank Management [3-0, 3 cr.]

This course covers commercial bank management policies and decisions. Analysis includes advanced treatment of asset-liability management, emphasizing risk management issues such as interest rates, liquidity, credit, capital, and off-balance sheet risk and activities. The analysis presents financial engineering techniques in risk management and evaluates bank performance.

BUS836 Modern Portfolio Management [3-0, 3 cr.]

This 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, and forward contracts.

BUS837 International Business [3-0, 3 cr.]

This course is a field survey covering the cultural, economic, political and social environments of international business. The course emphasizes global finance and exchange rate determination, exports, imports, and country risk analysis.

BUS839 Organizational Behavior [3-0, 3 cr.]

This course explores human behavior at the individual, group and organizational level. Issues of leadership and management, conflict resolution, communications, decision-making power and political behavior, and stress and organizational change will be introduced.

BUS841 Marketing Management [3-0, 3 cr.]

This course shows students how to manage the marketing process for organizations, to

optimize the resource use and to maximize the benefits. It focuses on decision-making. Lectures, case studies, 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, coupled with an investigation of the significant factors that a firm must consider as it positions itself to enter the international marketplace.

BUS851 Quantitative Methods in Business [3-0, 3 cr.]

This course is an 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, and modeling techniques.

BUS852 Research Methods in Business [3-0, 3 cr.]

This course is an 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, and research report writing.

BUS861 Financial Management [3-0, 3 cr.]

This course is a review of the concepts underlying the financing of a business, emphasizing the uses of capitalization and leverage for current operations and for future expansion. Topics include valuation theory, investment theory, financial planning and control, dividend policy and growth, alternative capitalization structures, appraisal of capital projects, and mergers and acquisitions.

BUS863 Financial Derivatives [3-0, 3 cr.]

This course deals with derivative securities. It focuses on the analysis of options, futures, option and futures' markets, and option and futures' strategies. In addition, it discusses option and futures' pricing models, and how derivatives are used in financial risk management.

BUS871 Seminar in Business [3-0, 3 cr.]

This course is an examination of the current or developing issues in management practices,

emphasizing immediacy impact and the 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.]

This course is an 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, and performance review and evaluation.

BUS874 Trends Management [3-0, 3 cr.]

This course acquaints students with the concept of environmental scanning, along with the major business trends. Trends management techniques that measure qualitative and quantitative forces affecting the general and specific environments will be introduced.

BUS875 Business Strategy & Innovation Management [3-0, 3 cr.]

This course builds a foundation in business strategy and frameworks in planning and execution. It emphasizes innovation as a source of sustainable competitive advantage, and equips the graduate student with the theory and application of strategy, industry analysis, and operational maneuvers, to meet strategic objectives. Students go through case analysis of real-life situations drawn from different parts of the world.

BUS876 Leadership [3-0, 3 cr.]

This course explores the theory and application of leadership, its various models, and how leadership plays a major role in personal and professional development. The course emphasizes the relationship between leadership and organizational performance in a competitive environment. Students go through case analysis and illustrations of leadership skills, styles and traits.

BUS898 Research Topic in Business [3-0, 3 cr.]

BUS899 Thesis in Business [6-0, 6 cr.]

This course entails the 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 publication.

EXECUTIVE MASTER OF BUSINESS ADMINISTRATION DEGREE PROGRAM

The Executive MBA program was the first to be offered in Lebanon and the Middle East. It started in February 2000. Since then dozens of executives graduated from the program and hold top management positions at several institutions.

The Executive MBA program at LAU allows professionals to earn top executive training and education while holding senior positions at their respective organizations.

The program is developed to enhance students' managerial as well as leadership skills. The program offers courses and seminars in all areas of business at flexible times to suit students' busy life style. All courses are offered during the weekend.

The program is very rich in its diversity of the student body. Executive MBA students join the program with different backgrounds. They hold degrees in engineering, pharmacy, law, business, and other areas. This diversity will cultivate students exposure and allow them to share their experience with their colleagues.

Joining the Executive MBA at LAU will give you the privilege of enrolling in a rewarding endeavour. You will be taught and trained by a team of highly experienced faculty and professionals with a significant experience. The faculty will teach and expose you to the latest theoretical and practical managerial techniques to be applied on the job managerial situations.

PROGRAM OBJECTIVES AND PHILOSOPHY

Executive training at the Lebanese American University is built on the philosophy that learning is a continuous process throughout individuals' careers. The purpose of the Executive Master of Business Administration (EMBA) is to allow experienced professionals in Lebanon and the Middle East to combine a full-time career with an executive educational program, culminating in an academic degree. A wide range of course offerings allows students to develop expertise in several areas of business, namely accounting, banking and finance, economics and statistics, management, and marketing. Such diversity aims at providing students from various business and academic backgrounds with the ability to comprehend the latest techniques

The School of Business

and applications in all aspects of business and corporate settings, by applying various course materials to on-the-job managerial situations.

Applicants are advised that the EMBA program is undergoing significant revision to include core courses in addition to elective courses (18 credits for the core and 21 credits for the elective and research requirements). Students with non-business background are required to take remedial courses as decided by the school.

With regard to the admission criterion for EMBA, the applicant is expected to have:

1. A minimum GPA of 2.75/4 or its equivalent.
2. GMAT will be required for students with GPA of at least 2.5 (or its equivalent) and less than 2.75 (or its equivalent).
3. The applicant should have a minimum of six years of working experience with a Middle Management or higher supervisory position.
4. Proficiency in English. Applicants from a non-English Universities have to demonstrate proficiency in English through
 - A University EEE administered exam (minimum score of 550)
 - A paper based TOEFL (minimum score of 575)
 - An international based TOEFL (minimum score of 90)
 - A computer based TOEFL (minimum score of 233)
5. All applicants will be interviewed for assessment by the admissions committee.
6. Meeting the conditions above does not automatically earn admission. The admissions committee has the final decision.
7. Up to 6 credits of non-remedial courses may be transferred from other graduate programs. The transferred courses must be equivalent to existing EMBA courses and subject to approval of the graduate committee.

PROGRAM & COURSE DESIGN

EMBA students must complete a total of 36 one-credit course. The program is conducted on Saturdays from mid-October to mid-September. On average, 21 courses are offered annually. A student who attends all the courses offered during the year needs less than two years to graduate. Each course carries a one-credit semester hour, equivalent to 15 hours of classroom contact.

Courses have no prerequisites. Students can enroll in one course every two Saturdays, according to the following schedule:

- Each course is offered in two seven-and-a-half-hour sessions, beginning at 9:00 a.m. and ending at 5:30 p.m., with a one-hour lunch break.
- During the first session, on the first Saturday, students receive the course material and attend an intensive seven-and-a-half hours of classes, ending with a take-home project.
- The second session resumes on the following Saturday. During this session, students sit for an in-class exam and attend seven-and-a-half additional hours of instruction. The course ends with a take-home project, submitted through email or in person, within two or three weeks.
- Up to 12 courses of one credit each offered by the institutes in the School of Business can be granted credit toward the E.M.B.A. program, subject to meeting the standards set by the program's administration.

LEARNING OUTCOMES

The E.M.B.A. program will enable the graduates to:

- Apply effectively accounting, financial, economic, management and marketing principles and theories in business organizations, to solve business problems.
- Work effectively in groups and teams, seeking to achieve common goals and objectives, and become effective leaders and managers in their institutions.
- Show effective listening skills, in addition to oral and written communication skills.
- Apply new technology to obtain and retrieve data to analyze information and to present results in an efficient way.
- Understand and recognize the integrity and ethical responsibility of business executives in any business and social environment.

COURSE REQUIREMENTS

All candidates of the Executive Master of Business Administration degree must take 36 of the following courses to graduate. Each course is worth one credit.

ACC710	Financial Accounting and Reporting	1
ACC712	Accounting for Business Investing Activities	1
ACC714	Accounting for Business Financing Activities	1
ACC716	Accounting for Managerial Decision Making	1
ACC718	Cost Accounting	1
ACC719	Budget and Control	1
ACC720	Auditing for Auditees	1
ACC780	Topics in Accounting	1
FIN710	Mathematics of Finance	1
FIN711	Interest Rate Risk	1
FIN713	Liquidity and Reserve Management Strategies	1
FIN716	Bank Equity Capital	1
FIN717	Bank Credit Analysis	1
FIN720	Foreign Exchange Markets and Rates	1
FIN722	International Money Markets	1
FIN725	The Euro and Business	1
FIN726	Financial Markets in the Middle East	1
FIN730	Capital Budgeting	1
FIN732	Mergers & Acquisitions	1
FIN733	Long-Term Financial Policies	1
FIN735	Working Capital Management	1
FIN740	Financial Statements Analysis and Forecasting	1
FIN742	Portfolio Theory	1
FIN743	Bond Analysis	1
FIN745	Financial Derivatives I	1
FIN746	Financial Derivatives II	1
FIN749	Investment Banking	1
FIN780	Topics in Banking and Finance	1
ECO711	Budgeting and Fiscal Policy	1
ECO712	Monetary Policy	1
ECO715	Managerial Economics	1
ECO720	Taxation of Personal and Corporate Income	1
ECO722	Regulation of Business	1
ECO725	Forecasting Business and Economic Indicators	1
ECO730	Data Analysis	1
ECO780	Topics in Economics and Statistics	1
MGT710	Management of Information Technology	1
MGT712	Advanced Organizational Behavior	1

MGT714	Competitive Advantage of Operations Management	1
MGT717	The Executive Manager & Strategy Implementation	1
MGT719	Global Competitive Strategy Management	1
MGT722	Organizational Constituents as Entrepreneurs	1
MGT725	Multinational Business Management	1
MGT728	Managing Conflicts and Negotiations	1
MGT730	Managing Planned Change	1
MGT732	Corporate Strategy	1
MGT733	The Social Responsibility of Business	1
MGT735	Managerial Performance Simulation	1
MGT736	Enhancing Managerial Communication Skills	1
MGT737	Modern Human Resource Management	1
MGT738	Personnel Economics	1
MGT739	Value Creation in Human Resource Management	1
MGT740	Strategic Management in the Hospitality Industry	1
MGT742	Tourism Planning and Development	1
MGT745	Contemporary Trends in the Hospitality Industry	1
MGT750	Leaders and Leadership	1
MGT752	Teamwork and Self-Managed Work Teams	1
MGT780	Topics in Management	1
MKT710	Ethics in Marketing	1
MKT712	Emerging Markets & Adaptive Marketing Strategies	1
MKT715	Competitive Marketing Management Strategy	1
MKT718	Sales Management	1
MKT721	Globalization and Electronic Commerce	1
MKT723	Marketing Channels and Logistics Strategy	1
MKT726	Advertising and Promotion Using IMC Strategy	1
MKT780	Topics in Marketing	1

COURSE DESCRIPTIONS

ACCOUNTING

ACC710 Financial Accounting and Reporting [1-0, 1 cr.]

This course covers the objectives of financial accounting and reporting, and classified financial statements, and their use in decision-making. Topics include the single and multiple-steps income statements, classified balance sheets, statements of cash flows, and basic financial statements.

ACC712 Accounting for Business Investing Activities [1-0, 1 cr.]

This course covers the concepts and methods used in accounting for current and non-current assets, including accounting systems and procedures, and internal controls involved. Topics include accounting for cash, marketable securities, receivables, inventories, and plant assets.

ACC714 Accounting for Business Financing Activities [1-0,1 cr.]

This course covers the accounting for liabilities and corporations stockholders' equities. Topics include accounting for notes payable, payroll, leases, accrued and contingent liabilities, and stockholders' equity.

ACC716 Accounting for Managerial Decision Making [1-0, 1 cr.]

This course covers capital budgeting, the allocation of scarce resources, product pricing, and other non-routine decisions. Topics include capital expenditures' decisions, cost-based product pricing, and linear programming for profit maximization.

ACC718 Cost Accounting [1-0, 1 cr.]

This course covers the different concepts and methods used in determining the costs of service engagements and manufactured products. Topics include job and process costing, activity-based costing, and cost allocations.

ACC719 Budget and Control [1-0, 1 cr.]

This course covers the principles and methods used in preparing budgets, and their use as control tools through variance analysis. This course also covers variable costing, standard costing, and cost-volume-profit analysis. Topics include the operating budget, the cash budget, the flexible budget, and measuring budget variances.

ACC720 Auditing for Auditees [1-0, 1 cr.]

This course overviews the work of auditors, and emphasizes the conditions that may allow auditors to reduce the extent of their audit procedures and still render unqualified opinions. Topics include audit opinions, audit standards, and evaluating audit risk.

ACC780 Topics in Accounting [1-0, 1 cr.]

This course addresses selected topics, spanning a wide range of accounting issues.

The seminar may be taken for credit more than once when topics differ.

BANKING & FINANCE

FIN710 Mathematics of Finance [1-0, 1 cr.]

This course explores the basic mathematics used in financial decision-making. Students are exposed to time value of money, and its application to bond and stock valuation. Topics include simple and compounded interest rates, future and present values of annuities, stock pricing model, bond pricing model, calculation of various indexes in financial markets, and approaches of calculating rates of return.

FIN711 Interest Rate Risk [1-0, 1 cr.]

This course highlights the risk of interest rate volatility and exposure. It covers bank interest rate risk measurement, using gap and duration analysis, and develops strategies for balance-sheet and off-balance-sheet risk management techniques.

FIN713 Liquidity and Reserve Management Strategies [1-0, 1 cr.]

This course discusses significant bank liquidity problems. It highlights the strategies for liquidity managers, estimates a bank's liquidity needs, and considers several factors in choosing among the different sources of reserves.

FIN716 Bank Equity Capital [1-0, 1 cr.]

This course highlights several different types of bank capital, and discusses bank capital requirements, based on risk weights, applied to assets, and off-balance-sheet items, under the Basle Agreement, and formulates a plan to meet capital needs.

FIN717 Bank Credit Analysis [1-0, 1 cr.]

This course discusses credit analysis by addressing the short and long-term loans to business firms, the financial ratio analysis of a

customer's financial statements, and business loan applications. The course also covers the pricing of business and consumer loans.

FIN720 Foreign Exchange Markets and Rates [1-0, 1 cr.]

This course introduces foreign exchange markets and rates, and analyzes the difference between spot and forward contracts, highlighting short-term and long-term exchange rate determination, using fundamental analysis. It also provides empirical evidence on currency risk management.

FIN722 International Money Markets [1-0, 1 cr.]

This course discusses the various techniques of investments and financing in international money markets. It analyzes the benefits of international diversification, by providing evidence of these benefits.

FIN725 The Euro and Business [1-0, 1 cr.]

This course introduces the latest developments in the performance of the euro, comparing the euro to other key currencies in international portfolios. The implications of the new currency for international and domestic business enterprises are discussed.

FIN726 Financial Markets in the Middle East [1-0, 1 cr.]

This course discusses the performance of financial markets operating in the Middle East. It examines their degree of development, the instruments they provide, and their role in financing various business activities.

FIN730 Capital Budgeting [1-0, 1 cr.]

This course explores the investment decisions concerning long-term assets in a corporation. It covers an in-depth analysis of capital budgeting techniques, cash flow estimation, lease versus buy decisions, and capital budgeting under uncertainty environments.

FIN732 Mergers & Acquisitions [1-0, 1 cr.]

This course examines the role of mergers and acquisitions in corporate restructuring. It explores the mechanics to evaluate corporate investment decisions, and the means of financing acquisitions. Topics include tools and techniques in the valuation of mergers and acquisitions, financing mergers and acquisitions, and the role of investment bankers in mergers and acquisitions.

FIN733 Long-Term Financial Policies [1-0, 1 cr.]

This course examines the various sources of long-term financing, and investigates the decisions to choose among these sources, in order to maximize the value of the firm. Topics include issues in stock and debt financing, optimal capital structure, dividend policy, cost of capital, and business and financial leverage.

FIN735 Working Capital Management [1-0, 1 cr.]

This course investigates the approaches in managing short-term assets and liabilities. It focuses on working capital policy and liquidity management. Topics include cash management, short-term financing, credit management, and inventory policy.

FIN740 Financial Statements Analysis and Forecasting [1-0, 1 cr.]

This course explores the tools and techniques used in analyzing the performance of a corporation, and examines the approaches used to forecast long-term financing. Topics include ratio analysis, sources and uses of capital, statement of cash flows, DuPont analysis, cash flow forecasting, and proforma financial statements.

FIN742 Portfolio Theory [1-0, 1 cr.]

This course examines the concepts of risk and return for individual securities and within the context of a portfolio, and investigates how investors allocate their investments to maximize their expected utility. Topics include measurement of risk and return, efficient frontier, diversification, and the capital asset pricing model.

FIN743 Bond Analysis [1-0, 1 cr.]

This course is an overview of the bond securities and markets, and investigates the various types of bonds, and how they are traded, as well as the term structure of interest rates. Topics include bond valuation, and price quotes in the financial press, yield calculations, types of debt instrument, and bond portfolio management.

FIN745 Financial Derivatives I [1-0, 1 cr.]

This course explores the foundations of forward and futures contracts, and their markets, and explains the mechanics of using forward and futures contracts in hedging investment

portfolios. It also investigates forward and futures' pricing models, including stock index futures, interest rate futures, and foreign currencies futures.

FIN746 Financial Derivatives II [1-0, 1 cr.]

This course deals with options contracts, and options markets, and investigates the various types of options, and how and where they are traded. It also explores the various investment strategies using options, and covers option valuation and portfolio hedging.

FIN749 Investment Banking [1-0, 1 cr.]

This course explores the role of investment banks in serving the needs of corporations or governments wishing to finance businesses or to invest capital. Topics include going public, raising capital, syndication, private placement, initial public offerings, underwriting, equity, and bond markets.

FIN780 Topics in Banking and Finance [1-0, 1 cr.]

This course addresses selected topics, spanning a wide range of banking and finance issues.

The seminar may be taken for credit more than once when topics differ.

ECONOMICS & STATISTICS

EC0711 Budgeting and Fiscal Policy [1-0, 1 cr.]

This course introduces the government budgeting process by addressing various issues of revenue and expenditure in developing economies, the nature of budget deficits and government debt, the methods to alleviate these problems, and the role of fiscal policy.

EC0712 Monetary Policy [1-0,1 cr.]

This course covers the basic functioning of monetary policy in stabilizing economic activity, the role of the central banks in managing and controlling monetary aggregates, and the relationship between money and the aggregate economy.

EC0715 Managerial Economics [1-0, 1 cr.]

This course covers the basic theory of the firm, by addressing cost analysis and pricing under different types of market structures, centering on imperfect competition.

EC0720 Taxation of Personal and Corporate Income [1-0, 1 cr.]

This course analyzes the impacts of personal and corporate income taxes on the behavior of individuals and firms. Specifically, it addresses the incentives created by imposition, and/or changes, of the various types and rates of corporate and personal income taxes or allowances, (depreciation allowances, investment tax credits).

EC0722 Regulation of Business [1-0, 1 cr.]

This course examines the variety of economic activities regulated by the government. Specifically, it concentrates on the functioning of imperfect markets for goods and services, the motivations for regulation, and that of regulators, past experiences with regulations, and various considerations in the design of regulations.

EC0725 Forecasting Business and Economic Indicators [1-0, 1 cr.]

This course represents an overview of forecasting issues, methods and support systems. Students will learn how to decompose a time series into its logical elements, to assess forecasting accuracy, and to implement forecasting procedures using professional software.

EC0730 Data Analysis [1-0, 1 cr.]

This course shows how to design, validate and interpret the findings of regression models in a variety of business applications. Students will leave this course knowing how to create a regression model using professional software, fit a model to the data, interpret model estimates, calculate and interpret elasticities of demand, diagnose model deficiencies, and evaluate predictive accuracy, within and out of a sample.

EC0780 Topics in Economics and Statistics [1-0, 1 cr.]

This course addresses selected topics, spanning a wide range of economics and statistics issues.

The seminar may be taken for credit more than once when topics differ.

MANAGEMENT

MGT710 Management of Information Technology [1-0, 1 cr.]

This course introduces students to the different information technologies, to help them develop an understanding of their role in providing management support. Course topics include many forms of networking, and artificial intelligence.

MGT712 Advanced Organizational Behavior [1-0, 1 cr.]

This course introduces the various fundamental behavioral aspects of human resources within the organization. Topics include leadership, motivation, performance appraisal, and organizational design.

MGT714 Competitive Advantage of Operations Management [1-0, 1 cr.]

This course follows the systematic approach of management to solve operations management problems. Topics include the planning, evaluation and control of operations, forecasting and inventory management, product life cycle management, resource allocation, quality of work environment, and technological change.

MGT717 The Executive Manager and Strategy Implementation [1-0, 1 cr.]

This course aims to develop, guide and mentor the student's capabilities to comprehend management skills in setting priorities, integrating action programs, communicating, and intervening. This course emphasizes the last stages of the decision-making process, namely, action and implementation.

MGT719 Global Competitive Strategy Management [1-0, 1 cr.]

This course allows students to identify, plan and execute the steps of strategic management formulation to face competition, and the necessary steps to long-run survival and growth as applied to the global competitive markets. The course includes environmental analysis skills, assessment of resource strengths and limitations, and the recognition of adequate organizational structure and values.

MGT722 Organizational Constituents as Entrepreneurs [1-0, 1 cr.]

This course offers a critical evaluation and discussion of the current and evolving fast-changing global marketplace, and the impact on companies in their quest for cost cutting, outsourcing, and fast response. The course will also focus on small businesses, and the

opportunities generated due to the changes in population demographics.

MGT725 Multinational Business Management [1-0, 1 cr.]

This course focuses on the new emerging borderless world, based on the international business environment, and using factors like legal-political issues, socio-cultural factors, and the economic environment. The course will describe the market entry strategies that businesses use to develop foreign markets.

MGT728 Managing Conflicts and Negotiations [1-0, 1 cr.]

This course considers the behavioral aspects that managers must define to understand conflicts. The course focuses on the negotiation skills to reduce tensions, including the model of styles to handle conflicts.

MGT730 Managing Planned Change [1-0, 1 cr.]

This course offers a critical review of the strategic management approaches and perspectives, and their relation to change in organizations. The course also offers skills to plan, design and execute change-management approaches and techniques.

MGT732 Corporate Strategy [1-0, 1 cr.]

This course reconciliates between industry analysis and corporate competitive capabilities, in a hands-on exercise in which teams of students formulate a corporate strategy, in the context of global forces. Students develop and defend a strategic plan for a local company in a given industry.

MGT733 The Social Responsibility of Business [1-0, 1 cr.]

This course identifies and analyzes social and legal issues affecting the business decision-making process. Markets are looked at as huge social institutions affecting organizations as they operate from within. Students will identify specific social and legal signals, which could be fundamental to the well-being of the organization.

MGT735 Managerial Performance Simulation [1-0, 1 cr.]

This course involves a hands-on exercise where students assume positions in a managerial setting. The students focus on the skills and issues that are typically faced by managers in their day-to-day work. Students' decision-making is measured based on their effectiveness and productivity.

MGT736 Enhancing Managerial Communication Skills [1-0, 1 cr.]

This course begins with the concept of communication as a fundamental skill that managers should possess. Students will develop and enhance their communication skills in a business environment, through cooperative learning.

MGT737 Modern Human Resource Management [1-0, 1 cr.]

This course presents the complexities, challenges, ethical issues, and tradeoffs involved in effectively managing human resources in today's increasingly competitive global environment. The course also provides a thorough analysis of the traditional areas of human resource management, namely, recruitment, compensation, performance appraisal, human resource planning, job evaluation, and training and development.

MGT738 Personnel Economics [1-0, 1 cr.]

This course introduces personnel economics, and explains how a systematic and disciplined approach can be used by human resource managers to base their decisions regarding recruitment and hiring, turnover, motivating workers and employees to higher levels of productivity, teams, benefits, and employee evaluation.

MGT739 Value Creation in Human Resource Management [1-0, 1 cr.]

This course answers the following fundamental question: "How can human resource management create value and deliver results?" The course discusses how human resource professionals can become business partners, players and pioneers, and how human resource practices can be designed in such a way to enhance individual competencies and organizational capabilities.

MGT740 Strategic Management in the Hospitality Industry [1-0, 1 cr.]

This course sheds light on the strategic issues and challenges that contemporary organizations face, and offers solutions to today's complex corporate problems. Strategy formulation, implementation and evaluation are examined in relation to the firm's competitive advantages.

MGT742 Tourism Planning and Development [1-0, 1 cr.]

This course acquaints students with selected theories, methods, techniques, current issues, practices and principles that govern tourism

development, through an exposure to a broad range of research conducted in the travel and tourism industry.

MGT745 Contemporary Trends in the Hospitality Industry [1-0, 1 cr.]

This course is designed to discuss and analyze the managerial process known as content analysis, to identify the major trends occurring in the hospitality and tourism industries, and to develop the technical skills required to interpret such trends.

MGT750 Leaders and Leadership [1-0, 1 cr.]

This course focuses on the issues of strategy, business and corporate levels, in the context of global competition. Topics covered include the global market trends, executive brainstorming and benchmarking, decision-making techniques, multidisciplinary analysis, and contemporary leadership trends.

MGT752 Teamwork and Self-Managed Work Teams [1-0, 1 cr.]

This course provides students with the knowledge and practice of developing an understanding of the formation and function of self-managed teams. Issues like the use and evolution of self-managed teams in the workplace, the ability to recognize and manage their personal style, and how it impacts their participation and performance in groups, as well as the pitfalls that prevent effectiveness in groups, are discussed.

MGT780 Topics in Management [1-0, 1 cr.]

This course addresses selected topics, spanning a wide range of management issues.

The seminar may be taken for credit more than once when topics differ.

MARKETING

MKT710 Ethics in Marketing [1-0, 1 cr.]

This course offers the business skills of evaluating ethical situations in marketing, to stimulate practical discussions that teach students the fundamentals of ethical decision-making in marketing.

MKT712 Emerging Markets and Adaptive Marketing Strategies [1-0, 1 cr.]

This course highlights many of the challenges of operating in emerging markets. It examines the interplay of finance, trade and investment in world-emerging markets, and focuses on contemporary problems for business leaders

The School of Business

by examining structural adjustment policies, as applied to marketing practices facing stabilization, privatization, liberalization, and the political economy of transition to a global market.

MKT715 Competitive Marketing Management Strategy [1-0, 1 cr.]

This course introduces the concepts of the strategic marketing process from the perspective of the marketing manager, and provides a framework for the analysis of problems in marketing management. Specific topics include the role of the marketing management strategy within the firm, an analysis of the marketing opportunities, a selection of target markets and market segmentation, the marketing strategies in a global marketplace, and the marketing mix decisions.

MKT718 Sales Management [1-0, 1 cr.]

This course emphasizes the marketing strategy as applied to the sales force, and the role of the sales managers as leaders and team builders, which is a key competitive advantage in today's environment. The aim of this course is to highlight the sales force as one of the company's competitive core asset.

MKT721 Globalization and Electronic Commerce [1-0, 1 cr.]

This course considers the related topics of technology and globalization, and relates them to the changing nature of competition in the realm of the strategic marketing practices. The course explores the electronic commerce opportunities that globalization and technology present to marketing managers.

MKT723 Marketing Channels and Logistics Strategy [1-0, 1 cr.]

This course reviews the major elements of logistics, and examines the key requirements and opportunities for planning logistics strategy. Topics include logistics and corporate planning, manufacturing logistics, distribution or marketing channels' logistics, procurement and supply, supply chain management, benchmarking, organization and management of logistics' channels, and new trends in distribution.

MKT726 Advertising and Promotion Using Integrated Marketing Communications Strategy [1-0, 1 cr.]

This course introduces students to the fast-changing field of advertising and promotion,

from an integrated marketing communications perspective, which calls for the "big picture" approach to planning, marketing and promotional programs, and coordinating the various communication functions.

MKT780 Topics in Marketing [1-0, 1cr.]

This course addresses selected topics spanning a wide range of marketing issues.

The seminar may be taken for credit more than once when topics differ.



School of Business Academic Departments

DEPARTMENT OF FINANCE AND ACCOUNTING (FINA)

Dr. Elias Raad, chair

FACULTY

Dr. Elias Raad, Associate Professor
Dr. Rima Turk Ariss, Associate Professor
Dr. Zaher Zantout, Associate Professor
Dr. Sebouh Aintablian, Assistant Professor
Dr. Bernard BenSita, Assistant Professor
Dr. Anwar Bou Mosleh, Assistant Professor
Dr. Walid El Gammal, Assistant Professor
Dr. Mahmoud Araissi, Visiting Assistant Professor
Mr. Tony Assad, Lecturer
Dr. Keghouhi Bogharian, Lecturer
Mr. Michel Majdalani, Lecturer
Ms. Janine Zakka, Lecturer
Ms. Ghada Abi Fares, Instructor
Mr. Abdulmajid Harfoush, Instructor

STAFF

Farah Al Souri, Academic Assistant

The department of accounting and finance is committed to providing professional education that prepares students for a competitive and changing global business environment. The department mission involves combining theoretical education, direct application and proper business ethics that allow students to develop ideas into business projects. Our students carry a broad conceptual knowledge and technical expertise that enable them to occupy jobs in leading organizations worldwide. The finance program prepares students for careers in commercial and investment banking, financial management, and asset and debt management. The accounting program prepares students for positions in bookkeeping, auditing, tax consulting and financial planning.

The department of accounting and finance offers programs in business administration with focus in accounting or finance. Both programs involve core business courses and a selection of courses that determine the students' focus. In addition, students are given the option to choose from a variety of business electives that fits their individual needs like preparing them to specific careers they wish to pursue.

GENERAL STUDENT LEARNING OUTCOMES

- Decision making ability: students possess analytical tools and technological knowledge that enables them to take business decision.
- Global perspective: students gain understanding of the dynamic global business environment and develop flexibility to adapt to the change.
- Team players: students learn the importance of organization and coordination that make them work in groups.
- Leadership characteristics: students discover what is required of knowledge and character to be team leaders.
- Communication skills: students receive interactive training throughout the program that strengthens their abilities to coordinate, acquaint and correspond with others.
- Ethical responsibility: students acquire the characteristics of respect, punctuality and transparency to become socially responsible and trust worthy business leaders.
- Accounting and Finance Student Learning Outcomes
- Understanding of financial markets and business organization: students gain good understanding of the financial markets and how business organizations operate within these markets.
- Thorough knowledge of the business setting: students learn how to raise funds to finance projects, make investment decisions, and manage the daily operations of the business.
- Ability to value financial securities: students obtain excellent information about the various financial securities and learn the analytical tools that enable them to value these securities.
- Exposure to the accounting rules and regulations: students receive wide exposure to GAAP, IAAP and other tax and reporting regulations.
- Preparation of financial statements: students learn the ways to measure and communicate the business activities of organizations.
- Analysis of financial statements: students demonstrate the ability to analyze financial statements and make forward looking estimates about the firm's financial health and performance.

B.S. IN BUSINESS WITH ACCOUNTING EMPHASIS

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 the skills and knowledge in accounting within a business management context. This area of emphasis also grounds students in the decision-making process and prepares them for graduate studies, leading to the Master of Business Administration (M.B.A.) Degree, the Master of Science (M.S.) Degree, or careers in entry-level position in accounting.

Required (15 credits)

ACC301	Intermediate Accounting	3
ACC302	Cost Accounting	3
ACC401	Advanced Accounting	3
ACC411	Auditing	3
ACC499	Senior Study - Accounting	3
BUS861	Financial Management	3

Any two of the following Business Electives (6 credits)

ACC304	Contemporary Issues in Accounting	3
ACC310	Accounting Information Systems	3
ACC415	Tax Accounting	3
ACC421	International Accounting	3
ACC430	Accounting Internship	3
BUS301	Intermediate Business Statistics	3
ECO301	Managerial Economics	3
MGT301	Organizational Behavior	3
MIS212	Management Information Systems II	3

ACCOUNTING COURSE DESCRIPTION:

ACC201 Principles of Accounting I [3-0, 3 cr.]

This course is an introduction to the accounting principles and practices. The course covers the measuring, recording, summarizing, reporting and interpreting of 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 liquidation of partnerships, as well as the organization, operation and financing of corporations, and 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.]

This course covers the accounting theory and problems, emphasizing financial reporting issues and financial statement interrelationships. It entails an intensive study of the 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 the 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.]

This course is an intensive study of the 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, and operating and capital leases.

Prerequisite: ACC301 Intermediate Accounting.

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ACC310 Accounting Information Systems [3-0, 3 cr.]

This course 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.]

This course emphasizes 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 in formulating audit opinions. Topics include auditors' professional responsibilities, audit planning, the study and evaluation of internal control, and auditing of transactions and balances.

Prerequisite: ACC202 Principles of Accounting II.

ACC415 Tax Accounting [3-0, 3 cr.]

This course considers the principles of taxation and makes a comparative study between the United States and the 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 the 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.]

This course allows students to earn up to three credits by working, during their last summer vacation, for a period of 16 weeks, in an instructor-approved accounting position at 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 their supervision and evaluation by the instructor.

Prerequisites: Senior standing and consent of the instructor.

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.

ACC521 Graduate Remedial in Accounting [3-0, 3 cr.]

This course includes essential material in ACC201 and ACC202. It is open only as a remedial course for accepted students in the M.B.A. program.

B.S. IN BUSINESS WITH BANKING & FINANCE EMPHASIS

A total of 51 credits are needed in the major (30 credits for the core, and 21 credits for the emphasis) to graduate. This area of emphasis prepares students for the 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.

Required (15 credits)

ECO321	Monetary Theory and Policy	3
FIN302	Financial Institutions and Markets	3
FIN311	Banking Operations	3
FIN411	Security Analysis and Portfolio Management	3
FIN499	Senior Study – Finance	3
BUS861	Financial Management	3

**Any two of the following Business Electives
(6 credits)**

BUS301	Intermediate Business Statistics	3
BUS311	Research Methods	3
ECO401	International Economics	3
ECO422	Public Finance & Fiscal Policy	3
FIN321	Introduction to Insurance	3
FIN401	Senior Seminar in Finance	3
FIN412	Credit Analysis	3
FIN421	Financial Derivatives	3
IBS321	Global Financial Management	3
MIS212	Management Information Systems II	3

**BANKING & FINANCE COURSE
DESCRIPTION:**

FIN301 Managerial Finance [3-0, 3 cr.]

This 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 these 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.]

This course is concerned with the financial systems. The emphasis is on understanding the operations of financial institutions, markets and instruments. Topics include commercial banking, expansion process of money, central banking, and other financial institutions, as well as the types of financial markets and instruments, and interest rates.

Prerequisite: ACC202 Principles of Accounting II.

FIN311 Banking Operations [3-0, 3 cr.]

This 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 commercial bank managers apply to perform their job. Topics include the structure and internal organization of banks, lending policies, and asset and liability management.

Prerequisites: 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.]

This 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.

Prerequisites: FIN301 Managerial Finance, FIN302 Financial Institutions and Markets, and senior standing.

FIN411 Security Analysis and Portfolio Management [3-0, 3 cr.]

This 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 such as risk and return, diversification, efficient portfolios, efficient markets, interest rate risk, and duration will be covered.

Prerequisites: FIN301 Managerial Finance and FIN302 Financial Institutions and Markets.

FIN412 Credit Analysis [3-0, 3 cr.]

This course provides students with the knowledge and analytic techniques of the principles of credit risk identification, financial analysis of a firm, and credit decision process, with special attention to the banking experience and cases on the credit application packages.

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, and swaps and financial risk management using derivatives.

Prerequisite: FIN411 Security Analysis and Portfolio Management.

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FIN499 Senior Study – Finance [3-0, 3 cr.]

This course is concerned with the integration of financial concepts and techniques the students have learned, and the application of these 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 the consent of the instructor



DEPARTMENT OF ECONOMICS (ECON)

Dr. Ghassan Dibeh, Chair

FACULTY

Dr. Salaheddin Abosedra, Professor
Dr. Abdallah Dah, Professor
Dr. Ghassan Dibeh, Professor
Dr. Wassim Shahin, Professor
Dr. Salpie Djoundourian, Associate Professor
Dr. Saifedean Ammous, Assistant Professor
Dr. Ali Fakih, Assistant Professor
Dr. Mary Habib Tofailli, Assistant Professor
Dr. Walid Marrouch, Assistant Professor
Dr. Ayman Reda, Assistant Professor
Dr. Amjad Toukan, Assistant Professor
Dr. Hussein Zeaiter, Assistant Professor
Dr. George Harb, Visiting Assistant Professor

STAFF

Farah Al Souri, Academic Assistant

THE DEPARTMENT

The department of economics offers programs that give students an excellent grounding in both theoretical and applied economics. The programs aim at preparing economics graduates to work in the private and public sectors. The programs also aim at preparing students for graduate work in economics, business, law, public administration, international relations and related fields. Members of the economics faculty are engaged in research in many areas of economics and have gained local, regional and international visibility.

PROGRAMS OFFERED

I - B.S. IN ECONOMICS

TRACKS

- Finance
- Management
- Mathematics
- Political Science/International Affairs

II - B.S. IN BUSINESS STUDIES WITH EMPHASIS IN ECONOMICS

III - MINOR IN ECONOMICS

CAREER OPPURTINITIES IN ECONOMICS

- Economist positions in the banking sector
- Economist positions in the public sector
- Economic consultancy positions
- Management consultancy positions
- Management positions
- Business and economic reporting positions
- Policy advising positions (local and international organizations)
- Graduate Work in Business
- Graduate work in Economics
- Graduate work in Finance

I. BACHELOR OF SCIENCE (B.S.) IN ECONOMICS

The Bachelor of Science in Economics provides students with the foundations of theoretical and applied economics. Students are prepared to work immediately after graduation in business, government and finance, or to pursue graduate studies in economics, business, law, public administration, international relations, and related fields. The program consists of up to 40 credit hours in Economics courses, plus 15 or 18 credit hours in a chosen track.

The Finance track allows students to immediately take career positions in business, and to pursue 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.

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.

MAJOR LEARNING OUTCOMES

- Graduates in the Bachelor of Science in Economics will be able to:
- Apply theoretical and quantitative reasoning to address economic and social issues.
- Solve economic problems and assess the merits of economic policies, using the appropriate methodology, and communicate their decisions effectively.
- Possess an understanding of their ethical and social responsibilities in a multicultural marketplace.
- Have an understanding of the impact of economic policies on the global business operations.

PLAN OF STUDY

Economics – All tracks (37–40 credits)

BUS210	Business Statistics	3
ECO201	Microeconomics	3
ECO202	Macroeconomics	3
ECO305	Intermediate Microeconomics	3
ECO306	Intermediate Macroeconomics	3
ECO311	Economic Development	3
ECO321	Monetary Theory and Policy	3
ECO330	Introductory Econometrics	3
ECO331	Econometrics Lab	1
ECO401	International Economics	3
ECO402	Advanced Topics in Economics	3
ECO410	Mathematical Methods for Economics	3*
ECO422	Public Finance and Fiscal Policy	3
ECO499	Senior Study – Economics	3

*Not a requirement for Track III (Mathematics)

Track I: Finance (18 credits)

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 credits)

ACC201	Accounting I	3
ACC202	Accounting II	3

MGT201	Introduction to Management	3
MGT301	Organizational Behavior	3

Plus

MGT420	Strategic Planning and Policy Formulation	3
MGT441	Human Resource Development	3

Or

MIS211	Management Information Systems I	3
MIS 212	Management Information Systems II	3

Track III: Mathematics (15 credits)

MTH201	Calculus III	3
MTH301	Linear Algebra	3
MTH304	Differential Equations	3

And any two of the following courses:

MTH206	Calculus IV	3
MTH207	Discrete Structures	3
MTH303	Numerical Methods	3
MTH306	Non-Linear Dynamics & Chaos	
MTH309	Graph Theory	
MTH498	Topics in Mathematics	

Track IV: Political Science/International Affairs (15 credits)

POL201	Introduction to Political Science	3
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Plus any four of the following upper-level courses in Political Science / International Affairs.

POL311	Methodology and Political Analysis	3
POL312	Politics of the Developing Areas	3
POL313	Concepts of International Relations	3
POL321	American Government and Politics	3
POL322	Foreign Policy of the Major Powers	3
POL323	Middle East Governments and Politics	3
POL331	International Organization	3
POL332	Public International Law	3
POL421	The Middle East in International Affairs	3
POL431	International Regional Organizations and Agencies	3
POL432	Diplomatic and Consular Services	3
POL433	The UN System and Problems of Development	3

II. B.S. IN BUSINESS WITH ECONOMICS EMPHASIS

The Business degree equips students with the professional skills in accounting, banking and finance, economics, international business, hospitality management, management information systems, management and marketing, enabling graduates to find jobs in the world of business, finance and government. Specifically, the Economics emphasis aims to give business students further training in economics so as to become business economists. Students are prepared to work, immediately after graduation, in business, finance and government. The degree is also an excellent preparation for those planning to pursue graduate studies in business administration and related fields.

MAJOR LEARNING OUTCOMES

Graduates in the Bachelor of Science in Business Studies will be able to:

- Work with their peers to solve relatively complex business problems, using the appropriate technologies and decision-making tools, within their respective areas of concentration, and communicate their decisions both written and orally.
- Possess an understanding of their ethical and social responsibilities in the global marketplace.
- Have an understanding of the global impact of economic conditions and cultural dimensions on their respective areas of concentration.

PLAN OF STUDY

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. This area of emphasis gives the students a good foundation in theoretical and applied economics. Students are prepared to work in both the private and the public sector jobs immediately after graduation.

Required (15 Credits)

ECO301	Managerial Economics	3
ECO321	Monetary Theory & Policy	3
ECO422	Public Finance & Fiscal Policy	3
ECO401	International Economics	3
ECO499	Senior Study – Economics	3

Any two of the following Business Electives (6 credits)

BUS301	Intermediate Business Statistics	3
BUS311	Research Methods	3
ECO306	Intermediate Macroeconomics	3
ECO311	Economic Development	3
ECO402	Advance Topics in Economics	3
ECO410	Mathematical Methods for Economics	3
FIN302	Financial Institutions & Markets	3
MGT441	Human Resource Development	3
MIS212	Management Information Systems II	3

III - MINOR IN ECONOMICS

The minor in Economics provides the LAU general student community with the opportunity to combine with their primary fields of study a breadth of knowledge in economics. The minor would be attractive academically for students in many majors such as engineering computer science, mathematics, political science, history and pharmacy. In addition, such students will increase their chances of employability in many areas where these fields interact with economics in the employment spheres. Such a minor will also form a perfect preparation for graduate work in Economics for those coming from quantitative scientific fields (e.g. physics, math, computer science, engineering...) or for graduate work in multidisciplinary fields related to undergraduate studies in different fields such as Financial Engineering, Construction and Engineering Management and Economics, Pharmaco-economics, Health Economics and Political Economy.

The Minor in Economics requires a total of 18-19 credits distributed as follows:

Core (12 Credits)

ECO201	Microeconomics	3
ECO202	Macroeconomics	3
ECO305	Intermediate Microeconomics	3
ECO306	Intermediate Macroeconomics	3

Plus any 6-7 credits from the following

ECO311	Economic Development	3
ECO321	Monetary Theory and Policy	3
ECO322	Public Finance and Fiscal Policy	3
ECO401	International Economics	3
ECO330	Introductory Econometrics	3
ECO331	Econometrics Lab	1
ECO 402	Advanced Topics in Economics	3
ECO410	Mathematical Methods for Economics	3

ECONOMICS COURSE DESCRIPTIONS:

ECO101 Survey of Economics

This course is a survey of main areas of economics. It introduces students to national income accounting, market mechanisms and structures, the banking and monetary system, public finance, foreign trade, economic systems, growth and development, economic fluctuations, and economic policies. This course is used for freshman equivalency and is not offered at LAU.

ECO201 Microeconomics [3-0, 3 cr.]

This course is an introductory course dealing with the nature and scope of economics, consumer behavior, theory of the firm, price determination, and allocation of resources.

ECO202 Macroeconomics [3-0, 3 cr.]

This course is an introductory course dealing with the principles of national income accounting, national income determination, macroeconomics' objectives and policy instruments, and the relative effectiveness of fiscal and monetary policies in stabilizing the economy.

ECO301 Managerial Economics [3-0, 3 cr.]

This 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 and ECO202 Macroeconomics.

ECO305 Intermediate Microeconomics [3-0, 3cr.]

This course covers in depth the theory and applications of consumer and producer behavior. It covers topics such as price/wage determination under various market structures, estimation of demand for a given product, analysis of a firm's pricing strategies, levels of price discrimination, comparison of the welfare effects of different policies, and externalities and public goods.

Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

ECO306 Intermediate Macroeconomics [3-0, 3 cr.]

This 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, various schools of macroeconomic thought and the sources of instability in the private economy.

Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

ECO311 Economic Development [3-0, 3 cr.]

This course covers the theories of economic development, planning and policies. The course also discusses the building of institutional mechanisms to achieve development.

Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

ECO321 Monetary Theory and Policy [3-0, 3 cr.]

This course covers money and the banking system's nature and functions. The course covers the interaction between the monetary and real sectors, money supply and demand analysis, and the theory and transmission mechanisms of monetary policy, and central banking.

Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

ECO330 Introductory Econometrics [3-0, 3 cr.]

This course introduces students to the theory and practice of econometric analysis. The course will include simple regression models, multiple regression models, regression with discrete random variables, and topics in time series analysis.

Prerequisite: STA201 Business Statistics.

ECO331 Econometrics Lab [0-1, 1 cr.]

This is a required lab course that complements the Econometrics course, and is designed to teach students data exploration and investigation skills, using a statistical computer software package.

Corequisite: ECO330 Introductory Econometrics.

ECO401 International Economics [3-0, 3 cr.]

This course deals with the principles of trade, resource allocation among nations, international monetary and exchange rate arrangements, and trade restriction problems.

Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

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ECO402 Advanced Topics in Economics [3-0, 3 cr.]

This course deals with selected topics in economic theory.

Prerequisite: At least 12 credits in economics courses. This course may be repeated for credit with the consent of the instructor.

ECO410 Mathematical Methods for Economics [3-0, 3 cr.]

This course covers advanced mathematical methods and tools used in modern economics. The course includes a brief calculus review, matrix theory, constrained optimization, and elements of game theory and dynamical systems.

Prerequisite: MTH105 Business Math or equivalent.

ECO422 Public Finance and Fiscal Policy [3-0, 3 cr.]

This course addresses government intervention under conditions of market failure. Topics covered include public debt, government

expenditure patterns, and tax structures. These are considered from the perspective of government services provision and as public policy instruments.

Prerequisites: ECO201 Microeconomics and ECO202 Macroeconomics.

ECO499 Senior Study [3-0, 3 cr.]

This course entails case studies, research readings, and field projects. It looks at recent research topics from a practical standpoint.

Prerequisite: Senior standing.

ECO511 Graduate Remedial in Economics/ Finance [3-0, 3 cr.]

This course includes essential material in ECO201, ECO202 and FIN301. It is open as a remedial course for accepted students in the M.B.A. program.



School of Business Academic Departments

DEPARTMENT OF HOSPITALITY AND MARKETING (HMKT)

Dr. Said Ladki, Chair

FACULTY

Dr. Jim Finlay, Professor
Dr. Said Ladki, Professor
Dr. Edward Vitale, Professor
Dr. Nouri Beyrouti, Associate Professor
Dr. Rania El-Haddad, Assistant Professor
Dr. Maya Farah, Assistant Professor
Mr. Albert Andraos, Instructor
Ms. Nadia Azzam, Instructor
Ms. Anneli Baalbaki, Instructor
Mr. Hassan Naja, Instructor
Mr. Bassem Slim, Instructor
Mr. Afif Hachem, Assistant Instructor

STAFF

Maya Khoury, Academic Assistant
George Tamer, Hospitality Lab Supervisor - Beirut

DEPARTMENT MISSION

The Hospitality and Tourism Management, International Business and Marketing Department in the School of Business at the Lebanese American University is committed to provide top quality education through the use of various educational technologies, hands-on application, while ensuring that students are learning relevant materials to prepare them for leadership positions in the market place.

PROGRAMS

The programs that are offered in our department are:

I - B.S. IN HOSPITALITY AND TOURISM MANAGEMENT

II - B.S. IN BUSINESS EMPHASIS HOSPITALITY MANAGEMENT

III - B.S. IN BUSINESS EMPHASIS INTERNATIONAL BUSINESS

IV - B.S. IN BUSINESS EMPHASIS MARKETING

Excellence in these programs is achieved through ongoing faculty research, continuous curriculum development and the offering of new courses in different areas of specializations as needed in the market place. To enhance students' potential and gain greater industry exposures, annual scholarly, academic, and professional conferences are held.

CAREER OPPORTUNITIES:

Upon the completion of minimum sixty credits (Junior Standing), students are required to participate in a hands-on training program which blends classroom learning with laboratory applications to simulate real life environment. Academic credits are earned from internship. Internship helps students establish ties with industry and prepare them for careers in real life. In addition, our faculty establish and place/train students in various countries at world-renowned companies.

National partners include:

- Hard Rock Café, Beirut
- Intercontinental Le Vendome, Beirut
- Intercontinental Phoenicia, Beirut
- Le Meridian Commodore, Beirut
- Le Royal, Beirut
- Movenpick Hotel, Beirut
- Riviera Hotel, Beirut
- Regency Palace, Beirut
- TGI Friday's, Beirut

The international partners include:

- Crown Reef Resorts in South Carolina-USA
- Crystal Sands -USA
- Orange Lake -USA
- Sea World in Florida-USA
- West Gate Lakes-USA
- Al Bustan Rotana Hotel-Dubai
- Burj Al Arab Hotel-Dubai

BACHELOR OF SCIENCE (B.S.) IN HOSPITALITY & TOURISM MANAGEMENT

The Bachelor of Science 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 convention planning, and general management positions. Graduates may serve as managers or directors of hotels and restaurants in the catering or food processing industries, as well as in 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 of the Business core requirements.

Students are also required to complete 320 hours of applied hands-on training activities to develop their technical skills and to apply classroom learning in real-world settings.

MAJOR LEARNING OUTCOMES

Graduates in the Bachelor of Science in Hospitality and Tourism Management will be able to:

Work with their peers to solve relatively complex business problems normally arising in hospitality management, using appropriate technologies and decision-making tools, and to communicate their decisions both orally and in writing.

Possess an understanding of their ethical and social responsibilities in the global marketplace.

Have an understanding of the global impact of economic conditions and cultural dimensions on travel, tourism and hospitality management.

B.S. in Hospitality Management Requirements (24 credits)

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 credits)

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

B.S. IN BUSINESS WITH HOSPITALITY MANAGEMENT EMPHASIS

A total of 51 credits are needed in the major (30 credits for the core and 24 credits for the emphasis) to graduate. After graduation, students are prepared to work in hotels, restaurants, catering, theme parks, casino management, food processing, and travel and tourism-related industries.

Required (24 Credits)

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 & Administration in RHI	3
HOM499	Senior Study - Internship in RHI	3

HOSPITALITY & TOURISM MANAGEMENT COURSE DESCRIPTION

HOM201 Introduction to Restaurant, Hotel and Institutional (RHI) Administration [3-0, 3 cr.]

This course 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.]

This course 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 the 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.]

This course entails a survey of travel and tourism. It focuses on concepts, terminology, demographics, financial significance, and trends. The course will also evaluate the economic, social and political impact of travel and tourism, including market, transportation, media, and destination development.

HOM231 Wine, Spirits and Cigars [1-0, 1 cr.]

This course studies the appreciation of wine, spirits and cigars. This is a course designed to teach students about the quality, origin, characteristics, vintage and all other personalities that make a good wine superior.

HOM233 Management of Service industries [1-0, 1 cr.]

This course presents specific customer issues, and offers an overview of the service industry, history, current status, and future trends of service organizations. It also emphasizes their unique characteristics and operations.

HOM235 Franchising in the Hospitality Industry [1-0, 1 cr.]

This course introduces students to franchising as a means of business. The course emphasizes on the different aspects of hospitality franchising, including history and development, franchisee-franchisor relationship, and legal aspects of franchising.

HOM237 Management of Tourism Attractions [1-0, 1 cr.]

This course covers the organization, and management, of tourist attractions including: museums, national heritages, theme parks, national parks, zoos, and other attractions.

HOM239 Business Etiquette and Protocol [1-0, 1 cr.]

This course will allow the students to learn the importance of etiquette in business and social settings, and the common courtesies in professional life, personal life, formalities, entertaining and entertainments, international, celebration and ceremonies and other situations.

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.

HOM251 Food Preparation II [2-3, 3cr.]

This course will allow students to gain further knowledge in cooking, with special emphasis on stocks, soups, sauces, cooking methods, pastry, and chocolate decoration. Food purchasing, grading, identification, and labeling codes will be introduced.

Prerequisite: HOM250 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.

HOM302 Hospitality Purchasing [3-0, 3 cr.]

This course acquaints students with the classifications/functions of the various food markets. It helps students understand the relationship between food specifications and purchasing methods, while enhancing students' organizational skills in the administration of a successful purchasing department. The course involves the discussion of such concepts as purchasing methods, negotiations, market evaluations and regulations.

HOM304 Hotel Operations [3-0, 3 cr.]

This course entails the study of organization, planning, leadership, decision-making, and the administration of hotels, with emphasis on front desk operations. The course also entails the 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,

School of Business Academic Departments

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.]

This course entails an analysis of the fundamentals and techniques of cost control in food service and hotel management. Management procedures to control costs from the purchase of products through the 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.]

This course covers the study of the organization, management and administration of restaurants, hotels and institutional programs, with emphasis on planning, leadership and decision-making, and the investigation of effective communication, laws, regulations and standards, as they relate to management. The course considers merchandising, and promotion restaurants, hotels and institutions, as well as principles of education and effective teaching methods, as they relate to employee training and in-service education. The course also covers the study of human relations and group dynamics, and emphasizes the use of computers and their applications in organization and management.

HOM321 Tourism Economic and Cultural Impact [3-0, 3 cr.]

This course covers the role of the economic and cultural impact of tourism in development and planning, as well as the nature of and the priorities given to tourism and tourism policies at national scales. 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.]

This course is an overview of the convention industry. It includes meetings, trade shows, 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 management, 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

This course is a supervised work-study program in a hotel. Students must 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.

The consent of the internship director is required



B.S. IN BUSINESS WITH INTERNATIONAL BUSINESS EMPHASIS

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. This area of emphasis provides a global perspective on management, finance, marketing, international affairs, and economics, while providing students 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.

Required (18 Credits)

ECO401	International Economics	3
FIN302	Financial Institutions & Markets	3
IBS311	Managing the Multinational Corporation	3
IBS321	Global Financial Management	3
IBS499	Senior Study/Internship	3
MKT311	International Marketing	3

Any of the following Business Electives (3 credits)

BUS301	Intermediate Business Statistics	3
BUS311	Research Methods	3
ECO311	Economic Development	3
FEB488	Topics in Family and Entrepreneurial Business	3
HOM321	Tourism Economic and Cultural Impact	3
IBS488	Topics in International Business	3
POL313	Concepts of International Relations	3

INTERNATIONAL BUSINESS COURSE DESCRIPTION

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, or shipping points.

Prerequisites: MGT201 Introduction to Management and MKT201 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.

Prerequisite: FIN301 Managerial Finance.

IBS488 Topics in International Business [3-0, 3 cr.]

This course covers a broad range of topics in international business, including growth through international expansion, multinationals, and designing and managing global operations. The course could be taken more than once for credit when topics differ.

Prerequisites: Refer to International Business requirements and the specific topic offered.

B.S. IN BUSINESS WITH MARKETING EMPHASIS

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. This area of emphasis 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.

School of Business Academic Departments

Required (15 Credits)

MKT301	Promotion Management & Market Communication	3
MKT304	Consumer Behavior	3
MKT311	International Marketing	3
MKT421	Marketing Research	3
MKT499	Senior Study – Marketing	3

Any of the following Business Electives (6 credits)

ACC302	Cost Accounting	3
BUS301	Intermediate Business Statistics	3
BUS311	Research Methods	3
FEB488	Topics in Family and Entrepreneurial Business	3
HOM302	Hospitality Purchasing	3
IBS311	Managing the Multinational Corporation	3
IBS488	Topics in International Business	3
MGT301	Organizational Behavior	3
MIS212	Management Information Systems II	3
MKT488	Topics in Marketing	3

MARKETING COURSE DESCRIPTION

MKT201 Introduction to Marketing [3-0, 3 cr.]

This course 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.]

This course is based on the dynamics of the 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 promotions and the marketing strategy, consumer response to different messages, creativity, and trade response to different promotional tools.

Prerequisite: MKT201 Introduction to Marketing.

MKT304 Consumer Behavior [3-0, 3 cr.]

This course covers customer satisfaction (the core of the marketing concept), and understanding consumers and their behavior (the basis of successful marketing strategies and programs). It provides an overview of the current knowledge about consumer behavior. Basic behavioral science and marketing-specific techniques, used in the marketing practice, are covered.

Prerequisite: MKT201 Introduction to Marketing.

MKT311 International Marketing [3-0, 3 cr.]

This 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.]

This course provides students with the 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, BUS201 Business Statistics and ECO201 Microeconomics, or the consent of the department.

MKT488 Topics in Marketing [3-0, 3 cr.]

The course covers special topics in marketing such as distributional channels and logistics, services marketing, e-marketing, and sales management.

The course could be taken more than once for credit when topics differ.

Prerequisite: MKT201 Introduction to Marketing.

MKT499 Senior Study [3-0, 3 cr.]

This course involves case studies, research readings, and field projects. It looks at the recent research topics from a practical standpoint.

Prerequisite: Senior standing.

DEPARTMENT OF MANAGEMENT STUDIES (MNGT)

Dr. Silva Karkoulouian, Chair

FACULTY

Dr. Jalal Armache, Associate Professor
 Dr. Silva Karkoulouian, Associate Professor
 Dr. Josiane Sreih, Associate Professor
 Dr. Grace Dagher, Assistant Professor
 Dr. Renee Ghattas, Assistant Professor
 Dr. Hussein Ismail, Assistant Professor
 Dr. Leila Canaan Messara,
 Assistant Professor
 Dr. Walid Touma, Assistant Professor
 Dr. Bassem Maamari, Lecturer

STAFF

In progress

THE DEPARTMENT

The department of Management Studies at the School of Business is designed to familiarize students with knowledge, skills and abilities they need for building a successful career path. The Management Studies department lays down a solid foundation for students to excel and become pioneers in their fields of work including business management, public administration, and entrepreneurial ventures. The department's mission lies in advancing knowledge, broadening insights and nurturing the minds of the young to become the leaders of the future.

The department is committed to endow students with a comprehensive vision of advanced organizational strategy, design and management. It develops in them a thorough understanding of business functions, analytical problem solving and decision making skills. It draws the right path to diversity, integrity, and professionalism in a business world governed by competition and continuous growth.

Undergraduate programs include:

- **B.S. IN BUSINESS EMPHASIS MANAGEMENT**
- **B.S. IN BUSINESS EMPHASIS FAMILY AND ENTREPRENEURIAL BUSINESS MANAGEMENT EMPHASIS**

B.S. IN BUSINESS WITH MANAGEMENT EMPHASIS

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. This area of emphasis helps students develop skills on how to manage people, materials, equipment, information and other resources used in the production of goods and services. It helps the students to understand the decision-making process in firms, and it develops in them an orderly and systematic way of thinking. It also prepares them for graduate work or for supervisory positions in areas such as purchasing, inventory control, operations scheduling, operations cost control, etc.

Required (15 Credits)

EC0301	Managerial Economics	3
MGT301	Organizational Behavior	3
MGT420	Strategic Planning & Policy Formulation	3
MGT441	Human Resources Development	3
MGT499	Senior Study - Management	3

Any of the following Business Electives (6 credits)

ACC302	Cost Accounting	3
BUS301	Intermediate Business Statistics	3
BUS311	Research Methods in Business	3
FEB301	Entrepreneurship & Small Business Management	3
FEB488	Topics in Family & Entrepreneurial Business	3
FIN302	Financial Institutions & Markets	3
HOM204	Restaurant Management	3
HOM304	Hotel Operations	3
IBS311	Managing the Multinational Corporation	3
IBS488	Topics in International Business	3
MGT401	Project Management	3
MGT450	Special Topics in Management	3
MIS212	Management Information Systems II	3

MANAGEMENT COURSE DESCRIPTION

MGT201 Introduction to Management [3-0, 3 cr.]

This course is a study of the management principles and concepts, specifically its history and philosophy, in addition to the processes, decision-making, planning, organizing, actuating and controlling.

MGT301 Organizational Behavior [3-0, 3 cr.]

This course covers the organizations' social psychology, which includes individual perception, motivation, and learning and communication style. It also covers 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.]

This course covers the 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 and MGT201 Introduction to Management.

MGT420 Strategic Planning and Policy Formulation [3-0, 3 cr.]

This course deals with 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. It aims to provide students with the tools necessary to comprehend and to 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 them with the aim of achieving long-term success for the organization. In addition, the course emphasizes the management skills needed to carry out this practice. Industry case studies will be used to examine success and failure stories of organizations.

MGT441 Human Resources Development [3-0, 3 cr.]

This course is based on the functions of management. It 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 and 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.]

This course involves case studies, research readings, and field projects. It looks at recent research topics from a practical standpoint.

Prerequisite: Senior standing.

B.S. IN BUSINESS WITH FAMILY & ENTREPRENEURIAL BUSINESS MANAGEMENT EMPHASIS

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. This area of emphasis caters to students who belong to families already in business and who wish to preserve its continuity, maintaining the family's wealth from generation to generation. The emphasis 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 emphasis are designed in such a way that they address the complex workings and challenges of family-owned and family-run businesses. Students will not only get 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 the growing entrepreneurial businesses. Course work in this area will begin as soon as it is feasible.

School of Business Academic Departments

Required (15 Credits)

FEB301	Entrepreneurial & Small Business Management	3
FEB304	Family Business Management	3
FEB311	Small Business Start-up Lab	3
FEB321	Venture Growth Strategies for Entrepreneurs	3
MGT499	Senior Study- Management	3

Any of the following Business Electives (6 credits)

ACC302	Cost Accounting	3
BUS301	Intermediate Business Statistics	3
FEB488	Topics in Family & Entrepreneurial Business	3
IBS488	Topics in International Business	3
MGT301	Organizational Behavior	3
MGT441	Human Resources Development	3
MKT421	Marketing Research	3

FAMILY & ENTREPRENEURIAL MANAGEMENT COURSE DESCRIPTION

FEB301 Entrepreneurship and Small Business Management [3-0, 3 cr.]

This course is designed to address the complex workings of small family-owned and run businesses. 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 considerations in building a business plan, managing inventory in small businesses, quality control and just-in-time techniques, managing human resources in the family businesses, techniques for enhancing profitability, and 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 family-owned and run businesses. It will help students develop action plans for their family businesses. Topical coverage includes concepts of corporate governance versus classical governance, structures of a family business, key elements of a governance structure, family businesses versus 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, and the 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, and multi-generational issues.

Prerequisite: MGT201 Introduction to Management.

FEB311 Small Business Startup Laboratory [3-0, 3 cr.]

The objective of this course is to encourage students to start new businesses and to address functional ways of startups. It will include topics such as the types of new businesses, new markets and the web, how to start marketing on the web, creating and designing your webpage, 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, and preparing small businesses to go global. The course includes a laboratory and students will end up with a feasibility study or a business plan.

Prerequisites: Senior standing, MGT201 Introduction to Management and 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, which 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, and tapping capital markets.

Prerequisites: MGT201 Introduction to Management and FIN201 Managerial Finance.

FEB488 Topics in Family and Entrepreneurial Business [3-0, 3 cr.]

This course covers a wide range of topics, focusing on the latest developments in entrepreneurship, and setting-up and managing small and medium enterprises. The course could be taken more than once for credit when topics differ.

Prerequisites: Refer to Family & Entrepreneurial Business requirements, and the specific topics offered.

DEPARTMENT OF INFORMATION TECHNOLOGY AND OPERATION MANAGEMENT (ITOM)

Dr. Abdul Nasser Kassar, Chair

FACULTY

Dr. Tarik Mikdashi, Professor
Dr. Abdul Nasser Kassar, Associate Professor
Dr. Raed El Khalil, Assistant Professor
Dr. Khodor Fakh, Assistant Professor
Dr. Leila Halawi, Assistant Professor
Dr. Issam Kouatli, Assistant Professor
Dr. John McGill, Assistant Professor

STAFF

Maya Khoury, Academic Assistant
Richard Issa, Computer Lab Supervisor - Byblos
Ziad El Bahloul, Academic Computer Center Senior Administrator- Beirut
Hisham Hashash, Senior Academic Assistant -Beirut

INTRODUCTION:

The Information Technology and Operation Management (ITOM) Department hosts the Information and Operations Management disciplines and offers the Management Information Systems (MIS) major at the Lebanese American University. Information and Operations Management integrates analytical, technological and people skills to meet the organizational goals and business challenges of an enterprise. MIS majors are expected to analyze business problems and processes, and to develop, implement and maintain business solutions through the effective and strategic management of information and information technology.

DEPARTMENT MISSION

The mission of the MIS major is to prepare students for careers, in a world with rapid changes in information technology, which will enable future managers to become experts in applying technology to solve business problems, and to develop the business knowledge and communication skills necessary to manage strategy development and lead organizations.

PROGRAMS

THE DEPARTMENT OFFERS A B.S. IN MANAGEMENT INFORMATION SYSTEMS

Career opportunities:

- Information Systems Consultants
- Information Systems managers
- Information Technology executives
- Information Systems Analysis
- Hardware Design Consultants
- Telecommunications Consultants
- Small Business Information Systems
- Network Operations Managers

GENERAL BUSINESS COURSE DESCRIPTION

BUS105 Business Mathematics

This is a freshman course for students admitted to the Business School. The course equips students with the mathematical skills required to better understand the many concepts and tools that are encountered in their studies in business and economics. Solving simultaneous equation systems, identifying the difference between linear and non-linear functions and equations, learning the basic rules of differentiation and integration, and recognizing the use of exponential and logarithmic functions are some of the topics covered in the course.

BUS201 Introduction to Business [3-0, 3 cr.]

This course is an introductory survey of the business environment. Topics include basic business functions and their interrelationships, accounting, finance, management, marketing and economics.

School of Business Academic Departments

BUS202 Business Communication [3-0, 3 cr.]

This course entails the development of writing skills applied to various forms of business communication.

Prerequisites: ENG101 English II and ENG102 English III.

BUS203 Business Law [3-0, 3 cr.]

This course is an introduction to legal concepts. It entails the 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.]

This course is 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 the marketing mix, as well as the 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.

BUS210 Business Statistics [3-0, 3 cr.]

This course covers probability, random variable, sampling theory, estimation, hypothesis testing, correlation and regression, time series, and index numbers.

No student may receive credit for both BUS210 and STA202 Applied Statistics, or STA302 Statistics.

BUS301 Intermediate Business Statistics [3-0, 3 cr.]

This course addresses more advanced topics in statistics for business students.

Prerequisite: BUS210 Business Statistics.

BUS305 – Leadership in NGOs and Businesses [3-0, 3 cr.]

This course explores the role of leadership in both the public and private sectors. It opens with an examination of the evolution of leadership theories. The course then turns to a study of the role of leadership in corporations, the NGO sector, public sector reform, political education, political parties, and government institutional capacity. The course combines both theoretical and practical approaches, but

especially the use of fieldwork, group exercises, and case-studies.

Prerequisite: MGT 201 Introduction to Management

BUS311 Research Methods [3-0, 3 cr.]

This course acquaints students with the importance of research in business. Topics include a research proposal design, data collection, and descriptive and statistical analysis.

Prerequisite: BUS301 Intermediate Business Statistics.

B.S. IN BUSINESS WITH MANAGEMENT INFORMATION SYSTEMS EMPHASIS

Students need 51 credits in the major (30 credits for the core and 21 credits for the emphasis) to graduate. This area of emphasis offers a curriculum focused on practical and applied courses, enabling students to enter the workforce 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 studies in business and related fields.

Required (15 Credits)

CSC242	Introduction to Computer Programming I	3
CSC331	Business Data Communication	3
CSC372	Database Analysis, Design & Management	3
MIS212	Management Information Systems II	3
MIS499	Senior Study – MIS	3

Any of the following Business Electives (6 credits)

CSC332	Web Design & Development	3
CSC392	Information Systems Analysis & Design	3
CSC298	Special Topics	3
FEB488	Topics in Family & Entrepreneurial Business	3
IBS488	Topics in International Business	3
MIS350	Technology Management	3
MIS410	Enterprise Wide Business Performance Model	3
MIS488	Topics in E-Business	3

MANAGEMENT INFORMATION SYSTEMS COURSE DESCRIPTION

MIS211 Management Information Systems I [3-0, 3 cr.]

This course covers the problems of managing the information system resources, combining case studies and lectures, to facilitate critical thinking on computer acquisition, information systems development, and organizational development of end-user computing.

Prerequisite: CSC201 Computer Applications or higher numbered Computer Science course

MIS212 Management Information Systems II [3-0, 3 cr.]

This course explores, 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 will explore the analysis, design and management of information systems.

Prerequisite: BUS211 Management Information Systems.

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 raises concepts and applications from multiple managerial functions. It provides an overall view of the enterprise including the structure, procedures, systems and people necessary to design, re-engineer the processes, and lay the foundations for the planning and implementation of large-scale MIS solutions. Emphasis is placed on the relationship between such solutions and the 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 functions, and its internal capacity in terms of people, process and technology.

This elective course is offered as needed.

MIS488 Special Topics in E-Business [3-0, 3 cr.]

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 solutions from the market trend analysis through user requirements and technological specifications, to planning, building, maintaining and managing an e-business.

The course could be taken more than once for credit when topics differ.

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 a set of given MIS problems in business, government, or other more general settings.

Prerequisite: Senior standing





The School of Engineering

The School of Engineering

MISSION

To educate students, to provide them with abilities for success in their lives as engineers and as responsible citizens, and to graduate them with distinctive skills that are sought after in the professional world and by graduate schools.

SCHOOL VISION

To advance a distinctive and innovative environment for engineering education.

SCHOOL CORE VALUES

Integrity: To deal honestly and fairly with the public and one another, and to be transparent in our dealing with the public and one another.

Commitment: To be committed to our students and to our school, and to conscientiously strive for excellence in our work.

Responsibility: To be accountable for our actions toward ourselves, others and the community, and to be accountable for our performance and committed to shared governance.

Respect: To value one's self and others and to respect the rights and dignity of others.

Courage: To face difficult situations with confidence and determination, and to promote intellectual freedom and stand up for one's convictions.

ACCREDITATION



The Bachelor of Engineering degree programs listed below are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700, the recognized accreditor of college and university programs in applied science, computing, engineering, and technology. ABET accreditation demonstrates a program's commitment to providing its students with a quality education that meets or exceeds specific criteria established by the relevant professions.

- Bachelor of Engineering degree program in Civil Engineering
- Bachelor of Engineering degree program in Computer Engineering
- Bachelor of Engineering degree program in Electrical Engineering
- Bachelor of Engineering degree program in Industrial Engineering
- Bachelor of Engineering degree program in Mechanical Engineering

Accreditation is a voluntary, peer-review process that requires programs to undergo comprehensive, periodic evaluations. The evaluations, conducted by teams of professionals working in industry, government, academe, and private practice within the ABET disciplines, focus on program curricula, faculty, facilities, institutional support, and other important areas.

One of the key elements of ABET accreditation is the requirement that programs continuously improve the quality of education provided. As part of this continuous improvement requirement, programs set specific, measurable goals for their students and graduates, assess their success at reaching those goals, and improve their programs based on the results of their assessment.

In addition to providing colleges and universities a structured mechanism to assess, evaluate, and improve their programs, accreditation also helps students and their parents choose quality college programs, enables employers and graduate schools to recruit graduates they know are well-prepared,

The School of Engineering

and is often used by registration, licensure, and certification boards to screen applicants.

ABET is a not-for-profit organization, owned and operated by its more than 30 professional and technical member societies. An internationally respected organization with more than 2,000 volunteers, ABET has set the higher educational standards in its fields for nearly 80 years. More information about ABET, its member societies, and the evaluation criteria used to accredit programs can be found at www.abet.org.

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George E. Nasr, Ph.D.

ASSISTANT DEAN

Mazen Tabbara, Ph.D.

CHAIRS

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Samer Saab, Ph.D.

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FACULTY

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Abdallah Sfeir, Ph.D.

Mazen Tabbara, Ph.D.

Dani Tannir, Ph.D.

Pierrette Zouein, Ph.D.

UNDERGRADUATE PROGRAMS

The School of Engineering offers Bachelor of Engineering (B.E.) degrees in:

Civil Engineering

Computer Engineering

Electrical Engineering

Industrial Engineering

Mechanical Engineering

With Minors in:

Packaging

Environmental Sciences

GRADUATE PROGRAMS

The School of Engineering offers Master of Science (M.S.) degrees in:

Civil and Environmental Engineering

Computer Engineering

Industrial Engineering and Engineering Management

INSTITUTES

INSTITUTE FOR WATER RESOURCES & ENVIRONMENTAL TECHNOLOGIES (IWRET)

This institute aims to promote usable technology in areas of water resources, environmental protection, and agriculture in the Middle East. It seeks to initiate new ideas and venues for applied research.

CISCO INSTITUTE

This institute offers Cisco courses in computer networking, and trains Cisco instructors for the Middle East and North Africa (MENA) region. It also performs quality visits to regional and local Cisco academies in the MENA region. The visits are meant to ensure these academies are offering high-standard Cisco courses, and have the proper manpower and equipment resources to perform the work.

ENGINEERING FACILITIES

CIVIL ENGINEERING LABORATORIES

The Department of Civil Engineering at the School of Engineering is committed to providing hands-on measurements, and experimentation, as a viable component of the educational program. The Civil Engineering Laboratories provide undergraduate students with the state-of-the-art equipment for experimentation and demonstration of the basic concepts covered in class. The Laboratories also serve for research purposes for the Faculty, and for the students' final year projects. The Civil Engineering Laboratories play a leading role in serving as testing facilities, and technical consultation, for several engineering firms, and private entities, following the internationally accepted standards and testing procedures. The Civil Engineering Laboratories house the following sub-specialty laboratories:

The Construction Materials Laboratory is equipped with a 400-ton Forney Hydraulic Testing Rig, a high precision, displacement controlled, Instron Testing Frame, equipment for standard testing of aggregates and concrete, in both fresh and hardened stages, equipment for non-destructive testing of different elements of existing structures, such as ultrasonic device, Schmidt Hammer, Windsor Probe, Rebar Scan, and Core Drills. Most standard tests can be performed on almost all the building and construction materials, including concrete, aggregates, asphalt, various metals, and related constituents.

The Environmental and Water Quality 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, fluorimeters, UV-visible spectrophotometers, colorimeters, peristaltic pumps, gas meters, centrifuges, incubators, and furnaces, in addition to mobile environmental monitoring stations for air pollution field measurements. This Laboratory has a full range of standard equipment for performing routine environmental analyses of unit processes and operations in water and wastewater treatment, water quality parameters, investigations in fresh and marine water quality, solid waste characterization and properties, evaluation of treatment processes, digestion and co-digestion, reactor performance, solid waste management, environmental impact monitoring, and environmental site investigations.

The GPS/GIS and Surveying Laboratory is equipped with mobile stations, and the only continuous monitoring GPS station in Lebanon, namely the LAUG station, which is part of the UNAVCO consortium in the United States, and the International GPS Service (IGS). This Laboratory helps and enables students to understand the basic principles of surveying by conducting numerous field exercises. Most of the field exercises are conducted outside the laboratory room to gather field data. Reduction and calculation of field data for final result is done in the laboratory room. In addition, activities include: collecting and modifying topographic maps, preparing digitized and GIS referenced maps with related features, DGPS measurements, presenting a general overview of geography, population, climate, water resources, water flows, dams, wastewater, water withdrawals, irrigation and drainage, on maps, survey and collect various data, and analyzing that data.

The Soil and Geotechnical Laboratory is equipped with an 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. Standard laboratory and field identification tests of soils, and their properties in the disturbed and undisturbed forms, may be performed on soils.

The Water Resources Laboratory features modern instruments and apparatuses for testing of various fluids and water resources. Tests may be performed to measure fluid properties and behavior, flow measurements, piping systems, pumps and their characteristics, flow conditions, open channels, turbines, suspended sediments and bed load analysis, river flows and characteristics, flow measuring devices calibration and standardization, fluid friction, calibration of weirs, orifices, hydraulic jumps, forces on gates, hydraulic benches, flow regimes identification, flow velocities, dispersion studies, water depths and discharges, build the corresponding hydrographs, offer technical consultations on hydraulic, and hydrologic, flow problems.

ELECTRICAL AND COMPUTER ENGINEERING LABORATORIES

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 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, and 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 the analysis, and design, of telecommunication systems.

The Communication Systems Laboratory introduces students to the different analog, and digital, communication systems using educational modulation and demodulation boards. The data acquisition for the associated experiments is done using MATALAB/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. Experimentations and analysis use industrial standard oscilloscopes, and data-acquisition boards interfaced via SIMULINK/MATLAB.

The Digital Design Laboratory is the home of all the microprocessor design and reconfigurable computing courses. Students who take microprocessor-programming courses come in with real life, step-by-step, processor programming. They learn to program, at the assembly level, all the types of devices and appliances such as a small video game, or 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 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 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 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, use this Lab extensively.

The Micro-Computer Laboratory is a general engineering area where students, from all the 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. The Lab opens at 8 a.m. and closes at 8 p.m. During rush periods, the Lab is open late, and sometimes overnight.

INDUSTRIAL AND MECHANICAL ENGINEERING LABORATORIES

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. It also includes Particle Image Velocimetry equipment that allows students to visualize fluid structures. Location: Flex 102.

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 which include: 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. Location: Flex103.

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. Location: Flex 103.

The Internal Combustion Engines 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. Location: Flex 103.

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. Location: ARC 205.

The Manufacturing Laboratory features a four axis 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 modelled part. Location: ENG 604.

The 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. Location: ARC 205.

The Instrumentation Laboratory is an environment that helps students become familiar with instrumentation and measurement techniques. It features data acquisition modules connected to the computers and to which several types of sensors can be connected. Acquired data can be collected, analyzed processed and stored using LabVIEW software. This system also allows the students to develop their own virtual instruments. Location: ENG 609A.

The Industrial Computing Laboratory is a general purpose computing lab equipped with 20 computers. It features state of the art engineering software such as Arena for simulation, Catia for ergonomics and manufacturing, JMP for quality control, Ansys and Comsol for thermofluids simulations, Fluent, AutoCad, etc. Location: ENG 605.

The Ergonomics Laboratory features equipment and software required for ergonomic design and analysis, such as an anthropometric kit, a thermo-anemometer, a sound level meter, a light meter, a psychometer with IR thermometer, a body composition monitor, a distance meter, and a baseline hydraulic dynamometer. In addition, the lab features workstations equipped with DELMIA software enabling the students to perform digital human measurement, human building, human task analysis, human posture analysis and human activity analysis. Location: ARC 602.

The Packaging Laboratory features an incline impact tester, a paper bursting machine, a cardboard bursting machine and a universal testing machine. The equipment allows students to analyze and perform tests on various packages and packaging materials. Location: Flex 101.

The Machine Shop includes a metal working area and a wood working area. It provides the students with hands-on experience in the use of tools and equipment used in manufacturing processes, such as lathes, saws, drilling machines, welding equipment, grooving machines, etc. Location: ARC 102.

Department Of Civil Engineering

DEPARTMENT OF CIVIL ENGINEERING

The Department of Civil Engineering offers the following degree programs:

- Bachelor of Engineering (B.E.) in Civil Engineering
- Master of Science (M.S.) in Civil and Environmental Engineering

UNDERGRADUATE PROGRAM:

The Bachelor of Engineering degree program in Civil Engineering is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, and telephone: (410) 347-7700, <http://www.abet.org>

B.E. IN CIVIL ENGINEERING

The Department of Civil Engineering at LAU provides a well-rounded quality and challenging engineering education that graduates dynamic and creative engineers. The program draws upon the broad resources of the comprehensive university that aspires to be among the top universities in the country and the region.

The Department of Civil Engineering is committed to providing students 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 Department of Civil Engineering currently offers courses in the fields of:

- Construction Engineering
- Environmental Engineering
- Geotechnical Engineering
- Surveying
- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

We prepare our graduates to be technically competent, talented, creative, and ethically responsible engineers who are effective professionals in today's work environment. We keep them abreast of the latest technical software. This enables them to enrich their lives and make valuable contributions to their communities.

The total number of credits required for graduation is 150. This includes six technical elective courses, and seven courses with

a separate industry standard software laboratory. Elective courses allow students to choose the emphasis, depending on their own interests and current market needs. Software courses enhance the learning experience and improve the marketability of our graduates. A typical schedule over a four-year period, including summer modules, is listed hereafter. Students may elect to take these courses over a longer period of time.

MISSION

The mission of the Department of Civil Engineering at LAU is to provide students with a quality and challenging education, through innovative teaching, professional practice and community service, enabling the students to enrich their lives and make valuable contributions to their communities.

PROGRAM EDUCATIONAL OBJECTIVES

Within a few years of graduation, the graduates of the Civil Engineering program will:

1. Achieve success in their chosen career path be it professional practice or graduate studies.
2. Adapt to meet the changing requirements of the job market.
3. Be responsible citizen engineers.

PROGRAM OUTCOMES

The students will acquire in their matriculation through the program, the following skills, knowledge, and behaviors:

- a. An ability to apply knowledge of mathematics, science, and engineering.
- b. An ability to design and conduct experiments, as well as to analyze and interpret data.
- c. An ability to design a system, component, or process, to meet the desired needs, within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. An ability to function on multidisciplinary teams.
- e. An ability to identify, to formulate, and to solve engineering problems.
- f. An understanding of one's professional and ethical responsibility.
- g. An ability to communicate effectively.
- h. A broad education necessary to understand the impact of engineering solutions in

Department Of Civil Engineering

- a global, economic, environmental, and social context.
- i. A Recognition of the need and the ability to engage in lifelong learning.
- j. A Knowledge of contemporary issues.
- k. An ability to use the techniques, the skills, and the modern engineering tools that are necessary for the engineering practice.

MAJOR REQUIREMENTS

This is a recommended plan of study over a four years period.

First Year

Fall Semester (17 credits)

MTH 201	Calculus III	3
CHM 201	Chemical Principles	3
CIE 200	Statics	3
COE 212	Engineering Programming	3
COE 201	Computer Proficiency	1
MEE 211	Engineering Graphics	1
ENG 202	Sophomore Rhetoric	3

Spring Semester (17 credits)

ARA 2--/3--	Arabic Language/Literature	3
HLT 201	Basic Health	1
CIE 202	Mechanics of Materials	3
MTH 206	Calculus IV	3
BIO200 or BIO203	Basic Biology or Intro to Ecology	3
ETH 201	Moral Reasoning	1
ENG 203	Fundamental of Oral Communication	3

Summer Module I (3 credits)

-- --	Liberal Arts Curriculum Elective	3
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Summer Module II (3 credits)

-- --	Liberal Arts Curriculum Elective	3
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Second Year

Fall Semester (15 credits)

CIE 308	Construction Materials	3
CIE 309	Construction Materials-LAB	1
CIE 302	Structural Analysis I	3
CIE 303	Structural Analysis - SOFT	1
CIE 320	Fluid Mechanics	3
CIE 321	Fluid Mechanics-LAB	1
MTH 304	Differential Equations	3

Spring Semester (15 credits)

CIE 306	Concrete Structures I	3
CIE 307	Concrete Structures I-SOFT	1
CIE 322	Hydraulics	3
CIE 323	Hydraulics-SOFT	1
CIE 304	Stress Analysis	3
CIE 305	Stress Analysis-LAB	1
CIE 361	Surveying	2
CIE 362	Surveying Lab	1

Summer Module I (6 credits)

GNE 331	Probability and Statistics	3
GNE 301	Professional Communication	2
PED 2--	Physical Education	1

Summer Module II (6 credits)

---	Liberal Arts Curriculum Elective	3
INE 320	Engineering Economy I	3

Third Year

Fall Semester (16 credits)

CIE 444	Soil Mechanics	3
CIE 445	Soil Mechanics - LAB	1
CIE 424	Water Distribution & Treatment	3
CIE 425	Environmental Engineering -LAB	1
CIE 460	Highway Engineering	3
CIE 461	Transportation Engineering -SOFT	1
CIE 480	Civil Eng. Management Fundamentals	3
GNE305	Professional Ethics	1

Spring Semester (15 credits)

CIE 426	Wastewater Collection & Treatment	3
CIE 427	Environmental Engineering - SOFT	1
CIE 446	Foundation Engineering	3
CIE 447	Geotechnical Engineering - SOFT	1
CIE 465	Transportation Systems Engineering	3
CIE 485	Construction Management	3
CIE 486	Construction Management - SOFT	1

Summer Module I (6 credits)

CIE 498	Professional Experience	6
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Fourth Year

Fall Semester (16 credits)

CIE 601	Project I	3
CIE 436	Detailing for Civil Engineers	2
CIE 434	The Civil Engineering Profession	2
CIE --	Technical Elective	3
CIE --	Technical Elective	3
CIE --	Technical Elective	3

Spring Semester (15 credits)

CIE 400	Steel Structures	3
CIE --	Technical Elective	3
CIE --	Technical Elective	3
CIE --	Technical Elective	3
---	Liberal Arts Curriculum Elective	3

Technical Electives

CIE510	Finite Element Method I	3
CIE512	Concrete Structures II	3
CIE520	Solid Waste Management	3
CIE521	Hydrology	3
CIE522	Environmental Impact Assessment	3
CIE525	Environmental Policy and Management	3
CIE526	Environmental Remediation	3
CIE563	Transportation Planning and Land Use	3
CIE564	Mass Transit Systems	3
CIE582	Infrastructure Management	3

CIE584	Quality Management Systems	3
CIE585	Risk and Natural Hazard Management	3
CIE 517	Earthquake Analysis of Structures	3
CIE 540	Advanced Geotechnical Engineering	3
CIE 586	Construction Decision under Uncertainty	3
CIE587	Construction Cost Engineering	3
CIE600	Topics in Civil Engineering	3
CIE602	Project II	3
	or any other technically related course approved by the department.	

COURSE DESCRIPTIONS

[Lecture hours-Lab hours, No. of Credits]

CIE200 Statics [3-0, 3 cr.]

Review of vector algebra; force system resultants; equilibrium of a particle and rigid body; internal forces and applications to beams, trusses and frames; shear and moment diagrams for beams; centroid and moment of inertia.

Pre-requisite: MTH102 and PHY111

CIE202 Mechanics of Materials [3-0, 3 cr.]

Review of 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 by integration.

Pre-requisite: CIE200 Statics.

CIE302 Structural Analysis I [3-0, 3 cr.]

Classification of statically determinate/indeterminate structures; deflections using the principle of virtual work; introduction to matrix algebra, analysis of statically indeterminate structures using Flexibility Method and Stiffness Method;

Pre-requisite: 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-D, 2-D, and 3-D; introduction to constitutive theories of materials and failure criteria for engineering materials; design and analysis of pressure vessels; elastic stability and simple buckling problems of columns, plates and shells; introduction to linear elastic fracture mechanics (LEFM) concepts and integrated design.

Pre-requisite: CIE202 Mechanics of Materials.

CIE305 Stress Analysis – LAB [0-3, 1 cr.]

Laboratory demonstration of stress analysis concepts including: stress and strain measurements, failure of materials, elastic stability, and fracture mechanics.

Co-requisite: CIE304 Stress Analysis.

CIE306 Concrete Structures I [3-0, 3 cr.]

Analysis and design of reinforced concrete members according to ACI code including: beams, solid and ribbed one-way slabs, T-beams, doubly reinforced beams, short columns, including development length and splicing of reinforcing steel bars.

Pre-requisite: CIE302 Structural Analysis I and CIE308 Construction Materials.

CIE307 Concrete Structures I – SOFT [0-2, 1 cr.]

Concrete design using commercial software according to established codes. 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.]

Introduction to the geological origins of construction materials and the effects of geological processes. General considerations on the use of materials in construction, required properties, selection, testing, design, and quality control of civil engineering materials. Design and testing of ordinary Portland cement concrete, asphaltic concrete, masonry, steel, and wood construction; overview of composites and other materials in civil engineering.

Pre-requisite: 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 as per national and international standard methods and specifications.

Co-requisite: CIE308 Construction Materials.

CIE320 Fluid Mechanics [3-0, 3 cr.]

Properties of fluids; hydrostatics and kinematics; basic equations and conservation laws: mass, energy and momentum; Reynolds Transport Theorem; steady laminar and turbulent pipe flow; dimensional analysis and similitude, flow measurements.

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.]

Review of governing equations, design of municipal water supply and distribution systems, flow in pipes and flow regimes; methods of flow measurements; open channel flow with gradually varied flow computations; hydraulic machinery. Introduction to spillways, reservoir routing, well hydraulics and drawdown.

Pre-requisite: CIE320 Fluid Mechanics.

CIE323 Hydraulics – SOFT [0-2, 1 cr.]

Analysis and design using commercially available software: municipal water distribution systems including pipes, reservoir, pumps and losses. Results visualizations and assessment: pressure, velocity, head losses.

Co-requisite: CIE322 Hydraulics.

CIE361 Surveying [2-0, 2 cr.]

Basic measuring procedures for distances, elevations, angles, bearings, azimuths; theory of measurements and errors, leveling, mapping; construction and topographic surveys, traverses, adjustment and closure, subdivision

of Land; area and volumes computations, road surveys: coordinate systems, triangulation.

Pre-requisite: MEE211 Engineering Graphics

CIE362 Surveying - LAB [0-3, 1cr.]

Students will apply in the field concepts learned in class including basic measuring procedures for distances, elevations, angles, bearings, azimuths; theory of measurements and errors, leveling, mapping; construction and topographic surveys, traverses, adjustment and closure, area and volumes computations.

Co- Requisite: CIE 361 Surveying

CIE400 Steel Structures [3-0, 3 cr.]

Introduction to the AISC-LRFD design philosophy; discussion of the behavior, analysis and design of steel structures; design of tension members, simple bolted connections, introduction to welded connections, compression members, laterally supported beams, beams under torsion, and lateral torsional loading.

Pre-requisite: CIE302 Structural Analysis I and CIE304 Stress Analysis.

CIE424 Water Distribution and Treatment [3-0, 3cr.]

Physical, chemical and biological water quality parameters and standards; water quantity, population estimation and use factors; methods of distribution and design criteria and periods; stresses in pipes and pipe materials, distribution system related appurtenances; water treatment techniques: purpose, sedimentation, thickening, coagulation/flocculation processes and basin design, filtration, disinfection.

Pre-requisite: CIE322 Hydraulics.

CIE425 Environmental Engineering – LAB [0-3, 1 cr.]

Fundamental quantities, titration, standards, physical, chemical and biological water and wastewater characteristics and parameter determination using standard methods, data reduction, analysis and interpretation.

Pre-requisite: CHM201 Chemical Principles and co-requisite: CIE424 Water Distribution and Treatment.

CIE426 Wastewater Collection and Treatment [3-0, 3 cr.]

Design of sanitary and storm sewers and related appurtenances, mass balances and hydraulic flow regimes; reaction order and rates, analysis of experimental data, attached and suspended growth biological wastewater treatment systems including: activated sludge and its variations, aerated lagoons, SBR, trickling filters, RBC; basic nitrification-denitrification processes; oxygen requirements; introduction to sludge treatment and disposal.

Pre-requisite: CIE 424 Water Distribution and Treatment.

CIE427 Environmental Engineering – SOFT [0-2, 1 cr.]

Analysis and design of wastewater treatment plants using commercially available software: sizing of tanks; and effluent concentration. Results visualizations and assessment.

Co-requisite: CIE426 Wastewater Collection and Treatment.

CIE434 The Civil Engineering Profession [2-0, 2 cr.]

Introduction to the history and heritage of civil engineering; specialized sub disciplines; professionalism and professional registration and societies; continuing education; impact of historical and contemporary issues on the identification, formulation, and solution of engineering problems, impact of engineering solutions on the economy, environment, political landscape, and society. The course involves teamwork researching topics related to the impact of contemporary engineering solutions.

Pre-requisite: fourth year standing

CIE436 Detailing for Civil Engineers [0-2, 2 cr.]

An introduction to computer-aided drafting techniques and design drawings using a CAD program and sketching to generate two and three dimensional drawings based on the conventions of engineering graphical communication, applications to different Civil Engineering areas of specialty. A required team effort project introduces the preparation of working design drawings and consideration of production methods.

Pre-requisite MEE 211 Engineering Graphics.

CIE444 Soil Mechanics [3-0, 3 cr.]

Formation and types of soils, field testing and soil classification, permeability and seepage analysis in saturated soils, stresses in a soil mass, total and effective stress analysis, stress-strain relationships and strength properties of soils, failure criteria, and theory of consolidation.

Pre-requisite: CIE 202 Mechanics of Materials.

CIE445 Soil Mechanics – LAB [0-3, 1 cr.]

Laboratory testing for properties and characteristics of soils including: classification tests, soil compaction and relative density, hydraulic conductivity, shear strength tests, and consolidation test.

Co-requisite: CIE444 Soil Mechanics.

CIE446 Foundation Engineering [3-0, 3 cr.]

Analysis, design and construction aspects of foundations including: subsurface exploration and soil characterization; design of shallow foundations based on bearing capacity and settlement calculations; earth pressure theories and design of typical retaining structures; introduction to deep foundations design.

Pre-requisite: 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.

Co-requisite: CIE446 Foundation Engineering.

CIE460 Highway Engineering [3-0, 3 cr.]

Planning, design, and operation of transportation systems. Theory and practice of the geometric design of streets and highways including horizontal and vertical curves, traffic flow modeling, analysis, control, and safety. Introduction to the design of intersections, and interchanges. Introduction to pavement design principles.

Pre-requisite: CIE361 Surveying.

CIE461 Transportation Engineering – SOFT [0-2, 1 cr.]

Highway design using commercial software integrating planning, geometric design, traffic modeling and GIS systems. Results visualizations and assessment.

Co-requisite: CIE460 Highway Engineering.

CIE465 Transportation Systems Engineering [3-0, 3 cr.]

Road vehicle performance, analysis and design of infrastructure systems, components of highway systems; planning and design of freeway interchanges, highway capacity and quality of service using High Capacity Manual methodologies, fundamentals of traffic flow theory and queuing analysis, traffic control and analysis of intersections, travel demand and forecasting.

Pre-requisite: CIE460 Highway Engineering.

CIE480 Civil Engineering Management Fundamentals [3-0, 3 cr.]

Organization and management theory, understanding of business fundamentals as applied in the private, government and non-profit sectors; public policy; public administration fundamentals with applications. Principles of leadership, government regulations and responsibilities of the different parties involved in public construction, bonds and insurance requirements, funding mechanisms, dispute resolution processes, professional ethics.

Pre-requisite: INE 320 Engineering Economy and Co-requisite GNE305 Professional Ethics.

CIE485 Construction Management [3-0, 3 cr.]

Construction contracting processes, development of the different phases of a construction project, quantity take-off and price estimating, proposal preparation; scheduling methods and networks, application of construction control tools such as: CPM, PERT, repetitive scheduling method; resource allocation and leveling, time-cost tradeoff; budgeting and cost control, and quality control.

Pre-requisite: CIE480 Civil Engineering Management Fundamentals.

CIE486 Construction Management – SOFT [0-2, 1 cr.]

Use of commercial software for the operations, scheduling, planning, resource allocation,

budgeting and control of construction projects.

Co-requisite: CIE485 Construction Management.

CIE498 Professional Experience [0-6, 6 cr.]

Professional experience through training in the execution of real-life engineering projects.

Pre-requisite: CIE 426 Wastewater Collections and Treatment, CIE 446 Foundation Engineering, CIE 306 Concrete Structures I, CIE 465 Transportation Engineering Systems.

CIE510 Finite Element Method I [3-0, 3 cr.]

Stress analysis of solids: shape function, displacement interpolation, linear constitutive relations, element stiffness-matrix, direct stiffness method, assessment of model adequacy, error estimation. Stress analysis using commercial software.

Pre-requisite: CIE202 Mechanics of Materials.

CIE512 Concrete Structures II [3-0, 3 cr.]

Design of: deep beams reinforced for shear and torsion; stair cases, slender columns, two-way column-supported slabs, footings, foundation and retaining walls.

Pre-requisite: CIE306 Concrete Structures I and CIE444 Soil Mechanics.

CIE517 Earthquake Analysis of Structures [3-0, 3 cr.]

Introduction to earthquake engineering including plate tectonics with emphasis on seismicity of Lebanon; introduction to structural dynamics and natural modes of vibrations, determination of earthquake loading on structures; computer analysis of structural response.

Prerequisites: CIE302 Structural Analysis I and CIE303 Structural Analysis I-Soft

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 principles and processes, environmental impact assessment, environmental legislation and risk, and pollution control management.

Pre-requisite: 4th year standing

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 frequency analysis, and introduction to hydrologic modeling.

Pre-requisite: 4th year standing.

CIE522 Environmental Impact Assessment [3-0, 3 cr.]

This course is the study and evaluation of the impacts of large scale projects on the quality of the physical, biological, and socio-economic environment taking into account environmental laws and regulations and EIA guidelines, identification of impacts, quantification methods, mitigation measures, and monitoring plans. Case study involving the preparation of an EIA report.

Pre-requisite: consent of instructor or senior standing.

CIE525 Environmental Policy and Management [3-0, 3 cr.]

This course explores human made problems in the environment parallel with concepts in environmental ethics, management and policies so as solutions are provided concerning preservation of the environment. Topics covered are toxic and solid wastes, pollution of air, water, food and soil, international and national environmental ethics, management and policies.

Pre-requisite: senior standing

CIE526 Environmental Remediation [3-0, 3 cr.]

This course deals with processes employing microorganisms, fungi, plants or their enzymes to return contaminated environments, such as polluted waters and soils, to their natural conditions. The control, optimization and monitoring of bioremediation is discussed as well as the environmental factors and microbial populations involved. In-situ, ex-situ applications and genetic engineering approaches are emphasized.

Pre-requisite: senior standing

CIE540 Advanced Geotechnical Engineering [3-0, 3 cr.]

Advanced topics in geotechnical engineering including: Load and Resistance Factor Design

(LRFD); design of deep foundations for axial and lateral loading; two-dimensional limiting equilibrium methods of slope stability analysis; design methods for slope stabilization; design of shoring systems such as diaphragm walls, sheet-pile walls, anchored walls, and braced excavations.

Pre-requisite: CIE 446 Foundation Engineering

CIE563 Transportation Planning and Land Use [3-0, 3 cr.]

Interaction between transportation and land use variables, including modeling requirements, impacts, and data needs within the context of good community planning and economic development; transportation management, administration, finance, system evaluation, implementation, and integration.

Pre-requisites CIE465 Transportation Systems Engineering and GNE 331 Probability and Statistics

CIE564 Mass Transit Systems [3-0, 3 cr.]

An overview of mass transit systems; transit system planning including demand and cost analysis and evaluation; transit system design including route design, scheduling, and fare policy; transit networks and marketing; para transit systems; future trends in mass transit.

Pre-requisites INE320 Engineering Economy and CIE465 Transportation Systems Engineering.

CIE582 Infrastructure Management [3-0, 3 cr.]

General methods of engineering systems management and the different types of infrastructure. Application of different methods for the planning and analysis of complex infrastructure projects considering possible financing alternatives, engineering solutions, and overall management issues during the life cycle of the project. Review of selected case studies from the Arab Gulf countries.

Pre-requisite: CIE 485 Construction Management

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.

Pre-requisite: 4th year standing

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.

Pre-requisite: GNE331 Probability and Statistics.

CIE586 Construction Decisions under Uncertainty [3-0, 3 cr.]

Application of decision analysis theory to construction project and organization decisions under uncertainty; decision trees and sensitivity analysis, utility assessment, multi-attribute utility theory, multiple sampling and decision strategies; bidding theory and use of probabilistic modeling and Monte-Carlo simulation to determine optimal bidding strategies.

Pre-requisites CIE480 Civil Engineering Management Fundamentals and GNE 331 Probability and Statistics

CIE587 Construction Cost Engineering [3-0, 3 cr.]

Cost engineering for construction organizations, projects, and operations. Construction financial accounting, project monitoring and cost controlling; construction financing, break even analysis, profit, earned value, balance sheets, and cash flow analyses; Cost indices, parametric estimates, unit price proposals, quantity take-off, cost estimation and bid preparation.

Pre-requisite CIE485 Construction Management

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.

Pre-requisite: To be announced prior to registration time.

CIE601 Project I [3-0, 3 cr.]

This course provides students with a design experience that is as close as possible to real life design projects; students will work on multidisciplinary teams according to a team work plan and under the supervision of fulltime faculty; each team meets separately with their advisors as needed to complete the work on the project but not less than three times during the semester; students choose from a set of predefined projects that have been approved by the department.

Co-requisite: CIE498 Professional Practice.

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.

Pre-requisite: CIE601 Project I and Consent of instructor.

MINOR IN ENVIRONMENTAL SCIENCE

Administered jointly by the Department of Civil Engineering and the Department of Natural Sciences

The minor in Environmental Science is an interdisciplinary program, which gives students the opportunity to examine environmental issues from a variety of perspectives. The knowledge of environmental science major issues is central to theories and research in chemistry, biology, civil engineering, as well as social science, business, and public policy. The purpose of this program is to provide students with the broad conceptual framework of environmental issues and to offer a new global vision of this interesting discipline. A Minor in Environmental Science aims at providing quality education to interested students and enriching their knowledge in existing global environmental issues and problems. It is expected to expose them to important issues related to environmental problems and their causes, including but not limited to ecosystems and how they work, deforestation, loss of biodiversity, species extinction, air pollution, global warming, ozone depletion, solid waste disposal, and renewable energy. Concepts in environmental ethics, management and policies concerning preservation of the environment will also be provided. Additionally it covers topics related to the study of natural and non-natural chemical and microbiological substances in the environment and their transformations, ending with remediation to most of environmental pollution issues.

EDUCATIONAL OBJECTIVES

1. Provide students with an understanding of the social, economic, political and legal framework of environmental issues
2. Provide students with enough background to be able to collect, analyze and formulate possible solutions to environmental problems.
3. Provide students with an understanding of the intertwining effects and impacts of human activities on the world vital natural resources.
4. Better prepare students for the job market.

STUDENT OUTCOMES

- Understand the underlying concepts and principles associated with environmental science.
- Identify sources of water, soil and air pollutants.
- Demonstrate familiarity with the practical/field dimensions of a range of environmental problems and issues.
- Understand the interrelationships between society, economy and environment.
- Ability to critically review environmental impact assessment reports.
- Discuss remediation strategies of a variety of environmental contaminants.
- Recognize potential harmful role of human being in shaping the environment.

MINOR REQUIREMENTS

Minor in Environmental Science students must complete a minimum of 18 credits (9 core credits, 9 elective credits)

Core Courses (9 Cr)

ENV200	Introduction to Environmental Science	3
ENV 402/ CIE525	Environmental Policy and Management	3
ENV422/ CIE522	Environmental Impact Assessment	3

Elective Courses (9 Cr)

CHM340	Environmental Chemistry	3
*BIO203	Introduction to Ecology	3
ENV423	Environmental Microbiology	3
CIE424	Water Distribution and Treatment	3
CIE 426	Wastewater collection and treatment	3
CIE 520	Solid Waste Management	3
CIE585	Risk and Natural Hazard Management	3
ENV426/ CIE526	Environmental Remediation	3
ENV427	Environmental Physics	3

**May replace ENV200 for engineering students only. Also, it can be substituted with BIO 331 (Ecology) for biology students. CIE courses are considered as CIE technical electives for civil engineering students.*

COURSE DESCRIPTIONS

BIO203 Introduction to Ecology [3-0, 3 cr.]

This course introduces the organization of individual organisms into populations, communities, and ecosystems. It focuses on the interactions between living organisms and their physical environment. Concepts such as diversity, competition, natural selection, adaptation,

climate changes, migration, extinction and deforestation are covered. Additionally the course tackles concepts of environmental microbiology in relation to pollution, remediation and recycling of liquid and solid wastes.

CHM340 Environmental Chemistry [3-0, 3 cr.]

This course is a study of natural and non-natural chemical substances in the environment and their chemical transformations. It involves chemistry of energy resources, atmosphere, hydrosphere, biosphere, and, lithosphere (natural and in polluted environment). Principles of chemical reactions, chemical equilibrium and reaction kinetics are applied in this course. Other covered topic is waste treatment and chemical processes. Parallel with these is learning the methods of environmental chemical analysis.

ENV200 Introduction to Environmental Science [3-0, 3 cr.]

This is 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 includes field trips.

ENV423 Environmental Microbiology [2-3, 3 cr.]

This ecologically based course discusses the relationship of microorganisms with one another and with their environment. It stresses the three major domains of life – Eucaryota, Archaea and Bacteria and studies their diversity, interactions and physiology in their natural environments. Biodegradation of organic matter, bio-geo-cycling of minerals and waste bio-treatment are emphasized. The course also deals with metagenomic, metaproteomic techniques and applications as well as the use of microarrays in Microbial Ecology.

ENV427 Environmental Physics [3-0, 3 cr.]

The course comprises aspects of atmospheric physics, soil physics and many aspects of applied physics. It introduces the essentials in environmental physics, and describes the basics in environmental spectroscopy e.g. black body radiation and the solar UV and Life. It also addresses the global climate, energy balance, energy available for human use, transport of pollutants, and noise pollution.

The course also discusses risk estimations, energy saving and nature and future thinking in the context of the global society.

CIE course descriptions are included in relevant sections of this academic catalogue.

Graduate Program

MASTERS OF SCIENCE (M.S.) IN CIVIL AND ENVIRONMENTAL ENGINEERING

The Department of Civil Engineering at LAU offers a comprehensive program leading to the degree of Master of Science (M.S.) in Civil and Environmental Engineering (CEE) with one of three emphases: (i) Infrastructure and Construction Management; (ii) Environmental Science, Engineering and Management; or (iii) Engineering Mechanics. The CEE Program aims at attracting qualified students to pursue graduate studies. The program provides graduate students with a sound professional and academic training in civil engineering, giving them access to a variety of courses in their area of study, as well as the opportunity to conduct research, thus combining the theoretical and the applied aspects of civil engineering.

The program is designed to stimulate independent thinking and the acquisition of knowledge, as well as the application of acquired knowledge and skills to the solution of practical engineering problems. The program provides an in-depth experience with one or more particular fields of Civil Engineering, while simultaneously exposing the student to cross-disciplinary issues and topics that affect the engineering and management of systems.

Flexibility is a key benefit of this program as it allows students to plan their degree in line with their long-term career goals, and to be consistent with any professional experience and prior training they may have. The M.S. – CEE Degree may be completed with or without a thesis.

MISSION

The mission of the graduate program in Civil and Environmental Engineering at LAU is to provide students with a well-rounded set of career skills that empowers them to address a wide range of problems through exposure to an advanced body of knowledge and scholarly endeavours.

PROGRAM EDUCATIONAL OBJECTIVES

The purpose of the Graduate Program in Civil and Environmental Engineering is to:

1. Train students to develop the methodology and necessary skills to explore emerging issues in engineering and science.
2. Provide students with an advanced background and a focused body of knowledge required for the present day professional practice in their chosen field of study, and to prepare them to adapt to a changing profession.
3. Train the students in an active research environment, to equip them with the latest tools of research, and to prepare them for further study toward the Doctoral Degree.

STUDENT LEARNING OUTCOMES

Graduates of the M.S. – CEE Programs will be able to:

- a. Reinforce skills developed in the undergraduate program.
- b. Use advanced analytical, computational, and/or experimental aspects of civil engineering.
- c. Make critical judgments based on a sound knowledge base.
- d. Conduct research and appreciate its importance in the evolution of civil engineering.

EMPHASIS AREAS

The course work for the M.S. - CEE can be grouped into the following three concentrations or emphasis areas:

1- INFRASTRUCTURE AND CONSTRUCTION MANAGEMENT:

This is designed to prepare the graduates to meet the challenges of planning, financing, designing, building and managing public and private infrastructure under growing technical, financial, social and environmental constraints.

2- ENVIRONMENTAL SCIENCE, ENGINEERING AND MANAGEMENT:

This is designed to prepare graduates to meet the challenges of sustainable development and natural resources management while protecting the environment.

3- ENGINEERING MECHANICS:

This is designed to prepare graduates to meet the challenges of designing technically efficient, cost-effective, and state-of-the-art facilities that are responsive to natural hazards and economic constraints.

ADMISSION REQUIREMENTS

Applicants for admissions to this program must have a Bachelor of Science in Engineering, or a Bachelor of Engineering Degree, from a recognized university, with a minimum general Grade Point Average (GPA) equivalent to 2.75, on a 4-point scale, or 2.75 in the Major. If the Bachelor's Degree is not in the field to be pursued, and/or if the GPA is less than 2.75, the applicant may be admitted as "special," as described in the Academic Rules and Regulations for Graduate Programs.

The GRE general exam is required of all applicants (GRE subject exams are not required). All applicants must submit scores for the GRE general exam (includes verbal reasoning, quantitative reasoning, and analytical writing scores). Your GRE test scores are an important part of your application. GRE test scores that are more than 5 years old will not be accepted.

The admissions committee considers several factors when making admission decisions: your academic performance at prior institutions (grades, rankings, and GPAs) and your GRE test score. The rate of graduate assistantship (GA), when requested, is directly related to your GPA and GRE scores. Letters of recommendation are optional; however, three letters are recommended, two of which to be completed by faculty who are familiar with your academic performance.

M.S. – CEE Requirements

Students are required to complete 30 credits for graduation. A student in the program can choose to pursue either a thesis or a non-thesis option. Students who take the thesis option are required to complete a six-credit thesis. The remaining credits can be completed according to the course requirements in each concentration or emphasis area, as specified below. The breadth requirements consist of six courses (18 credit hours) for all of the emphasis areas. The student should take at least the equivalent of 18 credits in engineering courses.

Students with a Bachelor of Engineering (B.E.) degree who are pursuing a M.S. degree may transfer up to six credits from their B.E. degree, provided that the transferred credits correspond to courses labelled graduate

courses and the student has scored, at least, a grade of "B" on each of these courses. The transfer of credits is governed by the Rules and Regulations for Graduate Programs.

In order to satisfy the requirements for the M.S. - CEE with a specific concentration or emphasis, the student is required to complete either one of the following options:

1. Infrastructure and Construction Management
2. Environmental Science, Engineering and Management
3. Engineering Mechanics

Infrastructure and Construction Management

The student is required to complete at least four courses from Infrastructure and Construction Management, one course from Optimization (please refer to the Industrial and Mechanical Engineering Department for courses in Optimization), and any course offered by the School of Engineering.

Environmental Science, Engineering and Management

The student is required to complete at least four courses from Environmental Science, Engineering and Management, and any two courses offered by the School of Engineering.

Engineering Mechanics

The student is required to complete, at least, four courses from Engineering Mechanics, and any two courses offered by the School of Engineering.

Remaining courses may be taken from any graduate program of the School of Engineering, or any approved graduate course in the university, including Business, International Affairs, Biology, Toxicology, Chemistry, and Computer Science.

It is recommended that the remaining courses in each program/emphasis area are chosen in the thesis area, if a thesis option is selected, and is done in consultation with the student's advisor. It is important to note that offering courses in a specific concentration area is contingent on adequate enrolment in that specific course/area.

COURSE LISTINGS

Infrastructure and Construction Management

CIE760	Transportation Engineering II	3
CIE761	Traffic Engineering	3
CIE782	Infrastructure Management	3
CIE784	Quality Management Systems	3
CIE785	Risk and Natural Hazard Management	3
CIE786	Highway Design and Management	3
CIE787	Concrete and Steel Construction	3
CIE788	GIS and Remote Sensing	3
CIE789	Cost Engineering and Control	3
CIE790	Construction Methods	3
CIE791	Project Scheduling	3
CIE792	Project Contracting	3

Environmental Science, Engineering and Management

CIE720	Solid Waste Management	3
CIE721	Hydrology	3
CIE722	Environmental Impact Assessment	3
CIE723	Water Resources: Planning and Management	3
CIE724	Air Quality Management	3
CIE725	Geo-environmental Engineering	3
CIE726	Unit Operations of Water Treatment Systems	3
CIE727	Unit Operations of Wastewater Treatment Systems	3
CIE728	Fate & Transport of Pollutants in the Environment	3
CIE729	Hydrogeology	3
CIE730	Irrigation and Drainage	3
CIE731	Urban Water Resources	3
CIE732	Advanced Environmental Engineering	3
CIE733	Groundwater Engineering	3

Engineering Mechanics

CIE700	Steel Structures	3
CIE701	Finite Element Methods	3
CIE704	Case Histories in Structural & Geotechnical Engineering	3
CIE705	Computational Hydraulics	3
CIE706	Structural Dynamics	3
CIE707	Earthquake Engineering	3
CIE708	Applied Elasticity	3
CIE709	Advanced Concrete Design	3
CIE710	Pre-stressed Concrete Design	3
CIE711	Pavement Design	3
CIE712	Design of Hydraulic Structures	3
CIE742	Foundations Engineering	3

Other Courses (12 credits)

CIE799	Special Topics Course	3
CIE891	Project course	3
CIE899	Thesis	6

COURSE DESCRIPTIONS

CIE700 Steel Structures [3-0, 3 cr.]

This course is an introduction to the LRFD philosophy. It covers the behaviour 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.

Pre-requisites: CIE302 Structural Analysis I and CIE304 Stress Analysis.

CIE701 Finite Element Methods [3-0, 3 cr.]

This course covers stress analysis of solids which include: shape function, displacement interpolation, linear constitutive relations, element stiffness-matrix, direct stiffness method, assessment of model adequacy and error estimation. It also covers stress analysis using commercial software.

Pre-requisite: CIE202 Mechanics of Materials.

CIE704 Case Histories in Structural and Geotechnical Engineering [3-0, 3 cr.]

This course is a selection of case histories in structural and geotechnical engineering, exposing the failures and limitations of the current practice and exploring state of the art solutions. The course involves site visits and visiting lecturers.

Pre-requisites: CIE302 Structure Analysis I and CIE444 Soil Mechanics.

CIE705 Computational Hydraulics [3-0, 3 cr.]

This course covers the formulation of ordinary and partial differential equations related to flow and transport problems such as flood waves, tidal propagation, shallow waves and transport of pollutants. The course also covers the numerical solutions using finite difference (explicit and implicit) schemes, finite element techniques and boundary integral methods. Also, the course comprises the measuring techniques in flow problems, data acquisition and online analysis.

Pre-requisite: CIE322 Hydraulics.

CIE706 Structural Dynamics [3-0, 3 cr.]

The course covers the dynamics effects of wind, earthquake, impact and blast loading, vibration of structural components and the damping effects.

Pre-requisite: CIE302 Structural Analysis I.

CIE707 Earthquake Engineering [3-0, 3 cr.]

This course is an introduction to earthquakes, seismological and faulting mechanisms, design of constructed facilities and infrastructural systems under earthquake loads, risk assessment and strengthening and case studies.

Pre-requisites: CIE302 Structure Analysis I and GNE331 Probability and Statistics.

CIE708 Applied Elasticity [3-0, 3 cr.]

This course covers tensor notation, analysis of stress, two-dimensional elasticity, bending of beams, torsion of prismatic bars, asymmetrically loaded members, beams on elastic foundations and elastic stability.

CIE709 Advanced Concrete Design [3-0, 3 cr.]

This course covers advanced topics in concrete design that include: Combined Footings, Retaining Walls, Mat Foundations, Pile Caps, Torsion, Walls, Shell Structures, Computer Aided Design of Concrete, in addition to other topics of interest.

Pre-requisites: CIE306 Concrete Structures I and CIE446 Foundation Engineering.

CIE710 Pre-stressed Concrete Design [3-0, 3 cr.]

This course covers the design of pre-stressed concrete structures, with an emphasis on flexural design of beams and slabs.

Pre-requisite: CIE306 Concrete Structures I.

CIE711 Pavement Design [3-0, 3 cr.]

This course covers the beam on elastic foundation, rigid and flexible pavements, highway and airport pavements, pavement performance and pavement systems management and maintenance.

Pre-requisites: CIE460 Highway Engineering I and CIE444 Soil Mechanics.

CIE712 Design of Hydraulics Structures [3-0, 3 cr.]

This course covers the history and background, function, planning process, types, analysis and design of culverts and bridge openings, dam appurtenances, intakes, aprons, chute blocks, spillways and drop structures. It also covers dam safety, stability and protection against scour.

Pre-requisites: CIE322 Hydraulics and CIE306 Concrete Structures I.

CIE720 Solid Waste Management [3-0, 3 cr.]

This course covers the quantity and quality of municipal and industrial solid wastes; the 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.

Pre-requisite: Consent of the instructor.

CIE721 Hydrology [3-0, 3 cr.]

This course covers the occurrence of water, precipitation, interception, depression storage, infiltration, evaporation, transpiration, snow melt, well hydraulics, stream flow, data sources, instrumentation, runoff and hydrographs, urban hydrology, hydrograph routing, probability in hydrologic design and the introduction to hydrologic modeling.

Pre-requisite: CIE322 Hydraulics.

CIE722 Environmental Impact Assessment [3-0, 3 cr.]

This course covers the study and evaluation of the impacts of large-scale projects on the quality of the physical, biological and socio-economical environment, taking into account environmental laws and regulations as well as environmental impact assessment guidelines. The course covers the identification of impacts, quantification methods, mitigation measures, and monitoring plans. The course deals with a case study involving the preparation of an environmental impact assessment report.

Pre-requisite: Consent of the instructor.

CIE723 Water Resources Planning and Management [3-0, 3 cr.]

This course covers the major issues in the planning and management of water resource systems, and the techniques – such as linear programming, dynamic programming and nonlinear programming – that are used to solve them. Practical problems in water resource systems such as water allocation, water quality management, reservoir operations, flood control, water resources management, basin modelling and flood and drought forecasting demonstrated are discussed with system analysis methods.

Pre-requisite: CIE721 Hydrology.

CIE724 Air Quality Management [3-0, 3 cr.]

This course covers the analysis of air pollution sources and methods for controlling emissions, with a focus on transportation-related air pollution. The course also encompasses a summary of fundamental chemical and physical processes governing pollutant behavior, and a quantitative overview of the characterization and control of air pollution problems. The analysis of key elements of the air pollution system such as the sources and control techniques, atmospheric transformations, atmospheric transport and modelling are discussed.

Pre-requisites: CIE320 Fluid Mechanics and CHM201 Chemical Principles.

CIE725 Geo-environmental Engineering [3-0, 3 cr.]

This course covers the geotechnical practice in environmental protection and restoration. The characterization of contaminated sites, preliminary site assessment, site investigation techniques and site cleanup and remediation technologies, as well as the monitoring requirements, are discussed. The course also covers the methods of soil and site characterization for siting of waste repositories, the design of waste containment systems, including landfills, slurry walls and soil stabilization, as well as the applicability and use of geosynthetics.

Pre-requisite: CIE444 Soil Mechanics.

CIE726 Unit Operations of Water Treatment Systems [3-0, 3 cr.]

This course covers the theory of aquatic chemistry and the principles of conventional and advanced unit operations, such as sedimentation, filtration, aeration, ion exchange, reverse osmosis for the treatment of drinking water and decontamination of groundwater, stability and conditioning, in addition to a detailed design of inlets, outlets and operational parts of the treatment plant.

Pre-requisite: CIE424 Water Distribution and Treatment

CIE727 Unit Operations of Wastewater Treatment Systems [3-0, 3 cr.]

This course covers wastewater characteristics and laboratory analysis, population kinetics and micro-organisms and their role in the various waste treatment processes, as well as process selection, oxidation kinetics, process modelling and control, sludge treatment and

disposal, and unit operations and processes of wastewater treatment.

Pre-requisite: CIE426 Wastewater Collection and Treatment.

CIE728 Fate and Transport of Pollutants in the Environment [3-0, 3 cr.]

This course emphasizes man-made chemicals, their movement through surface and groundwater, air, soil, and their eventual fate. The course covers the physical transport, as well as chemical and biological sources and sinks, and the linkages to health effects, sources and control and policy aspects.

Pre-requisites: CHM201 Chemical Principles and CIE322 Hydraulics.

CIE729 Hydrogeology [3-0, 3 cr.]

This course covers the natural parameters, distribution of water, hydro-geological structures, movement and storage of water; methods of investigation, collection of samples, observation of water levels, measurement of aquifer properties, speed and direction of ground water flow, and hydro-geological models.

Pre-requisite: CIE721 Hydrology.

CIE730 Irrigation and Drainage [3-0, 3 cr.]

This course covers the irrigation practices application systems, soil-plant-water relationships, irrigation system types, scheduling, effluent reuse, case studies, quantity and quality of stream flow generated in a drainage basin, and surface, and subsurface, drainage systems.

Pre-requisite: CIE322 Hydraulics.

CIE731 Urban Water Resources [3-0, 3 cr.]

This course covers the urban climate, urban development effects on catchments responses, design of storm water drainage systems, master plans, management for water pollution, sedimentation, and erosion control, use of models for planning and operation, flood control, reservoir design and operation (linear and dynamic programming, and case studies.

Pre-requisite: CIE721 Hydrology.

CIE732 Advanced Environmental Engineering [3-0, 3 cr.]

This course covers reaction kinetics, classes and types of reactions, rates and orders,

analysis of experimental data, applications, setup of mass balances, flow analysis of CM and PF regimes, detention time in vessels, flow and quality equalization, system material balances, sludge production in activated sludge systems, nitrogen and phosphorus removal, treatment in ponds and wetlands as well as natural systems, fate and transport of pollutants in natural waters, loading equations for streams, dissolved oxygen variation in a stream.

Pre-requisite: CIE426 Wastewater Collection and Treatment.

CIE733 Groundwater Engineering [3-0, 3 cr.]

This course covers the flow of incompressible fluids through porous media, groundwater movement, Darcy's law, groundwater production, recharge, quality, saltwater intrusion, aquifer management, differential equations governing the flows, laboratory and field methods of hydraulic conductivity measurements, confined and unconfined flow, and graphical flow nets and the use of analogs, as well as seepage control in earth structures, soil stabilization, drainage, geo-textiles, and construction denaturing.

Pre-requisite: CIE721 Hydrology.

CIE742 Foundations Engineering [3-0, 3 cr.]

This course is an introduction to the elastic and plastic theories of foundations, behavior and design of shallow foundations, behavior and design of lateral earth retaining structures, and an introduction to deep foundations design, and case studies.

Pre-requisite: CIE444 Soil Mechanics.

CIE760 Transportation Engineering II [3-0, 3 cr.]

This course covers the analysis and design of infrastructure systems, components of highway systems, interchanges, intersections, execution methods and practices, and the basic design of major transportation facilities.

Pre-requisite: CIE460 Highway Engineering.

CIE761 Traffic Engineering [3-0, 3 cr.]

This course covers the human and vehicular characteristics, as they affect highway traffic flow, traffic regulations, accident cause and prevention, improving the flow on existing facilities, planning traffic systems, and terminal problems.

CIE782 Infrastructure Management [3-0, 3 cr.]

This course covers the general methods of engineering systems management, and the different types of infrastructure. The course analyzes the possible financing and engineering solutions, and alternatives, as well as the overall management during the life cycle of the project.

Pre-requisite: CIE485 Construction Management.

CIE784 Quality Management Systems [3-0, 3 cr.]

This course is an 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.

Pre-requisite: Consent of the instructor.

CIE785 Risk and Natural Hazard Management [3-0, 3 cr.]

This course covers the types, frequency, and the effects of natural hazards, the calculation of the return period, and the planning and designing of engineering systems to survive natural events, as well as the mitigation of damage.

Pre-requisite: GNE331 Probability and Statistics.

CIE786 Highway Design and Management [3-0, 3 cr.]

This course is an introduction to highway networks, their engineering and management characteristics, and their maintenance and performance issues, financing and cost recovery methods, and integrated solutions and information technology tools (use of HDM tools by the World Road Association PIARC).

Pre-requisites: CIE460 Highway Engineering I and INE320 Engineering Economy.

CIE787 Concrete and Steel Construction [3-0, 3 cr.]

This course covers the selection and planning of construction methods for modern concrete and steel structures, including bridges, high-rise buildings, sea structures, structural steel erection, and the heavy industrial plants including special forming and heavy erection and false-work.

Pre-requisites: CIE306 Concrete Structures I, CIE400 Steel Structures, and CIE485 Construction Management.

CIE788 GIS and Remote Sensing [3-0, 3 cr.]

This course covers the fundamentals of sensing earth resources, data acquisition and processing, aircraft and satellite images, digital image processing, pattern recognition, feature extraction, and the geographic information systems in various applications, using GIS software including ARC/INFO and ARC-VIEW.

Pre-requisite: CIE361 Surveying.

CIE789 Cost Engineering and Control [3-0, 3 cr.]

This course covers cost engineering for construction organizations, projects, and operations. It encompasses construction financing, break-even, profit, and cash flow analyses, and capital budgeting, as well as the equipment cost and procurement decisions. Construction financial accounting, cost accounting, cost control systems, and databases are discussed, as well as cost indices, parametric estimates, and unit price proposals, measuring work and settling claims.

Pre-requisite: CIE485 Construction Management.

CIE790 Construction Methods [3-0, 3 cr.]

This course is an advancement study of the application and analysis of construction equipment and methods. Topics include drilling, blasting, tunneling, dewatering foundations, and rigging studies.

Pre-requisites: CIE308 Construction Materials and CIE306 Concrete Structures I.

CIE791 Project Scheduling [3-0, 3 cr.]

This course covers the basic critical path planning, and scheduling, with arrow and precedence networks. The course is an introduction to resource leveling, and least cost scheduling, including time-cost tradeoff analysis, and schedule control.

Pre-requisite: Consent of the instructor.

CIE792 Project Contracting [3-0, 3 cr.]

This course covers construction and contracting for contractors, owners and engineers, industry structure, the types of contracts and delivery systems of construction, and the planning, estimating, quantity takeoff and pricing, labor and equipment estimate, as well as the proposal preparation. Students use contract documents to prepare detailed estimates.

Pre-requisite: Consent of the instructor.

CIE799 Special Topic Course [3-0, 3 cr.]

This course is a special topic course which can be offered in any of the concentration areas. When offered, it is counted towards the Degree requirements as a regular course.

Pre-requisite: To be announced prior to registration time.

CIE891 Project Course [3-0, 3 cr.]

This course is a project course in any of the concentration areas. It can be taken by the Graduate student seeking a non-thesis Master's degree. It is contingent upon the Advisor's approval. The student is limited to one project course per degree.

Pre-requisite: Consent of the instructor.

CIE899 Thesis [6-0, 6 cr.]

This course is an independent work performed by students with emphasis on research, and leading to original contribution to knowledge. The selection of the topic and the progress of the work are supervised by a Faculty Advisor. The student is limited to one thesis course per degree.

Pre-requisite: Consent of the instructor.



Department Of Electrical & Computer Engineering

The Department of Electrical and Computer Engineering offers the following degree programs:

UNDERGRADUATE PROGRAMS

1. Bachelor of Engineering (B.E.) in Computer Engineering
2. Bachelor of Engineering (B.E.) in Electrical Engineering

GRADUATE PROGRAM

Master of Science (M.S.) in Computer Engineering

UNDERGRADUATE PROGRAMS

BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING

The Bachelor of Engineering degree program in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, and telephone: (410) 347-7700, <http://www.abet.org>

Students in the computer engineering program develop an in-depth knowledge of digital systems, computers, software, networks, and communications systems. In addition to the core topics in electrical and computer engineering, students are exposed to subjects including microprocessors, operating systems, computer architecture, database systems, networks, electronics, control systems, software engineering, reconfigurable computing, communications systems, and telecommunications. This provides for a balanced coverage and an integration of hardware, software, and communications engineering. As part of the academic program, six credits of professional experience are also included in the last summer prior to graduation, to give students an opportunity to integrate classroom instruction with practical work experience.

The broad scope of the program enables the students to pursue 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, and may also select to pursue graduate studies.

The computer engineering program is credit-based and requires the completion of 150 semester hours. A typical schedule is listed below and extends over a four-year period including summer modules; students may select to take these courses over a longer period of time.

MISSION

The Mission of the Computer Engineering Program is to educate each student to become a responsible and productive computer engineer who can effectively manage future challenges.

PROGRAM EDUCATIONAL OBJECTIVES

Within a few years of graduation, the graduates of the Computer Engineering program will:

- Demonstrate technical aptitude in Computer Engineering careers and/or graduate studies
- Establish themselves in diverse fields of Computer Engineering
- Conduct themselves as effective professionals

PROGRAM OUTCOMES

The students will acquire in their matriculation through the program, the following skills, knowledge, and behaviors:

- a. An ability to apply knowledge of mathematics, science, and engineering.
- b. An ability to design and conduct experiments, as well as to analyze and interpret data.
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. An ability to function on multidisciplinary teams.
- e. An ability to identify, to formulate, and to solve engineering problems.
- f. An understanding of one's professional and ethical responsibility.
- g. An ability to communicate effectively.
- h. A broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- i. A recognition of the need and the ability to engage in lifelong learning.
- j. A knowledge of contemporary issues.
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

MAJOR REQUIREMENTS

First Year

Fall Semester (17 credits)

ENG202	Sophomore Rhetoric	3
PHY201	Electricity and Magnetism	4
MTH201	Calculus III	3
COE212	Engineering Programming	3
GNE212	Engineering Mechanics	3
COE201	Computer Proficiency	1

Spring Semester (16 credits)

MTH207	Discrete Structures I	3
—	Liberal Arts Curriculum Elective	3
ETH201	Moral Reasoning	1
MTH206	Calculus IV	3
MTH304	Differential Equations	3
ELE201	Electrical Circuits I	3

Summer Module I (6 credits)

—	Liberal Arts Curriculum Elective	3
—	Liberal Arts Curriculum Elective	3

Summer Module II (3 credits)

ARA2-/3-	Arabic Language/Literature	3
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Second Year

Fall Semester (15 credits)

HLT201	Basic Health	1
ENG203	Fundamentals of Oral Communication	3
ELE302	Electrical Circuits II	3
ELE303	Electrical Circuits II Lab	1
COE312	Data Structures	3
COE321	Logic Design	3
COE322	Logic Design Lab	1

Spring Semester (17 credits)

—	Engineering Elective	3
ELE401	Electronics I	3
ELE402	Electronics I Lab	1
ELE430	Signals and Systems	3
COE323	Microprocessors	3
COE324	Microprocessors Lab	1
—	Liberal Arts Curriculum Elective	3

Summer Module I (2 credits)

GNE301	Professional Communication	2
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Summer Module II (4 credits)

PED —	Physical Education	1
GNE331	Probability and Statistics	3

Third Year

Fall Semester (16 credits)

INE320	Engineering Economy I	3
ELE442	Control Systems	3
ELE443	Control Systems Lab	1
ELE537	Communication Systems	3
COE423	Computer Architecture	3
COE493	Professionalism	3

Spring Semester (18 credits)

—	ECE Track X1	3
COE424	Digital Systems	3
COE425	Digital Systems Lab	1
—	ECE Elective	3
—	ECE Elective	3
—	ECE Track U1	3
COE492	Fundamentals in ECE	1
ELE540	Communications System Lab	1

Summer Module I (6 credits)

COE498	Professional Experience	6
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Fourth Year

Fall Semester (15 credits)

COE418	Database Systems	3
COE414	Operating Systems	3
COE 591	Capstone Design Project	3
—	ECE Track X2	3
—	Free Elective	3

Spring Semester (15 credits)

COE416	Software Engineering Systems	3
COE431	Computer Networks	3
—	Engineering Elective	3
COE593	COE application	3
—	ECE Track U2	3

Technical Electives: ECE technical electives for both COE and ELE programs are grouped into four different tracks. The four tracks and courses within each track are:

1. Communication & Networks:

- ELE535 Information & Coding Theory
- ELE531 Optical Fiber Communication
- ELE538 Noise in Communications
- ELE539 Telecommunications
- COE535 Optical Networks

2. Computer Hardware & Systems:

- COE527 VLSI Design
- COE521 Embedded Systems
- COE522 High-Perf. Computer Architecture

3. Systems Engineering:

- ELE548 Linear Systems
- ELE553 Reliability
- ELE521 Faulted Power Systems
- ELE599 Tp.ELE:RenewableEnergy Sources
- ELE599 Tp. ELE: Microelectronics

4. Theory & Algorithms:

- COE555 Queuing Theory
- ELE535 Information & Coding Theory
- ELE599 Tp.ELE:Sim.of Electronics Cir.

Engineering Electives: engineering electives can be any of the following courses:

- Any ECE Technical Elective
- INE307 Deterministic OR models
- INE308 Stochastic OR models
- INE428 Project Management
- INE529 Project Contracting
- INE527 Project Scheduling
- INE350 Simulation
- INE402 Optimization
- INE506 Decision Analysis
- MEE401 Energy systems (2 credits)
- MEE590 Energy Audit (2 credits)
- MEE599 Introduction to Mechatronics
- CIE520 Solid Waste Management
- CIE521 Hydrology
- CIE522 Environmental Impact Assessment
- CIE525 Environmental Policy and Management
- CIE526 Environmental Remediation
- CIE584 Quality Management Systems
- CIE585 Risk and Natural Hazard Management
- CIE723 Water Resources Planning and Management
- CIE733 Groundwater Engineering
- CIE788 GIS and Remote Sensing

1. Except for ELE305, ELE391 and COE312, any COE/ELE course can be considered as a technical elective as long as it is not a required course. COE599/ELE599 could be taken more than once for credit when topics differ.

COURSE DESCRIPTIONS

COE201 Computer Proficiency [0-2, 1 cr.]

This course covers word processing, spreadsheet, presentation software, internet, e-mail, database and web design.

COE211 Computer Programming [3-2, 4 cr.]

This course covers a one-language syntax, structured programming, basic constructs (arrays, etc.), object-oriented programming and projects.

Pre-requisite: COE201 Computer Proficiency.

COE212 Engineering Programming [3-0, 3 cr.]

This course covers a high-level programming language syntax, structured programming, basic constructs, arrays, object programming, case studies, and projects tailored towards solving engineering and mathematically-oriented problems.

COE312 Data Structures [3-0, 3 cr.]

This course covers the programming principles, stacks and recursion, queues, lists, searching, and sorting algorithms, binary trees and the introduction to object-oriented programming concepts.

Pre-requisite: COE 212 Engineering Programming.

COE321 Logic Design [3-0, 3 cr.]

This course provides an introduction to digital logic circuits and covers binary number representations, combinational logic design, Boolean algebra, arithmetic circuits, regular logic, programmable logic devices, flip flops, registers, counters, sequential state machines, and asynchronous and synchronous logic.

Pre-requisites: COE201 Computer Proficiency, COE 212 Engineering Programming, MTH 207 Discrete Structures I.

COE322 Logic Design Lab [0-3, 1 cr.]

This laboratory course provides hands-on experience implementing digital logic design systems using modern computer-aided design tools, discrete components, breadboards, and digital probes.

Concurrent with COE321 Logic Design.

COE323 Microprocessors [3-0, 3 cr.]

This course covers the internals of the microprocessor and assembly language, storing, manipulating, moving data, basics of control flow, interfacing to other devices, basics of writing good assembly code using the stacks and position independent codes.

Pre-requisite: COE321 Logic Design.

COE324 Microprocessor Lab [0-3, 1 cr.]

This is a lab course with experiments in microprocessors.

Concurrent with COE323 Microprocessors.

COE414 Operating Systems [3-0, 3 cr.]

This course provides an overview of operating systems and provide the basic structure and architecture of some operating systems in the market.

This course covers the process creation, management, synchronization, communications, and scheduling. Memory management and protection.

Pre-requisite: COE 312 Data Structures, COE323 Microprocessors.

COE416 Software Engineering [3-0, 3 cr.]

This course covers the analysis, development, design and documentation of software.

Pre-requisite: COE312 Data Structures.

COE418 Database Systems [3-0, 3 cr.]

This course covers the data modeling, relational database, SQL, query languages, object oriented databases and client-server databases.

Pre-requisite: COE 212 Engineering Programming.

COE423 Computer Architecture [3-0, 3 cr.]

This course introduces computer components and systems. Topics include evolution of computer systems, bus interconnections, I/O mechanisms, memory management and hierarchy, instruction set design, and basic pipelined techniques.

Pre-requisites: COE323 Microprocessors.

COE424 Digital Systems [3-0, 3 cr.]

This course is an introduction to digital systems design and covers timing concepts, area-delay tradeoffs, pipelining, and synthesis. Register transfer notation and VHDL are introduced to model, simulate, and verify designs. Topics include field-programmable gate arrays, technology mapping, layout synthesis, and routing.

Pre-requisite: COE323 Microprocessors.

COE425 Digital Systems Lab [0-3, 1 cr.]

This laboratory course provides hands-on experience implementing complex digital systems using modern computer-aided design tools, FPGA-based boards, and various I/O devices.

Concurrent with COE424 Digital Systems.

COE431 Computer Networks* [3-0, 3 cr.]

This course covers the topologies, installation and configuration, testing, modeling and simulation of networks. In addition to: protocols, standards, TCP/IP, and socket programming.

Fourth year standing required.

COE 492 FUNDAMENTALS IN ECE [0-3, 1 cr.]

This course consolidates the concepts covered in the first two years of the program in mathematics, computers, and engineering with emphasis on their practical applications in ECE. It also provides an accurate and comprehensive assessment for these concepts by exposing the students to professional engineering and FE-style examinations.

Pre-requisite: GNE 331 Probability & Statistics, ELE 430 Signals & Systems, ELE 401 Electronics I, COE 323 Microprocessors.

Concurrent with COE 424 Digital Systems.

COE 493 PROFESSIONALISM IN ENGINEERING [3-0, 3 cr.]

Overview of the nature and scope of engineering profession. Working on a multidisciplinary team environment; professional and ethical responsibility; the impact of engineering solutions in a global and societal context; contemporary issues; and life-long learning.

Pre-requisite: Third year standing required.

COE498 Professional Experience [0-6, 6 cr.]

This course entails professional experience through training in the execution of real-life engineering projects.

Pre-requisite: Fifth year standing and the consent of the instructor.

COE533 Advanced Computer Networks [3-0, 3 cr.]

This course covers advanced networks, remote procedure calls (RPC's), layering and ISO.

Pre-requisite: COE431 Computer Networks.

COE591 Capstone Design Project I [3-0, 3 cr.]

The course is devoted to the solution of open-ended engineering design projects with functional specifications and realistic constraints. This project provides a culminating major design experience that is concluded by a written report and an oral presentation.

Course Pre-requisites: Fifth year standing.

COE592 Project II [3-0, 3 cr.]

This course is an advanced engineering project, using acquired technical knowledge, formal report, and presentation.

Pre-requisite: Final-year standing and the consent of the instructor.

COE593 COE application [3-0, 3 cr.]

This course allows COE graduates to acquire the technical skills that are required to match a specific industry-related need. In particular, it exposes students to the techniques, which can improve their chances of gaining employment in jobs aligned with the considered need. This exposure is reinforced by an extensive hands-on experience that is brought into classroom through small-scale projects pertaining to problems inspired from the identified need.

Prerequisites: Fourth Year standing

COE599 Topics in Computer Engineering [1-3, 3 cr.]

This course covers the treatment of new developments in various areas of computer engineering.

Pre-requisite: Fifth year standing.

BACHELOR OF ENGINEERING IN ELECTRICAL ENGINEERING

The Bachelor of Engineering degree program in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, and telephone: (410) 347-7700, <http://www.abet.org>

Electrical Engineering is a science-oriented branch of engineering, primarily concerned with all the phases of development and utilization of electric signals. The study of electrical engineering can be conveniently divided into the areas of circuits, electronics, electromagnetism, 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. As part of the academic program, six credits of professional experience are also included in the last summer prior to graduation, to give students an opportunity to integrate classroom instruction with practical work experience.

The Electrical Engineering program is credit-based and requires the completion of 150 semester hours. A typical schedule is listed below and extends over a four-year period, including summer modules; students may select to take these courses over a longer period of time.

MISSION

The mission of the Electrical Engineering Program is to educate each student to become a responsible and productive electrical engineer capable of effectively managing future challenges.

PROGRAM EDUCATIONAL OBJECTIVES

Within a few years of graduation, the graduates of the Electrical Engineering program will:

- Demonstrate technical aptitude in Electrical Engineering careers and/or graduate studies
- Establish themselves in diverse fields of Electrical Engineering
- Conduct themselves as effective professionals

PROGRAM OUTCOMES

The students will acquire in their matriculation through the program, the following skills, knowledge, and behaviors:

- a. An ability to apply knowledge of mathematics, science, and engineering.
- b. An ability to design and conduct experiments, as well as to analyze and interpret data.
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. An ability to function on multidisciplinary teams.
- e. An ability to identify, to formulate, and to solve engineering problems.
- f. An understanding of one's professional and ethical responsibility.
- g. An ability to communicate effectively.
- h. A broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- i. A recognition of the need and the ability to engage in lifelong learning.
- j. A knowledge of contemporary issues.
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

MAJOR REQUIREMENTS

First Year

Fall Semester (17 credits)

ENG202	Sophomore Rhetoric	3
PHY201	Electricity and Magnetism	4
MTH201	Calculus III	3
GNE212	Engineering Mechanics	3
COE201	Computer Proficiency	1
COE212	Engineering Programming	3

Spring Semester (16 credits)

MTH 207	Discrete Structures	3
—	Liberal Arts Curriculum Elective	3
ETH201	Moral Reasoning	1
MTH304	Differential Equations	3
MTH206	Calculus IV	3
ELE201	Electrical Circuits I	3

Summer Module I (6 credits)

—	Liberal Arts Curriculum Elective	3
—	Liberal Arts Curriculum Elective	3

Summer Module II (3 credits)

ARA2-/3-	Arabic Language/Literature	3
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Second Year

Fall Semester (15 credits)

ENG203	Fund. of Oral Communication	3
COE321	Logic Design	3
COE322	Logic Design Lab	1
ELE391	Mathematical Methods in Elec. Eng.	3
ELE302	Electrical Circuits II	3
ELE303	Electrical Circuits II Lab	1
HLT201	Basic Health	1

Spring Semester (17 credits)

—	Liberal Arts Curriculum Elective	3
ELE401	Electronics I	3
ELE402	Electronics I Lab	1
COE323	Microprocessors	3
COE324	Microprocessors Lab	1
ELE411	Electromagnetic Fields	3
ELE430	Signals and Systems	3

Summer Module I (2 credits)

GNE301	Professional Communication	2
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Summer Module II (4 credits)

PED —	Physical Education	1
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GNE331	Probability and Statistics	3
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Third Year

Fall Semester (18 credits)

ELE493	Professionalism	3
—	ECE Track X1	3
ELE537	Communication Systems	3
ELE442	Control Systems	3
ELE443	Control Systems Lab	1
—	ECE Elective	3
—	Free Elective	2

Spring Semester (17 credits)

—	ELE Track X2	3
—	Engineering Elective	3
ELE420	Electromechanics	3
ELE538	Noise in Communication Systems	3
ELE540	Communications Systems Lab	1
INE320	Engineering Economy I	3
ELE492	Fundamentals in ECE	1

Summer Module I (6 credits)

COE498	Professional Experience	6
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Fourth Year

Fall Semester (13 credits)

ELE413	Electromagnetic Waves	3
ELE 591	Capstone Design Project	3
MEE220	Engineering Graphics	1
ELE422	Power Systems	3
—	ECE Track U1	3

Spring Semester (16 credits)

—	ECE Track U2	3
ELE593	ELE Application	3
ELE423	Power Systems Lab	1
—	Engineering Elective	3
—	ECE Elective	3
ELE539	Telecommunication Systems	3

Technical Electives: ECE technical electives for both COE and ELE programs are grouped into four different tracks. The four tracks and courses within each track are:

1. Communication & Networks:

- ELE535 Information & Coding Theory
- ELE531 Optical Fiber Communication
- ELE538 Noise in Communications
- ELE539 Telecommunications
- COE431 Computer Networks
- COE535 Optical Networks

2. Computer Hardware & Systems:

- COE527 VLSI Design
- COE521 Embedded Systems
- COE522 High-Perf. Computer Architecture
- COE423 Computer Architecture

3. Systems Engineering:

- ELE548 Linear Systems
- ELE553 Reliability
- ELE521 Faulted Power Systems
- ELE599 Tp.ELE:RenewableEnergy Sources
- ELE599 Tp. ELE: Microelectronics

4. Theory & Algorithms:

- COE418 Database Systems
- COE414 Operating Systems
- COE555 Queuing Theory
- ELE530 Information & Coding Theory
- ELE599 Tp.ELE:Sim.of Electronics Cir.

Engineering Electives: engineering electives can be any of the following courses:

- Any ECE Technical Elective
- INE307 Deterministic OR models
- INE308 Stochastic OR models
- INE428 Project Management
- INE529 Project Contracting
- INE527 Project Scheduling
- INE350 Simulation
- INE402 Optimization
- INE506 Decision Analysis
- MEE401 Energy systems (2 credits)
- MEE590 Energy Audit (2 credits)
- MEE599 Introduction to Mechatronics
- CIE520 Solid Waste Management
- CIE521 Hydrology
- CIE522 Environmental Impact Assessment
- CIE525 Environmental Policy and Management
- CIE526 Environmental Remediation
- CIE584 Quality Management Systems
- CIE585 Risk and Natural Hazard Management
- CIE723 Water Resources Planning and Management
- CIE733 Groundwater Engineering
- CIE788 GIS and Remote Sensing

1. Except for ELE305, ELE391 and COE312, any COE/ELE course can be considered as a technical elective as long as it is not a required course. COE599/ELE599 could be taken more than once for credit when topics differ.

COURSE DESCRIPTIONS

ELE201 Electrical Circuits I [3-0, 3 cr.]

This course covers the resistors, capacitors and inductors, 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 and computer-aided circuit simulation (SPICE).

Pre-requisite: PHY201 Electricity and Magnetism.

ELE302 Electrical Circuits II [3-0, 3 cr.]

This course covers 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).

Pre-requisites: ELE201 Electrical Circuits I and MTH304 Differential Equations.

ELE303 Electrical Circuits II Lab [0-3, 1 cr.]

This is a lab course with experiments in Electrical Circuits II.

Concurrent with ELE302 Electrical Circuits II.

ELE305 Introduction to Electrical Engineering [3-0, 3 cr.]

This course introduces the concepts of resistors, capacitors and inductors, voltage and current sources, operational amplifiers, voltage and current laws, node and mesh analysis, network theorems, power and energy, three-phase circuits, logic circuits, and binary representations .

ELE 391 MATHEMATICAL METHODS IN ELECTRICAL ENGINEERING [3-0 3cr.]

This course introduces foundation knowledge of complex variables and linear algebra with applications to electrical engineering. Topics covered are vector spaces, subspaces, linear dependence/independence, basis; linear transformations and eigenstructure analysis; matrix representations of linear electrical systems; analytic functions of complex variables

and contour integrals; Cauchy integral formula.

Pre-requisite: MTH 304 Differential Equations.

ELE401 Electronics I [3-0, 3 cr.]

This course covers Microelectronics devices and their applications using latest semiconductors technologies. These devices range from Normal Diodes, ZENER diodes, LEDs, Photodiodes, BJTs, to MOSFETS. Their applications include the design of regulators, rectifiers, clippers, operational amplifiers and digital integrated circuitry.

Pre-requisite: ELE302 Electrical Circuits II.

ELE402 Electronics I Lab [0-3, 1 cr.]

The laboratory experiments are hands-on implementation of the devices and circuitry presented in the course as well as circuit simulation using the SPICE software.

Concurrent with ELE401 Electronics I.

ELE411 Electromagnetic Fields [3-0, 3 cr.]

Fundamental concepts of the electromagnetic model, vector analysis, static electric fields, static magnetic fields, steady electric currents, Maxwell's equations, Coulomb's law, Gauss's law, Biot-Savart law, Faraday's law, Poisson's and Laplace's equations, Joule's law, capacitance calculations, inductance calculations, resistance calculations.

Pre-requisite: ELE 201 Electrical Circuits I, ELE 391 Mathematical Methods in Electrical Engineering, COE 321 Logic Design.

ELE413 Electromagnetic Waves [3-0, 3 cr.]

Fundamental concepts of electromagnetic waves, Maxwell's equations, propagation of plane electromagnetic waves, theory and application of transmission lines, waveguides, antennas.

Pre-requisites: ELE302 Electrical Circuits II and ELE411 Electromagnetic Fields.

ELE420 Electromechanics [3-0, 3 cr.]

This course covers three-phase circuit concepts; magnetic circuits; energy storage and conversion; force and emf production; forces and torques of electric origin in electromagnetic systems; power transformers and autotransformers; principles of electric ac machines; synchronous generators; three-phase and single-phase induction motors.

Pre-requisites: ELE411 Electromagnetic Fields.

ELE422 Power Systems [3-0, 3 cr.]

This course provides students with a working knowledge of power system problems and computer techniques to solve some of these problems. Topics include: review of three-phase analysis, complex power, per-unit system, synchronous machines, transformers, autotransformers, and regulating transformers; calculation of transmission line parameters, evaluation of steady state operation of transmission lines; reactive power compensation; line capability; power flow analysis using Gauss-Seidel and Newton-Raphson methods.

Pre-requisite: ELE420 Electromechanics.

ELE423 Power Systems Lab [0-3, 1 cr.]

This course covers the following experiments to study various aspects of electric machines and power systems: fundamentals of electrical power technology; alternating currents; power and impedance in ac circuits; three-phase circuits; single-phase and three-phase transformers; fundamentals of rotating machines; dc motors and generators; ac induction motors; three-phase synchronous generators and motors.

Concurrent with ELE422 Power Systems.

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; z-transform; analysis and design of digital filters; DFT and FFT.

Pre-requisite: ELE302 Electrical Circuits II.

ELE442 Control Systems [3-0, 3 cr.]

This course covers modeling and dynamical systems, transient-response analysis, response of control systems, root locus analysis, and modern control (state space).

Pre-requisite: ELE430 Signals and Systems.

ELE443 Control Systems Lab [0-3, 1 cr.]

Laboratory experiments in Control Systems. This course introduces students to the implementation of PID- controllers and two-step controllers, first order delay as well as third order delay, such implementation are done

using educational PID boards and DC servo boards. Experimentations and analysis use Industrial standard oscilloscopes, and data-acquisition boards interfaced via SIMULINK/MATLAB.

Concurrent with ELE442 Control Systems.

ELE 492 FUNDAMENTALS IN ECE [0-3, 1 cr.]

This course consolidates the concepts covered in the first two years of the program in mathematics, computers, and engineering with emphasis on their practical applications in ECE. It also provides an accurate and comprehensive assessment for these concepts by exposing the students to professional engineering and FE-style examinations.

Pre-requisite: ELE 401 Electronics I, ELE 430 Signals and Systems, GNE 331 Probability and Statistics, COE 323 Microprocessors.

ELE 493 PROFESSIONALISM IN ENGINEERING [3-0, 3 credits]

Overview of the nature and scope of engineering profession. Working on a multidisciplinary team environment; professional and ethical responsibility; the impact of engineering solutions in a global and societal context; contemporary issues; and life-long learning.

Pre-requisite: Third year standing required.

ELE498 Professional Experience [0-6, 6 cr.]

This course entails a professional experience through training in the execution of real life engineering projects.

Pre-requisite: Fifth-year standing and the consent of the instructor.

ELE525 Faulted Power System* [3-0, 3 cr.]

This course provides students with advanced knowledge of power system evaluation techniques. Topics include: economic load dispatch with generation limits and line losses; impedance model; three-phase symmetrical faults; symmetrical components; and unsymmetrical faults analysis.

Pre-requisite: ELE422 Power Systems.

ELE528 Electrification of Plants [3-0, 3 cr.]

Electrical Design, software and calculation notes complete including Lighting, Power and Low current systems design.

Pre-requisite: ELE422 Power Systems.

ELE537 Communication Systems [3-0, 3 cr.]

Basic principles of point-to-point communication link design and analysis, introduction to the theory and principles of modern communication systems, overview of the currently used analog and digital communication techniques and their relative advantages and disadvantages, analog modulation and demodulation, component parts used in analog and digital transceivers.

Pre-requisite: ELE430 Signals and Systems, GNE 331 Probability and Statistics.

ELE538 Noise in Communication Systems [3-0, 3 cr.]

This course covers physical noise sources, noise calculations in communication systems, stochastic processes, and communication systems performance in the presence of noise.

Pre-requisite: ELE537 Communication Systems.

ELE539 Telecommunication Systems [3-0, 3 cr.]

This course covers spread spectrum and data communications, microwave and satellite links, optical fiber, mobile radio systems, the evolution of mobile radio communications including 2G, 2.5G and 3G, cellular concept, and mobile radio propagation including large-scale path loss.

Pre-requisite: ELE537 Communication Systems.

ELE540 Communication Systems Lab [0-3, 1 cr.]

This is a lab course with experiments in communication systems. The experiments implement the modulation and the demodulation techniques acquired in the communication system course through modulation and demodulation boards and through MATLAB.

Pre-requisite: ELE537 Communication Systems.

ELE591 Capstone Design Project I [3-0, 3 cr.]

The course is devoted to the solution of open-ended engineering design projects with functional specifications and realistic constraints. This project provides a culminating major design experience that is concluded by a written report and an oral presentation.

Course Pre-requisites: Fifth year standing.

ELE592 Project II [3-0, 3 cr.]

This course is an advanced engineering project using acquired technical knowledge, formal report, and presentation.

Pre-requisites: Fifth year standing and the consent of the instructor.

ELE593 ELE application [3-0, 3 cr.]

This course allows ELE graduates to acquire the technical skills that are required to match a specific industry-related need. In particular, it exposes students to the techniques, which can improve their chances of gaining employment in jobs aligned with the considered need. This exposure is reinforced by an extensive hands-on experience that is brought into classroom through small-scale projects pertaining to problems inspired from the identified need.

Prerequisites: Fourth Year standing

ELE599 Topics in Electrical Engineering [1-3, 3 cr.]

This course covers the treatment of new development in various areas of Electrical Engineering.

Pre-requisites: Final-year standing and the consent of the instructor.

Graduate Program

MASTER OF SCIENCE IN COMPUTER ENGINEERING

The Graduate Computer Engineering (COE) and the Computer and Communication Engineering (CCE) programs strive to prepare students for further graduate studies, as well as for a possible career in the industry. Two important objectives are addressed:

1. A sufficient level of breadth that guarantees general knowledge in the main areas of COE/CCE. These areas were chosen carefully to span four major areas: Hardware and Systems, Software and Theory, Communication Systems, and Systems Engineering.
2. A sufficient level of depth that will allow students some degree of specialization. Therefore, students will have the requisite background needed to pursue a higher graduate education and perform research. In addition, the curriculum provides a good practical experience by allowing students to choose from a variety of practical and implementation-oriented courses.

MISSION

The Mission of the Graduate Program in Computer Engineering is to train graduate students in an active research environment, and to equip them with the latest tools of research.

EDUCATIONAL OBJECTIVES

The purpose of the Graduate Program in Computer Engineering is to:

1. Aid students in creatively using their background in basic sciences and mathematics, as well as their expertise in certain areas of computer engineering.
2. Assist students in innovatively applying the design process to complex engineering problems, and innovatively using computers as a tool for simulation, analysis, design and computing.
3. Provide a creative, critical and model-based thinking and problem-solving approach.
4. Offer students the opportunity to do research on important scientific and technical problems, to disseminate knowledge, and to publish research findings.

STUDENT OUTCOMES

Graduates of the Graduate Program in Computer Engineering will acquire the following skills:

- a. The ability to demonstrate a mastery of the methodology and the techniques specific to the field of study.
- b. The ability to communicate both orally and in writing at a high level of proficiency in the field of study.
- c. The ability to conduct research or to develop other forms of creative project work.
- d. The ability to function as a professional in the discipline.

EMPHASIS AREAS

The course work for the master's program in Computer Engineering can be grouped into the following two emphasis areas:

1. Computer Engineering
2. Computer and Communication Engineering

Computer Engineering (COE) focuses on the design, analysis and application of computers, and on their applications as components of systems.

Computer and Communication Engineering (CCE) focuses on the design, analysis and application of communication and telecommunication systems, as well as systems in computer engineering.

ADMISSION REQUIREMENTS

Applicants for admission to this program must have a Bachelor of Science in Engineering, or a Bachelor of Engineering Degree from a recognized college or university, with a minimum general Grade Point Average (GPA) equivalent to 2.75, on a 4-point scale, or 2.75 in the major. If the bachelor's degree is not in the field to be pursued, and/or if the GPA is less than 2.75, the applicant may be admitted as "special," as described in the Academic Rules and Regulations for Graduate Programs.

The GRE general exam is required of all applicants (GRE subject exams are not required). All applicants must submit scores for the GRE general exam (includes verbal reasoning, quantitative reasoning, and analytical writing scores). Your GRE test scores are an important part of your application. GRE test scores that are more than 5 years old will not be accepted.

The admissions committee considers several factors when making admission decisions: your academic performance at prior institutions (grades, rankings, and GPAs) and your GRE test score. The rate of graduate assistantship (GA), when requested, is directly related to your GPA and GRE scores. Letters of recommendation are optional; however, three letters are recommended, two of which to be completed by faculty who are familiar with your academic performance.

CREDIT REQUIREMENTS

The Graduate Program in COE, with emphasis in COE or CCE, consists of 30 credit hours, and leads to a Master of Science in Computer Engineering, with emphasis in COE or CCE.

Students with a Bachelor of Engineering Degree, and who are pursuing a Master of Science Degree, may transfer up to six credits from their Bachelor of Engineering Degree, provided that the transferred credits correspond to courses labeled graduate courses, and the student has scored at least a "B" on each of these courses.

GRADUATE COURSE REQUIREMENTS

The graduate courses have been grouped into the following four concentration areas:

1. Hardware and Systems
2. Software and Theory
3. Communication Systems
4. Systems Engineering

The proposed graduate curricula for each of the two programs are based on the breadth and depth requirements. The breadth requirements consist of six courses (18 credit hours) for both programs.

In order to satisfy the requirements for the MSE in Computer Engineering with emphasis on:

Computer Engineering, the student is required to complete at least

- Four courses from Hardware & Systems,
- One course from Software and Theory, and
- One course from either Communication Systems or Systems Engineering.

Computer and Communications Engineering, the student is required to complete at least

- Two courses from Hardware & Systems,
- One course from Software & Theory

- Two courses from Communication Systems, and
- One course from Systems Engineering

The remaining courses may be chosen, without restriction, from any of the four concentration areas, and counted toward the depth requirement. It is recommended that these courses be chosen in the thesis area, in consultation with the student's advisor.

COURSE LISTINGS

The following is a list of selected courses (three credits each) in the four concentration areas:

Other topic courses might be offered in these areas

Hardware & Systems

Hardware

COE725	VLSI Design	3
COE722	Rapid Prototyping	3
COE726	VLSI Design Automation	3
COE728	ULSI Testing	3
COE721	Embedded Systems	3

Systems

COE533	Advanced Computer Networks	3
COE711	Transactions Processing Systems	3
COE712	Distributed Systems	3
COE723	High Performance Computer Architecture	3
COE732	Networks Security	3
COE733	Optical Networks	3

Software & Theory

Software

COE714	Advanced Software Engineering	3
COE715	Object-Oriented Software Engineering	3
COE716	Knowledge-Based Systems	3
COE717	Parallel Programming and Cluster Workstations	3
COE718	Computer Graphics	3
COE741	Artificial Intelligence	3

Theory and Algorithms

COE742	Neural Networks	3
COE752	Design & Analysis of Algorithms	3
COE753	Heuristic Optimization	3
COE754	Automata Theory & Formal Languages	3
COE755	Queuing Theory	3
ELE735	Information & Coding Theory	3
ELE799	Simulation of Electronic Circ.	3

Communication Systems

ELE731	Optical Fiber Communications	3
ELE732	Wireless Communication Systems	3
ELE733	Mobile Communication Systems	3
ELE735	Information and Coding Theory	3

Department Of Electrical & Computer Engineering

Students with a Bachelor of Engineering Degree, and who are pursuing a Master of Science Degree, may transfer the following courses (provided the student has scored at least a "B"): ELE538 Noise in Communication Systems and ELE539 Telecommunication Systems

Systems Engineering

ELE742	Linear Systems	3
ELE753	Reliability Evaluation of Engineering Systems	3
ELE724	Faulted Power Systems	3
ELE799	Renewable Energy Sources	3

Other Courses

—	Special Topics	3
COE898	Project	3
COE899	Thesis	6

Topics Courses

When offered, advanced topic courses can count toward the breadth or depth requirements, upon the approval of the student's advisor. Topic courses are three-credit courses, and might not be offered every year.

Project Courses

A three-credit project course, in any of the concentration areas, can also be considered as a regular course, only for the non-thesis option. The student is limited to at most one project course.

Remedial Courses

Remedial courses may be required from students seeking a degree not in their undergraduate field of specialization.

COURSE DESCRIPTIONS

COE711 Transactions Processing Systems [3-0, 3 cr.]

This course covers the theoretical foundations underlying commitment protocols that form the basis of transaction processing techniques. Transaction processing systems have lots of moving parts such as: 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.

Pre-requisite: COE312 Data Structures and Algorithms.

COE712 Distributed Systems [3-0, 3 cr.]

This course is an 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.

COE714 Advanced Software Engineering [3-0, 3 cr.]

This course covers the 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.

COE715 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.

Pre-requisite: COE312 Data Structures and Algorithms.

COE716 Knowledge-Based Systems [3-0, 3 cr.]

This course covers the knowledge representation, search techniques, logical reasoning, and language understanding. The course is an introduction to the methodology of design and the implementation of expert systems. The course emphasizes the techniques for representing and organizing domain and control knowledge, as opposed to the theory and implementation of inference engines.

Pre-requisite: COE312 Data Structures and Algorithms.

COE717 Parallel Programming and Cluster Workstations [3-0, 3 cr.]

This course covers a parallel computing, using groups of computers to solve problems at a greater computational speed. Topics include parallel computing techniques and algorithms, including divide and conquer, pipelined computations, genetic algorithms and simulated annealing. Topics also include synchronous and asynchronous computations, load balancing, shared memory, distributed memory, and distributed shared memory. Use of the message-passing method of parallel computing, and use the standard parallel computing tools such as PVM and MPI.

Pre-requisite: COE312 Data Structures and Algorithms.

COE718 Computer Graphics [3-0, 3 cr.]

This course is an introduction to computer graphics algorithms, programming methods and applications, with a focus on the fundamentals of two and three dimensional raster graphics, scan-conversion, clipping, geometric transformations, computational geometry, computer-human interfaces, animation, and visual realism.

Pre-requisite: CSC312 Data Structures and Algorithms.

COE 721 Embedded Systems [3-0, 3 cr.]

This course provides an introduction to the design of embedded systems including both their hardware and software. Topics ranging from simple circuit design to computer architecture will be discussed. Different types of processors will be presented along with interfacing to memories, I/O devices, and other processors. The 68HC12 or PIC microcontrollers will be used as an example processor for assignments and the course project.

Pre-requisite: Consent of instructor.

COE722 Rapid Prototyping [3-0, 3 cr.]

This course covers the principles and techniques for rapid prototyping of electronic systems, top-down design methodology, techniques, technologies, and tradeoffs (design time-cost-speed-power-area) as applied to the entire digital electronic system design hierarchy (system-module-chip-circuit), high-level system specification, and simulation techniques, synthesis and schematic capture alternatives to hardware realization.

Pre-requisite: COE312 Reconfigurable Computing.

COE723 High Performance Computer Architecture [3-0, 3 cr.]

This course covers topics in advanced pipelined techniques and scheduling, instruction level parallelism, and dynamic scheduling. Advanced processor design techniques are introduced such as superscalar, super-pipelined, VLIW, multiprocessing, multithreading, and supercomputing architectures. In addition, relationships between high-performance computing and interconnection networks, embedded systems, advanced storage systems, and cloud computing examples are established.

Prerequisites: COE423 Computer Architecture or the consent of the instructor.

COE725 VLSI Design [3-0, 3 cr.]

This course covers the VLSI design, circuits layout, timing, delay, power estimation, use of layout editors and circuit simulation tools, synthesis, and an introduction to electronic design automation.

Pre-requisite: COE321 Logic Design.

COE726 VLSI Design Automation [3-0, 3 cr.]

This course covers the algorithms and methodologies for the synthesis, analysis and verification of digital systems, silicon compilation, high-level synthesis, logic synthesis, and layout synthesis, hardware description languages and their use in the synthesis process, fault simulation and coverage analysis, and the extensive use of electronic design automation tools.

Pre-requisite: COE321 Logic Design.

COE728 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).

Pre-requisite: COE321 Logic Design.

COE732 Networks Security [3-0, 3 cr.]

This course is an introduction to network security, including developing an understanding of security engineering, cryptography, mechanisms to protect private communication over public network, and techniques to protect networked computer systems. This course considers the technical, operational and managerial issues of computer systems and network security in an operational environment. The course will address the threats to computer security, 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.

Pre-requisite: COE431 Computer Networks.

COE 733 Optical Networks [3-0, 3 cr.]

This course covers the fundamentals of optical networking. In particular, it touches on the following topics: the building blocks of optical wavelength division multiplexed networks, wavelength division multiplexing (WDM) and its enabling technologies, WDM-based access and metro optical network architectures, wavelength-routed optical wavelength division multiplexed networks used for wide area coverage, optical burst switched networks, and optical packet switched networks.

Pre-requisite: Consent of instructor.

COE741 Artificial Intelligence [3-0, 3 cr.]

This course is an introduction to artificial intelligence concepts, heuristic search, clause form logic, knowledge representation, reasoning and inference, an overview of the computer vision, planning, natural language, Lisp, and Prolog. Subjects covered may include unification and resolution in first order logic, graph search algorithms, planning, game playing, heuristic classifiers, knowledge engineering, and uncertainty management.

Pre-requisite: COE312 Data Structures and Algorithms.

COE742 Neural Networks [3-0, 3 cr.]

This course covers the construction and function of neurons, synaptic transmission and plasticity, the functional organization of the neural system, modeling and simulation of real neural networks, the most well-known ANN-architectures and algorithms for learning, methods for unsupervised learning, principles for neural network representation, hardware

architectures for neural computations (neural chips and neural computers), examples of technical applications of ANN in areas like pattern recognition, combinatorial optimizations, diagnosis, and robotics.

Pre-requisite: The consent of the instructor.

COE752 Design and Analysis of Algorithms [3-0, 3 cr.]

This course covers the time and space complexity of algorithms. It looks at the models of computation, the techniques for efficient algorithm design, and the effect of data structure choice on the efficiency of an algorithm, as well as the divide and conquer techniques, greedy methods, dynamic programming, amortized analysis, graph and network algorithms, NP-completeness, and selected advanced algorithms.

Pre-requisite: The consent of the instructor.

COE753 Heuristic Optimization [3-0, 3 cr.]

This course covers the basic heuristic optimization techniques in computing. This course describes a variety of heuristic search methods including serial simulated annealing, Tabu 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.

COE754 Automata Theory and Formal Languages [3-0, 3 cr.]

This course covers the Finite Automata and regular expressions, context-free grammars, pushdown Automata, properties of context-free languages, Turing machines, undecidability, computational complexity, and P and NP problems.

Pre-requisite: The consent of the instructor.

COE 755 Queuing Theory [3-0, 3 cr.]

This course introduces two modeling techniques, namely simulation and queueing modeling techniques. The following topics are discussed in this regard: single queue Markovian systems, semi-Markovian queueing systems, open queueing networks, closed queueing networks, pseudo-random number generation, estimation techniques for analyzing endogenously created data, and validation of a simulation design.

Pre-requisite: Consent of instructor.

COE898 Project [3-0, 3 cr.]

This design course integrates various areas of electrical and computer engineering into a real design project. Design reviews, and a final oral presentation with a written report, are required.

Pre-requisites: 15 graduate credits, and the consent of the instructor.

COE899 Thesis [6-0, 6 cr.]

This is a master's thesis research course under the direction of a faculty member.

ELE544 Feedback Control [3-0, 3 cr.]

This course covers the frequency-response analysis, control systems design by frequency response, PID controls, and an introduction to robust control.

Pre-requisite: ELE442 Control Systems.

ELE 724 Faulted Power System [3-0, 3cr.]

This course covers the techniques and mathematical tools needed to analyze faulted power systems. Topics include impedance model, analysis of three-phase symmetrical faults, symmetrical components, unsymmetrical faults, and power systems stability. Students will be challenged to draw upon a background of knowledge from earlier studies to explore these topics in a comprehensive manner. Pre-requisite: ELE 422 Power Systems and Consent of instructor.

ELE731 Optical Fiber Communications [3-0, 3 cr.]

This course covers the waveguiding in optical fibers, fiber losses including attenuation, dispersion and nonlinearities, noise, receiver and transmitter design, link analysis, introduction to erbium-doped amplifiers, and time- and wavelength-division-multiplexed networks.

Pre-requisite: The consent of the instructor.

ELE732 Wireless Communication Systems [3-0, 3 cr.]

This course covers the evolution of the mobile radio communications including 2G, 2.5G and 3G, cellular concept, and the mobile radio propagation, including large-scale path loss, and small-scale fading and multipath.

Pre-requisite: ELE537 Communication Systems.

ELE733 Mobile Communication Systems [3-0, 3 cr.]

This course covers the modulation techniques for mobile radio, equalization, diversity, and channel coding, speech coding, multiple access

techniques for wireless communications, wireless networking, and wireless systems and standards.

Pre-requisites: ELE732 Wireless Communication Systems or Telecommunication Systems.

ELE 734: Optical Fiber Communications [3-0, 3 cr.]

Basic principles of point-to-point optical fiber communications, waveguiding and signal degradation in optical fibers, optical sources, photodetectors, WDM components, dimensioning of fiber links for analog and digital transmissions, performance of digital optical communication systems in the presence of noise. Pre-requisite: Consent of instructor.

ELE 735: Information and Coding Theory [3-0, 3 cr.]

Information theory applied to communication systems. It covers digital signals and streams, information measures, data compression, error-correcting codes, block codes, convolutional codes, Viterbi algorithm, noise, maximum-entropy, Markov chains, channel capacity formalism and Shannon's theorem.

Pre-requisite: Consent of instructor.

ELE742 Linear Systems [3-0, 3 cr.]

This course covers the canonical realization of transfer functions, state observability and controllability, state feedback and asymptotic observers, reduced order observers, and regulator design.

Pre-requisite: ELE442 Control Systems.

ELE753 Reliability Evaluation of Engineering Systems [3-0, 3 cr.]

This course covers the basic reliability concepts, elements of probability and statistical theory, application of important distributions, reliability in series, parallel and complex systems, application of Markov chains in the evaluation of repairable system reliability, application of Markov processes for reliability evaluation of complex systems, and the utilization of Monte Carlo simulation in basic system reliability evaluation.

Pre-requisite: GNE331 Probability and Statistics.

Special topics [3-0, 3 cr.]

This course covers topics of current interest selected by the faculty.

Pre-requisite: The consent of the instructor.

Department Of Industrial & Mechanical Engineering

The Department of Industrial and Mechanical Engineering offers the following degree programs:

UNDERGRADUATE PROGRAMS

1. Bachelor of Engineering (B.E.) in Industrial Engineering
2. Bachelor of Engineering (B.E.) in Mechanical Engineering

With a minor in Packaging

GRADUATE PROGRAM

Master of Science (M.S.) in Industrial Engineering and Engineering Management.

Undergraduate Programs

BACHELOR OF ENGINEERING IN INDUSTRIAL ENGINEERING

The Bachelor of Engineering degree program in Industrial Engineering is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700, <http://www.abet.org>

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 a greater demand for engineering graduates with a broad interdisciplinary background. This program prepares students 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 150 semester hours. While the program is credit-based, a typical schedule over a four-year period, including summer modules, is

listed below. Students may select to take these courses over a longer period of time.

MISSION

The Industrial Engineering Program strives to support the mission of the school by providing students with a solid and contemporary industrial engineering curriculum and a broad education that prepares them for successful careers as industrial engineers in a globalized world as well as graduate studies.

PROGRAM EDUCATIONAL OBJECTIVES

Within a few years of graduation, the graduates of the industrial engineering program will:

1. Lead successful careers in a wide range of Industrial Engineering areas or succeed in graduate studies.
2. Be agents of change in dynamic environments.
3. Establish themselves as responsible professionals and work successfully as members of a multi-disciplinary team.

PROGRAM OUTCOMES

The students will acquire in their matriculation through the program, the following skills, knowledge, and behaviors:

- a. An ability to apply knowledge of mathematics, science and engineering.
- b. An ability to design and conduct experiments, as well as to analyze and interpret data.
- c. An ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. An ability to function on multidisciplinary teams.
- e. An ability to identify, formulate and solve engineering problems.
- f. An understanding of one's professional and ethical responsibility.
- g. An Ability to communicate effectively.
- h. A broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- i. A recognition of the need and the ability to engage in lifelong learning.
- j. A Knowledge of contemporary issues.

- k. An Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

MAJOR REQUIREMENTS

First Year

Fall Semester (16 credits)

COE 212	Engineering Programming	3
ENG 202	Sophomore Rhetoric	3
GNE 212	Engineering Mechanics	3
MEE 211	Engineering Graphics	1
MTH 201	Calculus III	3
----	Liberal Arts Curriculum Elective	3

Spring Semester (16 credits)

ARA 201	Appreciation of Arabic Lit.	3
ELE 305	Introduction to Electrical Eng.	3
ETH 201	Moral Reasoning	1
MTH 304	Differential Equations	3
MTH 206	Calculus IV	3
----	Liberal Arts Curriculum Elective	3

Summer Module I (6 credits)

GNE333	Engineering Analysis I	3
—	Liberal Arts Curriculum Elective	3

Summer Module II (4 credits)

GNE331	Probability and Statistics	3
PED 2--	Physical Education	1

Second Year

Fall Semester (15 credits)

INE 307	Intro. To Deterministic OR Models	3
INE 350	Simulation	3
INE 351	Simulation Laboratory	1
MEE 212	Computer Applications in IME	2
MEE 321	Material Properties & Processes	3
xxx	Engineering Elective (1/3)	3

Spring Semester (16 credits)

INE 308	Intro. To Stochastic OR models	3
INE 320	Engineering Economy I	3
INE 346	Production Systems I	3
INE 362	Manufacturing Processes	3
INE 363	Manufacturing Lab	1
xxx	Engineering Elective (2/3)	3

Summer Module I (5 credits)

ENG203	Fundamentals of Oral Communication	3
GNE301	Professional Communication	2

Summer Module II (4 credits)

—	Liberal Arts Curriculum Elective	3
HLT201	Basic Health	1

Third Year

Fall Semester (15 credits)

GNE 305	Professional Ethics	1
INE 416	Ergonomics	4
INE 417	Ergonomics Lab	1
INE 442	Quality Control	3
INE 446	Production Systems II	3
xxx	Engineering Elective (3/3)	3

Spring Semester (17 credits)

INE 428	Project Management	3
INE 438	Facilities Planning and Logistics	3
INE xxx	Technical Elective (1/10) [Area 1]	3
INE xxx	Technical Elective (2/10) [Area 2]	3
INE xxx	Technical Elective (3/10) [Area 3]	3

Summer Module I (6 credits)

COE498	Professional Experience	6
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Fourth Year

Fall Semester (16 credits)

INE 591	Project 1	3
INE 593	Capstone Engineering Design	1
INE 440	Advanced Statistics	3
INE xxx	Technical Elective (4/10) [Area 4]	3
INE xxx	Technical Elective (5/10) [Free]	3
INE xxx	Technical Elective (6/10) [Free]	3

Spring Semester (14 credits)

INE 491	Seminar on Contemporary Issues	2
INE xxx	Technical Elective (7/10) [Free]	3
INE xxx	Technical Elective (8/10) [Free]	3
INE xxx	Technical Elective (9/10) [Free]	3
INE xxx	Technical Elective (10/10) [Free]	3

Engineering Elective Courses

The following table clarifies the "INE General Elective" requirement:

- The first column lists the approved courses' Subjects
- The second column lists the excluded courses that DO NOT count as INE General Elective towards graduation.

Department Of Industrial & Mechanical Engineering

Category	Exclusions from category
courses with MEE prefix	MEE498, MEE591, MEE592, MEE599 and all Lab courses (1-credit courses). Lab Courses are: MEE305, MEE312, MEE333, MEE406, MEE408, MEE433, MEE443, MEE404, MEE516.
courses with COE prefix	COE201, COE211, COE498, COE591, COE592, COE599 and all Lab courses (1-credit courses). Lab Courses are: COE303, COE322, COE324, COE411, COE425, COE515, COE516.
courses with ELE prefix	ELE201, ELE591, ELE498, ELE592, ELE599, and all lab courses (1 credit courses). Lab Courses are: ELE303, ELE402, ELE403, ELE416, ELE423, ELE443, ELE523, ELE540, ELE546.
courses with CIE prefix	CIE200, CIE360, CIE498, CIE580, CIE584, CIE583, CIE600, CIE601, CIE602, and all Lab and SOFT Courses. Lab /Soft courses are: CIE303, CIE305, CIE307, CIE309, CIE321, CIE323, CIE425, CIE427, CIE445, CIE447, CIE461, CIE486, CIE581.
courses with ACC, FIN, ECO, MIS prefixes	ACC430, ACC499, ACC521, FIN401, FIN499, ECO330, ECO331, ECO402, ECO410, ECO499, ECO511, MIS350, MIS488, MIS499.
Courses with CSC, and MTH prefix	CSC201, CSC241, CSC242, CSC243, CSC398, CSC480, CSC490, CSC498, CSC599, MTH101, MTH102, MTH111, MTH200, MTH201, MTH206, MTH301, MTH304, MTH320 to MTH408, MTH497, MTH498, MTH499, MTH321, MTH401, MTH402, MTH406.
Courses with CHM prefix	CHM 201

Technical Elective Courses by Concentration Areas

1. Optimization

- INE407 [3-0, 3 cr.] Network Flow
- INE501 [3-0, 3 cr.] Linear Programming
- INE502 [3-0, 3 cr.] Integer Programming
- INE503 [3-0, 3 cr.] Nonlinear Optimization
- INE504 [3-0, 3 cr.] Stochastic Processes
- INE505 [3-0, 3 cr.] Dynamic Programming
- INE507 [3-0, 3 cr.] Advanced Stochastic Processes
- INE551 [3-0, 3 cr.] Advanced Simulation

2. Production Systems

- INE436 [3-0, 3 cr.] Materials Handling
- INE541 [3-0, 3 cr.] Quality Management Systems
- INE542 [3-0, 3 cr.] Supply Chain Management

- INE544 [3-0, 3 cr.] Inventory Analysis
- INE548 [3-0, 3 cr.] Machine Scheduling

3. Manufacturing

- INE563 [3-0, 3 cr.] CAD/CAM
- INE564 [3-0, 3 cr.] Reliability Evaluation of Engineering Systems
- INE565 [3-0, 3 cr.] Analysis of Automated Manufacturing Systems
- INE566 [3-0, 3 cr.] Advanced Information Technology for Industrial & Manufacturing Engineering
- INE567 [3-0, 3 cr.] Time Series Control & Process Adjustment

4. Industrial Management & Economics

- INE506 [3-0, 3 cr.] Decision Analysis
- INE521 [3-0, 3 cr.] Engineering Economy II
- INE522 [3-0, 3 cr.] Cost Engineering and Control
- INE523 [3-0, 3 cr.] Financial Engineering
- INE524 [3-0, 3 cr.] Advanced Financial Engineering
- INE527 [3-0, 3 cr.] Project Scheduling
- INE529 [3-0, 3 cr.] Project Contracting

Special Topics

- INE599 [1-3, 3 cr.] Topics in Industrial Engineering



COURSE DESCRIPTIONS

INE302 Linear Programming [3-0, 3 cr.]

This course covers the formulation of linear programming problems, simplex method, duality, and sensitivity analysis.

Pre-requisite: GNE333 Engineering Analysis I.

INE307 Deterministic OR models [3-0, 3 cr.]

Introduction to deterministic OR modeling. Optimization modeling: decision variables, objective functions, and constraints. Models include linear programs, integer programs, transportation and assignment problems, simple network problems. Methods include simplex method, transportation simplex, shortest path, minimum cost flow, and maximum flow problems.

Pre-requisites: GNE333 Engineering Analysis I, COE 212 Engineering Programming.

INE308 Stochastic OR models [3-0, 3 cr.]

Introduction to discrete Markov chains and continuous Markov Processes, including transient and limiting behavior. The Poisson/Exponential process. Conditional probabilities and conditional expectations. Applications to reliability, maintenance, inventory, production, simple queues and other engineering problems. Introduction to decision theory, risk, utility and decision trees.

Pre-requisites: GNE331 Probability and Statistics.

INE320 Engineering Economy I [3-0, 3 cr.]

This course covers equivalence and interest formulae, real-world transactions, present worth analysis, annual equivalent worth, rate of return analysis, depreciation, inflation, and cost/benefit ratio.

Pre-requisite: Third year standing.

INE345 Production Control [4-0, 4 cr.]

This course covers forecasting, capacity planning, aggregate planning, line balancing, and financial analysis.

Pre-requisite: INE302 Linear Programming, COE221 Computer Programming, and GNE331 Probability and Statistics.

INE346 Production Systems I [3-0, 3 cr.]

Course is an introduction to subjects that span the industrial engineering curriculum and that are covered in greater detail in more advanced

courses. Subjects covered are Forecasting, EOQ, safety stock, Process design, Aggregate Planning, facilities planning and logistics, quality control, human factors, ergonomics and work design, principles of Industrial Management and Project management.

Pre-requisites: GNE331 Probability and Statistics, INE 307 Deterministic OR models.

INE350 Simulation [3-0, 3 cr.]

This course covers random number generation, random variety generation, components of discrete event simulation, learning simulation software, and the simulation of simple systems: queuing, inventory, manufacturing, QC, transportation, layout.

Pre-requisites: GNE331 Probability and Statistics, and COE211 Computer Programming.

INE351 Simulation Lab [0-2, 1 cr.]

Lab course complements the course INE350 simulation. This lab provides students with hands-on experience in the use of state of the art simulation tools and programs such as ARENA.

Co-requisite: INE 350 Simulation.

INE362 Manufacturing Processes [3-0, 3 cr.]

This course offers a balanced quantitative and qualitative coverage of manufacturing processes: Casting, Material Removal, Deformation, Welding and Assembly.

Course presents an overview of engineering materials, primary manufacturing processes and includes projects tailored towards using manufacturing processes for obtaining functional products.

Pre-requisite: MEE321 Material Properties and Processes.

INE363 Manufacturing Lab [0-3, 1 cr.]

Lab provides students with hands on experience in the use of traditional mechanical workshop equipment and software for manufacturing drawings generation. Students are also introduced to CNC Programming.

Concurrent with INE362 Manufacturing Processes.

INE402 Optimization [3-0, 3 cr.]

This course covers queuing theory and models, linear programming, integer programming,

transportation/allocation, assignment, inventory, annealing, networks, dynamic programming, forecasting, and simulation techniques.

Pre-requisite: GNE333 Engineering Analysis I.

INE407 Network Flow [3-0, 3 cr.]

This course covers networks, shortest/longest path, decision trees, and network flow.

Pre-requisite: INE307 Deterministic OR models or Consent of instructor.

INE410 Work Design and Measurement [3-0, 3 cr.]

This course covers methods engineering, operation analysis, worker and machine relationships, productivity measures, time study, time standards, allowances, work sampling, predetermined time systems, learning curves, wage payment, safety and risk factor identification.

Pre-requisites: Fourth year standing

INE414 Human Factors in Engineering [3-0, 3 cr.]

This course covers 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, and climate and noise considerations.

Pre-requisite: Fourth-year standing.

INE415 Occupational Safety [2-0, 2 cr.]

This course covers eliminating and controlling hazards, system safety, expert systems, and accident reconstruction methodologies.

Pre-requisites: INE410 Motion and Time Study, and INE414 Human Factors in Engineering.

INE416 Ergonomics [4- 0, 4 cr.]

Course covers the biomechanics of the musculoskeletal system; anthropometry; manual work design; lifting; motion study; workstation, tools, and tasks design; displays & controls design; machine user interfaces; environmental stress assessment (noise, heat, illumination); toxicology; cognitive work design; operations analysis; worker and machine relationships; productivity measures; time standards; allowances; work sampling; predetermined time systems;

learning curves; wage payment; safety and risk factor identification; worker motivation; job evaluation; job compensation.

Pre-requisites: Fourth year standing.

INE417 Ergonomics Lab [0 -3, 1 cr.]

Lab provides students with hands on experience in the use of the state of the art ergonomics equipment and software for virtual human modeling.

Concurrent with INE416 Ergonomics

INE428 Project Management [3-0, 3 cr.]

Course covers topics on organization structures, project manager-line manager interface, manager's role as planning agent, skill requirements for project manager, management functions, team building as an ongoing process, concurrent engineering as a PM approach, TQM as a PM approach, effective team communication and communication traps, project communication, effective time management, managing conflicts and conflict resolution, ethics obligation matrix and ethics for project managers, project planning, project time management, activity planning, CPM scheduling, and resource allocation. Course includes a team project to plan and schedule the implementation of a selected project.

Pre-requisites: GNE305 Professional Ethics.

INE434 Facilities Planning and Layout [4-0, 4 cr.]

This course covers 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, and evaluation of alternative design.

Pre-requisites: INE302 Linear Programming and INE345 Production Control.

INE436 Materials Handling [3-0, 3 cr.]

This course covers materials handling equipment, the selection and design of material handling systems, simulation, and interface with facilities layout.

Pre-requisites: INE446 Production Systems II or Consent of instructor.

INE438 Facilities Planning & Logistics

[3-0, 3 cr.]

Course covers topics in flow measurements and analysis, flow planning, activity planning and relationships, layout planning, single facility location models minimax and minisum facility location, multiple facility location, process capacity analysis, materials handling capacity analysis, facilities planning in the context of supply chain design and supply chain excellence.

Pre-requisites: INE446 Production Systems II.

INE440 Advanced Statistics [3-0, 3 cr.]

This course covers single factor experiments, randomized blocks, Latin squares, introduction to factorial designs, 2k factorial blocking and confounding, and forecasting.

Pre-requisite: GNE331 Probability and Statistics.

INE442 Quality Control [3-0, 3 cr.]

This course covers the modeling process quality, inferences about process quality, statistical process control, types of control charts, acceptance sampling, and process capability analysis.

Pre-requisites: INE 346 Production Systems I.

INE443 Quality Control II [1-2, 2 cr.]

This course covers application of SPC tools to control process quality in a real manufacturing setting, and the introduction to TQM/ISO standards.

Pre-requisites: INE440 Advanced Statistics and INE442 Quality Control I.

INE446 Production Systems II[3-0, 3 cr.]

Course covers topics on Inventory analysis, Forecasting, Machine Scheduling, sequencing, cycle time, material control, Manufacturing systems, e.g., cellular, group technology, flexible, lean, JIT, MRP, and ERP. Concurrent engineering and design for manufacturing.

Pre-requisites: INE 346 Production Systems I.

INE491 Seminar on Contemporary issues in INE [2-0, 2 cr.]

This is a seminar course covering contemporary issues in Industrial Engineering. Students are asked to research contemporary subjects in the field and present findings to the class.

Pre-requisites: Fourth year standing.

INE498 Professional Experience [0-6, 6 cr.]

This course covers professional experience, through training in the execution of real-life engineering projects.

Pre-requisites: Fifth-year standing and the consent of the instructor.

INE501 Linear Programming [3-0, 3 cr.]

Formulation of linear programming problems; Simplex method; Duality and sensitivity analysis.

Pre-requisites: GNE333 Engineering Analysis I and consent of instructor.

INE502 Integer Programming [3-0, 3 cr.]

This course covers integer programming and general search techniques.

Pre-requisites: INE307 Deterministic OR models or Consent of instructor.

INE503 Nonlinear Optimization [3-0, 3 cr.]

This course covers nonlinear/continuous optimization methods.

Pre-requisites: INE307 Deterministic OR models or Consent of instructor.

INE504 Stochastic Processes [3-0, 3 cr.]

Introduction to non-measure theoretic stochastic processes. Poisson processes, renewal processes, and discrete time Markov chains. Applications in queuing systems, reliability, stochastic scheduling, and inventory control.

Pre-requisites: GNE331 Probability and Statistics and consent of instructor.

INE505 Dynamic Programming [3-0, 3 cr.]

This is a course on the theory and practice of dynamic programming. Topics covered in Deterministic DP: Shortest path algorithms including label setting and correcting, A*, and solution horizon approaches, with applications in resource allocation, knapsack problem, capacity expansion, equipment replacement, and traffic routing; Infinite decision trees and dynamic programming networks with cycles. Topics covered in Stochastic DP are stochastic shortest path problem and Markov decision processes. Applications include asset divestiture, capital budgeting, portfolio selection, inventory control, systems reliability, and maximization of expected utility with constant risk posture.

Pre-requisites: INE307 Deterministic OR models, and consent of instructor.

INE506 Decision Analysis [3-0, 3 cr.]

This course covers decision analysis, game theory, Bayesian decision theory, and the utility theory.

Pre-requisite: GNE331 Probability and Statistics, and consent of instructor.

INE507 Advanced Stochastic Processes [3-0, 3 cr.]

Introduction to martingales in continuous time. Brownian motion: construction, basic properties, sample paths. Stochastic integration, Ito's rule, applications. Introduction to stochastic differential equations and diffusion processes. Applications to financial economics: option pricing, consumption/investment problems.

Pre-requisites: INE 504 Stochastic processes and consent of instructor.

INE521 Engineering Economy II [3-0, 3 cr.]

This course deals with the uncertainty, breakeven analysis, sensitivity analysis, probabilistic risk analysis, and accounting principles.

Pre-requisites: INE320 Engineering Economy I.

INE522 Cost Engineering and Control [3-0, 3 cr.]

Cost engineering for construction organizations, projects, and operations. Construction financing; break-even, profit, and cash flow analyses; capital budgeting. Equipment cost and procurement decisions. Construction financial accounting, cost accounting, cost control systems, databases. Cost indices, parametric estimates, unit price proposals, measuring work and settling claims.

Pre-requisites: consent of instructor.

INE523 Financial Engineering [3-0, 3 cr.]

Introduction to financial models: mean-variance analysis, portfolio selection, separation theorems, capital asset pricing, arbitrage pricing, derivative security pricing, bond management. Modeling, analysis, and computation of derivative securities. Applications of stochastic calculus and stochastic differential equations. Numerical techniques: finite-difference, binomial method, and Monte Carlo simulation.

Pre-requisites: INE504 Stochastic Processes and consent of instructor.

INE524 Advanced Financial Engineering [3-0, 3 cr.]

calculus. Martingale approach to Black-Scholes formula. Optimal stopping and American options. Pricing of continuous and discrete exotic options. Term structure models and pricing of bond options. Jump diffusion models. Applications, including pricing of real and electricity options and hedging of real options.

Pre-requisites: INE507 Advanced Stochastic Processes and INE 523 Financial Engineering

INE527 Project Scheduling [3-0, 3 cr.]

This course covers the basic critical path planning and scheduling, with arrow and precedence networks, introduction to resource leveling, and least cost scheduling, including time-cost trade-off analysis, and schedule control.

Pre-requisites: consent of instructor or Fourth-year standing.

INE529 Project Contracting [3-0, 3 cr.]

This course covers 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, and students use of contract documents to prepare detailed estimates.

Pre-requisites: consent of instructor or Fourth-year standing.

INE541 Quality Management Systems [3-0, 3 cr.]

Course covers Total Quality Management theories and application, Design for Six Sigma (DFSS) and six sigma approaches, DMAIC, Auditing, ISO standards and ISO certification.

Pre-requisites: Consent of instructor and fourth year standing.

INE542 Supply Chain Management [3-0, 3 cr.]

Special topics of current interest; Treatment of new developments in various areas of industrial engineering as warranted; Network Design in a Supply Chain; Demand Forecasting and Aggregate Planning; Transportation Networks; Sourcing. Pre-requisites: Consent of instructor and Fourth year standing.

INE544 Inventory Analysis [3-0, 3 cr.]

This course covers continuous/periodic/deterministic/stochastic inventory models, materials requirements planning(MRP), just-in-time production systems, assembly systems, and flexible manufacturing distribution systems.

Pre-requisites: INE446 Production Systems II or Consent of instructor.

INE548 Machine Scheduling [3-0, 3 cr.]

This course covers basic single machine problem (BSMP), flow shop scheduling with setup cost (TSP), and vehicle routing.

Pre-requisites: INE446 Production Systems II or Consent of instructor.

INE551 Advanced Simulation [3-0, 3 cr.]

This course covers the analysis of simulation data, input and output, validation and verification of system design, comparing alternative system configuration, simulation of complex systems, and case studies.

Pre-requisites: INE350 Simulation, INE346 Production Systems I, Fourth year standing.

INE563 CAD/CAM [3-0, 3 cr.]

This course introduces students to the use of product lifecycle management (PLM) software packages for sketching, drafting, modeling, assembly and prototyping. Course includes projects tailored towards using software to the design and manufacturing of a physical product.

Pre-requisite: INE362 Manufacturing Processes

INE567 Time Series Control & Process Adjustment [3-0, 3 cr.]

Statistical analysis and design of process adjustment methods for quality improvement purposes. Topics include ARIMA time series models, autocorrelation and SPC, integration of SPC schemes and feedback control, identification and estimation of transfer function models, design and analysis of optimal stochastic controllers, PID and EWMA controllers, self-tuning and multivariate control.

INE591 Project I [3-0, 3 cr.]

This course covers selected engineering project, using acquired technical knowledge, formal report, and presentation.

Pre-requisites: Fifth year standing and INE362 Manufacturing Processes, INE350 Simulation, INE446 Production Systems II, INE434 Facilities Planning and Layout, INE428 Project Management, GNE305 Professional Ethics.

INE592 Project II [3-0, 3 cr.]

This course covers advanced engineering project, using acquired technical knowledge, formal report, and presentation.

Pre-requisites: consent of the instructor and Fifth year standing.

INE593 Capstone Engineering Design [1-0, 1 cr.]

The course will reinforce and integrates topics covered in other courses in the curriculum and used in engineering design. Topics covered include need identification and problem definition, managing the design process, team behavior and group dynamics, design research and information gathering, concept generation and evaluation, risk, reliability, and safety, legal and ethical issues in design, communicating the design.

Pre-requisites: course to be given Concurrent with INE591 Project I.

INE599 Topics in Industrial Engineering [1-3, 3 cr.]

This course covers the treatment of new development, in various areas of industrial engineering.

Pre-requisites: consent of the instructor and Fourth year standing.



BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING

The Bachelor of Engineering degree program in Mechanical Engineering is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700, <http://www.abet.org>

The Mechanical Engineering Program 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, which 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. While the program is credit-based, a typical schedule over a four-year period, including summer modules, is listed below. Students may select to take these courses over a longer period of time.

MISSION

The Mechanical Engineering Program strives to support the mission of the school by providing students with a solid and contemporary mechanical engineering curriculum and a broad education that prepares them for successful careers as mechanical engineers in a globalized and diverse world as well as graduate studies.

PROGRAM EDUCATIONAL OBJECTIVES

Within a few years of graduation, the graduates of the Mechanical Engineering program will:

1. Establish themselves as practicing mechanical engineers or be engaged in advanced studies in the areas of thermal/fluid systems, mechanical systems and design or materials and manufacturing
2. Demonstrate leadership and function effectively as responsible members of professional teams.
3. Demonstrate ability to undertake engineering projects that address environment, society and economy requirements.

PROGRAM OUTCOMES

The students will acquire in their matriculation through the program, the following skills, knowledge, and behaviors:

- a. An ability to apply knowledge of mathematics, science and engineering.
- b. An ability to design and conduct experiments, as well as to analyze and interpret data.
- c. An ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. An ability to function on multidisciplinary teams.
- e. An ability to identify, formulate and solve engineering problems.
- f. An understanding of professional and ethical responsibility.
- g. An ability to communicate effectively.
- h. A Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
- i. A recognition of the need and the ability to engage in lifelong learning.
- j. A knowledge of contemporary issues.
- k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

MAJOR REQUIREMENTS

First Year

Fall Semester (16 credits)

COE 212	Engineering Programming	3
ENG 202	Sophomore Rhetoric	3
CIE200	Statics	3
MEE 211	Engineering Graphics	1
MTH 201	Calculus III	3
----	Liberal Arts Curriculum Elective	3

Spring Semester (16 credits)

ELE 305	Introduction to Electrical Eng.	3
ETH 201	Moral Reasoning	1
ARA20	Appreciation of Arabic Literature	3
MTH 304	Differential Equations	3
MTH 206	Calculus IV	3
MEE241	Dynamics	3

Summer Module I (6 credits)

GNE333	Engineering Analysis I	3
---	Liberal Arts Curriculum Elective	3

Summer Module II (4 credits)

GNE331	Probability and Statistics	3
PED 2--	Physical Education	1

Second Year

Fall Semester (15 credits)

MEE311	Fluid Mechanics	3
MEE312	Fluid Mechanics Lab	1
MEE301	Thermodynamics	3
MEE351	Computer Aided Design	3
MEE321	Material Properties and Processes	3
MEE212	Computer Applications in IME	2

Spring Semester (17 credits)

MEE403	Heat Transfer	3
MEE404	Heat Transfer - Lab	1
MEE391	Instrumentation and Measurements	3
MEE320	Strength of Materials	3
MEE341	Kinematics and Dynamics of Linkages	3
MEE332	Manufacturing Processes	3
MEE333	Manufacturing Lab	1

Summer Module I (5 credits)

ENG203	Fundamentals of Oral Communication	3
GNE301	Professional Communication	2

Summer Module II (4 credits)

---	Liberal Arts Curriculum Elective	3
HLT201	Basic Health	1

Third Year

Fall Semester (15 credits)

GNE305	Professional Ethics	1
---	Science Elective	3
MEE442	Mechanical Vibrations	3
MEE443	Mechanical Vibrations Lab	1
MEE445	Control Systems	3
MEE446	Control Systems Lab	1
MEE414	Thermal Systems Design	3

Spring Semester (17 credits)

INE428	Project Management	3
INE491	Seminar on Contemporary Issues	2
MEE302	Energy Conversion	3
MEE422	Mechanical Engineering Design	3
---	Technical Elective (1/6)	3
---	Technical Elective (2/6)	3

Summer Module II (6 credits)

MEE498	Professional Experience	6
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Fourth Year

Fall Semester (14 credits)

MEE593	Capstone Engineering Design	1
MEE591	Project I	3
INE402	Optimization	3
MEE515	Refrigeration and Air Conditioning	3
MEE516	Refrigeration and Air Conditioning Lab	1
---	Technical Elective (3/6)	3

Spring Semester (15 credits)

---	Technical Elective (4/6)	3
---	Technical Elective (5/6)	3
---	Technical Elective (6/6)	3
---	Liberal Arts Elective Course	3
INE320	Engineering Economy I	3

Technical Electives

GNE334	Engineering Analysis II	3
INE527/ INE529	Project Scheduling/Contracting	3
MEE407	Internal Combustion Engines	3
MEE421	Finite Element Methods	3
MEE503	Power Plant Engineering	3
MEE505	Solar Systems	3
MEE513	Gas Turbines	3
MEE515	Refrigeration and Air-Conditioning	3
MEE533	Advanced CAD/CAM	3
MEE543	Acoustics and Vibration Control	3
MEE550	Mechatronics	3
MEE590	Energy Audit	3
MEE592	Project II	3
MEE599	Topics in Mechanical Engineering	3

Or any other approved technical elective course by the department.

Science Electives

The Science elective must be taken from the following courses

BIO200	Basic Biology	3
CHM200	Essentials of Chemistry	3
CHM 201	Chemical Principles	3
BIO 201	General Biology	4
PHY 201	Electricity and Magnetism	4

COURSE DESCRIPTIONS

MEE211 Engineering Graphics [0-2, 1 cr.]

An introduction in the basics of 2D drafting, sketching and pictorial views, orthographic multiviews, auxiliary and section views, dimensions, drawing layouts and presentations. Basic use of a computer aided drafting software (such as AutoCAD).

MEE212 Computer Applications in IME [1-2, 2 cr.]

This course is designed to introduce students to powerful computational software such as MATLAB and MATHEMATICA and to database systems. Students will learn how to write MATLAB and MATHEMATICA programs for Industrial and Mechanical engineering applications. Array definitions and manipulations, user-defined functions, solution of differential equations, plotting, and several built in functions will be covered.

Pre-requisites: COE212 Engineering Programming and GNE333 Engineering Analysis

MEE220 Engineering Graphics [2-4, 4 cr.]

This course covers basic engineering drawing, CAD proficiency, sketching, and schematics.

MEE241 Dynamics [3-0, 3 cr.]

This course covers kinematics, and kinetics of particles, systems of particles, and kinetics of rigid bodies.

Pre-requisites: MTH201 Calculus III and CIE200 Statics.

MEE301 Thermodynamics [3-0, 3 cr.]

This course covers the 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, and entropy.

Pre-requisite: Sophomore standing.

MEE302 Energy Conversion [3-0, 3 cr.]

This course covers the performance and design considerations of energy conversion systems, the design and performance problems involving steam, gas turbine, and combined cycle power plants, and the reciprocating and rotary engines.

Pre-requisite: MEE301 Thermodynamics.

MEE311 Fluid Mechanics [3-0, 3 cr.]

This course covers fluid statics, analysis of fluid motion using the continuity, momentum, and energy, relationship, and the introduction to viscous flow.

Pre-requisite: MEE241 Dynamics.

MEE312 Fluid Mechanics Lab [0-3, 1 cr.]

This course entails laboratory experiments in fluid mechanics.

Concurrent with MEE311 Fluid Mechanics.

MEE320 Strength of Materials [3-0, 3 cr.]

This course covers mechanical properties and behavior of stressed materials, stress analysis of beams, columns and shafts, statically indeterminate structures, plane stress and strain, and principal stresses.

Pre-requisite: CIE200 Statics.

MEE321 Material Properties and Processes [3-0, 3 cr.]

This course covers the mechanical and physical properties of engineering materials (metals, ceramics and polymers), which are explained through their structures. Topics include strength and ductility, crystal structures and defects, phases, heat treatment.

The course includes a revision of theories and principles of atomic structure and chemical bonding. Pre-requisite: sophomore standing.

MEE332 Manufacturing Processes [3-0, 3 cr.]

This course offers a balanced quantitative and qualitative coverage of manufacturing processes: Casting, Material Removal, Deformation, Welding and Assembly. Course presents an overview of engineering materials, primary manufacturing processes and includes projects tailored towards using manufacturing processes for obtaining functional products.

Pre-requisite: MEE321 Material Properties and Processes.

MEE333 Manufacturing Lab[0-3, 1 cr.]

Lab provides students with hands-on experience in the use of traditional mechanical workshop equipment and software for manufacturing drawings generation. Students are also introduced to CNC Programming.

Concurrent with MEE332 Manufacturing Processes.

MEE341 Kinematics and Dynamics of Linkages [3-0, 3 cr.]

This course covers kinematics of mechanical devices, displacement, velocity and acceleration of linkages, cams and gear trains, and an introduction to synthesis, design, and computer problems.

Pre-requisites: MEE 241 Dynamics, MEE351 Computer Aided Design and MEE212 Computer Applications in IME Concurrent with MEE332 Manufacturing Processes.

MEE 351 Computer Aided Design [2-2, 3 cr.]

This course covers the numerical design chain encompassing conceptual design techniques & methodologies, sketching, geometrical modeling, design specifications and product assembly. Course includes projects tailored towards using CAD software for designing mechanical engineering products.

Pre-requisites: MEE211 Engineering Graphics

MEE390 Instrumentation and Measurements [1-3, 2 cr.]

This course covers 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, and the use of instrumentation software.

Pre-requisite: ELE305 Introduction to Electrical Engineering, GNE331 Probability and Statistics.

MEE 391 Instrumentation and Measurements [2-3, 3 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.

Pre-requisites: ELE 305 Introduction to electrical engineering; GNE 331 Probability and Statistics

MEE401 Energy Systems [2-0, 2 cr.]

This course covers the energy and its transformation, balance, and open/closed systems.

MEE403 Heat Transfer [3-0, 3 cr.]

This course covers the transfer of heat by conduction, radiation and convection, and the analysis of steady state, and simple transient heat processes, and the evaporation, boiling, and condensing, heat transfer.

Pre-requisites: MTH304 Differential Equations, MEE311 Fluid Mechanics.

MEE404 Heat Transfer Lab [0-3, 1 cr.]

This course entails laboratory experiments in heat transfer.

Pre-requisites: GNE 331 Probability and Statistics; Concurrent with MEE403 Heat Transfer.

MEE407 Internal Combustion Engines [3-0, 3 cr.]

This course covers the principles, practice, and characteristics, of internal combustion engines, with laboratory demonstrations in engine testing and performance. The laboratory entails experiments in internal combustion engines.

Pre-requisite: MEE302 Energy Conversion.

MEE408 Internal Combustion Engines Lab [0-3, 1 cr.]

This course entails laboratory experiments in internal combustion engines.

Concurrent with MEE407 Internal Combustion Engines.

MEE 414 Thermal Systems Design [3-0, 3 cr.]

This course covers the analysis and design of thermal systems using the principles developed in thermodynamics, fluid mechanics, and heat transfer. Students develop computer programs to solve open-ended thermal design problem.

Pre-requisites: MEE403 Heat Transfer.

MEE 421 Finite Element Methods [3-0, 3 cr.]

This course introduces a numerical technique used in the solution of PDE governed problems. Applications cover solid mechanics, fluid dynamics and heat transfer problems in 1D. The course provides an insight on the extension to 2D and 3D problems. Bar, truss, beam and frame elements are covered in solid

mechanics applications. Computer program development for the solution of 1D problems. Use of state of the art commercial finite element software (COMSOL Multiphysics).

Pre-requisites: GNE333 Engineering Analysis I, and MEE320 Strength of Materials.

MEE422 Mechanical Engineering Design [3-0, 3 cr.]

This course covers kinematics, and force analysis of machine and machine elements, balancing, critical speed, flywheel design, and dynamic measurement, and design and computer problems.

Pre-requisites: MEE341 Kinematics and Dynamics of Linkages, and MTH304 Differential Equations.

MEE442 Mechanical Vibrations [3-0, 3 cr.]

This course covers kinematics and force analysis of machine and machine elements, balancing, critical speed, flywheel design and dynamic measurement, and design and computer problems.

Pre-requisites: MEE341 Kinematics and Dynamics of Linkages, and MTH304 Differential Equations

MEE443 Mechanical Vibrations Lab [0-3, 1 cr.]

This course entails laboratory experiments in machine dynamics.

Pre-requisites: GNE 331 Probability and Statistics; Concurrent with MEE442 Mechanical Vibrations.

MEE445 Control Systems [3-0, 3 cr.]

This course covers control system design of mechanical systems, emphasis on thermal, fluid, and motion, systems under feedback control, and classical control topics, including laplace transforms, system modeling, stability theory, and practical applications to professional practice.

Pre-requisites: GNE333 Engineering Analysis I; Concurrent with MEE442 Mechanical Vibrations.

MEE 446 Control Systems Lab [0-3, 1cr]

The Control Systems lab provides experiential training of the methods used in modeling, analysis, simulation, and control of engineering systems. Students will design and implement controllers using modern Instruments and software.

Pre-requisites: MEE391 Instrumentations and Measurements

Concurrent with MEE445 Control Systems.

MEE 491 Seminar on Contemporary issues in MEE [2-0, 2 cr.]

This is a seminar course covering contemporary issues in Mechanical Engineering. Students are asked to research contemporary subjects in the field and present findings to the class.

Pre-requisites: Third year standing.

MEE498 Professional Experience [0-6, 6 cr.]

This course covers professional experience through training in the execution of real-life engineering projects.

Pre-requisites: Fifth-year standing and the consent of the instructor.

MEE503 Power Plant Engineering [3-0, 3 cr.]

This course covers steam and gas turbine power cycles, modern power plants, combined power plants, energy and availability analysis, economics of power generation, and design problems and field trips.

Pre-requisites: MEE302 Energy Conversion and MEE512 Thermo-fluids.

MEE505 Solar Systems [3-0, 3 cr.]

This course covers the solar energy resources, collector models, active DHW, and space heating systems, passive heating, utilizability, and design-chart method, and photovoltaic and wind systems.

Pre-requisite: MEE403 Heat Transfer.

MEE512 Thermofluids [3-0, 3 cr.]

This course covers the analysis of the mechanics, and thermodynamics, of flowing compressible fluids, and the design of incompressible fluid flow and machinery.

Pre-requisite: MEE403 Heat Transfer.

MEE513 Gas Turbines [3-0, 3 cr.]

This course covers the design and performance of stationary and propulsion gas turbines.

Pre-requisite: MEE302 Energy Conversion.

MEE515 Refrigeration and Air-Conditioning [3-0, 3 cr.]

This course covers principles of vapor compression and absorption refrigeration, heat pumps, psychometrics, principles of thermal comfort, and environmental aspects, determination of heating and cooling loads, and air conditioning system design and analysis.

Pre-requisite: MEE403 Heat Transfer.

MEE516 Refrigeration and Air-Conditioning Lab [0- 3, 1 cr.]

This course entails laboratory experiments in refrigeration and air-conditioning.

Concurrent with MEE515 Refrigeration and Air-Conditioning.

MEE533 Advanced CAD/CAM [3-0, 3 cr.]

This course covers the application of the design process to design and manufacture engineering products throughout the different steps of specification, behavioral modeling, design analysis, material selection, prototyping, manufacturing and testing. The course requires extensive usage of PLM software packages to the design and manufacturing of a mechanical design problem.

Pre-requisite: MEE332 Manufacturing Processes, MEE351 Computer Aided Design; 5th year standing

MEE543 Acoustics and Vibration Control [3-0, 3 cr.]

This course covers the 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, and design problems on vibration isolation systems, and absorbers.

Pre-requisite: MEE442 Mechanical Vibrations.

MEE550 Mechatronics [3-0, 3 cr.]

Mechatronics is an interdisciplinary engineering area that comprises the integration of mechanical engineering, electronics, control systems, and computer science, which together contribute to design smart products and processes. This course will cover principles and interfacing techniques of several sensors and actuators; rapid prototyping of closed-loop computer controlled electromechanical systems; analysis, design, and implementation of Mechatronic systems. Basic electronics, DC motors, stepper motors, H-bridges, various sensors, signal conditioning, PIC microcontrollers, PLCs, and others topics will be covered in class lectures and lab assignments.

Pre-requisite: MEE391 Instrumentation and Measurements.

MEE590 Energy Audit [3-0, 3 cr.]

This course covers the survey of energy sources, cost analysis, alternatives, environmental issue, audit techniques, and technical reporting.

Pre-requisite: MEE403 Heat Transfer.

MEE591 Project I [3-0, 3 cr.]

This course covers selected engineering project using acquired technical knowledge, formal report, and presentation.

Pre-requisites: Fifth year standing and MEE332 Manufacturing Processes, MEE414 Thermal Design Systems, MEE422 Mechanical Engineering Design, GNE305 Professional Ethics, INE428 Project Management

MEE592 Project II [3-0, 3 cr.]

This course covers advanced engineering project, using acquired technical knowledge, formal report, and presentation.

Pre-requisites: Final-year standing and the consent of the instructor.

MEE 593 Capstone Engineering Design [1-0, 1 cr.]

Course reinforces and integrates topics covered in other courses in the curriculum and used in engineering design. Topics covered include need identification and problem definition, managing the design process, team behavior and group dynamics, design research and information gathering, concept generation and evaluation, risk, reliability, and safety, legal and ethical issues in design, communicating the design.

Co-requisites: Project I

MEE599 Topics in Mechanical Engineering [1-3, 3 cr.]

This course covers the treatment of new development in various areas of mechanical engineering.

Pre-requisites: Fifth-year standing and the consent of the instructor.

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 the 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.

EDUCATIONAL OBJECTIVES

The objective of the Packaging Minor is to capitalize on theories and skills learned in other disciplines, to prepare students for success as packaging professionals in positions ranging from technical research and development to design, production and sales.

EDUCATIONAL OBJECTIVES

The objective of the Packaging Minor is to capitalize on theories and skills learned in other disciplines, to prepare students for success as packaging professionals in positions ranging from technical research and development to design, production and sales.

STUDENT OUTCOMES

- The ability to apply scientific and design principles to analyze, develop and produce packages that protect, preserve and transport a product.
- The ability to apply design principles to inform, to communicate, and to advertise a product.
- Knowledge of materials, and materials' behavior, structures, methods, machinery,

and the most common types of processes used for package design, production, and transportation.

- Hands-on experience in testing, analyzing and designing packages.

MAJOR REQUIREMENTS

The Packaging Minor requires the completion of 18 credits of packaging courses, consisting of 12 required core credits, and six elective credits.

Required Core Courses (12 credits)

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 credits)

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 Engineering3	3

Note: Students with Engineering or Design emphasis are advised to take the two electives in the respective area of emphasis.

COURSE DESCRIPTIONS

PKG/INE570 Introduction to Packaging [3-0, 3 cr.]

This course will present an overview of the history of packaging, its functions, materials, and development, and an overview of packaging design, processing systems, and testing. The historical, social, technological, and environmental impact, as well as the 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.

Pre-requisite: Second-year standing.

PKG/INE572 Packaging Dynamics and Permeation [2-3, 3 cr.]

This course is 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.

Pre-requisite: PHY211 Statics or ARC311 Building Systems.

PKG/INE573 Packaging Types and Processes* [3-0, 3 cr.]

This course is a study of the 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 improving 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.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE580 Packaging Design [1-4, 3 cr.]

This course covers the 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.

Pre-requisite: Second-year standing.

PKG/INE574 Paper & Paperboard Packaging [3-0, 3 cr.]

This course is a 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, and the design features and performance of basic paper characterization tests.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE575 Corrugated Packaging* [3-0, 3 cr.]

This course is a study of distribution packaging which includes: product design factors affecting transportation, transportation hazards, protective package design, modern computer aids to shipping package design, regulations, and the

methods and significance of various pre-shipment test procedures.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE576 Rigid Plastic Packaging* [3-0, 3 cr.]

This course is a 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.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE577 Packaging for Food, Drug, and Cosmetics* [3-0, 3 cr.]

This course covers the physical and chemical properties of packaging materials including metals, glass, paper and polymers, 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.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE578 Food Preservation Packaging [3-0, 3 cr.]

This course covers the 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.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE579 Special Topic Course in Packaging Engineering [3-0, 3 cr.]

This course will address the current issues in packaging engineering, and the trends in the market, with lectures by invited guests from the field.

Pre-requisite: The consent of the 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.

Pre-requisite: 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 to bring fresh ideas to the concept of surface treatment and structure in the elaboration of the visual identity of a product.

Pre-requisite: PKG/INE570 Introduction to Packaging.

PKG/INE586 Computer Graphics for Packaging* [2-2, 3 cr.]

This course covers the 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.

Pre-requisite: 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.

Pre-requisites: 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 the current issues in packaging design, and the trends in the market, with lectures by invited guests from the field.

Pre-requisite: Consent of the instructor.

Graduate Program

MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING AND ENGINEERING MANAGEMENT

The Master of Science in Engineering in Industrial Engineering and Engineering Management Program responds to a need, at the country level, for engineers that can manage and improve integrated systems of people, materials, information, facilities, and technology. The Graduate Program in Industrial Engineering and Engineering Management, with emphasis in Engineering Management, draws on LAU's substantial, and growing, experience in Undergraduate Industrial Engineering education, to provide engineers, coming from other engineering disciplines, with a significant opportunity to specialize in the management, and the optimization, of engineering systems.

The Graduate Program in Industrial Engineering and Engineering Management is essentially a hybrid Program that is built by combining specialized knowledge bases, leading to a non-traditional interdisciplinary education. The knowledge bases, referred to hereunder as concentrations areas, consist in part of elective Graduate-level courses from Industrial, Mechanical, and Civil Engineering Programs, and Graduate courses from Computer Science, Economics, Business, and International Affairs Graduate Programs.

MISSION

The Mission of the Graduate Program in Industrial Engineering and Engineering Management is to capitalize on the skills and theories learned in disciplines other than Industrial Engineering, to uniquely prepare students for successful engineering management careers.

EDUCATIONAL OBJECTIVES

The objectives of the Graduate Program in Industrial Engineering and Engineering Management are to:

1. Provide engineers, coming from other engineering disciplines, with a significant opportunity to specialize in the management and optimization, of engineering systems.
2. Introduce engineers to the state of the art tools and methods used in the design, management, or improvement, of integrated systems of people, materials, facilities, information, and technology.

3. Provide students with a unique, non-traditional, interdisciplinary education that is tailored to the student's professional needs and interests.

STUDENT OUTCOMES

The students will acquire in their matriculation through the program, the following skills, knowledge, and behaviors:

- a. The ability to use the knowledge of math and science to model, and to improve, complex integrated systems of people, materials, facilities or technology.
- b. The broad knowledge that encompasses the fields of production systems and manufacturing, construction engineering and management, and finance and economics.
- c. The ability to use data analysis, and optimization, for decision making.
- d. The ability to provide support for systems engineering and project management.
- e. The ability to function as a professional in the discipline.
- f. The ability to grow through a lifelong acquisition of knowledge.
- g. Advanced proficiency in the student-selected topics in optimization, production systems and manufacturing, infrastructure and construction, and management, or finance and economics.

ADMISSIONS REQUIREMENTS

The program is open to applicants with B.E. or B.S. degrees in the Engineering disciplines, other than in Industrial Engineering. Admission is granted, only, on a selective basis to students meeting the following minimum requirements. Applicants must have a Bachelor of Science in Engineering, or a Bachelor of Engineering, Degree from an accredited college or university, with a minimum general Grade Point Average (GPA) equivalent to 2.75, on a 4-point scale, or 2.75 in the Major.

The GRE general exam is required of all applicants (GRE subject exams are not required). All applicants must submit scores for the GRE general exam (includes verbal reasoning, quantitative reasoning, and analytical writing scores). Your GRE test scores are an important part of your application. GRE test scores that are more than 5 years old will not be accepted.

The admissions committee considers several factors when making admission decisions: your academic performance at prior institutions

(grades, rankings, and GPAs) and your GRE test score. The rate of graduate assistantship (GA), when requested, is directly related to your GPA and GRE scores. Letters of recommendation are optional; however, three letters are recommended, two of which to be completed by faculty who are familiar with your academic performance.

If the GPA is less than 2.75, the applicant may be admitted as "special," as described in the Academic Rules and Regulations for Graduate Programs.

DEGREE REQUIREMENTS

The Graduate Program in Industrial Engineering and Engineering Management, with Emphasis in Engineering Management, consists of 30 credit hours, and leads to a Master of Science in Industrial Engineering and Engineering Management (Emphasis in Engineering Management).

In particular the degree requirements are:

- 30 hours of Graduate level courses.
- At least 18 hours in Engineering courses.
- No more than six credit hours in project-based courses, or Thesis work.
- At least six hours in Optimization.
- At least nine hours from Production Systems and Manufacturing, or Infrastructure and Construction Management.
- At least 3 hours from Finance and Economics.

The remaining courses may be taken from any of the following concentration areas:

- CA_1 Optimization
- CA_2 Production Systems and Manufacturing
- CA_3 Infrastructure and Construction Management
- CA_4 Finance and Economics
- CA_5 Software

TRANSFER OF CREDITS

B.E. holders can transfer up to six credits from their B.E. degree, provided that the student has scored at least a grade of "B" on each of these courses. Transfer of credits is governed by the Graduate Program Rules and Regulations.

COURSE LISTING BY CONCENTRATION AREAS

Courses eligible for Graduate credit under this Program are grouped into five concentration areas:

CA_1: Optimization

INE700	Advanced Statistics	3
INE701	Linear Programming	3
INE702	Integer Programming	3
INE703	Dynamic Programming	3
INE704	Stochastic Processes	3
INE705	Non-linear Programming	3
INE706	Decision Analysis	3
INE707	Network Flow	3
INE708	Queuing Theory and Applications	3
INE709	Advanced Stochastic Processes	3
INE711	Advanced Simulation	3
INE810	Special Topics in Optimization	3

CA_2: Production Systems and Manufacturing

INE742	Industrial Quality Control	3
INE743	Reliability Evaluation of Engineering Systems	3
INE744	Inventory Analysis	3
INE745	Facilities Planning and Layout	3
INE746	Materials Handling	3
INE748	Machine Scheduling	3
INE749	Transportation and Supply Chain Systems	3
INE761	Computer Aided Design/ Computer Aided Manufacturing	3
INE762	Analysis of Automated Manufacturing Systems	3
INE763	Advanced Information Technology for Industrial & Manufacturing Engineering	3
INE764	Time Series Control & Process Adjustment	3
INE840	Special Topics in Production Systems & Manufacturing	3

CA_3: Infrastructure and Construction Management

CIE761	Traffic Engineering	3
CIE762	Transportation Engineering II	3
CIE785	Risk and Natural Hazard Management	3
CIE786	Highway Design and Management	3
CIE787	Concrete and Steel Construction	3
CIE788	GIS and Remote Sensing	3
CIE790	Construction Methods	3
INE721/ CIE789	Cost Engineering and Control	3
INE722/ CIE782	Infrastructure Management	3
INE724/ CIE784	Quality Management Systems	3
INE727	Project Scheduling	3
INE729	Project Contracting	3
INE820	Special Topics in Infrastructure & Construction Management	3

CA_4: Finance and Economics

BUS811	Business Economics	3
BUS821	Financial Accounting	3
BUS836	Modern Portfolio Management	3

BUS837	International Business	3
BUS861	Financial Management	3
INA831	International Political Economy	3
INE771	Financial Engineering	3
INE772	Advanced Financial Engineering	3
INE781	Engineering Economy II	3
INE870	Special Topics in Finance & Economics	3

CA_5: Software

COE716/ CSC723	Knowledge-Based Systems	3
COE717	Parallel Programming and Cluster Workstations	3
COE718/ CSC450	Computer Graphics	3
COE741/ CSC460	Artificial Intelligence	3
COE742	Neural Networks	3
COE752/ CSC711	Design and Analysis of Algorithms	3
COE753/ CSC714	Heuristic Optimization	3
CSC475	Advanced Topics in Databases	3

Other Courses

INE800	Project Course	3
INE801	Special Topic Courses	3
INE899	Thesis	6

COURSE DESCRIPTIONS

INE700 Advanced Statistics [3-0, 3 cr.]

This course covers single factor experiments, randomized blocks, Latin squares, introduction to factorial designs, 2k factorial blocking and confounding, and forecasting.

INE701 Linear Programming [3-0, 3 cr.]

This course covers the formulation of linear programming problems, simplex method, and duality and sensitivity analysis.

INE702 Integer Programming [3-0, 3 cr.]

This course covers integer programming, and general search techniques.

INE703 Dynamic Programming [3-0, 3 cr.]

This is a course on the theory and practice of dynamic programming. Topics covered in Deterministic DP: Shortest path algorithms including label setting and correcting, A*, and solution horizon approaches, with applications in resource allocation, knapsack problem, capacity expansion, equipment replacement, and traffic routing; infinite decision trees and dynamic programming networks with cycles. Topics covered in Stochastic DP are stochastic shortest path problem and Markov decision processes. Applications include

asset divesture, capital budgeting, portfolio selection, inventory control, systems reliability, and maximization of expected utility with constant risk posture.

Pre-requisite: INE701 Linear Programming.

INE704 Stochastic Processes [3-0, 3 cr.]

This course covers Markov decision processes, and chains stochastic processes.

INE705 Non-linear Programming [3-0, 3 cr.]

This course covers nonlinear/continuous optimization methods.

INE706 Decision Analysis [3-0, 3 cr.]

This course covers decision analysis, game theory, Bayesian decision theory, and utility theory.

INE707 Network Flow [3-0, 3 cr.]

This course covers networks, shortest/longest path, decision trees, and network flow.

INE708 Queuing Theory and Applications [3-0, 3 cr.]

This course is an introduction to congestion and related stochastic models. Topics include birth and death models, measures of performance, Little's Law, conservation law, PASTA, work in system, service disciplines and priorities, regenerative processes, stability and stationary distributions, approximations and bounds. Examples from telecommunications, production, inventory, and computer science, are covered.

INE709 Advanced Stochastic Processes [3-0, 3 cr.]

This course is an introduction to martingales in continuous time. Brownian motion: construction, basic properties, sample paths. Stochastic integration, Ito's rule, and applications, are discussed. The course is an introduction to stochastic differential equations and diffusion processes. Applications to financial economics: option pricing, and consumption/investment problems, are also covered.

Pre-requisite: INE704 Stochastic Processes.

INE711 Advanced Simulation [3-0, 3 cr.]

This course covers an analysis of simulation data: input and output, validation and verification of system design, comparing alternative system configuration, simulation of complex systems, and case studies.

INE721 Cost Engineering and Control [3-0, 3 cr.]

This course covers cost engineering for construction organizations, projects, and operations, it also covers construction financing, break-even, profit, and cash flow analyses, capital budgeting, equipment cost, and procurement decisions. Construction, financial accounting, cost accounting, cost control systems, and databases, as well as cost indices, parametric estimates, unit price proposals, measuring work, and settling claims are also covered.

Pre-requisite: INE729 Project Contracting.

INE722 Infrastructure Management [3-0, 3 cr.]

This course covers the general methods of engineering systems management, and the different types of infrastructure. The course analyzes possible financing, and engineering, solutions and alternatives, and the overall management during the life cycle of the project.

INE724 Quality Management Systems [3-0, 3 cr.]

This course is an introduction to quality management systems, ISO 9000, 14000, Total Quality Management, and the applications of QMS to the engineering, and management, of large projects, systems, and organizations.

Pre-requisite: Consent of the instructor.

INE727 Project Scheduling [3-0, 3 cr.]

This course covers the basic critical path planning, and scheduling with arrow and precedence networks, introduction to resource leveling, and least cost scheduling, including time-cost tradeoff analysis and schedule control.

INE729 Project Contracting [3-0, 3 cr.]

This course covers the construction contracting for contractors, owners and engineers. The course also covers industry structure, the types of contracts and delivery systems of construction, planning, estimating, quantity takeoff and pricing, labor and equipment estimate, and the proposal preparation. Students use contract documents to prepare detailed estimates.

INE742 Quality Control I [3-0, 3 cr.]

This course covers the modeling process quality, inferences about process quality, statistical process control, types of control charts, acceptance sampling, and process capability analysis.

INE743 Reliability Evaluation of Engineering Systems [3-0, 3 cr.]

This course covers the concepts and basic background for evaluating the reliability of engineering systems. It covers network modeling and evaluation of simple and complex systems, cut-set method, tie-set method, multi-failure modes. Probability distributions in reliability evaluation and system reliability evaluation using probability distributions are discussed. Also, discrete and continuous Markov chains (reliability evaluation in repairable systems), frequency and duration techniques (concepts, applications to multi-state problems, frequency balance approach) and the Monte Carlo simulation, are covered.

INE744 Inventory Analysis [3-0, 3 cr.]

This course covers the continuous/periodic/deterministic/stochastic inventory models, Materials Requirements Planning (MRP), just-in-time production systems, assembly systems, and flexible manufacturing distribution systems.

INE745 Facilities Planning and Layout [3-0, 3 cr.]

This course covers the 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 and the evaluation of alternative design.

INE746 Materials Handling [3-0, 3 cr.]

This course covers the materials handling equipment; selection and design of material handling systems, simulation, and interface with facilities layout.

INE748 Machine Scheduling [3-0, 3 cr.]

This course covers the Basic Single Machine Problem (BSMP); flow shop scheduling with setup cost (TSP); vehicle routing.

Pre-requisite: INE302 Linear Programming.

INE749 Transportation and Supply Chain Systems [3-0, 3 cr.]

This course covers the topics of supply chain characterization, site location, mode selection, distribution planning, vehicle routing, demand management, replenishment management, geographic information systems, and real-time control issues.

Pre-requisite: Consent of the instructor.

INE761 CAD/CAM [3-0, 3 cr.]

This course covers the use of computer-aided design software packages, including systems for computer-aided drafting, solid modeling, finite element analysis, and computer-aided manufacturing, and design projects including the fabrication of physical prototypes generated with numerically controlled machines.

INE762 Analysis of Automated Manufacturing Systems [3-0, 3 cr.]

This course covers the development of analytical stochastic models as the basis for understanding the performance, and the design/planning aspects of automated manufacturing systems. The course focuses on flow lines, job shops, and flexible manufacturing systems.

INE763 Advanced Information Technology for Industrial & Manufacturing Engineering [3-0, 3 cr.]

This course covers advanced information technology concepts, tools, and techniques, for designing, and implementing, manufacturing systems.

INE764 Time Series Control & Process Adjustment [3-0, 3 cr.]

This course covers the statistical analysis and design of process adjustment methods for quality improvement purposes. Topics include ARIMA time series models, autocorrelation and SPC, integration of SPC schemes and feedback control, identification and estimation of transfer function models, design and analysis of optimal stochastic controllers, PID and EWMA controllers, self-tuning and multivariate control.

INE771 Financial Engineering [3-0, 3 cr.]

This course is an introduction to financial models: mean-variance analysis, portfolio selection, separation theorems, capital asset pricing, arbitrage pricing, derivative security pricing, bond management, modeling, analysis, and computation of derivative securities. Applications of stochastic calculus and stochastic differential equations are covered, as well as numerical techniques: finite-difference, binomial method, and Monte Carlo simulation.

Pre-requisite: INE704 Stochastic Processes.

INE772 Advanced Financial Engineering [3-0, 3 cr.]

This course is a review of basic mathematics, including renewal theory and stochastic calculus, Martingale approach to Black-Scholes formula, optimal stopping and American options, pricing of continuous and discrete exotic options, term structure models and pricing of bond options, jump diffusion models, and applications, including pricing of real and electricity options, and hedging of real options.

Pre-requisite: INE709 Advanced Stochastic Processes.

INE781 Engineering Economy II [3-0, 3 cr.]

This course covers the principles of investing, including investment strategies, investment in stocks and bonds. Project risk and uncertainty with focus on break-even analysis, decision trees, and sequential investment decisions, are discussed. Capital budgeting, including the choice of minimum attractive rate of return under capital rationing, evaluation of multiple investment alternatives and capital budgeting with limited budgets are covered, as well as the Monte Carlo Simulation.

INE800 Project Course [3-0, 3 cr.]

This course is an applied design course. Design reviews and a final oral presentation with a written report are required.

Pre-requisite: Consent of the instructor.

INE810 Special Topics in Optimization [3-0, 3 cr.]

This course covers topics of current interest in optimization, selected by instructor.

Pre-requisite: Consent of the instructor.

INE820 Special Topics in Infrastructure & Construction Management [3-0, 3 cr.]

This course covers topics of current interest in infrastructure, and construction management, selected by instructor.

Pre-requisite: Consent of the instructor.

INE840 Special Topics in Production Systems & Manufacturing [3-0, 3 cr.]

This course covers topics of current interest in production systems and manufacturing, selected by instructor.

Pre-requisite: Consent of the instructor.

INE870 Special Topics in Finance & Economics [3-0, 3 cr.]

This course covers topics of current interest in finance, and economics, selected by the Instructor.

Pre-requisite: Consent of the instructor.

INE899 Thesis [6-0, 6 cr.]

This course is an independent directed study, design, research in the field of interest of the student or Instructor.

GENERAL ENGINEERING COURSES

GNE212 Engineering Mechanics [3-0, 3 cr.]

This course covers the review of vector algebra, forces systems resultants, equilibrium of particles and rigid bodies, internal forces, kinematics and kinetics of particles, systems of particles and rigid bodies.

Pre-requisite: Sophomore Standing

GNE301 Professional Communication [2-0, 2 cr.]

This course covers the English language proficiency, business letter writing, memo writing, report presentation and writing and the use of presentation software.

Pre-requisite: ENG202 Sophomore Rhetoric.

GNE305 Professional Ethics [1-0, 1 cr.]

Introduce the fundamental canon of ethics in engineering practices and the associated professional liabilities. Reinforce the importance of safety as it relates to engineering design and implementation. The course involves teamwork researching a situation related to professional and ethical responsibilities.

Pre-requisites: Third year standing.

GNE331 Probability and Statistics [3-0, 3 cr.]

This course covers set theory, probability axioms, random variables (RV), continuous and discrete probability density functions, distributions, operations on RV's, sampling distributions, confidence intervals (single variable), hypothesis testing (single variable), linear regression (single variable), and non-linear regression.

Pre-requisite: MTH206 Calculus IV.

GNE333 Engineering Analysis I [3-0, 3 cr.]

This course covers vector spaces, matrix algebra, solution of linear systems with numerical applications, eigenvalues and eigenvectors and applications, nonlinear equations and systems with numerical solutions and numerical integration.

Pre-requisite: MTH206 Calculus IV.

GNE334 Engineering Analysis II [3-0, 3 cr.]

This course covers vector-integral calculus, Gauss-Stokes theorem, introduction to partial differential equations, Fourier series and Fourier integral, and numerical solution of ordinary and partial differential equations.

Pre-requisites: MTH204 Differential Equations and GNE333 Engineering Analysis I.





The Gilbert & Rose-Marie Chagoury School of Medicine

The Gilbert & Rose-Marie Chagoury School of Medicine

INTERIM DEAN

Dr. N. Lynn Eckhert, M.D., Dr PH

ASSOCIATE DEAN

Dr. Zeinat Hijazi, M.D., Education

ASSISTANT DEANS

Dr. Pierre Zalloua, Ph.D., Research

Dr. Sola Bahous M.D., Ph D Clinical Affairs

FULL TIME FACULTY

Abdallah, Eddie; M.D; Professor, Surgery

Abi Nader, Elie, M.D; Assistant Professor, Anesthesiology

Abi Nader, Khalil; M.D.; Assistant Professor, Obstetrics & Gynecology

Abi Raad, Vanda; M.D; Associate Professor, Anesthesiology

Abillama, Fayez Francois; M.D., Instructor, Pulmonary & Critical Care

Ahdab, Rechdi, M.D., Assistant Professor, Neurology

Alayli, Rajaa, M.D. Associate Professor, Gastroenterology

Aouad, Daisy; M.D., Instructor; Anesthesiology

Arbid, Elias, M.D.; Assistant Professor, Vascular Surgery

Asmar, Nadia, M.D., Instructor in Medicine/General Medicine

Assi, Chahine; M.D., Assistant Professor, Surgery/ Orthopedics

Awdeh, Adnan; M.D., Instructor, General Surgery

Azar, Riad; MD, Associate Professor, Gastroenterology

Bahous, Sola, M.D., Ph.D.; Associate Professor of Medicine (Nephrology)/ Pharmacology

Barakat, Hanane; M.D., Instructor, Anesthesiology

Deeb, Mary, Ph.D.; Associate Professor in Epidemiology and Biostatistics

Doueih, Noha; M.D., Instructor, Pathology.

Dunya, Malko, M.D., Instructor in Medicine/Anatomy

Dunya, Ibrahim; M.D., Assistant Professor, Ophthalmology

Eckhert, N. Lynn, M.D., Dr.PH, Professor of Pediatrics

El Khoury, Joe; M.D; Assistant Professor., Radiology

El Ramy, Julie; M.D., Instructor, Radiology,

Fahd, Sharbel; M.D., Assistant Professor, Ophthalmology,

Fakhoury, Henri; M.D; Instructor., Anesthesiology

Faour, Wissam, Ph.D., Instructor in Medicine/Pharmacology

Farra, Anna; M.D., Instructor in Medicine/Microbiology

Farhat, Hussein; M.D., Assistant Professor; Pathology

Ferzli, Antoine; M.D., Instructor, Gastroenterology,

Gerges, Bassam; M.D., Instructor, Anesthesiology,

Ghanam Nemr, Rita; M.D., Assistant Professor, Endocrinology,

Ghanem, Georges, M.D. Associate Professor, Cardiology

Haidar, Mona, M.D. M.P.H.; Instructor in Medicine/Social Medicine

Hamalian, Carole, M.D.; Instructor, Pathology

Hijazi, Zeinat, M.D., Professor of Pediatrics (Pulmonary Diseases)

Hirbli, Kamal; M.D., Assistant Professor, Endocrinology,

Karam, Albert; M.D., Assistant Professor, Nephrology,

Khairallah, Maya, Ph.D., Assistant Professor of Medicine/Biochemistry

Khoury, Alfred; M.D., Instructor, Surgery/ Orthopedics

Khodr, Bilal; M.D. Instructor; Emergency Medicine

Kikano, Raghid, M.D., Assistant Professor, Radiology

Kilany, Hala; M.D., Assistant Professor, Nephrology
Koniski, Marie-Louis Dalal; M.D., Associate Professor, Pulmonary and Critical Care
Mahfoud, Daniel; M.D., Instructor, Radiology,
Matar, Maroun; M.D., Instructor, Neonatology
Mokhbat, Jacques; M.D., Professor; Internal Medicine/ Infectious Diseases
Naoum, Joseph, M.D.; Assistant Professor, Vascular Surgery
Nasser, Rima; M.D., Assistant Professor, Surgery/ Orthopedics
Nasser, Selim, M.D., Associate Professor of Medicine- Histology/Pathology
Riachi, Najj; M.D., Associate Professor, Neurology
Rizk, Tamina; M.D., Instructor, Radiology,
Samaha, Roula; M.D., Associate Professor, Internal Medicine/ Infectious Diseases,
Serhal, Wassim; Pharm.D. &Ph.D., Instructor, Pathology & Laboratory Medicine
Shabb, Bassem, M.D., Associate Professor, Surgery
Tarcha, Walid; M.D., Instructor, Cardiology
Tannous, Zeina; M.D., Associate Professor, Dermatology,
Wakim, Gerard; M.D., Assistant Professor, Pediatrics
Yammine, Joseph; M.D., Instructor, Pulmonary & Critical Care
Zeineh, Salim; M.D., Associate Professor, Surgery & Urology
Zalloua, Pierre, Ph.D., Professor of Medicine/Genetics
Zreik, Tony, M.D., M.B.A., Professor of Obstetrics & Gynecology

PART TIME FACULTY

Abdelnoor, John, M.D.; Professor, Surgery/Orthopedics
Abi Aad, Fouad, M.D. Instructor, Surgery/ General Surgery
Abi Gerages, Dany, M.D., Assistant Professor, Internal Medicine, Hematology-Oncology
Abi Raad, Georges, M.D.; Instructor, Surgery/Orthopedics
Abi Younes, Jean, M.D.; Instructor Surgery/Cardiothoracic
Abou Jaoude Claude, M.D.; Assistant Professor, Anesthesiology
Abou Jaoude Tannoury, Pauline, M.D.; Assistant Professor, Pediatrics
Abou Nader, Maroun, M.D.; Instructor, Surgery/ Neurosurgery
Abou Zeid, Massoud, M.D.; Instructor, Pediatrics
Abousleiman, Mounir, M.D.; Instructor, Obstetrics & Gynecology
Ajjoub, Sleiman, M.D.; Instructor, Surgery/Orthopedics
Akl, Adel, M.D.; Instructor, Psychiatry
Akoum, Riad, M.D., Assistant Professor, Internal Medicine- Hematology/Oncology
Asmar, Edgard, M.D.; Instructor, Pediatrics
Asmar, Rabih, M.D.; Instructor, Internal Medicine/ Emergency Room
Atallah Firas, M.D., Instructor, Surgery/Orthopedics
Atik, Fouad, M.D., Instructor, Ear Nose and Throat
Bachour, Falah, M.D., Instructor Surgery/Orthopedics
Bassil, Maria, M.D., Instructor, Internal Medicine/ Endocrinology
Beainy, Walid, M.D.; Instructor, Surgery/ General surgery
Beyrouthy, Georges, M.D.; Instructor, Surgery/Pediatric
Bitar, Roger, M.D.; Instructor, Obstetrics & Gynecology
Boueri, Wissam, M.D.; Instructor, Surgery/Orthopedics
Boustani, Rene, M.D. Instructor, Internal Medicine, Gastroenterology
Boustany Yehya; M.D. Instructor, Dermatology
Brihi, Emile, M.D.; Associate Professor, Diagnostic Imaging and Interventional Therapeutics, Radiology
Chammas Salim M.D. Instructor, Diagnostic Imaging and Interventional Therapeutics, Radiation
Oncology
Chedid, Philippe, M.D.; Professor, Pediatrics
Chidiac, Rita; M.D. Instructor, Internal Medicine, Pulmonary

Daou, Abdo, M.D.; Instructor, Internal Medicine, Cardiology
Eid, Leila, M.D.; Instructor, Internal Medicine/ Anesthesiology
Eid, Antoine M.D.; Instructor, Surgery/Plastic Surgery
Elias Ghanem, MD, Professor, Internal Medicine/ Cardiology
El Bayeh, Hamid M.D. Instructor, Internal Medicine/Cardiology
El Kik, Wajdi M.D.; Instructor, Obstetrics & Gynecology
El-Hajj, Georges M.D. Instructor, Surgery/General Surgery
El-Khoury, Georges, M.D. Instructor, Surgery/General Surgery
Fakhoury, Robert, M.D. Instructor, Internal Medicine/ Cardiology
Fares, Jocelyn, M.D., Instructor, Internal Medicine/Endocrinology
Gemayel, Pierre M.D. Instructor, Surgery/Orthopedics
Genadry Sarkis, Nohad, M.D., Instructor, Internal Medicine/Family Medicine
Ghanameh, Wadih, M.D.; Instructor, Obstetrics & Gynecology
Ghantous, Samir, M.D.; Instructor, Surgery/ Pediatric Surgery
Ghaoui, Albert , M.D. Instructor, Internal Medicine/Gastroenterology
Ghorayeb Zaki M.D. Instructor Surgery/Pediatric Surgery
Ghossain, Antoine, M.D.; Professor, Surgery/General Surgery
Habib, Jad, M.D.; Instructor, Internal Medicine, Family Medicine
Haddad, Hadi, M.D., Instructor, Pediatrics
Haddad, Walid Michel, M.D., Instructor, Internal Medicine/Anesthesiology
Haddad, Walid Fawzi, M.D., Instructor, Ophtalmology
Hage Chahine, Hana, M.D.; Instructor, Psychiatry
Hagechahine, Samer, M.D., Instructor, Internal Medicine, Neurology
Haibeh, Pierre, M.D. Instructor, Obstetrics & Gynecology
Hajjar Nicolas M.D. Instructor Surgery/ General Surgery
Hawat, Ninette, M.D.; Instructor, Pediatrics
Hayek Fadi, M.D; Assistant Professor, Surgery/ Vascular Surgery
Hayek Naji, M.D.; Assistant Professor; Surgery/ Plastic Surgery
Hojaily Bernard, M.D.; Instructor, Rheumatology
Issa El Khoury, Gabriel, M.D.; Instructor, Internal Medicine/ Family Medicine
Jahshan, Antoine, M.D., Associate Professor, Obstetrics & Gynecology
Kabbani, Samer, M.D.; Associate Professor, Internal Medicine/ Cardiology
Kallas, Georges, M.D.; Instructor, Internal Medicine
Kamel, Gaby, M.D.; Associate Professor, Surgery/ Urology
Kanaan, Michel, M.D; Instructor, Ear Nose and Throat
Kanaan, Salim; M.D., Instructor, Surgery/ Neurosurgery
Karam Antonios, Hoda, M.D., Instructor, Internal Medicine/Anesthesiology
Karam, Carma, M.D., Assistant Professor, Internal Medicine/Cardiology
Karame, Elias, M.D., Instructor, Internal Medicine/Endocrinology
Karaminassian Raffy, M.D. Instructor, Internal Medicine/Cardiology
Koniski Andre, MD, Instructor, Ophthalmology
khalil Ali, M.D., Instructor, Internal Medicine/Gastroenterology
Khater Roger, M.D., Assistant Professor, Internal Medicine/Hematology-Oncology
Khattar El Hachem, Boutros, M.D., Instructor, Ear Nose and Throat (ENT)
Khayat, Imad, M.D., Instructor, Pediatrics
Kuraya-Ziyadeh, Joe, M.D., Instructor, Internal Medicine/ Cardiology
Laham, Rafic, M.D., Instructor, Internal Medicine
Maalouf, Riad, MD, Associate Professor, Ophthalmology
Mahfoud, Nathalie, M.D., Instructor, Laboratory Medicine
Mantoura, Joseph, M.D.; Assistant Professor, Surgery/Neurosurgery
Massaad, Ziad, M.D.; Instructor, Obstetrics & Gynecology
Misk Raymond, M.D., Instructor, Internal Medicine/Gastroenterology
Mitri, Faouzi, M.D., Instructor, Obstetrics & Gynecology
Mouwakadie, Roula M.D. Instructor, Internal Medicine/Anesthesiology

The Gilbert & Rose-Marie Chagoury School of Medicine

Mouwakadie, Elie, M.D., Instructor, Obstetrics & Gynecology
Murr, Ghassan, MD, Instructor, Ear Nose and Throat (ENT)
Murr, Rita, M.D., Instructor Internal Medicine, Hematology/Oncology
Nader, Roland, M.D., Instructor, Internal Medicine/Cardiology
Nassar Nicolas, M.D.; Instructor, Surgery/General Surgery
Nasr Marwan, MD, Assistant Professor, Plastic Surgery
Nasr El Khoury Naji, M.D., Instructor, Internal Medicine/Cardiology
Neemtallah Sandra M.D., Instructor, Pediatrics
Nohra Liliane, M.D., Instructor, Internal Medicine/Anesthesiology
Peltekian Laure, M.D., Instructor, Internal Medicine/ Rheumatology
Raad, Najwa, M.D. Instructor, Internal Medicine
Rassi, Simon M.D., Assistant Professor, Ear Nose and Throat
Rechdan, Johnny, MD, Assistant Professor, Obstetrics & Gynecology
Saade Michel, M.D., Assistant Professor, Internal Medicine/ Hematology-Oncology
Saadeh, Carlos, MD, Assistant Professor, Surgery/Vascular surgery
Saba, Zeina, M.D., Instructor, Obstetrics & Gynecology
Sakr Drakebly, Rania, MD, Instructor, Medicine
Salame, Elias, M.D., Instructor, Internal Medicine/Cardiology
Salmeh Paul, M.D. Instructor, Surgery/ Urology
Samaha, Camille, M.D., Assistant Professor, Surgery/Orthopedics
Samaha, Michel, M.D. Assistant Professor Obstetrics & Gynecology
Sayad Alain M.D., Assistant Professor, Pediatrics
Sayad Roula, MD, Associate Professor, Pediatrics
Sfeir, Zeina, M.D., Assistant Professor, Pediatrics
Stephan, Antoine, M.D., Professor, Internal Medicine/Nephrology
Tawil Said, M.D., Instructor, SurgeryVascular Surgery
Tohme Zelia M.D., Assistant Professor, Internal Medicine/Endocrinology
Tohme Karim, M.D., Professor, Ophthalmology
Tohme Roland, MD, Instructor, Plastic Surgery
Wehbe Fadi, M.D., Instructor, Internal Medicine/Gastroenterology
Yared, Georges, M.D., Assistant Professor, Obstetrics & Gynecology
Yatim Ahmad, M.D. Assistant Professor, Diagnostic Imaging and Interventional Therapeutics, Radiology-Nuclear Medicine
Youssef, Nazih, M.D., Instructor, Surgery/Urology
Youssef, Pierre, M.D.; Instructor, Surgery/Cardiothoracic
Younis Muhammad, MD, Assistant Professor, Ophthalmology
Zahreddine, Radwan, M.D., Instructor, Internal Medicine/Gastroenterology
Zalloum, Richard, M.D.; Instructor, Internal Medicine/Cardiology
Zalzal, Nabih, M.D.; Instructor, Obstetrics & Gynecology

The Gilbert and Rose Marie Chagoury School of Medicine (SOM) at LAU began its first year of instruction on September 1, 2009.

The school accepts applications from pre-medical students who meet its admission requirements (available at <http://www.lau.edu.lb/>).

Class sizes in the first year were approximately 24 students and will increase to a maximum of 64 students by the beginning of its fifth academic year of operation.

MISSION

The mission of the School of Medicine at LAU is to create a medical academy that will define and shape the character of a “new physician.”

VISION

While providing talented young men and women with the opportunity to pursue an American-style medical education, the School of Medicine also emphasizes a world-class, basic, and clinical/translational research, particularly targeting the regional health needs. The school aims for regional pre-eminence by adopting strategic objectives, which will establish triangular collaborations among regional medical centers, their partners in American medicine, and LAU.

HARVARD MEDICAL INTERNATIONAL

Harvard Medical International (HMI) and LAU have entered into a long-term relationship focused on the development of a state-of-the-art academic medical institution based in Byblos. The school features an innovative American-style curriculum designed to bring the best in medical education to the most pressing health care challenges facing the people of Lebanon and the surrounding region.

LEARNING OBJECTIVES

Graduates of LAU's School of Medicine will be expected to:

1. Provide patient-centered care.
2. Employ evidence-based practice.
3. Utilize informatics.
4. Apply quality improvement.
5. Work in interdisciplinary teams.

These competencies will be achieved through a four-year medical curriculum with the following overall objectives, delivered as four themes:

Basic and Clinical Science Theme:

1. Describe and identify normal anatomical structures in the human body and relate anatomical knowledge to the practice of medicine.
2. Describe and identify the microscopic structure of the basic tissues and major organs of the body and relate the microscopic structure of each organ to its function.
3. Understand and describe the cellular and molecular mechanisms which support homeostasis and how body systems interact with each other for maintenance of whole body functions.
4. Demonstrate knowledge of etiology, morphology, pathogenesis, pathophysiology, biochemical processes and molecular basis of common diseases, and how they correlate with clinical signs and symptoms, and the principles underlying their diagnoses and treatment.
5. Know the roles of microbes in causing human diseases and that of the immune system in health and disease.
6. Handle drugs safely and effectively considering their mechanisms of action, pharmacokinetics and pharmacodynamics in the management of a patient's problems, and critically evaluate alternative means of healing.
7. Recognize the role of genetic factors in health and disease.

Clinical Competence Theme:

1. Obtain relevant medical history from patients and perform appropriate physical examination showing courtesy, respect and empathy in communication with both patients and their relatives.
2. Use clinical judgment, scientific principles and an evidence-based approach to set a management plan for a patient's problem(s) with due consideration to benefits, risks, costs and preferences.
3. Prioritize a patient's problems and deal with them accordingly.
4. Recognize life-threatening situations and deliver basic emergency care for such patients within or outside healthcare facilities.
5. Be aware of how illness may affect the patient-doctor relationship.

Professional and Behavioral Theme:

1. Discuss the basics of normal human development and the range of behavior at each stage of the life cycle.
2. Communicate with patients and their families courteously and provide appropriate counselling, while demonstrating respect for their beliefs, views and privacy.
3. Communicate professionally, clearly, and concisely with all categories of healthcare workers in all areas and all media.
4. Use ethical principles in all healthcare-related decision-making, particularly where this may involve disadvantaged members of society.
5. Recognize one's limits of knowledge and abilities and seek help in a timely manner.
6. Demonstrate competence in the use of information technology in clinical practice and medical research.
7. Engage in continuous self-evaluation and continuous medical education, and take responsibility for one's professional development.
8. Critically evaluate reports in the medical literature.
9. Interact positively with the pharmaceutical industry by observing the code of medical ethics, transparency and professionalism.

Social Medicine and Public Health Theme:

1. Recognize the uses of epidemiologic and statistical principles and their applications to the clinical practice of medicine.
2. Become familiar with the theory and practice of social medicine.
3. Describe and discuss the role of biomedical research in the study of disease etiology, prevention and treatment in human subjects.
4. Identify the morbidity and mortality risk factors in Lebanon and the Middle East region, explain the role and relevance of preventive medicine, and demonstrate knowledge of the healthcare system necessary to give correct advice to all categories of patients.
5. Explain the meaning and the impact of illness on the individual, his family and the wider social network.
6. Recall, recognize and discuss how behavioral, psychosocial, cultural, economic, political, environmental and occupational factors influence health and disease.
7. Be able to think critically about health inequality and suggest how to prevent or reduce health disparities.
8. Reflect on the culture of medicine into which medical students are being socialized and transformed.

PROGRAMS

The School of Medicine offers a four-year study program leading to the M.D. degree.

CURRICULUM

The School of Medicine's curriculum has been adopted in coordination with Harvard Medical International and the International Advisory Council. It embraces systems-based learning for the pre-clinical years, following an introductory "foundation block" during the first three months of Medicine I.

The curriculum is distinct from the traditional lecture-based curriculum as it is:

- a. Integrated
- b. Systems-based
- c. Relies on problem solving for learning (Problem-Based Learning)
- d. Promotes self-directed learning
- e. Includes early clinical exposure

The school learning objectives will be achieved through a four-year medical curriculum to be delivered

according to four themes:

- i. Basic and Clinical Science
- ii. Clinical Competence
- iii. Professional and Behavioral
- iv. Social Medicine and Public Health.

Methods of instruction include:

- a. Lectures
- b. Problem-based learning
- c. Laboratory work
- d. Simulations
- e. Tutorials
- f. Case studies
- g. Self-directed learning
- h. Clinical experience with real as well as standardized patients

MEDICINE I								
Course #	Course Name	Weeks	Lecture Hrs	Lab Hrs	Tutorial Hrs	PBL Hrs	SDL Hrs	Credits
IMS - 711	The Foundations of Medicine	15	138	120	46	4	146	17
IMS - 721	Hematology and Immunology	4	30	10	65	20	55	7
IMS - 731	Endocrinology & Reproductive Medicine	7	51	27	55	24	63	8
IMS - 741	Nephrology	6	42	18	43	20	65	7
IMS - 751	The Musculoskeletal System/Dermatology	7	29	21	26	16	47	8
Total Credits								47
MEDICINE II								
Course #	Course Name	Weeks	Lecture Hrs	Lab Hrs	Tutorial Hrs	PBL Hrs	SDL Hrs	Credits
IMS - 761	Pulmonary System	7	48	12	40	28	78	9
IMS - 771	Cardiovascular System	8	62	20	75	32	80	11
IMS - 781	Gastrointestinal System	7	49	16	65	28	70	9
IMS - 791	Central Nervous System, Peripheral Nervous System, Sensory System	12	110	30	100	48	120	16
Total Credits								45

COURSE DESCRIPTIONS

IMS711: The Foundations of Medicine:

This module introduces the medical student to the basic disciplines underlying the practice of medicine. It contains the full dissection of the human body coupled to clinical correlations (anatomy), as well as the basic principles of cell histology, pathology, physiology, biochemistry, pharmacology, genetic medicine, clinical skills, behavioral and ethical medicine, communication skills, evidence-based medicine, social medicine, preventive medicine, biostatistics and public health.

IMS721, 731, 741, 751, 761, 771, 781, and 791:

These modules provide an integrated approach to each of the organ systems of the body delivered according to four themes: (I) Basic and Clinical Science, (II) Clinical Competence, (III) Professional and Behavioral, and (IV) Social Medicine and Public Health.

MEDICINE III AND MEDICINE IV:

The third and fourth-year course requirements consist of rotations in specific clinical subspecialties and electives.

MEDICINE III

Students in Medicine III are required to take 8-week Clerkships in Medicine, Surgery, Pediatrics, Obstetrics and Gynecology and 4-week Clerkships in Psychiatry, Primary Care and Neurology. The rotations will consist of in-patient and ambulatory clinical and community experiences. The primary site of the rotations will be at University Medical Centre- Rizk Hospital; except for the Psychiatry Clerkship which is currently offered at the Psychiatric Hospital of the Cross.

MEDICINE IV

Medicine IV consists of required rotations, selective rotations (choice among requirements) and elective rotations. The required rotations will be in the areas of Emergency Department (4 Weeks), Intensive Care Unit (4 Weeks), Anesthesiology (2 Weeks), Pathology (2 Weeks), Otolaryngology (2 Weeks), and Ophthalmology (2 Weeks). The selective rotations include 4 weeks in Medicine subspecialties and 4 weeks in surgical subspecialties Electives (16 weeks) will be offered in areas across the spectrum of medical studies including all specialties and subspecialties, public health and community medicine, whether local or international. Electives will also be offered in research. Medicine IV will be completed in mid May 2013.

INSTITUTES

LAU INTSTITUE FOR HUMAN GENETICS (LAIHIG)

LAIHIG constitutes a regional hub for genetics research and education intended to build a strong foundation in multiple disciplines within the field of human genetics. It involves faculty members from three schools: Medicine, Art and sciences, and Pharmacy. The institute supports medical research, focusing primarily on cardiovascular disease, diabetes and cancer. The mission is to develop and foster excellence in human genetics research and education, and provide a bridge between basic and clinical sciences, particularly as they relate to understanding and treating cardiovascular disease, diabetes and cancer.





The Alice Ramez Chagoury School of Nursing

The Alice Ramez Chagoury School of Nursing

The Alice Ramez Chagoury School of Nursing at the Lebanese American University is one of the most prestigious Schools of Nursing in Lebanon, and a pioneer in interprofessional education in the Middle East. The School offers a Bachelor of Science in Nursing (B.S.N.) degree that will enable graduates to work as generalist nurses. The School is committed to excellence in education through a concept-based curriculum and experiential learning approaches, as well as a learning environment that promotes personal and professional development.

SCHOOL MISSION

The Alice Ramez Chagoury School of Nursing is dedicated to improving the health of the people of Lebanon and the Middle East region by educating professional nurses and contributing to advances in health care through innovative research, scholarship, and service. To assure academic excellence the curriculum is built on a liberal arts foundation and complements nursing science with knowledge from the biomedical and social sciences. Through an interprofessional educational process we engage students as whole persons, preparing them to be empathic, competent, and ethical clinicians and future leaders in health care.

VISION

To be the pioneering school of nursing in Lebanon and the Middle East region through interprofessional education of knowledgeable, skilled and conscientious professional nurses and generation of new nursing knowledge to address contemporary health care needs.

GOALS OF CURRICULUM

Educational Objectives

The purpose of the Bachelor of Science in Nursing program is to:

1. Offer a curriculum that has depth in the biomedical and nursing sciences and a broad base in liberal arts and sciences.
2. Provide interprofessional learning experiences in the classroom, clinical laboratory, and health care settings.
3. Foster in students an appreciation for the values that are the foundation of professional nursing practice.
4. Use innovative pedagogical approaches that enable students to integrate knowledge, skilled know-how and ethical comportment to plan, provide and evaluate patient care.
5. Prepare students to practice in a rapidly changing and complex health care environment.
6. Promote the skills of scholarly inquiry and research to lay the foundation for life-long learning and graduate education in nursing.

STUDENT LEARNING OUTCOMES

Graduates of the Bachelor of Science in Nursing program will be able to:

1. Combine knowledge from liberal arts and sciences with knowledge of nursing and biomedical sciences to care for individuals, families, communities and populations.
2. Provide holistic, evidence-based nursing care to promote the health and well-being of individuals, families, communities and populations.
3. Base practice on the fundamental nursing values of accountability, advocacy, altruism, autonomy, human dignity, integrity and social justice.
4. Provide care that is respectful and sensitive to diversity in patients' cultural traditions, religion, age, gender and socioeconomic circumstances.
5. Use biomedical and information technologies to deliver high quality care, support clinical decision making, communicate and mitigate error.
6. Show leadership through involvement in patient safety and quality improvement initiatives.
7. Partner with patients and members of the interprofessional team to achieve optimal outcomes of care.

The Alice Ramez Chagoury School of Nursing

8. Practice nursing with an awareness of the influence that economics, policy, regulation and changes in the environment have on the delivery of care and the nursing profession.
9. Assume responsibility for life-long learning and professional development.

DEAN

Nancy Hoffart, PhD, RN, Professor

ASSISTANT DEAN

Myrna A.A. Doumit, PhD, RN, Associate Professor

FACULTY

Mira Abi Saad, MSN, RN, Clinical Instructor
 Rita Doumit, PhD, RN, Assistant Professor
 Grace Khatcherian, MSN, RN, Clinical Instructor
 Ola Sukkarieh, PhD, RN, Assistant Professor

PROGRAMS / DEGREES AVAILABLE

BACHELOR OF SCIENCE IN NURSING

Sophomore Year - BSN I

Fall Semester (13 credits)

CHM200	Essentials of Chemistry	3
PHE201	Physical Education	1
BIO200	Basic Biology	3
NUT201	Fundamentals of Human Nutrition	3
PSY234	Development across the Life Span	3

Spring Semester (17 credits)

ENG202	Sophomore Rhetoric	3
PSY201	Introduction to Psychology	3
NUR201	Fundamentals of Nursing and Health Assessment	4
BIO311	Microbiology	3
BIO343	Anatomy and Physiology	3
BIO344	Anatomy and Physiology Lab	1

Summer Semester (6 credits)

ENG203	Fundamentals of Oral Communication	3
NUR210	Professional Nursing Concepts I	3
NUR230	Nursing Cooperative Experience I	0

Junior Year - BSN II

Fall Semester (17 credits)

ARA2XX	Arabic Language or Literature	3
NUR310	Pathophysiology for Nursing Practice	4
NUR312	Pharmacology for Nursing Practice	3
NUR320	Health and Illness Concepts I	4
NUR340	Core Nursing Practicum I	3

Spring Semester (16 credits)

STA205	Biostatistics	3
NUR321	Health and Illness Concepts II	4
NUR341	Core Nursing Practicum II	3
NUR342	Core Nursing Practicum III	3
LAC___	History, Philosophy, Culture or Religion elective	3

Summer Semester (3 credits)

NUR315	Health Care Research and Evidence-based Practice	3
NUR330	Nursing Cooperative Experience II	0

Senior Year - BSN III

Fall Semester (16 credits)

LAC___	Arts elective	3
NUR410	Professional Nursing Concepts II	3
NUR420	Health and Illness Concepts III	4

Student chooses 2 of the following:

NUR440	Maternal-Child Clinical Intensive	3
NUR441	Mental Health Clinical Intensive	3
NUR443	Promotion of Healthy Lifestyles Clinical Intensive	3
NUR444	High Acuity Nursing Clinical Intensive	3

Spring Semester (15 credits)

ENGXXX___	Literature elective	3
NUR411	Professional Nursing Concepts III	3
NUR475	Nursing Synthesis	2
NUR480	Capstone Clinical	4
NUR4XX	Choose a 3rd Clinical Intensive	3

RULES AND REGULATIONS

BACHELOR OF SCIENCE IN NURSING (B.S.N.)

ADMISSION

Students seeking admission into the Bachelor of Science in Nursing program should contact the Office of Admissions to complete the application process. Students admitted to LAU after completion of their secondary education are eligible to enroll in the nursing program. LAU freshman who have completed the freshman requirements and students in other majors may seek admission to the nursing program through petition.

ACADEMIC RULES AND REGULATIONS FOR THE B.S.N. PROGRAM

The School of Nursing follows most of the University-wide academic rules and regulations that appear in the Academic Catalog. For exceptions and additional rules and regulations that are specific to the B.S.N. program, see the

School of Nursing Student Handbook located on the School of Nursing website, <http://nursing.lau.edu.lb>.

GRADUATION REQUIREMENTS

In order to qualify for the B.S.N. degree the student must:

- Meet credit requirements: Holders of the Lebanese Baccalaureate or equivalent who are admitted as sophomores must earn at least 103 credits of which they must take 52 credit hours in residence. Transfer students must take 30 credit hours in residence. Students entering as freshmen must earn at least 133 credits (see general University requirements for additional details).
- Successfully complete all requirements including LAC, professional courses and prerequisite courses.
- Earn a grade point average of at least 2.0 in all professional courses.
- Earn a cumulative grade point average of at least 2.0.
- Earn P (pass) grades in the cooperative education experiences.
- Complete the required courses within seven years from the time of first enrollment in NUR201.

COURSE DESCRIPTIONS

NUR201 Fundamentals of Nursing and Health Assessment [2-6, 4 cr.]

In this course students learn to apply the nursing process in performing health assessment and nursing fundamentals for individuals across the lifespan and in various health care settings.

Prerequisite: admission to the nursing major.

Co-requisite: BIO343/344 Anatomy and Physiology/Lab

NUR210 Professional Nursing Concepts I [3-0, 3cr.]

In this course students learn concepts associated with understanding oneself and others in the context of professional nursing practice and are introduced to the nursing metaparadigm.

Prerequisites: PSY201 Introduction to Psychology, NUR201 Fundamentals of Nursing and Health Assessment. Co-requisite: NUR230 Nursing Cooperative Experience I.

NUR230 Nursing Cooperative Experience I. [0 cr.]

In the first cooperative (co-op) experience students are employed on general patient care units in hospitals, working a minimum of 200 hours to complete the co-op requirement. The co-op student functions as an assistant to a registered nurse (RN) and gains competence in performing fundamental nursing techniques delegated and supervised by the RN. Students who successfully complete NUR201 Fundamentals of Nursing and Health Assessment before securing a co-op position.

NUR310 Pathophysiology for Nursing Practice [4-0, 4 cr.]

Students learn the pathogenesis of various symptoms and diseases affecting the human body. Altered physiological functions of human organs are explained and then described on the molecular, cellular, organ and systemic levels. Common pathophysiologic processes are discussed in conjunction with recent research. The interrelationships between clinical pathophysiology and basic physiology and genetics are emphasized.

Prerequisites: BIO343/344, Anatomy and Physiology/Lab; CHM200 Basic Chemistry

NUR312 Pharmacology for Nursing Practice [3-0, 3 cr.]

This course provides fundamentals of pharmacology and applied drug therapy. Topics include general principles of drug action, drug distribution, and drug elimination, with attention to the development of clinical reasoning skills necessary to identify, avoid, and solve practical drug-related problems. Specific prototypes of selected drug classifications provide the framework for understanding the action, use, side-effects, and nursing implications of drugs.

Prerequisite: Admission to the nursing major, CHM200 Basic Chemistry.

NUR315 Health Care Research and Evidence-based Practice [3-0, 3 cr.]

This course is an introduction to health care research. Emphasis is on the research process, commonly used research designs and methods, and application of research findings and other evidence to practice.

Prerequisites: NUR201 Fundamentals of Nursing and Health Assessment, NUR210 Professional Nursing Concepts I, STA205 Biostatistics.

NUR320 Health and Illness Concepts I [4-0, 4 cr.]

In this introductory course students gain knowledge of concepts associated with individual health and illness requiring nursing care. Concept categories covered include health and health maintenance, regulation and homeostasis, hemostasis, stress and coping, and protection.

Prerequisites: NUR201 Fundamentals of Nursing and Health Assessment, NUR210 Professional Nursing Concepts I, BIO311 Microbiology. Co-requisites: NUR340 Core Nursing Practicum I, NUR310 Pathophysiology for Nursing Practice.

NUR321 Health and Illness Concepts II [4-0, 4 cr.]

This is the second of three courses in which students learn concepts associated with an individual's health and illness that require nursing care. Concept categories include regulation and homeostasis, sexual reproduction, oxygenation, comfort, social interactions, and cognition.

Prerequisite: NUR320 Health and Illness Concepts I.

NUR330 Nursing Cooperative Experience II [0 cr.]

In the second cooperative experience students are employed in various health care agencies, working a minimum of 200 hours to complete the requirement. The co-op student functions in an assistant role, on an assigned unit, providing nursing care at the advanced beginner level, as delegated to and supervised by the RN. The student must have completed the Nursing Cooperative Experience I as well as NUR342 Core Nursing Practicum III prior to pursuing the second co-op experience.

NUR340 Core Nursing Practicum I [0-9, 3 cr.]

In this course students are introduced to clinical nursing care of patients in various health care settings. Students apply selected concepts related to health and illness and professional nursing in providing patient care. The clinical schedule will include inpatient and community care and may include day, evening, night, and weekend experiences.

Prerequisites: NUR201 Fundamentals of Nursing and Health Assessment, NUR210 Professional Nursing Concepts I. Co-requisite: NUR320 Health and Illness Concepts I, NUR312 Pharmacology for Nursing Practice.

NUR341 Core Nursing Practicum II [0-9 (0-18 for 7 weeks), 3 cr.]

In this course students deliver clinical nursing care to patients in the inpatient setting. Students apply selected concepts related to health and illness and professional nursing, and use the nursing process in providing patient care. The clinical schedule may include day, evening, night, and weekend experiences.

Prerequisite: NUR340 Core Nursing Practicum I. Co-requisite: NUR321 Health and Illness Concepts II.

NUR342 Core Nursing Practicum III [0-9 (0-18 for 7 weeks), 3 cr.]

In this course students learn to deliver clinical care for multigenerational families in various health care settings in the community. Students apply selected concepts related to health and illness and professional nursing, and use the nursing process to provide patient care. The clinical schedule may include day, evening, night, and weekend experiences.

Prerequisite: NUR340 Core Nursing Practicum I. Co-requisite: NUR321 Health and Illness Concepts II.

NUR410 Professional Nursing Concepts II [3-0, 3 cr.]

In this course students learn concepts associated with nursing roles and behaviors in the delivery of health care and their application in multiple settings. Students are introduced to aggregates (communities and populations) as the unit of care.

Prerequisite: NUR210 Professional Nursing Concepts I.

NUR411 Professional Nursing Concepts III [2-3, 3 cr.]

This course addresses concepts related to organization of health care, regulation of health care and nursing practice, and the influence of economic, legal, and environmental factors on the availability and quality of care. Nursing roles of care coordinator and delegator are examined. In the clinical component of the course students conduct an assessment of either a microsystem or a community.

Prerequisite: NUR410 Professional Nursing Concepts II.

NUR420 Health and Illness Concepts III [4-0, 4 cr.]

This is the final course involving concepts associated with an individual's health and illness that require nursing care. Concept categories include regulation and homeostasis, protection, activity, sensory perception, stress and coping, cognition, and behavior.

Prerequisite: NUR321 Health and Illness Concepts II.

NUR440 Maternal Child Clinical Intensive [1-6 (2-12 for 7 weeks), 3 cr.]

This course includes clinical practice and didactic content that focuses on knowledge and skills relevant to the care of pregnant women, newborns, and children in various health care settings. Central to the course is family-centered care, with particular attention to concepts related to health promotion, reproduction, growth and development, family dynamics, coping, culture, and interpersonal relationships. The clinical schedule will include inpatient and community experiences and may include day, evening, night, and weekend experiences.

Prerequisites: NUR342 Core Nursing Practicum III, NUR321 Health and Illness Concepts II, NUR315 Health Care Research and Evidence-based Practice. Co-requisites: NUR420 Health and Illness Concepts III, NUR410 Nursing Professional Concepts II.

NUR441 Mental Health Clinical Intensive [1-6 (2-12 for 7 weeks), 3 cr.]

This course includes clinical practice and didactic content that focuses on knowledge and skills relevant to the care of patients with acute and chronic mental health problems. Students examine variations in foci of care for mental health patients. Concepts addressed include therapeutic communication, ethics, advocacy, education, family dynamics, altered thought process, self, mood and affect, interpersonal relationships, interpersonal violence, and addiction. The clinical schedule will include inpatient and community experiences and may include day, evening, night, and weekend experiences.

Prerequisites: NUR342 Core Nursing Practicum III, NUR321 Health and Illness Concepts II, NUR315 Health Care Research and Evidence-based Practice.

NUR443 Promotion of Healthy Lifestyles Clinical Intensive [1-6 (2-12 for 7 weeks), 3 cr.]

This course includes clinical practice and didactic content that focuses on the knowledge and skills to foster health behavior change in individuals, families, communities, and populations. Students will plan, deliver, and evaluate health education and behavior change programs for individuals of all ages. This course incorporates concepts related to health promotion, change, motivation, educator, leader, advocate, communication, power, anxiety, culture, and human diversity. The clinical schedule may include inpatient, ambulatory, and community experiences as well as experiences on days, evenings, nights, and weekends.

Prerequisites: NUR342 Core Nursing Practicum III, NUR321 Health and Illness Concepts II, NUR315 Health Care Research and Evidence-based Practice.

NUR444 High Acuity Nursing Clinical Intensive [1-6 (2-12 for 7 weeks), 3 cr.]

This course includes clinical practice and didactic content that focuses on knowledge and skills relevant to the care of patients with multisystem problems in critical care units. Central to the clinical experience is the synthesis of health and illness concepts in managing critically ill patients, including oxygenation, perfusion, elimination, acid-base balance, fluid and electrolyte balance, infection, inflammation, immunity, intracranial perfusion, anxiety, family dynamics, and ethics. The clinical schedule will include inpatient experiences and may include day, evening, night, and weekend experiences.

Prerequisites: NUR342 Core Nursing Practicum III, NUR321 Health and Illness Concepts II, and NUR315 Health Care Research and Evidence-based Practice.

NUR475 Nursing Synthesis [1-3, 2 cr.]

This course is a synthesis of professional nursing and health and illness concepts. Clusters of concepts will be applied in simulation and other learning activities.

Prerequisites: NUR420 Health and Illness Concepts III. Co-requisite: NUR411 Professional Nursing Concepts III.

The Alice Ramez Chagoury School of Nursing

NUR480 Capstone Clinical. [0-12 (0-24 for 7 weeks), 4 cr.]

In this course students have precepted clinical practice experience in selected health care settings. Clinical may occur in inpatient, ambulatory, and community settings and include day, evening, night, and weekend experiences.

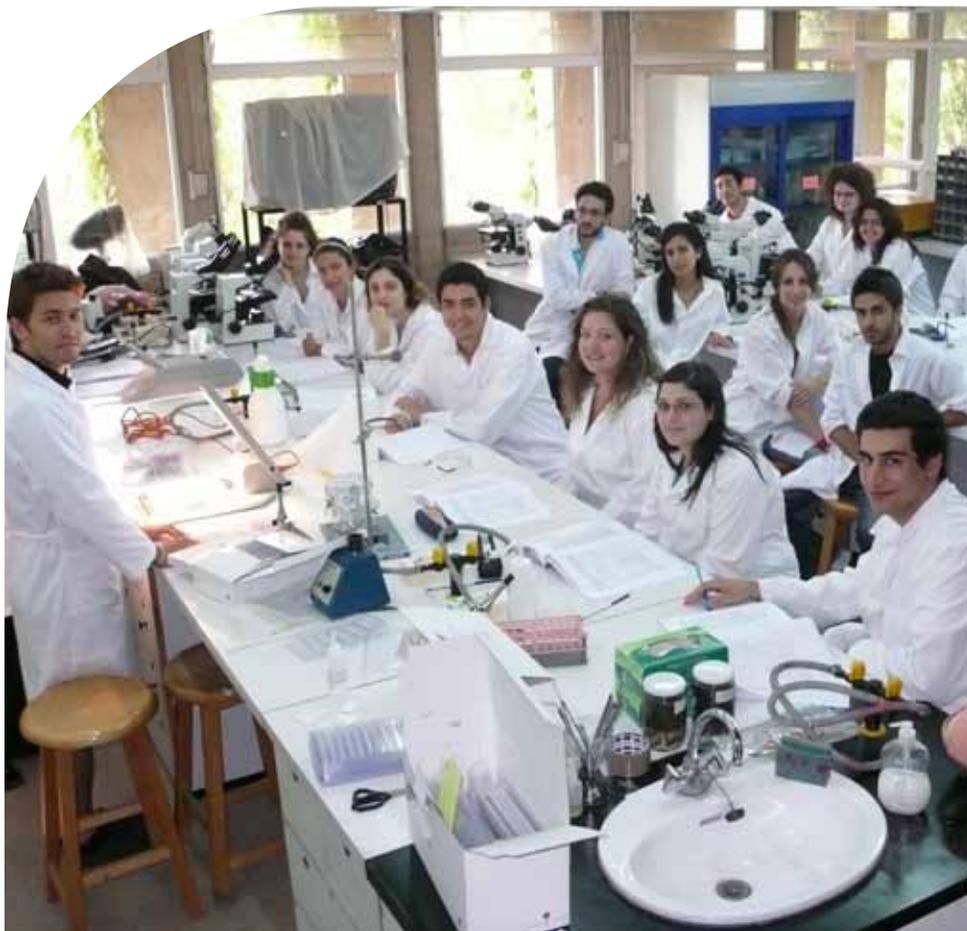
Prerequisites: Successful completion of three Clinical Intensives. Co-requisite: NUR411 Professional Nursing Concepts III.

CLINICAL SIMULATION CENTER

The Alice Ramez Chagoury School of Nursing shares a Clinical Simulation Center with the Gilbert and Rose-Marie Chagoury School of Medicine on the Byblos campus. The Center has been designed to look and function like the health care settings in which students will practice after graduation. The 9-bay inpatient simulation laboratory replicates clinical units in hospitals, such as general ward, intensive care unit, and newborn nursery. This laboratory is equipped with state-of-the-art medical equipment and supplies; infant, pediatric and adult human patient simulators; and clinical skills task trainers. The 8-room outpatient laboratory replicates a typical ambulatory clinic and its accoutrements.

The Center is equipped with videotaping capability so faculty can review and assess student progress in acquiring foundational and advanced clinical skills and students can review and reflect on their performance. The Center provides a realistic and safe setting for students as they learn complex skills, apply theoretical knowledge to simulated patient care situations and develop teamwork skills. Experiential learning in the Center will enhance students' competence and confidence when caring for patients in hospitals and other care delivery sites.





The School of Pharmacy

The School of Pharmacy

The School of Pharmacy was established in 1993 to promote pharmacy education, research, and patient centered care.

MISSION

The School's primary responsibility is to graduate pharmacists who are entrusted with the highest academic standards to apply and disseminate the most updated information about drugs in the various and ever changing health care systems. Graduates will be competent to practice pharmacy in all settings and be equipped with the necessary values to serve society in a most caring, professional, and ethical conduct.

PROGRAM EDUCATIONAL GOALS

The goals of the program are to prepare pharmacy graduates to:

- Provide evidence-based patient centered care to optimize pharmacotherapy outcomes in various multidisciplinary health-care practice settings.
- Manage pharmacy operations in hospitals, community pharmacies, and industrial settings.
- Promote public health awareness and disease prevention, through innovation in the practice of pharmacy, for the benefit of the individual and the community being served.
- Perform duties in accordance with legal, ethical, socio-economic and professional standards.
- Integrate scholarly research with clinical pharmacy practice and commit to self-directed lifelong learning.

The school offers two professional degrees: the entry-level Bachelor of Science (B.S.) in Pharmacy, requiring five academic years, and a Doctor of Pharmacy (Pharm.D.), requiring six academic years, including the B.S. in Pharmacy.

Completion of the B.S. in Pharmacy degree will qualify students to take the National Competency Assessment Examination (Colloquium) to practice in Lebanon.

Graduates of the Pharm.D. Program can sit for the North American Pharmacy Licensure Examination (NAPLEX) in the United States. Graduates who successfully pass the NAPLEX are entitled to become licensed pharmacists, capable of practicing the pharmacy profession in the United States.

The B.S. in Pharmacy consists of two years of pre-professional studies, and three years of professional courses. After receiving their B.S. in Pharmacy, LAU students may choose to apply for admission to the fourth professional year to earn the Pharm.D. degree.

The School of Pharmacy comprises two departments: Pharmaceutical Sciences (PS) and Pharmacy Practice (PP).

The PS Department provides foundations in basic and pharmaceutical sciences, including anatomy and physiology, biochemistry, medicinal chemistry, pharmacology, pharmaceuticals, and pharmacoconomics.

The PP Department provides the didactic and experiential component of the clinical program. The didactic courses include: pharmacotherapeutics, clinical pharmacokinetics, dispensing, and pharmaceutical care. Experiential training encompasses training in various practice settings, allowing students to gain skills in pharmacy management and experience in the community, hospitals, drug information, and clinical settings.

ACCREDITATION STATUS

The School of Pharmacy is a full member of the American Association of Colleges of Pharmacy (AACP). It is the only full member of AACP outside of the United States.

The Doctor of Pharmacy Program is accredited by the Accreditation Council for Pharmacy Education (ACPE). Currently, the Pharm.D. Program at LAU is the only ACPE-accredited program outside of the United States.

INTERIM DEAN

Pierre Zalloua, Ph.D.

ASSOCIATE DEAN FOR ACADEMIC AFFAIRS

Imad Btaiche, Pharm.D., BCNSP

ACTING ASSISTANT DEAN FOR STUDENTS AFFAIRS

Jad Abdallah, PhD

CHAIRS

Roy Kanbar, D.Pharm. Ph.D.
(Pharmaceutical Sciences)
Aline Saad, Pharm.D.
(Pharmacy Practice)
Lamis Karaoui Pharm.D., BCPS
(Director of Experiential Education)

FACULTY

Full-time Faculty

J. Abdallah, Ph.D.
T. Abouantoun, Ph.D.
I. Btaiche, Pharm.D., BCNSP
S. Chamoun-Nasser, Pharm.D.
H. Dimassi, Ph.D.
W. Kabbara, Pharm.D.
R. Kanbar, D.Pharm, Ph.D.
L. Karaoui, Pharm.D., BCPS
G. Khoury, Pharm.D.
H. Mansour, Pharm.D., BCPS
A. Milane, D.Pharm. Ph.D.
M. Mrueh, Ph.D.
W. Ramadan, Pharm.D.
E. Ramia, Pharm.D.
H. Rizk, M.D.*
Y. Saab, Pharm.D., Ph.D.
A. Saad, Pharm.D.
M. Sheikh-Taha, Pharm.D., BCPS
L. Sholy, R.Ph., Pharm.D.
P. Zalloua, Ph.D.
A. Zeitoun, Pharm.D.
R. Zeenny, Pharm.D.

* 50% SOP + 50% SAS

Part-time Faculty

F. Abillama, MD
B. Chami, Pharm.D.
M. Deeb, Ph.D.
M. Dunia, MD
M. El Beyrouthy, PhD
R. Fahd, MS
M. Ghassibe, PhD
S. Helou, Pharm.D.
S. Itani, Pharm.D.
M. Jabre, Pharm.D., BCPP

G. Khayat, Pharm.D.
B. Khodor, MD
V. Loubnan, Pharm.D.
J. Mokhbat, M.D.
Z. Nassour, D.Pharm. R.Ph.
A. Saab, Ph.D.
M. Salameh, PhD
L. Skayem, Pharm.D.
R. Takchi, M.Sc.
S. Tokajian, Ph.D.

LEBANESE SITES ADJUNCT FACULTY

W. Abi Ghanem, R.Ph.
C. Abighosn, R.Ph.
C. Abi-Khaled, R.Ph.
N. Abi Ghosn, R.Ph.
R. Abi Khalil, R.Ph.
S. Addada, R.Ph.
Y. Akiki, R.Ph.
A. Ali, R.Ph.
F. Antaki, R.Ph.
N. Antaki, R.Ph.
C. Asmar, R.Ph.
R. Azzam, R.Ph.
M. Bawab, R.Ph.
C. Barbar, R.Ph.
R. Batrouni, R.Ph.
M. Bitar, R.Ph.
R. Bitar, R.Ph.
M. Bsar, R.Ph.
A. Bsar, R.Ph.
R. Chaarani, R.Ph.
A. Cordahi, R.Ph.
L. Draiby R.Ph.
N. Drouby, R.Ph.
R. El-Ali R.Ph.
R. Elkadoum, R.Ph.
M. El-Masri R.Ph.
T. Farah, R.Ph.
N. Gbayi, R.Ph.
J. Ghosoub, R.Ph.
M. Hadi, R.Ph.
G. Haidar, R.Ph.
N. Hamade, R.Ph.
G. Hantouche, R.Ph.
H. Hasswani, R.Ph.
S. Helou, R.Ph., Pharm.D.
B. Hindi, R.Ph.
Dr. R. Hokayem
S. Itani, Pharm.D.
H. Jardaly, R.Ph.
N. Jibai, R.Ph.
R. Kaddoum, R.Ph.
L. Kara, R.Ph., Pharm.D.
F. Kehde, R.Ph.
H. Kevorkian, R.Ph.
G. Khayat, R.Ph., Pharm.D.
O. Khoury, R.Ph.
P. Khoury, R.Ph.
C. Kopianos, R.Ph., Pharm.D.

A. Kordahi, R.Ph.
A. Kouyoumji, R.Ph.
C. Kreidy, R.Ph.
M. Machmouchi, R.Ph.
H. Machmouchi, R.Ph.
F. Mahfouz, R.Ph.
R. Mansour, R.Ph.
F. Maroun, R.Ph.
N. Massoud, Pharm.D.
M. Melki, R.Ph.
F. Merhi, R.Ph., Pharm.D.
I. Mokdad, R.Ph.
N. Mouawad, R.Ph.
R. Nabbout, R.Ph.
D. Nasr, R.Ph.
Z. Nassour, R.Ph.
N. Nawfal, R.Ph.
E. Nehme, R.Ph.
I. Odaymi, R.Ph., Pharm.D.
S. Rahbani, R.Ph.
Y. Saad, R.Ph.
M. Sabouni, R.Ph.
H. Sacre, R.Ph.
R. Sacre, R.Ph.
R. Sakr, R.Ph.
M. Salameh, R.Ph.
L. Sassine, R.Ph.
U. Shanouha, R.Ph.
G. Sili, R.Ph., Pharm.D.
O. Tabboush, R.Ph.
C. Tawileh, R.Ph.
C. Tayeh, R.Ph.
R. Younes, R.Ph.
S. Younes, R.Ph.
S. Zayour, R.Ph.

U.S. SITES ADJUNCT FACULTY

A. State of New Jersey

1. Saint Michael's Medical Center: 111 Central Avenue, Newark, NJ 07102

Corinne Chahine-Chakhtoura, M.S., Pharm.D., Navin Philips, Pharm.D.
Kathleen Ryan, Pharm.D.
Manisa Tanprayoon, Pharm.D., BCPS

2. Clara Maass Medical Center: 1 Clara Maass Drive, Belleville, NJ 07109

Mona Philips, RPh, MAS
George Shehata, Pharm.D., CACP
Lea Elsava, Pharm.D.
Soo Kang, Pharm.D.
Jennifer Thomas, Pharm.D.

3. Atlantic Health System: 475 South Street, Morristown, NJ 07960

William Rickley, M.S., Pharm.D.
Rachna Kapoor, Pharm.D.
Stacy Hardeo, Pharm.D.
Anjali Kakwani, Pharm.D.
Diane Zimmerman, R.Ph

4. New Jersey Community Pharmacies

Souheil Hallit, M.S., Pharm.D.
Christina Boutros, Pharm.D.
Michael Caruso, RPh
Donna Cogavin, RPh
Jennifer Elfante, RPh

B. State of Texas

1. The Methodist Hospital

May Achi, Pharm.D., BCPS
Valerie Belden, Pharm.D., BCPS
Linda Blanton, B.S., R.Ph.
Fariedah Bostan, Pharm.D.
Wilda Chung-On, R.Ph., Pharm.D., MBA
Aida Coralic, R.Ph., BCPS
James Cox, Pharm.D.
Anh Cung, Pharm.D.
Kyle Dawson, Pharm.D., BCPS
Jenny Devos, Pharm.D., BCPS
Daniela Espino, Pharm.D., BCPS
Kalliopi Fitousis, Pharm.D., BCPS
Zhili Fu, M.D, R.Ph., BCPS
Kayode Giwa, Pharm.D., BCPP
Becky Halfon, Pharm.D.
Jeff Hall, Pharm.D.
Judy Ikwuagwu, B.S.Pharm., Pharm.D., BCPS
Shiney Karikottu, Pharm.D.
Diana Kurian, Pharm.D.
Van-Anh Le, Pharm.D.
Michael Liebl, Pharm.D., BCPS
Joe Murillo, Pharm.D., BCOP
Michelle Murillo, Pharm.D.
William Musick, Pharm.D., BCPS (AQ-ID)
Kimberly Nguyen, Pharm.D.
Phuong Nguyen Liebl, Pharm.D., BCPS
Melanie Ruegger, Pharm.D., BCPS
Brian Parrish, Pharm.D.
Samir Patel, Pharm.D., BCPS
Kathryn Pidcock, Pharm.D., BCPS
David Putney, Pharm.D., BCPS

The School of Pharmacy

Michael Sirimatuross, Pharm.D., BCNSP
 Ellen Strapp, Pharm.D., BCPS
 Sara Tebbe, Pharm.D., BCPS
 Anila Thomas, Pharm.D., BCPS
 Allison Wilson, Pharm.D., BCPS
 Julie Won, Pharm.D., BCPS
 Jerry Wong, Pharm.D., MBA
 Mona Yu, Pharm.D.

2. Texas Community Pharmacy Preceptors (Walgreens)

Regina Simien, Pharm.D.
 Larry Barr-Meyer, Pharm.D.
 Ameer Patel, R.Ph.
 Angel Hinojosa, R.Ph.
 Debra Henderson, R.Ph.

PROGRAMS

The curriculum below applies only to students who entered LAU in the fall 2007 semester. Students who joined the School of Pharmacy prior to the fall 2007 semester, are advised to refer to the 2005 Academic Catalog available on the LAU website.

Pre-Professional Year I

Fall Semester (17 credits)

ARA2_/ARA3_	Arabic Language or Literature	3
—	LAC-Arts	3
CHM201	Chemical Principles	3
—	Physical Education (excluding Basic Health)	1
BIO201	Biology I	4
—	LAC-Social Sciences	3

Spring Semester (16 credits)

PHA204	Computer Application to Pharmacy	2
—	LAC-Literature	3
ENG202	Sophomore Rhetoric	3
CHM311	Organic Chemistry I	3
CHM313	Organic Chemistry I Lab	1
PHA202	Medical Anatomy & Physiology	4

Pre-Professional Year II

Fall Semester (14 credits)

PHA209	Principles of Pathophysiology and Immunology	4
CHM312	Organic Chemistry II	3
CHM314	Organic Chemistry II Lab	1
ENG203	Fundamental of Oral Communication	3
PHA211	Microbiological Basis of Disease	3

Spring Semester (17 credits)

PHA208	Medical Biochemistry	4
PHA205	Statistics for Health Profession Majors	3
PHA210	Systems Pathophysiology	4
—	LAC-Humanities	3
—	LAC-Micro/Macroeconomics	3

Professional Year I

Fall Semester (18 credits)

PHA308	Pharmaceutical Analysis & Biotechnology	2
PHA309	Pharmaceutical Analysis & Biotechnology, Lab	1
PHA312	Medicinal Chemistry I	3
PHA314	Dosage Forms I	3
PHA315	Dosage Forms I, Lab	1
PHA320	Physical Assessment	2
PHA322	Professional Communication	1
PHA333	Pharmacy Management	3
PHA—	Professional Elective	2

Spring Semester (15 credits)

PHA313	Medicinal Chemistry II	3
PHA316	Dosage Forms II	3
PHA317	Dosage Forms II, Lab	1
PHA330	Pharmacology I	4
PHA325	Pharmacy Practice & Ethics	2
PHA340	Pharmacotherapeutics I	2

Summer Semester (6 credits)*

PHA398	Pharmacy Practice Management I	3
PHA399	Pharmacy Practice Management II	2
PHA397	Introduction to Professional Pharmacy Practice Experience	1

* Students are expected to complete PHA 397, 398, 399 over summer P1 and summer P2.

Professional Year II

Fall Semester (18 credits)

PHA441	Pharmacotherapeutics II	3
PHA442	Pharmacotherapeutics III	3
PHA430	Pharmacology II	4
PHA422	Pharmacokinetics & Biopharmaceutics	4
PHA421	Drug Information & Literature Evaluation	2
PHA—	Professional Elective	2

Spring Semester (17 credits)

PHA443	Pharmacotherapeutics IV	3
PHA444	Pharmacotherapeutics V	3
PHA445	Pharmacotherapeutics VI	3
PHA449	Dispensing and Pharmaceutical Care	3
PHA452	Toxicology	3
PHA435	Pharmacognosy&Evidence-Based Herbal Medicine	2

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Professional Year III

Fall Semester (19 credits)

PHA550	Introduction to Pharmacogenomics	1
PHA557	Pharmacoeconomics	3
PHA560	Clinical Nutrition & Diet Therapy	2
PHA570	Professional Pharmacy Practice – Hospital/DIC Experience	6
PHA571	Professional Pharmacy Practice – Community Experience	6
PHA 523	Clinical Pharmacokinetics* or another Professional Elective	1

Spring Semester (17 credits)

PHA515	Pharmacy Seminar	1
PHA—	Professional Elective	1
PHA572	Professional Pharmacy Practice – Patient Care Experience	12
PHA510	U.S. Pharmacy Law & Regulation	2
PHA513	Lebanese Pharmacy Law & Regulation	1

A total of 6 credits of professional electives, as one-credit or two-credit courses, should be completed before graduation.

* Students interested in applying to the Pharm.D. Program should take PHA523 Clinical Pharmacokinetics (1cr.) as a professional elective.

Professional Year IV

Pharm.D. Candidates Only

The fourth professional year of the Doctor of Pharmacy Program consists of nine four-week advanced practice experiences (27credits). The fourth professional year consists of four required experiences, one from each below:

1. Ambulatory Care
2. Community
3. Hospital/Health System Pharmacy
4. Inpatient/acute care general medicine

The Four Required Advanced Pharmacy Practice Experiences

Advanced Pharmacy Practice (12 credits)

PHA 670	Required Advanced Pharmacy Practice in Ambulatory Care	3
PHA 671	Required Advanced Pharmacy Practice in Community Pharmacy	3
PHA 672	Required Advanced Pharmacy Practice in Hospital / health system pharmacy	3
PHA 673	Required Advanced Pharmacy Practice in Inpatient/acute care general medicine	3

The Five Elective Advanced Pharmacy Practice Experiences could be selected from any of the following PHA 650 Elective Advanced Pharmacy Practice Experiences.

PHA 650: Elective Advanced Pharmacy Practice Experience	Adult Oncology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Ambulatory Care	3
PHA 650: Elective Advanced Pharmacy Practice Experience	CCU	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Dermatology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Emergency Medicine	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Endocrinology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Family Medicine	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Gastroenterology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Infectious Diseases	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Medical Intensive Care	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Neonatal Intensive care	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Nephrology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Neurology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	OB/GYN	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Pediatric Oncology	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Pediatrics	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Pharmaceutical Company	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Pharmaceutical Industry	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Psychiatry	3
PHA 650: Elective Advanced Pharmacy Practice Experience	Teaching	3
PHA 689: Elective Advanced Pharmacy Practice Experience	Pharmacy Project	3

RULES AND REGULATIONS

I-BACHELOR OF SCIENCE (B.S.) IN PHARMACY ADMISSION

Students seeking admission into the pre-professional phase of the program should contact the Office of Admissions, in order to complete the application process.

Students admitted to LAU after completion of their secondary education, as well as students who hold a B.S. or a B.A. degree and who did not complete all the requirements in the first two academic years, are eligible to enroll in the pre-professional program.

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After the completion of the pre-professional courses, students must complete an application form for admission into the professional phase of the program. The application forms are obtained from the Office of the Assistant Dean for students affairs of the School of Pharmacy, and must be submitted with all the required documents (i.e. recommendations and transcripts), before May 31st of every academic year.

Admission into the professional phase of the program takes place only in the fall semester, and will be decided upon by the School Admissions Committee, with the approval of the dean. The committee automatically rejects incomplete applications or if received after the above-mentioned deadline. Following the completion of the application process, an individual interview will be conducted with each applicant. Applicants will be evaluated based on different criteria such as GPA, interview, faculty evaluation, writing skills, recommendation letters, number of repeats, warning letters and others.

To be admitted into the professional phase of the program, students must complete all of the pre-professional courses, with a minimum cumulative Grade Point Average (GPA) of 2.5, and pass all the major courses, with a minimum grade of C, and an overall GPA of at least 2.5. Major courses include all the PHA courses, as well as CHM201, CHM311, CHM312, CHM313, CHM314 and BIO201.

In addition, to be eligible to apply to the professional program, students normally are allowed a maximum of three repeats of the same course or different courses, and should not have received any academic or disciplinary warning. Two warnings during the academic years will lead to dismissal from the School / not eligible to apply to the professional program. Furthermore, a student may, with approval of the School Academic Council chaired by the Dean, carry one grade of D, D+ or C- in one course in the pre-pharmacy program to the professional program provided student was not able to repeat the course before fall of admission. Such grade must be removed in fall or spring semesters of the following year. Failure to do so will prevent student from being promoted to the next higher year. Please be aware that courses in the professional program are offered sequentially as stated in the curriculum and on a yearly basis according to student standing.

Admission into the professional phase of the program is competitive. Meeting the minimum requirements does not guarantee acceptance.

A minimum grade of B or its equivalent in pre-pharmacy courses must be earned by students transferring from an institution other than LAU. Furthermore, transfer of professional pharmacy courses will be conducted according to ACPE guidelines; only professional pharmacy courses from the Accreditation Council for Pharmacy Education (ACPE) accredited programs are transferable. Major courses transferred will be included in calculating the GPA for admission.

Applicants holding a B.A. or a B.S. degree from the following Universities are exempted from taking the Liberal Arts Core (LAC) courses:

- AUB
- Balamand
- NDU
- Haigazian

Students admitted into the professional program after July 1, 2007 will be subject to the requirement stated in the ACPE Standard 14, Guideline 14.6, namely: "The required Advanced Pharmacy Practice Experience, in all program pathways, must be conducted in the United States, or its territories, or possessions."^{*1}

The School of Pharmacy at the Lebanese American University is an equal opportunity institution and will not use the race, sex, religion or national origin of an applicant as criterion for admission into the program.

ACADEMIC PROBATION & DISMISSAL FROM THE PROFESSIONAL PROGRAM

A student failing to score at least a C in any of the PHA courses, after registering for the course three times, including withdrawals, will be dismissed from the School of Pharmacy.

Students will be placed on Academic Probation (GPA below 2.0) only once. If a student fails to achieve a good academic standing (GPA of 2.0 or above) after one semester of probation (excluding summer), he/she will be suspended from the School of Pharmacy for one year. If a student fails to improve his/her GPA (2.0 or above) during the first semester (excluding summer), after serving his/her suspension, he/she will be dismissed from the school. A student

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suspended for one year may be considered for readmission, after the school's approval, and will be advised to repeat courses in which he/she received an F, D, D+ or C-, and may not carry more than 13 credits in a semester.

1 This applies only for students who seek the Pharm.D. degree.*

PROMOTION TO A HIGHER YEAR

To be promoted to a higher year in the professional program, a student must complete all courses of each year with grade of C or better before being allowed to enroll in any course in the higher year. All courses will be followed sequentially as stated in the curriculum. However, a student must have prior approval of the School Academic Council chaired by the Dean to be allowed to carry one grade of D, D+ or C- to a higher year. Such deficient grade must be removed within the following two semesters of the higher year. Failure to remove this deficiency on time will result in denying promotion to the next higher year. A grade "F" will stop the student from being promoted to a higher year. Students must successfully complete all didactic courses of the program before they are allowed to enroll in any Pharmacy Practice Experiences (rotations).

In the first professional year, P1, students will not be able to register for PHA 397, 398 and 399 if they have not completed all P1 courses or if they have more than 2 courses with a grade below C. A grade "F" will stop the student from taking PPM or being promoted to P2.

GRADUATION REQUIREMENTS

To earn a Bachelor of Science in Pharmacy, a student must have a minimum overall GPA of 2.00 in all PHA courses taken at LAU, and have a minimum grade of C in all PHA courses.

II-DOCTOR OF PHARMACY (PHARM.D.)

ADMISSION

Admission into the Pharm.D. Program takes place only in the fall semester. Applications should be obtained from the School of Pharmacy. All applicants must submit a completed application form to the School of Pharmacy no later than January 20 of the year of expected admission.

Admission into the Pharm.D. Program is a competitive process and only a specified number of students will be admitted into the program. The School Admissions Committee will

evaluate applicants based on GPA, interview, number of courses repeated in the professional program, preceptor/ faculty recommendation letters, faculty evaluation, warning letters and others. Two warnings during the academic years will lead to dismissal from the School or will not be eligible to apply to the Pharm.D program.

Only students who earned a B.S. in Pharmacy degree from LAU or an ACPE accredited university are eligible to apply. Furthermore, applicants who earned the B.S. in Pharmacy from LAU may apply for admission into the Pharm.D program within 2 years after receiving the B.S in Pharmacy degree.. Graduates from non-ACPE-accredited universities must start from pre-pharmacy or the first professional year (P1).

GRADUATING REQUIREMENTS

To graduate with a Pharm.D. degree, a student must have a minimum GPA of 2.00 and grades of C in all required courses.

COURSE DESCRIPTIONS

PHARMACEUTICAL SCIENCES DEPARTMENT

PHA202 Medical Anatomy and Physiology [4 cr.]

This course covers the anatomy and physiology of the human body, with emphasis on the central nervous system, the autonomic nervous system, the cardiovascular and renal systems, and the 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.

Corequisite: Pre-Professional Year I status.

PHA204 Computer Application to Pharmacy [2 cr.]

This course covers the use of computers for solving professional, educational and business problems. The course also covers the utility of computer technology, online information resources, hardware peripherals, CD-ROM databases, programs, and multimedia

computing systems, which pharmacists can use in their practice.

Corequisite: Pre-Professional Year I status.

PHA205 Statistics for Health Profession Majors [3 cr.]

This course covers the descriptive and basic inferential statistics, and issues surrounding the design of biomedical and biopharmaceutical investigations.

Corequisite: Pre-Professional Year I & II status.

PHA208 Medical Biochemistry [4 cr.]

This course covers the chemistry and metabolism of biomolecules (proteins, lipids, carbohydrates and DNA) and enzymology, and metabolic pathways to energy utilization. Particular emphasis is placed on the biochemical basis for disease, and targets for therapeutic intervention.

Prerequisites: CHM201, CHM 311, CHM312, CHM 313, and CHM314.

Corequisite: Pre-Professional Year II status.

PHA209 Principles of Pathophysiology & Immunology [4 cr.]

This course covers the basic principles and mechanisms of pathologies and disorders that affect the human body in general, as well as a few selected systems. It also covers the environmental, nutritional and genetic origins of pathology and immunity, in relation to internal as well as external disease processes. Diagnostic modalities, interpretation of relevant laboratory data, and an introduction to the basic pharmacology and treatment of major diseases, are also covered.

Prerequisite: PHA202.

Co-requisite: Pre-Professional Year II status.

PHA210 Systems Pathophysiology [4 cr.]

This course is a continuation of PHA209. It covers the pathologies and disorders that affect the human body, in its various systems. It discusses disease processes, etiologies and symptoms, as well as diagnostic modalities, the interpretation of relevant laboratory data, and an introduction to the basic pharmacology and the treatment of major diseases of the various bodily systems. The course will consist of lectures, discussions, as well as case presentations.

Prerequisite: PHA209.

Co-requisite: Pre-Professional Year II status.

PHA211 Microbiological Basis of Disease [3 cr.]

This course covers the characteristics of microorganisms, in general, and the specific characteristics of pathogenic bacteria, viruses and fungi. Topics include the different aspects of medical microbiology, identification and the control of pathogens, disease transmission, host resistance, immunity, control of infection, and development of microbiological techniques.

Prerequisite: BI0201.

Corequisite: Pre-Professional Year II status.

PHA308 Pharmaceutical Analysis and Biotechnology [2 cr.]

This course is an introduction to the principles and techniques used in pharmaceutical analysis, hence; extraction, spectroscopy, chromatography and dissolution procedures. Particular emphasis is placed on the recombinant DNA technology.

Prerequisites: CHM201, CHM312 and CHM314.

Corequisite: Professional Year I status.

PHA309 Pharmaceutical Analysis and Biotechnology Lab [1 cr.]

This course is a laboratory taken concurrently with PHA308. Techniques used to assess the quality of drug products are covered, as well as PCR and electrophoresis techniques.

Prerequisites: CHM201, CHM312 and CHM314.

Corequisite: PHA308, Professional Year I status.

PHA312 Medicinal Chemistry I [3 cr.]

This course covers the physicochemical properties of various drug categories, their relation to biological activity, metabolic pathways, and structure-activity, and their adverse effects.

Prerequisites: CHM312 and CHM314.

Corequisite: Professional Year I status.

PHA313 Medicinal Chemistry II [3 cr.]

This course is a continuation of Medicinal Chemistry I.

Prerequisite: PHA312.

Corequisite: Professional Year I status.

PHA314 Dosage Forms I [3 cr.]

This course covers the design, formulation, manufacturing and evaluation of pharmaceutical dosage forms, based on physical chemical principles. Drug regulatory affairs, current good manufacturing practices, in compliance with FDA guidelines and standards, pre-formulation studies, formulations of solids, liquids, and aerosols are discussed.

Corequisites: PHA315 and Professional Year I status.

PHA315 Dosage Forms I Laboratory [1 cr.]

This is a compounding laboratory taken concurrently with PHA314. Techniques and principles used to prepare and dispense individual extemporaneous prescriptions, including calculations and dating of compounded dosage forms, are discussed.

Corequisites: PHA314 and Professional Year I status.

PHA316 Dosage Forms II [3 cr.]

This course is a continuation of PHA314. It covers the design, formulation, manufacturing and evaluation of semi-solid, complex and novel pharmaceutical dosage forms.

Prerequisite: PHA314.

Corequisites: PHA317 and Professional Year I status.

PHA317 Dosage Forms II Laboratory [1 cr.]

This is a compounding laboratory taken concurrently with PHA316.

Prerequisite: PHA315.

Corequisites: PHA316 and Professional Year I status.

PHA320 Physical Assessment [2 cr.]

This course is an introduction to the various techniques and tools necessary to conduct physical examinations and to monitor modifications caused by common disease states and drug therapy. Practical sessions are included.

Prerequisite: PHA210.

Corequisite: Professional Year I status.

PHA322 Professional Communication [1 cr.]

This course is an analysis and application of the factors promoting or hindering successful communications between the pharmacist

and the patients, as well as with health professionals.

Prerequisites: ENG202 and ENG203.

Corequisite: Professional Year I status.

PHA325 Pharmacy Practice and Ethics [2 cr.]

This course is an introduction to the practice of pharmacy in institutional and community settings. It entails the study of the development of the profession of pharmacy and the ethical principles upon which the profession rests.

Corequisite: Professional Year I status.

PHA330 Pharmacology I [4 cr.]

The course is designed to introduce students to the principles of drug use. The course emphasizes on drug-receptor relationships, pharmacodynamics, pharmacokinetics, drug-drug interactions, and the adverse effects of various categories of drugs.

Prerequisite: PHA210.

Corequisites: PHA313 and Professional Year I status.

PHA333 Pharmacy Management [3 cr.]

This course is an introduction to pharmacy management, as applied to various pharmacy practice settings. Topics will be discussed within the framework of the Lebanese law.

Corequisite: Professional Year I status.

PHA421 Drug Information and Literature Evaluation [2 cr.]

This course covers the use of reference sources to retrieve, evaluate and disseminate information in pharmacy practice. Fundamentals of research design, methodology, and analysis in practicing evidence-based pharmacy are discussed.

Prerequisites: PHA330 and PHA205.

Corequisite: Professional Year II status.

PHA422 Pharmacokinetics and Biopharmaceutics [4 cr.]

This course entails the study and application of the fundamental concepts of absorption, distribution, metabolism and the elimination of drugs. The influences of formulation, disease and diet on pharmacokinetics, as well as the principles of bioavailability and bioequivalence are discussed.

Prerequisite: PHA316.

Corequisite: Professional Year II status.

PHA430 Pharmacology II [4 cr.]

This course is a continuation of PHA330.

Prerequisites: PHA210, PHA313, PHA330 and PHA211.

Corequisite: Professional Year II status.

PHA435 Pharmacognosy and Evidence-Based Herbal Medicine [2 cr.]

This course is an introduction to the preparation and extraction of active ingredients, and the identification and classification of medicinal plants. An explanation of the pharmacology and therapeutic use of commonly prescribed and dispensed herbal medicines, based on current scientific research, is covered.

Prerequisite: PHA313.

Corequisite: Professional Year II status.

PHA452 Toxicology [3 cr.]

This course covers the fundamental and mechanistic aspects of toxicology, with emphasis on the mechanisms of toxicants, pathophysiology, clinical manifestations, and on the management of toxic exposures and antidotal therapy.

Prerequisites: PHA330, PHA430 and PHA422.

Corequisite: Professional Year II status.

PHA510 U.S. Pharmacy Law and Regulation [2 cr.]

This course covers the federal laws that affect the regulation of drugs and the practice of pharmacy. The course helps the students realize and understand the general principles of the federal law related to drug control and to pharmacy practice.

Corequisite: Professional Year III status.

PHA512 Lebanese Pharmacy Law and Regulation [1 cr.]

This course discusses the regulations of pharmacy practice in Lebanon including the requirements to become a licensed pharmacist, to establish a community pharmacy, to operate a hospital pharmacy, and to receive a license for manufacturing a drug or importing any substance that falls under its category. The course covers the registration process of any

substance considered a drug at the Ministry of Public Health department, including its pricing regulation and profit allowance. It also sheds the light on situations whereby a pharmacist can dispense, substitute a medication or make changes to the dosing regimen. Other topics discussed include the responsibilities and rights of pharmacy inspection/audit from the Lebanese Ministry of Public health and any other regulatory body, and definition of felony or crime and determine its respective penalty measures. Finally, this course covers all the regulations related to establishing the Lebanese Order of Pharmacists, including its mission, goals, organization structure, executive board, committees, retirement plan, financial operations, elections, and inspection.

PHA550 Introduction to Pharmacogenomics [1 cr.]

This course covers the relationship of genetic individual variability to drug response.

Prerequisite: PHA430.

Corequisite: Professional Year III status.

PHA557 Pharmacoeconomics [3 cr.]

This course is an introduction to the role of pharmacoeconomics in the health care system, with emphasis on research outcomes. This course covers the application of pharmacoeconomic analysis in clinical practice.

Prerequisites: PHA333 and PHA421.

Corequisite: Professional Year III status.

PHA560 Clinical Nutrition & Diet Therapy [2 cr.]

This course covers the principles of nutrition, with emphasis on the nutritional aspects of carbohydrates, lipids, proteins, vitamins, electrolytes and trace elements. Total parenteral nutrition, enteral nutrition, nutrition for growth and development, and nutrition care of selected disease states will be covered.

Prerequisites: PHA340, PHA441, PHA442, PHA443, PHA444 and PHA445.

Corequisite: Professional Year III status.

PHARMACY PRACTICE DEPARTMENT

PHA398 Pharmacy Practice Management I [3 cr.]

This course covers the aspects of practical experiences in selected pharmacy management settings, under the supervision of pharmacists and clinical faculty coordinators. Community pharmacy management approaches and styles, organizational principles, personnel, purchasing and inventory control, pricing, professional fees, community pharmacy services, and the Lebanese law are covered.

Prerequisites: PHA210, PHA313, PHA316, PHA322, PHA333, PHA320, PHA 330, PHA 340 and Professional Year I status.

PHA399 Pharmacy Practice Management II [2 cr.]

This course is a continuation of PHA398. It covers the aspects of practical experiences in selected hospital pharmacy management environments, under the supervision of pharmacists and clinical faculty coordinators. It also covers the management approaches and services provided in hospital pharmacies, in accordance with the Lebanese law.

Prerequisites: PHA210, PHA313, PHA316, PHA322, PHA333, PHA320, PHA 330, PHA 340 and Professional Year I status.

PHA397 Introduction to Professional Pharmacy Practice Experience [1 cr.]

This course is an introduction to the practice of pharmaceutical care, through a structured early learning experience in a clinical setting, and under the supervision of a clinical faculty member.

Prerequisites: PHA210, PHA313, PHA316, PHA320, PHA322, PHA333, PHA 330, PHA 340 and Professional Year I status.

PHA340 Pharmacotherapeutics I [2 cr.]

This is the first in a series of six courses addressing the pharmacotherapeutic principles and functional consequences of the disease state. Discussion will focus on the therapeutic problem solving and the evaluation of drugs commonly used in clinical practice. Individualization of pharmacotherapy, selection of appropriate drug regimen, with its efficacy and toxicity monitoring parameters, and the assessment of various drug interactions, and their adverse reactions, are covered.

Disease prevention, patient counseling, and pharmacoconomics issues will be an integral part of each disease state management. Pharmacotherapeutics of psychiatric diseases will be discussed.

Prerequisites: PHA210, PHA312 and PHA320.

Corequisites: PHA330 and Professional Year I status.

PHA441 Pharmacotherapeutics II [3 cr.]

This course focuses on endocrinologic and oto/ophthalmologic diseases, and women's health.

Prerequisites: PHA210, PHA313, PHA316, PHA320, PHA397, PHA398 and PHA399. Corequisites: PHA430 and Professional Year II status.

PHA442 Pharmacotherapeutics III [3 cr.]

This course focuses on the pulmonary, gastrointestinal, arthritic and nephrologic diseases.

Prerequisites: PHA210, PHA313, PHA316, PHA320, PHA397, PHA398, and PHA399.

Corequisites: PHA430 and Professional Year II status.

PHA443 Pharmacotherapeutics IV [3 cr.]

This course focuses on the cardiovascular and dermatologic diseases.

Prerequisites: PHA210, PHA313, PHA316, PHA320, PHA397, PHA398, PHA399 and PHA430.

Corequisite: Professional Year II status.

PHA444 Pharmacotherapeutics V [3 cr.]

This course focuses on infectious diseases.

Prerequisites: PHA210, PHA211, PHA313, PHA316, PHA320, PHA397, PHA398, PHA399 and PHA430.

Corequisite: Professional Year II status.

PHA445 Pharmacotherapeutics VI [3 cr.]

This course focuses on the hematological/oncologic, neurologic, genitourinary, and reproductive system diseases.

Prerequisites: PHA210, PHA313, PHA316, PHA320, PHA397, PHA398, PHA399 and PHA430.

Corequisite: Professional Year II status.

PHA449 Dispensing and Pharmaceutical Care [3 cr.]

This course covers the techniques and skills required to safely and accurately dispense prescription and non-prescription drug products to patients. Emphasis will be on computerized patient record keeping, interpreting and evaluating prescriptions, as well as tips for patient counseling.

Prerequisites: PHA322, PHA340, PHA430, PHA441 and PHA442.

Corequisites: PHA443, PHA444, PHA445, PHA452 and Professional Year II status.

PHA515 Pharmacy Seminar [1 cr.]

This course entails discussions of current literature as well as issues concerning the pharmacy profession.

Prerequisites: PHA340, PHA421, PHA422, PHA441, PHA442, PHA443, PHA444 and PHA445.

Corequisite: Professional Year III status.

PHA570 Professional Pharmacy Practice – Hospital/DIC Experience [6 cr.]

This course covers pharmacy practice in a hospital setting and at a drug information center. It covers the principles of hospital pharmacy management rules and regulations, drug distribution systems, patient-oriented pharmacy services, as well as the principles of evidenced-based medicine and the systemic approach in answering drug information questions and analyzing the literature.

Prerequisite: Passing all the PHA courses from the pre-professional years.

Corequisite: Professional Year III status.

PHA571 Professional Pharmacy Practice – Community Experience [6 cr.]

This course covers the pharmacy practice in a community setting. It deals with the principles of community pharmacy management rules and regulations, drug distribution systems, and patient-oriented pharmacy services which include dispensing medications, communicating with patients and health professionals, providing proper information, and monitoring the patient profiles for drug interactions, medication noncompliance, and inappropriate drug therapy.

Prerequisite: Passing all the PHA courses from the pre-professional years.

Corequisite: Professional Year III status.

PHA572 Professional Pharmacy Practice – In-patient Care Experience [12 cr.]

This course covers the use of therapeutic problem-solving skills, and the knowledge of the appropriate use of medications in patient care environments, which include patient monitoring, therapeutic consultation, and in-service presentation and communication with health care professionals and patients.

Prerequisite: Passing all the PHA courses from the pre-professional years.

Co-requisite: Professional Year III status. PROFESSIONAL PHARMACY ELECTIVES

Note: Electives will be offered under the same course number: PHA 567 (Special Topics) and would include, but not restricted to, the following listed courses.

PHA 567: Special Topics- Public Health [1 cr.]

This course introduces topics of public health to the students of pharmacy. The course looks at leading causes of death, and measures of morbidity/mortality. Topics related to outbreaks, screening, vaccinations, health determinants, major chronic diseases, and public health program planning and evaluation are covered in the course.

PHA 567: Special Topics Pharmacoepidemiology [1 cr.]

This course introduces the students to the principles, concepts and application of epidemiology in the field of pharmaceutical sciences. The course consists of lectures, assigned readings that provide the students with basic knowledge and tools relevant to pharmaco-epidemiology practice.

PHA 567: Special Topics- First Aid [1 cr.]

This course introduces students to first aid skills needed to respond to respiratory and cardiac emergencies, to reduce pain, and to minimize the consequences of injury or sudden illness.

PHA523 Clinical Pharmacokinetics [1 cr.]

This course covers the application of pharmacokinetics principles for the rational design and monitoring of individualized dosage regimen for commonly used and low-therapeutic-index drugs.

Prerequisite: PHA 422.

Corequisite: Professional Year III status.

REQUIRED/ELECTIVE: ADVANCED PHARMACY PRACTICE EXPERIENCE

DESCRIPTIONS

Numerous and various experiences are available for the Doctor of Pharmacy advanced practice rotations, including: institutional health care systems, community pharmacies, pharmaceutical industry, and clinical and pharmaceutical sciences' research opportunities. The experience is supervised by skilled preceptors. Yearly, the chair of the Pharmacy Practice will prepare a list of the currently available experiences.

Experience Selection

Students will be matched with the rotation sites, based on the students' choice and availability. In July, students are asked to rank, in order of preference, the elective rotations they would like to do. Selection of sites is checked upon by Chair of the Pharmacy Practice Department and the Director of Experiential Education.

Experience Scheduling

The Chair of the Pharmacy Practice, the Director of Experiential Education and the site coordinators schedule all experiences. Students are asked not to contact individual preceptors to schedule or reschedule the experience elective. Students desiring to modify their schedule need to approach the Director of Experiential Education, with a valid excuse, by the third and the fourth week of July, before the start of the first experience.

REQUIRED ADVANCED PHARMACY PRACTICE EXPERIENCES

PHA670–PHA673 (12 cr)

The required experiences are designed to allow the student to develop a strong understanding of specific areas of ambulatory care, community pharmacy practice, hospital/health system pharmacy practice and acute care internal principles. The goals that students should achieve during this module are to further understand the pathophysiology and treatment of various diseases commonly encountered, 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 patient care. The students will also work with both the medical and pharmacy services, and will provide pharmaceutical care to the patients. The students will gain the relevant knowledge, learning valuable information for their future practice. Students will also gain strong skills in professional and educational

communications, all under the mentoring of the clinical pharmacy experienced preceptors.

Prerequisites: Bachelor of Science in Pharmacy and Professional Year IV status.

PHA650 Elective Advanced Pharmacy Practice

The elective experience is designed to allow the student to develop a stronger understanding of a specialty area.

For direct patient care experiences, the goals that students should achieve during this elective experience are generally to further understand the pathophysiology and treatment of various diseases in that specialty, and to develop strong and advanced skills in the design and monitoring of rational pharmacotherapy regimens, and how they can utilize the available data to maximize patient care. Students will work closely with the chief of department or the chief resident, and under the close mentoring from a clinical pharmacy faculty member. Furthermore, the students will provide pharmaceutical care to the patients and will gain the relevant knowledge, learning valuable information for their future practice.

For non-direct patient care experiences, the goals that the students should achieve are dependent on the elected experience. In general, all experiences are designed to allow students to gain further knowledge, and to develop the required skills and information for their future practice. Students are required to choose three topics, based on availability.

Prerequisite: Bachelor of Science in Pharmacy/ Professional Year IV status.

PHA689 Pharmacy Project

This course will be offered as an elective to all Pharm.D. students who wish to engage in research. At the beginning of the academic year, a list of potential research projects will be generated by the School of Pharmacy from which students can choose.

SUPPORTING FACILITIES

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 HPLC systems, which are equipped with a variety of detectors (absorbance, PDA, electrochemical, fluorescence, conductivity, and refractive index), enabling their use for a

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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 the 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 GC-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 products using traditional approaches (mortar and pestle, spatula and slab), as well as modern technology. Basic equipment includes the water bath, hot plate, magnetic stirrer, oven, electronic balance, and vortex. More sophisticated equipment such as the 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 omissions in prescriptions, and 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.



Faculty

FALL 2012

Abboushi, Jenine - School of Arts and Sciences

Ph.D., Comparative Literature, Harvard University, 1996.

Abdallah, Eddie - School of Medicine

M.D., University of Michigan, 1993.
General Surgery, University of Florida, 1999.
Surgical Oncology, UT MD Anderson Cancer Center, 2002.
Hepatobiliary Surgery, Hopital Beaujon, 2003.

Abdallah, Jad - School of Pharmacy

Ph.D., Structure, Function and Protein Engineering, Université Paris VII, 2006.

Abdel Baki, Randa - School of Architecture and Design

M.F.A., Computer Graphics, Pratt Institute, 1998.

Abdo, Antoine - School of Arts and Sciences

Ph.D., Literature, Université Saint Joseph, 1986.

Abi Abdallah-Doumit, Myrna - School of Nursing

Ph.D., Philosophy, Duquesne University of the Holy Spirit, 2006.

Abi Fares, Ghada - School of Business

M.B.A., Business Administration, American University of Beirut, 1993.

Abi Ghanem, Samer - School of Arts and Sciences

M.A., Actuarial Science, The University of Texas at Austin, 2003.
M.M.B., Money & Banking, American University of Beirut, 1999.

Abi Habib, Ralph - School of Arts and Sciences

Ph.D., Biochemistry and Molecular Biology, Wake Forest University, 2005.

Abi Nader, Elie - School of Medicine

M.D., American University of Beirut, 1978.
Anaesthesiology, Johns Hopkins Hospital, 1982.
Cardiothoracic Anaesthesia, Cleveland Clinic, 1982.

Abi Nader, Khalil - School of Medicine

M.D., American University of Beirut, 2003.
Obstetrics & Gynaecology, American University of Beirut, 2007.
Maternal Foetal Medicine, University College London Hospitals, 2009.

Abi Raad, Vanda - School of Medicine

M.D., Saint Joseph University, 1989.
Anaesthesiology, American University of Beirut, 1992.

Cardiovascular Anaesthesia, American University of Beirut, 1993.

Regional Anaesthesia, Hopital la Conception, 2006.

Abi Saad-Youssef, Mira - School of Nursing

M.S., Nursing, American University of Beirut, 2008.

Abillama, Fayez Francois - School of Medicine

M.D., University of Algiers, 1986.
Anesthesia and Intensive Care, Cochin Hospital, 1991.

Intensive Care, CHR Rambouillet, 1991.

Abillamah, Walid - School of Engineering

Ph.D., Industrial and Operations Engineering, University of Michigan, 1994.

Abosedra, Salaheddin - School of Business

Ph.D., Economics, University of Colorado, 1984.

Abou Antoun, Tamara - School of Pharmacy

Ph.D., Molecular Medicine, The George Washington University, 2008.

Abou Arbid, Silia - School of Architecture and Design

B.Arch., Architecture, University of Montreal, 1993.

Abou Rjeily, Chadi - School of Engineering

Ph.D., Communications, l'Ecole Nationale Supérieure des Telecommunications, 2006.

Abu Khzam, Faisal - School of Arts and Sciences

Ph.D., Computer Science, The University of Tennessee, 2003.

Abu Teen, Samir - School of Arts and Sciences

M.A., English Literature, American University of Beirut, 1979.

Acra, Usama - School of Arts and Sciences

M.A., Communication, Marquette University, 1982.

Aercke, Kristiaan - School of Arts and Sciences

Ph.D., Comparative Literature, The University of Georgia, 1988.

Aghacy, Samira - School of Arts and Sciences

Ph.D., English, University of Exeter, 1977.

- Ahdab, Rechdi - School of Medicine**
M.D., Lebanese University, 2000.
Neurology, Lebanese University, 2005.
AFSA , Neurology, Université Paris XII, 2007.
Clinical Neurophysiology, Hopital Henri-Mondor, 2009.
- Aintablian, Sebouh - School of Business**
Ph.D., Finance, York University, 2000.
- Akle, Barbar - School of Engineering**
Ph.D., Mechanical Engineering, Virginia Polytechnic Institute and State University, 2005.
- Alayli, Rajaa - School of Medicine**
M.D., American University of Beirut, 1993.
Internal Medicine, Yale University, 1996.
Gastroenterology, Yale University, 1999.
- Ali, Ihab - School of Engineering**
Ph.D., Mechanical Engineering, University of Maryland, 2010.
- Amin, Tamer - School of Arts and Sciences**
Ph.D., Psychology, Clark University, 2002.
- Ammar, Diala - School of Arts and Sciences**
Ph.D., Motor Development, Texas A & M University, 2006.
- Ammous, Saifedean - School of Business**
M.A., Arts, Columbia University, 2006.

M.S., Development Management, University of London, 2004.
- Andraos, Albert - School of Business**
M.A., Professional Sales Management, Webster College, 1982.
- Aouad-Barakat, Daisy - School of Medicine**
M.D., Saint Joseph University of Beirut, 1973.
Anaesthesiology, American University of Beirut, 1976.
- Araissi, Mahmoud - School of Business**
Ph.D., Economics, Indiana University, 1995.
- Arbid, Elias - School of Medicine**
M.D., University of Massachusetts, 1987.
Surgery, Berkshire Medical Center (Univ of Massachusetts), 1992.
Vascular Surgery, Boston University, 1995.
- Armache, Jalal - School of Business**
Ph.D., Human Resources Development, Barry University, 1997.
- Arnaut, Jean-Paul - School of Engineering**
Ph.D., Management & Systems Engineering, Old Dominion University, 2006.
- Assad, Tony - School of Business**
M.S., Business, Beirut University College, 1984.
- Assaf, Nadra - School of Arts and Sciences**
Ed.D., Education, University of Leicester, 2009.
- Assi, Chahine - School of Medicine**
M.D., Université Claude Bernard Lyon, 1992.
Orthopedics Surgery, Several Hospitals in France, 1996.
Orthopedics and Trauma Surgery, Utah Hospital, 2001.
- Awdeh, Adnan - School of Medicine**
M.D., American University of Beirut, 1976.
General Surgery, American University of Beirut, 1980.
- Awwad, Rita - School of Engineering**
Ph.D., Civil Engineering, The University of Michigan (Rackham Graduate School), 2010.
- Ayyash-Abdo, Huda - School of Arts and Sciences**
Ed.D., Counselling & Human Development, The George Washington University, 1987.
- Azar, Danielle - School of Arts and Sciences**
Ph.D., Computer Science, McGill University, 2004.
- Azar, Riad - School of Medicine**
M.D., Université Saint Joseph, 1994.
Internal Medicine, University of Massachusetts Medical Center, 1998.
Digestive disease and nutrition, University of Massachusetts Medical School, 2001.
- Azzam, Nadia - School of Business**
M.B.A., Business Administration, American University of Beirut, 1981.
- Azzi, Reine - School of Arts and Sciences**
M.A., European Humanities Program, University of St. Andrews, University of Bergamo & University of Perpignan, 2007.
- Bacha, Nahla - School of Arts and Sciences**
Ph.D., Applied Linguistics and TESOL, University of Leicester, 1998.
- Badr, Elie - School of Engineering**
Ph.D., Mechanical Engineering, The University of Tulsa, 1994.

Badran, Dany - School of Arts and Sciences

Ph.D., English Studies & Critical Linguistics,
The University of Nottingham, 2003.

Bahous, Maria - School of Architecture and Design

M.A., Graphic Design, London College of
Communication, University of the Arts London,
2005.

Bahous, Rima - School of Arts and Sciences

Ed.D., Applied Linguistics & TESOL, University
of Leicester, 2001.

Bahous, Sola - School of Medicine

M.D., Lebanese University, 1995.
Internal Medicine, Lebanese University, 1997.
Nephrology, Lebanese University, 1999.
Ph.D., Pharmacologie Cardiovasculaire,
Universite Paris VI, 2005.

Balaa, Luma - School of Arts and Sciences

Ph.D., English, University of Strathclyde, 1993.

Barakat, Hanan - School of Medicine

M.D., Saint Joseph University, 1996
Anesthesia and Intensive Care, Hotel Dieu de
France, 2000.
Neonatal Pediatrics, ENT and OB/GYN
Anesthesia, Robert Debre Hospital and Bichat
Hospital, 2001.

Barello, Luca - School of Architecture and Design

Ph.D., Architecture, Politecnico Di Torino,
2011.

Baroudi, Sami - School of Arts and Sciences

Ph.D., Political Science, Indiana University, 1992.

Baroudy, George - School of Arts and Sciences

Ph.D., Endocrinology, University of Surrey, 1979.

Bassil, Maya - School of Arts and Sciences

Ph.D., Human Nutrition, McGill University, 2011.

Bazzi, Tarif - School of Arts and Sciences

Ph.D., Arabic Literature, American University
of Beirut, 1991.

Behmardi, Wahid - School of Arts and Sciences

Ph.D., Arabic Literature, University of
Cambridge, 1991.

Ben Sita, Bernard - School of Business

Ph.D., Economics & Business Administration,
Swedish School of Economics & Business
Administration, 2005.

Beyrouti, Nouri - School of Business

Ph.D., Graphic Communication Management
& Technology, New York University, 1989.

Bobrow, Andrew - School of Arts and Sciences

M.A., Media Studies, The New School, 2006.

Bogharian, Keghouhie - School of Business

Ph.D., Business Administration, Université
Montesquieu Bordeaux IV, 2009.

Bogharian, Krikoris - School of Arts and Sciences

Ph.D., Medical Sciences, American University
of Beirut, 1976.

Bohsali, Rached - School of Architecture and Design

D.E.A., Domestic Architecture, Ecole
D'Architecture Paris-Villermin-France, 1985.

Boumosleh, Anwar - School of Business

Ph.D., Finance, University of Alabama, 2005.
C.F.A., Chartered Financial Analyst, AIMR, 2001.

Bouse, Derek - School of Arts and Sciences

Ph.D., Communication, University of
Pennsylvania, 1991.

Btaiche, Imad - School of Pharmacy

Pharm.D., Pharmacy, Lebanese University,
1994.

Burns, Christopher - School of Architecture and Design

M.Arch., Architecture, Yale University, 1988.

Chamelian, Rania - School of Business

Ph.D., Hospitality & Food Management,
University of Surrey, 2010.

Chamoun, Chaouki - School of Architecture and Design

D.E.S., Painting, Lebanese University, 1972.

Chamoun, Rachid - School of Architecture and Design

Ph.D., Urbanism By Ecological Landscape,
Union Institute and University, 2005.

Chatila, Evelyn - School of Arts and Sciences

M.A., Education, Lebanese American
University, 2006.

Chatila, Jean - School of Engineering

Ph.D., Civil Engineering, Université d'Ottawa,
1997.

Choghari, Nathalie - School of Medicine

M.S., Public Health, American University of Beirut, 2000.

Dabaghi, Leila - School of Arts and Sciences

B.A., Political Science, American University of Beirut, 1961.

Dabbous, Yasmine - School of Arts and Sciences

Ph.D., Mass Communication, Louisiana State University, 2010.

Dabbous-Sensenig, Dima - School of Arts and Sciences

Ph.D., Broadcast Regulation, Sheffield Hallam University, 2003.

Daccache, Maroun - School of Architecture and Design

Ph.D., Architectural Composition & Design, Instituto Universitario Di Architettura Di Venezia, 1992.

Daccache, Nidal - School of Arts and Sciences

Ph.D., Arabic Literature, Lebanese University, 2004.

Dagher, Grace - School of Business

Ph.D., Business Administration, the University of Texas Pan American, 2008.

Dah, Abdallah - School of Business

Ph.D., Economics, University of Colorado, 1988.

Daher, Costantine - School of Arts and Sciences

Ph.D., Biology, University of Surrey, 1998.

Daif, Rachid - School of Arts and Sciences

Doctorat, Islamic Studies, Université de Paris III Sorbonne Nouvelle, 1974.

Dakakni, Deema - School of Arts and Sciences

M.A., Education, Lebanese American University, 2009.

M.A., Public Administration, American University of Beirut, 2002.

Darwish, Orpha - School of Arts and Sciences

M.S., Education, Southern Illinois University, 1968.

Dasouki, Suhail - School of Arts and Sciences

M.B.A., Business, Lebanese American University, 2002.

Deeb, Marie - School of Medicine

Ph.D., Epidemiology & Biostatistics, The Johns Hopkins University, 1988.

Diab, Nuwar - School of Arts and Sciences

Ed.D, Education, University of Leicester, 2009.

Diab, Rula - School of Arts and Sciences

Ph.D., Foreign Language Education, The University of Texas at Austin, 2000.

Dibeh, Ghassan - School of Business

Ph.D., Economics, University of Texas at Austin, 1994.

Dimassi, Hani - School of Pharmacy

Ph.D., Biostatistics, University of Oklahoma, 2004.

Djoundourian, Salpie - School of Business

Ph.D., Economics, Louisiana State University, 1993.

Dodigovic, Marina - School of Arts and Sciences

Ph.D., Linguistics, University of Bremen, 1995.

Doueih, Noha - School of Medicine

M.D., Saint Joseph University, 1976.

General Pathology, Hopital Trouseau, Hopital Saint Antoine, Hopital Boucaut, 1980.

Nephropathology, Necker-Enfants Malades Hospital, 1992.

Dunya, Ibrahim - School of Medicine

M.D., American University of Beirut, 1988.

General Surgery and Ophthalmology, American University of Beirut, 1993.

Oculoplastics, Massachusetts Eye & Ear Infirmary, Harva, 1994.

Pediatric Ophthalmology and Strabismus, New England Medical Center, Tufts University, 1994.

Dunya, Malko - School of Medicine

M.D., American University of Beirut, 1980.

Urology, American University of Beirut, 1985.

Eckhart, Lynn - School of Medicine

M.D., Pediatrics, State University of New York, Buffalo, 1970.

Dr. PH, Johns Hopkins, 1980.

Eido, Dana - School of Arts and Sciences

M.A., Comparative Literature, Lebanese American University, 2007.

El Asmar, Nadia - School of Medicine

M.D., Saint Joseph University, 1989.

Primary Care, Saint Joseph University, 2001.

El Fakhani, Said - School of Business

Ph.D., Management Science, The University of Texas at Dallas, 1989.

EI Gammal, Walid - School of Business

Ph.D., Accounting and Finance, The University of Manchester, 2007.

EI Hakim-Tannous, Zeina - School of Medicine

M.D., American University of Beirut, 1995
Dermatology, American University of Beirut, 1999.

Dermatopathology, Harvard Medical School, 2000.

Mohs Micrographic/Dermatologic Surgery and Cutaneous Oncology, Harvard Medical School, 2001.

EI Hussari, Ibrahim - School of Arts and Sciences

Ed.D., Education, University of Leicester, 2002.
Ph.D, Literature, Kensington University, 1982.

EI Khatib, Nader - School of Arts and Sciences

Ph.D., Informatique et Mathématiques, Université Lyon I, 2010.

EI Khoury, Ghada - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2007.

EI Khoury, Joe - School of Medicine

M.D., Saint Joseph University, 1990.

Radiology, Saint Joseph University, 1994.

Vascular and Interventional Radiology, Ranguel University Hospital, Broussais University Hospital, Pitié-Salpêtrière University Hospital, 1997.

EI Khoury, John - School of Engineering

Ph.D., Civil Engineering, Virginia Polytechnic Institute, 2005.

EI Ramy, Julie - School of Medicine

M.D., Lebanese University, 1998.

Radiology, Lebanese University, 2003.

Pediatric Radiology and Cardiac CT, Charles Nicole Hospital, 2004.

Cardiac MRI, Gasthuisberg Hospital, 2006.

EI Sibai, Mirvat - School of Arts and Sciences

Ph.D., Molecular Pharmacology, Yeshiva University, 2007.

EI Khalil, Raed - School of Engineering

Ph.D., Engineering in Manufacturing Systems, Lawrence Technological University, 2009.

Estephan, Grace - School of Engineering

Ph.D., Civil Engineering, Purdue University, 2006.

Fahd, Sharbel - School of Medicine

M.D., American University of Beirut, 1980.

Ophthalmology, American University of Beirut, 1983.

Fakhoury, Henri - School of Medicine

M.D., Saint Joseph University, 1986.

Anesthesia and Surgical Intensive Care, Hopital Foch, 1989.

Medical Intensive Care, Hopital Saint Michel, 1990.

Pediatric Anesthesia, Hopital Robert Debres, 1991.

Fakhoury, Tamirace - School of Arts and Sciences

Ph.D., Political Sciences, University of Freiburg, 2007.

Fakih, Ali - School of Business

Ph.D., Applied Economics, Université de Montreal, 2011.

Fakih, Khodr - School of Business

J.D., Law, Northwestern University, 2008.

Faur, Wissam - School of Medicine

Ph.D., Molecular Biology, Université de Montreal, 2004.

Farah, Maya - School of Business

Ph.D., Marketing, The University of Manchester, 2007.

Farahpour, Behnam - School of Architecture and Design

M.Arch, Architecture, University of California, Berkeley, 2009

Farhat, Hussein - School of Medicine

M.D., Liege State University, 1986.

Laboratory Medicine, Liege State University, 1992.

Nuclear Medicine, Liege State University, 1994.

Farjallah, Tony - School of Arts and Sciences

M.A., Sciences de L'Education, Université de Montreal, 1996.

Fawaz, Wissam - School of Engineering

Ph.D., Network & Information Science, University of Paris 13, 2006.

Ferzli, Antoine - School of Medicine

M.D., University of Lyon, 1975.

Internal Medicine, St Hilaire de Touvet Hospital, 1977.

Faculty

- GI Endoscopy and Gastroenterology, University of Lyon, 1977.
Gastroenterology, University of Lyon, 1978.
- Finlay, Jim - School of Business**
Ph.D., Marketing, Louisiana Tech University, 1984.
- Frossard, Philippe M. - School of Arts and Sciences**
Ph.D., Physiology, Université Louis Pasteur De Strasbourg, 1979.
- Garabedian, Sami - School of Arts and Sciences**
M.S., Athletic Administration & Coaching, University of Miami, 1983.
- Gerges, Bassam - School of Medicine**
M.D., Faculty of Medicine & Pharmacy JASSY, 1984.
Anaesthesiology, American University of Beirut, 1988.
- Ghajar, Raymond - School of Engineering**
Ph.D., Electrical Engineering-Power Systems, University of Saskatchewan, 1993.
- Ghanam Nemr, Rita - School of Medicine**
M.D., Saint Joseph University, 1992.
Endocrinology, Saint Joseph University, 1995.
Endocrinology/Lipodology, Pitie-Salpetriere France, 1997.
- Ghanem, George - School of Medicine**
M.D., Université Saint Joseph, 1985.
Cardio-vascular Pathology, les universites de I-ile-de-France, 1989.
Congenital and pediatric cardiology, Universite de Paris Val-de-Marne, 1990.
Interventional cardiology, Tenon hospital, 1992.
- Ghattas, Renée - School of Business**
Ph.D., Business, University of Leicester, 2004.
- Ghosn, Irma-Kaarina - School of Arts and Sciences**
Ph.D., Education (Applied Linguistics/TESOL), University of Leicester, 2002.
- Habchi, Wassim - School of Engineering**
Ph.D., Mechanical Engineering, Institut National des Sciences Appliquées de Lyon (INSA), 2008.
- Habib-Tofailli, Mary - School of Business**
Ph.D., Economics, The American University, 2005.
- Habre, Paula - School of Arts and Sciences**
M.A., Education, American University of Beirut, 1992.
- Habre, Samer - School of Arts and Sciences**
Ph.D., Mathematics, Syracuse University, 1991.
- Hachem, Aff - School of Business**
B.A., Hospitality Management, The Business and Computer University College, 2005.
- Haddad, Elie - School of Architecture and Design**
Ph.D., Architecture, University of Pennsylvania, 1998.
- Hage, Nermine - School of Arts and Sciences**
M.A., Education, American University of Beirut, 1997.
- Haidar, Mona - School of Medicine**
M.D., American University of Beirut, 2003.
M.P.H., Public Health, Harvard University, 2009.
- Halawi, Leila - School of Business**
D.B.A., Information Technology Management, Nova Southeastern University, 2005.
- Hamalian, Carole - School of Medicine**
M.D., Saint Joseph University, 2003.
Pathology, Rene Descartes University, 2006.
- Hamdan, May - School of Arts and Sciences**
Ph.D., Mathematics, Syracuse University, 1994.
- Hammoud, Hassan - School of Arts and Sciences**
Ph.D., Social Welfare, Case Western Reserve University, 1981.
- Haraty, Nableh - School of Arts and Sciences**
Ed.D., Education, Brunel University, 2008.
- Haraty, Ramzi - School of Arts and Sciences**
Ph.D., Computer Science, North Dakota State University, 1992.
- Harb, George - School of Business**
Ph.D., Economics, Institut D'Etudes Politiques De Paris, 2007.
- Harfouche, Elie - School of Architecture and Design**
M.S., Architectural History, University College of London, 2006.
D.E.S., Architecture, University of Balamand, 2000.

Harfoushe, Abdel Majid - School of Business

B.A., Business Management, University of Maryland, 1981.

C.P.A., Accounting, Maryland State Board of Public Accountancy, 1984.

Harik, Ramy - School of Engineering

Ph.D., UHP Automatique, Traitement du Signal et Genie, Universite Henri Poincare Nancy I, 2007.

Harmanani, Haidar - School of Arts and Sciences

Ph.D., Computer Engineering, Case Western Reserve University, 1994.

Harmoush, Layla - School of Arts and Sciences

Ph.D., Education Science, Université Saint Joseph, 2000.

Hashwa, Fouad - School of Arts and Sciences

Ph.D., Microbiology, University of Gottingen, 1972.

Hijazi, Abeer - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2001.

Hijazi, Zeinat - School of Medicine

M.B., B.CH., Paediatrics, University of Cairo, 1973.

Hirbli, Kamal - School of Medicine

M.D., Saint Joseph University, 1978.

Endocrinology, Paris Hotel Dieu Hospital, 1981.

Hoffart, Nancy - School of Nursing

Ph.D., Nursing, The University of Virginia, 1989.

Houri, Ahmad - School of Arts and Sciences

Ph.D., Organic Chemistry, Boston College, 1996.

Ibrahim, Raghida - School of Arts and Sciences

M.A., Comparative Literature, Lebanese American University, 2008.

Ismail, Hussein - School of Business

Ph.D., Human Resource Development, The University of Manchester, 2006.

Issa, Camille - School of Engineering

Ph.D., Structural Engineering, Virginia Polytechnic Institute & State University, 1985.

Issa, Jimmy - School of Engineering

Ph.D., Mechanical Engineering, Michigan State University, 2008.

Issa, Leila - School of Arts and Sciences

Ph.D., Computational and Applied Mathematics, Rice University, 2010.

Jabbour, Mona - School of Architecture and Design

M.F.A., Painting, Pratt Institute, 1990.

Jabbara, Joseph, President - School of Arts and Sciences

Ph.D., Political Science, Catholic University of America, 1970.

Jaeger, Mariella - School of Architecture and Design

M.S., Packaging, Design and Marketing, Hochschule der Medien-University of Media, 2008.

Jeha, Mimi - School of Arts and Sciences

Ph.D., Higher Education Administration, North Texas State University, 1978.

Jreidini, Farid - School of Architecture and Design

B.A., Architecture, American University of Beirut, 1984.

Jureidini, Ray - School of Arts and Sciences

Ph.D., Sociology, The Flinders University of South Australia, 1988.

Kabbani, Ahmad - School of Arts and Sciences

Ph.D., Chemistry, University of California-Davis, 1979.

Kabbara, Wissam - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2006.

Kahil, Abdallah - School of Architecture and Design

Ph.D., History of Arts & Archaeology, New York University, 2002.

Kaloustian, Garene - School of Arts and Sciences

Ph.D., Child Development & Family Studies, Purdue University, 2008.

Kaloyeros, Loulwa - School of Arts and Sciences

M.S., Developmental Psychology, University of Manchester, 1987.

Kanbar, Roy - School of Pharmacy

Ph.D., Biologie, Medecine, Santé, Université Claude Bernard-Lyon I, 2008.

Pharm.D., Pharmacy, Université Saint Joseph, 2002.

Karam, Albert - School of Medicine

M.D., Saint Joseph University, 1977.
Nephrology, Henri Mondor France, 1982.

Karam, Gebran - School of Engineering

Ph.D., Materials & Structures, Massachusetts Institute of Technology, 1994.

Karaoui, Lamis - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2005.

Karkoulian, Silva - School of Business

Ed.D., Education, University of Leicester, 2003.

Kassar, Abdel Nasser - School of Business

Ph.D., Mathematics, University of South Western Louisiana, 1991.

Khachan, Victor - School of Arts and Sciences

Ph.D., Applied Linguistics, Macquarie University, 2005.

Khairallah, Maya - School of Medicine

Ph.D., Experimental Medicine, McGill University, 2006.

Khalaf, Roy - School of Arts and Sciences

Ph.D., Biology, State University of New York, 2001.

Khalife, Joseph - School of Arts and Sciences

B.A., Musicology, Université Saint-Esprit Kaslik, 1991.

Khalifeh, Joseph - School of Arts and Sciences

M.S., Electrical & Computer Engineering, North Carolina State University, 1986.

Katcherian, Grace - School of Nursing

M.S., Nursing, American University of Beirut, 2007.

Khazen, Georges - School of Arts and Sciences

Ph.D., Neurosciences, Ecole Polytechnique – Federale de Lausanne, 2011.

Khodr, Bilal – School of Medicine

M.D., American University of Beirut, 1993.
Pediatrics, State University of New York, 1994.
Pediatrics, Georgetown University Medical Centre, 1996.

Neonatal-Perinatal Medicine, Harvard Medical School, 1997.

Pediatrics Hematology-Oncology, University of Florida, 2004.

Khoury, Alfred - School of Medicine

M.D., Lebanese University, 1990.

Orthopedics Surgery, Lebanese University, 1996.

Sport Surgery, Pitie-Salpetriere Hospital, 1997.

Khoury, Michel - School of Engineering

Ph.D., Mechanical Engineering, Lehigh University, 2004.

Khoury, Nada - School of Architecture and Design

Ph.D., Environmental Design, Université de Montreal, 2008.

Khoury, Tarek - School of Architecture and Design

M.F.A., Graphic Design, Boston University, 2002.

M.A., Visual Communication, Central England in Birmingham, 2000.

Khuri, Richard - School of Arts and Sciences

Ph.D., Philosophy, University of California, 1986.

Kikano, Raghid - School of Medicine

M.D., Université Saint Joseph, 2003.

Radiology, Université Saint Joseph, 2008.

Imagerie medicale, CHU Mondor, 2008.

Vascular and interventional radiology, Cleveland Clinic, 2010.

Neuroradiology, The University of Chicago-Medical center, 2011.

Kilany, Hala - School of Medicine

M.D., Lebanese University, 1993.

Internal Medicine, Lebanese University, 1995.

Nephrology, Lebanese University, 1998.

Kiprianos, Joseph - School of Architecture and Design

Ph.D., Architecture, University of Natal, 2004.

Knio, Mona - School of Arts and Sciences

Ph.D., Theatre Studies, The University of Leeds, 1994.

Koniski, Marie-Louise - School of Medicine

M.D., Saint Joseph University, 1976.

Pulmonary and Critical Care, Henri Mondor Hospital, 1980.

Korfali, Samira - School of Arts and Sciences

Ph.D., Chemistry, University of Bradford, 1999.

Kouatli, Issam - School of Business

Ph.D., Mechanical Engineering, The University of Birmingham, 1990.

Ladki, Said - School of Business

Ph.D., Human Nutrition & Foods, Virginia Polytechnic Institute & State University, 1993.

Lahoud, Antoine - School of Architecture and Design

D.E.S.S., Restauration et Conservation, Lebanese University, 2000.

D.E.A., Architecture - Aménagement de L'Espace, Ecole d'Architecture de Nancy, 1989.

Lahoud, Bassam - School of Architecture and Design

M.A., Fashion Photography, Click Up, 1992.

Maalouf, Adoni - School of Arts and Sciences

M.A., Advanced Theatre Practice, The Central School of Speech and Drama, 2004.

Maalouf, Ruth - School of Architecture and Design

M.A., Design, Royal College of Art, 1968.

Maamari, Bassem - School of Business

D.B.A., Business Administration, Grenoble Ecole de Management, 2010.

Mahfoud, Daniel - School of Medicine

M.D., Saint Joseph University, 1990.

Radiology, Université Rene Descartes, Paris V, 1995.

Majdalani, Michel - School of Business

M.B.A., Finance, Columbia University, 1985.

M.S., Operations Research, Columbia University, 1984.

M.S., Electrical Engineering, Columbia University, 1983.

Majdalani, Mona C. - School of Arts and Sciences

Ph.D., Curriculum and Instruction, Texas A&M University, 1993.

Makarem, Wassilia - School of Arts and Sciences

M.A., English Literature, American University of Beirut, 1984.

Malik, Habib - School of Arts and Sciences

Ph.D., History, Harvard University, 1985.

Maluf, Ramez - School of Arts and Sciences

Ph.D., History of Science, The University of Oklahoma, 1985.

Mansour, Cedar - School of Business

J.D., Law, West Virginia University, 1991.

Mansour, Nashat - School of Arts and Sciences

Ph.D., Computer Science, Syracuse University, 1992.

Marrouch, Walid - School of Business

Ph.D., Applied Economics, HEC Montreal, 2009.

Marroum, Marianne - School of Arts and Sciences

Ph.D., Comparative Literature, Purdue University, 1993.

Matar, Maroun - School of Medicine

M.D., Lebanese University, 1996.

Pediatrics, Lebanese University, 1999.

Neonatology, Institut de Puericulture de Paris, Antoine Beclere Hospital, 2001.

Pediatric Cardiology, René Descartes University, 2002.

McGill, John - School of Business

Ph.D., Management Science, University of Massachusetts, 1992.

Messarra, Leila - School of Business

Ed.D., Management, University of Leicester, 2007.

Mikdashi, Tarek - School of Business

Ph.D., Education (Mathematics), The University of Michigan, 1979.

Milane, Aline - School of Pharmacy

Ph.D., Pharmacology, Université Paris Sud 11, 2009.

Mohsen, Nadim - School of Arts and Sciences

D.E.A., Political Sociology, Lebanese University, 2007.

Maitrise, Social Development Lebanese University, 2002.

Mohsen, Raed - School of Arts and Sciences

Ph.D., Interpersonal & Public Communication, Bowling Green State University, 1987.

Mokhbat, Jacques - School of Medicine

M.D., Saint Joseph University, 1977.

Clinical Microbiology, Saint Joseph Hospital, 1978.

Internal Medicine, Saint Michael Medical Centre, 1981.

Infectious Diseases, University of Minnesota, 1983.

- Mouawad, Nelly - School of Arts and Sciences**
Ph.D., Natural Sciences, University of Cologne, 2005.
Ph.D., Astrophysics, Planetology, Sciences and Spatial Techniques, University Bordeaux 1, 2001.
- Mouawad, Ray - School of Arts and Sciences**
Ph.D., History, Université Saint Joseph, 1991.
- Moubarak, Walid - School of Arts and Sciences**
Ph.D., Political Science, Indiana University, 1979.
- Moujaes, Samar - School of Arts and Sciences**
Ph.D., Arabic Studies, Université de Paris-Sorbonne, 1997.
- Moukaddem Baalbaki, Annelie - School of Business**
M.B.A., Marketing, American University of Beirut, 1996.
- Mourad, Azzam - School of Arts and Sciences**
Ph.D., Electrical and Computer Engineering, Concordia University, 2009.
- Mroueh, Mohammad - School of Pharmacy**
Ph.D., Pharmacology, The University of Houston, 1992.
- Na'was, Tarek - School of Arts and Sciences**
Ph.D., Medical Sciences, American University of Beirut, 1983.
- Nabhani, Mona - School of Arts and Sciences**
Ed.D., Education, University of Leicester, 2003.
- Naccache, Ziad - School of Architecture and Design**
M.F.A., Painting, Rhode Island School of Design, 2007.
- Nahas, Anna - School of Medicine**
Ph.D., Infectious Diseases, Karolinska Institutet, 2007.
M.D., Karolinska Institutet, 1996.
- Naja, Hassan - School of Business**
M.B.A., Aviation, Embry-Riddle Aeronautical University, 1981.
- Nakad, Zahi - School of Engineering**
Ph.D., Computer Engineering, Virginia Polytechnic Institute & State University, 2003.
- Naoum, Joseph - School of Medicine**
M.D., Vanderbilt University, 1998.
General Surgery, University of Texas, 2003.
Vascular Surgery, Baylor College of Medicine, 2007.
- Naous, Ghada - School of Arts and Sciences**
M.S., Chemistry, American University of Beirut, 1996.
- Nasr, George - School of Engineering**
Ph.D., Electrical Engineering, University of Kentucky, 1988.
- Nasrallah, Therese - School of Arts and Sciences**
M.S., English Language & Literature, Mankato State University, 1987.
- Nassar, Lina - School of Arts and Sciences**
Ph.D., Theater Studies, Université de la Sorbonne Nouvelle, 1995.
- Nasser, Rima - School of Medicine**
M.D., Duke University, 1996.
Orthopaedic Surgery, University of Illinois, 2001.
Adult reconstruction, Illinois Bone and Joint institute, 2002.
- Nasser, Selim - School of Medicine**
M.D., Saint Joseph University, 1992.
Pathology, Harvard Medical School, 2001.
- Nasser, Soumana - School of Pharmacy**
Pharm.D., Pharmacy, University of Rhode Island, 2001.
- Nauffal, Diane Issa - School of Arts and Sciences**
Ph.D., Education Administration & Policy, University of Birmingham, 2005.
- Nour, Chadi - School of Arts and Sciences**
Ph.D., Math, University Claude Bernard, 2003.
- Obeid, Samir - School of Arts and Sciences**
M.S., Computer Science, Lebanese American University, 1998.
- Osta, Iman - School of Arts and Sciences**
Ph.D., Math & Computer Education, Université Joseph Fourier, 1988.
- Ouass, Iyad - School of Engineering**
Ph.D., Computer Engineering, University of Cincinnati, 2002.
- Ouass, Makram - School of Arts and Sciences**
Ph.D., Conflict Analysis & Resolution, George Mason University, 2009.
- Oueini, Ahmad - School of Arts and Sciences**
Ed.D., International Education Development, Columbia University, 1994.

Pempedjian, Giselle - School of Arts and Sciences

M.S., Educational Leadership, University of Leicester, 2008.

Prescott-Decie, Brian - School of Arts and Sciences

M.A., Education, The University of Oxford, 1977.

Raad, Elias - School of Business

Ph.D., Finance, The University of Alabama, 1989.

Rahme, Suraya - School of Arts and Sciences
M.A., TESOL, University of New South Wales, 2005.

Ramadan, Wijdan - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2000.

Ramia, Ely - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2009.

Reda, Ayman - School of Business

Ph.D., Economics, Michigan State University, 2005.

Riachi, Naji - School of Medicine

M.D., American University of Beirut, 1986.

Internal Medicine, Mount Sinai Medical Center, 1991.

Neurology, University Hospitals of Cleveland, 1994.

Epilepsy and Clinical Neurophysiology, Cleveland Clinics Foundation, 1996.

Rizk, Hikmat - School of Arts and Sciences

M.D., Surgery, University of Heidelberg, 1974.

Rizk, Tamina - School of Medicine

M.D., Saint Joseph University, 2004.

Radiology, Saint Joseph University, 2009.

Oncology and Breast Imaging, Henri Mondor UH, 2010.

Rizk-Jamati, Sandra - School of Arts and Sciences

Ph.D., Biology, University of Glasgow, 2000.

Romanos, Antoine - School of Architecture and Design

B.Arch., Architecture, Ecole Nationale Supérieure des Beaux-Arts, 1969.

Rowayheb, Marwan - School of Arts and Sciences

Ph.D., Political Science, University of London, 2001.

Saab, Nada - School of Arts and Sciences

Ph.D., Religious Studies-Islam, Yale University, 2003.

Saab, Samer - School of Engineering

Ph.D., Electrical Engineering, University of Pittsburgh, 1992.

Saab, Yolande - School of Pharmacy

Ph.D., Pharmacy, Brighton University, 2004.

Pharm.D., Pharmacy, Lebanese American University, 1999.

Saad, Aline - School of Pharmacy

Pharm.D., Pharmacy, Wayne State University, 2004.

Sadaka, George - School of Arts and Sciences

M.A., English Literature, American University of Beirut, 2002.

Salamey, Imad - School of Arts and Sciences

Ph.D., Political Science, Wayne State University, 2003.

Salem, Elise - School of Arts and Sciences

Ph.D., English Literature, The University of North Carolina at Chapel Hill, 1985.

Salloukh, Bassel - School of Arts and Sciences

Ph.D., Political Science, McGill University, 2000.

Salman, Nabil - School of Arts and Sciences

B.A., Business Administration, Central State University, 1980.

B.A., English, Central State University, 1970.

Samaha, Roula - School of Medicine

M.D., American University of Beirut, 1991.

Internal Medicine, American University of Beirut, 1994.

Infectious Diseases, Cleveland Clinic Foundation, 1996.

Infectious Diseases in the Immunocompromised Patients, MD Anderson Cancer Centre, 1997.

Samia, Elie - School of Arts and Sciences

M.A., Political Science, American University in Cairo, 1989.

Sanchez-Ruiz, Maria-Jose - School of Arts and Sciences

Ph.D., Psychology, Universidad Autonoma De Madrid, 2009.

Sarouphim, Ketty - School of Arts and Sciences

Ph.D., Educational Psychology, The University of Arizona, 1997.

Semaan, Mars - School of Arts and Sciences

Ph.D., Physics, Texas Christian University, 1982.

Serhal, Wassim - School of Medicine

Pharm.D., Pharmacie, Université de Reims Champagne-Ardenne, 1998.

Laboratory Medicine, CHU Reims, 1998.

Sfeir, Abdallah - School of Engineering

Ph.D., Mechanical Engineering, The University of California, 1969.

Shabb, Bassem - School of Medicine

M.D., American University of Beirut, 1982.

Pathology and Laboratory Medicine, University of Texas, 1983.

Surgery, University of Texas, 1988.

Residency- Cardiothoracic Surgery, The University of Texas, 1990.

Shahin, Wassim - School of Business

Ph.D., Economics, Indiana University, 1986.

Shahine, Mona - School of Arts and Sciences

M.A., Education, American University of Beirut, 1996.

Shami, Samira Anais - School of Arts and Sciences

M.A., Teaching English as a Foreign Language, Southern Illinois University at Carbondale, 1975.

Sharafeddine, Sanaa - School of Arts and Sciences

Ph.D., Electrical Engineering, Munich University of Technology, 2005.

Sheikh Taha, Marwan - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 1999.

Sholy, Lydia - School of Pharmacy

Pharm.D., Pharmacy, Creighton University, 1991.

Shweiry, Zein - School of Arts and Sciences

M.A., English Literature, American University of Beirut, 2007.

Skulte-Ouaiss, Jennifer - School of Arts and Sciences

Ph.D., Government & Politics, University of Maryland, 2005.

Slim, Bassem - School of Business

M.S., Hospitality Management, University of Houston, 1993.

Sreih, Josiane - School of Business

Ph.D., Management, Université de Paris, 1996.

Srouji, Hanibal - School of Architecture and Design

M.F.A., Fine Arts, Concordia University, 1987.

Sukkariah-Haraty, Ola - School of Nursing

Ph.D., Nursing, Northeastern University, 2011.

Taan, Yasmine - School of Architecture and Design

M.S., Communications Design, Pratt Institute, 1995.

Tabar, Paul - School of Arts and Sciences

Ph.D., Sociology/Anthropology, Macquarie University, 1990.

Tabbara, Mazen - School of Engineering

Ph.D., Structural Engineering, Northwestern University, 1990.

Takche, Jean - School of Arts and Sciences

Ph.D., Mathematics, Pennsylvania State University, 1984.

Taleb, Robin - School of Arts and Sciences

Ph.D., Medical Science, University of Western Sydney, 2009.

Tannir, Dani - School of Engineering

Ph.D., Engineering, McGill University, 2010.

Tarcha, Walid - School of Medicine

M.D., Saint Joseph University, 1979.

Cardiology, University Pierre and Marie Curie, 1983.

Invasive Cardiology, Hopital Tenon, 1984.

Tjapkes-Langewerf, Lydia - School of Arts and Sciences

M.PHIL., Philosophy, University of Cambridge, 2006.

M.A., History, University of Groningen, 2004.

Tokajian, Sima - School of Arts and Sciences

Ph.D., Medical Science, University of Newcastle Upon Tyne, 2003.

Toukan, Amjad - School of Business

Ph.D., Economics, University of California, 2007.

Touma, Rony - School of Arts and Sciences

Ph.D., Applied Mathematics, University of Montreal, 2005.

Touma, Walid - School of Business

Ph.D., Computer Engineering, The University of Texas at Austin, 1992.

Tabelsi, Samir - School of Business

Ph.D., Accounting, HEC Montreal, 2005.

Turk Ariss, Rima - School of Business

Ph.D., Finance, University of Wales, Cardiff, 2004.

Vassilenko, Larissa - School of Arts and Sciences

Ed.D., Education, University of Leicester, 2005.

Vitale, Edward - School of Business

Ph.D., Marketing, University of IOWA, 1973.

Wakim, Gerard - School of Medicine

M.D., Saint Joseph University, 1977.

Paediatrics, University of Paris, 1985.

Wex, Brigitte - School of Arts and Sciences

Ph.D., Photochemical Sciences, Bowling Green State University, 2005.

Yammine, Joseph - School of Medicine

M.D., Saint Joseph University, 1974.

Pulmonary, Université René Descartes, Paris V, 1977.

Yusuf Karamah, Amy - School of Arts and Sciences

M.A., English Language, American University of Beirut, 2004.

M.A., Archaeology, University of London, 1995.

Zakka, Janine - School of Business

M.B.A., Business Administration, American University of Beirut, 1977.

C.P.A., Accounting, State of Montana, 1998.

Zalloua, Pierre - School of Medicine

Ph.D., Molecular & Cellular Biology, University of California, 1996.

Zantout, Zaher - School of Business

Ph.D., General Business Administration, Drexel University, 1990.

Zeaiter, Hussein - School of Business

Ph.D., Economics, University of Wisconsin-Milwaukee, 2008.

Zebian, Samar - School of Arts and Sciences

Ph.D., Psychology, The University of Western Ontario, 2001.

Zeeni, Nadine - School of Arts and Sciences

Ph.D., Human Nutrition, Agro Paris Tech, 2009.

Zeenny, Rony - School of Pharmacy

Pharm.D., Pharmacy, Lebanese American University, 2005.

Zeineh, Salim - School of Medicine

M.D., American University of Beirut, 1977.

General Surgery, American University of Beirut, 1979.

Urology, American University of Beirut, 1982.

Basic Urology, University of California, 1983.

Zeitouni, Latif - School of Arts and Sciences

Ph.D., Semiotics, Université d'Aix Marseille I, 1985.

Ph.D., General Linguistics, Université Saint Joseph, 1980.

Zouein, Pierrette - School of Engineering

Ph.D., Civil Engineering, The University of Michigan, 1996.

Zreik, Tony - School of Medicine

M.D., American University of Beirut, 1986.

Obstetrics & Gynaecology, Yale University, 1994.

Reproductive endocrinology, Yale University, 1996.

M.B.A. Business Administration, Ecole Supérieure des Affaires, 2004

Presidents and Administrative Officers

FORMER PRESIDENTS

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

Cornelius B. Houk
Feb. 1967–June 1967 (Acting)

Marie Sabri
1967–1969 (Acting)

William H. Schechter
1969–1973

Albert Y. Badre
1973–1982

Riyad F. Nassar
1982–2004

PRESIDENT AND ADMINISTRATIVE OFFICERS

PRESIDENT

Joseph G. Jabbra, Ph.D.
President

UNIVERSITY OFFICERS

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Provost

Elise Salem, Ph.D.
Vice President for Student Development & Enrollment Management

Cedar Mansour, J.D.
Vice President, General Counsel and Special Assistant to the President

Emile Lamah, B.S., C.P.A.
Vice President for Finance

Roy Majdalani, B.E., M.B.A.
Vice President for Human Resources and University Services

Philippe Frossard, Ph.D.
Dean of the School of Arts and Sciences

Said El-Fakhani, Ph.D.
Dean of the School of Business

George Nasr, Ph.D.
Dean of the School of Engineering

Lynn Eckert, M.D.
Interim Dean of the School of Medicine

Pierre Zalloua, Ph.D.
Interim Dean of the School of Pharmacy

Nancy Hoffart, Ph.D.
Founding Dean of the School of Nursing

Elie Badr, Ph.D.
Assistant Provost for Academic Programs
Interim Dean of the School of Architecture & Design

Sami Baroudi, Ph.D.
Assistant Provost for Faculty Affairs

Raed Mohsen, Ph.D.
Dean of Students, Beirut

Mars Semaan, Ph.D.
Dean of Students, Byblos

Presidents and Administrative Officers

George Hamouche, M.S.

Assistant Vice President for Facilities
Management

Sonia Hajjar, Ph.D.

Assistant Vice President for Finance / Budget
& Grants

Charles Abu Rjeily, Licence,

Assistant Vice President for Finance /
University Comptroller

Peggy Hanna, M.B.A.

Assistant Vice President for Marketing and
Communications

Abdo Ghie, M.A.

Assistant Vice President for Enrollment
Management

Camille Abou-Nasr, B.E.

Assistant Vice President for IT

Nassib Nasr, M.P.H.

Assistant Vice President for Development,
Middle East and Europe

Tarek Na'was, Ph.D.

Faculty Senate Chair

Camille Issa, Ph.D.

Faculty Senate Vice Chair

Sami Garabedian, M.S.

Faculty Senate Secretary

ACADEMIC OFFICERS

SCHOOL OF ARCHITECTURE & DESIGN

Interim Dean

Elie Badr, Ph.D.

Assistant Dean

Elie Haddad, Ph.D.

Chairs

Maroun Daccache, Ph.D., Architecture &
Interior Design

Randa Abdel Baki, M.F.A., Graphic Design

Rached Bohsali, D.E.A.A., Fine Arts &
Foundation Studies

Associate Chairs

Tarek Khoury, M.F.A., Graphic Design

Farid Jureidini, B.Arch., Fine Arts & Foundation
Studies

SCHOOL OF ARTS & SCIENCES

Dean

Philippe Frossard, Ph.D.

Assistant Dean

Nashat Mansour, Ph.D., Beirut

Nahla Bacha, Ph.D., Byblos

Chairs

Beirut

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Ahmad Kabbani, Ph.D., Natural Sciences

Huda Abdo, Ed.D., Social Sciences

Iman Osta, Ph.D., Education

Samer Habre, Ph.D., Computer Science and
Mathematics

Mona Knio, Ph.D., Communication Arts

Byblos

Costantine Daher, Ph.D., Natural Sciences

Danielle Azar, Ph.D., Computer Science and
Mathematics

Nahla Bacha, Ph.D., Humanities

Makram Ouais, Ph.D., Social Sciences

Presidents and Administrative Officers

SCHOOL OF BUSINESS

Dean

Said El-Fakhani, Ph.D.

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Abdallah Dah, Ph.D., Beirut

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Elias Raad, Ph.D., Banking & Finance and Accounting / Director of the Executive Master of Business Administration Program

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SCHOOL OF ENGINEERING

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Jean Chatila, Ph.D., Civil Engineering

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SCHOOL OF PHARMACY

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Pierre Zalloua, Ph.D.

Associate Dean

Imad Btaiche, Pharm.D., Academic Affairs

Acting Assistant Dean

Jad Abdallah, Ph.D., Student Affairs

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Aline Saad, Pharm.D., Pharmacy Practice

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Lynn Eckert, M.D.

Associate Dean

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Director

Pierre Zalloua, Ph.D., Director of the Genomics and Proteomic Lab

SCHOOL OF NURSING

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Myrna Doumit, Ph.D.

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Diane Nauffal, Ph.D., Director

UNIVERSITY ENTERPRISE OFFICE

Walid Touma, Ph.D., Director

INSTITUTE FOR WOMEN'S STUDIES IN THE ARAB WORLD

Dima Dabbous-Sensenig, Ph.D., Director

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Joseph Hage, M.A., Director, Byblos

Presidents and Administrative Officers

STUDENT DEVELOPMENT

Dean of Students

Raed Mohsen, Ph.D., Beirut

Mars Semaan, Ph.D., Byblos

Athletics

Sami Garabedian, M.S., Director, Beirut

Joe Moujaes, B.E., Director, Byblos

Residence Hall

Hiam Musharrafieh, M.A., Supervisor, Beirut

Suzy Saba, T.S., Supervisor, Byblos

Enrollment Management

Abdo Ghie, M.P.A., Assistant Vice President for Enrollment Management

Admissions

Nada Badran, M.S., Director, Beirut

Michel Najjar, M.S., Director, Byblos

Financial Aid & Scholarships

Samir Obeid, M.S., Director, Beirut

Ghada Abi Fares, M.B.A., Director, Byblos

Registrar

Annie Lajinian-Magarian, M.A.

Fouad Salibi, B.A.

Outreach & Civic Engagement

Elie Samia, M.A., Executive Director

CONTINUING EDUCATION PROGRAM & TESTING SERVICES

Mimi Melki Jeha, Ph.D., Director of Continuing Education Program, Byblos, Director of University Testing Services, Byblos

Michel Majdalani, M.B.A., Director of Continuing Education Program, Beirut

FINANCE OFFICERS

Budget & Financial Planning

Sonia Hajjar, Ph.D., Assistant Vice President for Finance / Budget & Grants

Grants & Contracts

Sonia Hajjar, M.B.A., Assistant Vice President for Finance / Budget & Grants

Comptroller

Charles Abu Rjeily, License, Assistant Vice President for Finance / University Comptroller

Business Office

Naji Medlej, D.E.A., Comptroller, Beirut

Michel Chahine, M.S., Comptroller, Byblos

HUMAN RESOURCES & UNIVERSITY SERVICES OFFICERS

Human Resources

Joseph Michael, D.G.E.S., Director, Byblos

Facilities Management

George Hamouche, M.S., Assistant Vice President for Facilities Management

Shaheen Bou Jaoude, B.E., Executive Director, Project Management and Contract Administration

Joseph Shebaya, D.I., Director, Planning and Renovations

Wissam Mansour, B.E., Director, Physical Plant, Byblos

Information Technology

Camille Abou-Nasr, B.E., Assistant Vice President for IT

Roula Matta Hage, D.I., Director of IT Applications and Solutions

Nicolas Majdalani, License, Director, IT Infrastructure and Support

Brigitte Baroudy, B.S., Director, IT Security

Hamid Saliba, Diplome, Director of IT Network, Telecom & Multimedia

Presidents and Administrative Officers

Business Services

Salim Chehab, B.E., Executive Director of Business Services

Jassem Othman, B.E., Director of Auxiliary Services

Jean Rizk, M.B.A., Director of Supply

Nehmat Aoun, B.S., Director of Hospitality Services

Ghassan Atwi, B.S., Director of Purchasing, Beirut

Antoine Faris, M.S., Director of Purchasing, Byblos

Protection

Ahmad Hassouna, Director of Protection

UNIVERSITY ADVANCEMENT OFFICERS

Peggy Hanna, M.B.A., Assistant Vice President for Marketing and Communications

Nassib Nasr, M.P.H., Assistant Vice President for Development, Middle East and Europe

Robert Hollback, B.S., Assistant Vice President for Development,

Christian Oussi, M.A., Executive Director of Public Relations

Abdallah Al Khal, M.B.A., Executive Director of Alumni Relations

Amal Abdel Massih, B.S., Director of Advancement Services

INTERNAL AUDIT OFFICE

Internal Audit

Khaled Abul-Husn, M.B.A., C.P.A., Director

Tuition fees for the academic year 2012 - 2013

PROGRAM	UNDERGRADUATE Per Term rate(**)	Per Credit rate
SCHOOL OF ARTS & SCIENCES		
Undergraduate programs		
Intensive English	6,210	520
Freshman	6,590	550
Arts		
Education	6,590	550
English	6,590	550
Political Science	6,590	550
Liberal Arts	6,590	550
Social Work	6,590	550
Teaching Diploma	6,590	550
Psychology	6,590	550
Philosophy	6,590	550
History	6,590	550
Communication Arts	7,070	590
Sciences		
Biology	7,070	590
General Science	7,070	590
RCD	7,070	590
Chemistry	7,070	590
Computer Science	7,070	590
Math	7,070	590
Math Education	7,070	590
Science Education	7,070	590
Nutrition	7,070	590
External Degree Program		
Excelsior College Degree	7,070	590
Graduate programs (***)		
Arts		
International Affairs		604
Comparative Literature		604
Education		604
Sciences		
Molecular Biology		621
Computer Science		621
SCHOOL OF BUSINESS		
Undergraduate Program	7,400	616
Graduate Program(***)		621
Executive Master of Business Administration(***)		621

Tuition fees for the academic year 2012 - 2013

SCHOOL OF ENGINEERING		
Undergraduate Program		
Civil Engineering	7,600	634
Computer Engineering	7,600	634
Industrial Engineering	7,600	634
Electrical Engineering	7,600	634
Mechanical Engineering	7,600	634
Graduate Program (***)		
Civil and Environmental Engineering		647
Computer Engineering		647
Industrial Engineering and Engineering Management		647
SCHOOL OF ARCHITECTURE & DESIGN		
Undergraduate Program		
Fine Arts	6,460	539
Interior Design	7,400	616
Graphic Design	7,400	616
Interior Architecture	7,700	643
Interior Architecture- Final year	7,700	643
Bachelor of Architecture	7,700	643
SCHOOL OF NURSING		
Undergraduate Program		
Nursing - New students (2012-2013)	5,650	470
Nursing - Continuing students (2011-2012)	5,400	450
Nursing- Continuing Students (2010-2011)	5,250	438
SCHOOL OF PHARMACY		
Undergraduate Program	8,100	675
		ANNUAL TUITION
Doctor of Pharmacy - Pharm.D.		18,600
SCHOOL OF MEDICINE		
M.D. Program		ANNUAL TUITION
New students - Year 2012-2013 - Annual tuition		26,250
Continuing students - Year 2011-2012 - Annual tuition		25,235
Continuing students Year 2010-2011- Annual tuition		24,500
Continuing students Year 2009-2010- Annual tuition		23,500
PROGRAM	UNDERGRADUATE PER TERM RATE(**)	PER CREDIT RATE
Special Students	8,100	675
Doctoral Research Fees - Sciences	3,300	
Doctoral Research Fees - Humanities	550	

(*) Exchange rate: 1 US Dollar = Lebanese Pounds 1,507.50

(**) 12 or more credit hours per term

(***) Graduate Programs per credit

Financial Aid

Driven by its mission, values and vision, LAU is committed to extend financial aid to needy and qualified students. In this respect, and within budget limitation, financial aid aims at providing equal opportunities to all students regardless of their nationality, race, gender, religion or ethnicity.

Financial aid is mainly a work-study program granted to full time undergraduate students based on their financial need and academic merit. The Financial Aid and Scholarships Office collects data through the application, supporting documents and a personal interview with the student and his/her parents/guardians. The data is then assessed through a system and the result is used as a guideline in the decision-making process. Final decisions are taken by a committee formed by LAU administrators and a faculty representative. Loans, scholarships and grants are complementary to the program.

UNDERGRADUATE STUDENTS

I. NEED-BASED AID

- a. Work-Aid Program:** All need-based financial aid recipients are required to work a certain number of hours on campus. Besides helping students cover their financial need, the work-study program helps them acquire work skills, develop discipline, and promote a sense of personal responsibility and accomplishment.
- b. Loans:** to undergraduate students are extended by the university as part of the total financial aid package. 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 the grace period, a service charge equivalent to 50 percent of the market credit interest rate will be charged. Moreover, collection incentives are available for students willing to settle their loans prior to maturity.
- c. Grants:** In case of high academic performance and upon loan request, grants are extended as part of the need-based aid in lieu of some or the entire loan amounts.

II. SCHOLARSHIPS (MERIT-BASED AID)

Scholarships are awarded to academically strong students during the first academic year of their enrollment and in subsequent years to continuing students in line with set eligibility criteria. In 2012-2013 the Entrance and Honor Scholarships will range between 20 and 50%.

a. Entrance Scholarships

Awarded to newly admitted students during the first academic year of their enrollment ending in September based on a combined rating of their high school and SAT grades. This scholarship is sustained throughout that academic year provided the student maintains a CGPA ≥ 3.00 .

b. Honor Scholarships

Awarded to students after the lapse of the first academic year and upon completion of 24 credits at LAU with a CGPA ≥ 3.50 , or ≥ 3.20 if budget permits.

c. Merit Scholarships

Awarded to a number of outstanding high school students covering 100% of tuition fees to encourage and promote academic excellence. Candidates are nominated by their high schools and are requested to fill out a merit scholarship application. Selection and continuity depend on set criteria.

d. Athletic Scholarships

Awarded to exceptional students with recognized promising athletic talents. Candidates should fill out the web posted application and submit it with the relevant supporting documents to the Financial Aid and Scholarships office.

III. GRANTS

- a. Program Grants:** Granted to students majoring in selected fields.
- b. Restricted Grants:** These grants are made available by individual donors and/or organizations. A separate application should be filled out by interested candidates and selection is made according to each donor's publicized conditions.
- c. Hardship Grants:** Granted to "Very Needy" students according to set criteria.
- d. Minister's Dependents Grants:** Granted to eligible dependents of Ministers from the Presbyterian Synod for Syria and Lebanon.
- e. Dependents' Grants:** Granted to dependents of full-time faculty and staff.

IV. STUDENT EMPLOYMENT

LAU offers employment to students who have acquired work skills as a supplementary form of financial aid catering to the needs of the university cost centers in providing additional workforce. Applying is accessible online at <https://csglau.lau.edu.lb/career/std/>. Placement and hourly rates depend on the student's skills and academic level.

SCHOOL OF MEDICINE STUDENTS

- a. **Merit Scholarships and Grants:** School of Medicine students are eligible for Merit Scholarships and Grants as described above.
- b. **Bank Loans:** Agreements with certain banks are arranged allowing Lebanese Students enrolled in the School of Medicine to benefit from interest free loans during their tenure at LAU. The interest amount will be borne by the university up until the students' exit date after which the interest will have to be covered by the students themselves.

PHARMD STUDENTS

Pharm D students are eligible for Scholarships, Grants and Bank Loans as per the above descriptions.

GRADUATE STUDENTS

- a. **Graduate Assistantships** Graduate students may apply for assistantships at the Dean's Office of the School to which the student is applying. Graduate assistantship covers 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 merit.
- b. **Student Employment** is also offered to graduate students as previously stated under point IV above.

FEDERAL LOANS FOR U.S. CITIZENS

LAU participates in the U.S. Federal Direct Loan Program, where the U.S. Department of Education acts as the lender. Students with U.S. citizenship (or green card holders) who are interested in this type of financial assistance must first submit a Free Application for Federal Student Aid (FAFSA) online at www.fafsa.ed.gov using the school code for LAU, G41133. U.S. Federal Direct Loans are offered to both undergraduate & graduate students except for Medical, PharmD, Nursing, students in a "Special" status and students enrolled less than 6 credit hours. More information about this program is available on the LAU website at <http://aid.lau.edu.lb/us-federal-loans/>.

You may also contact the Federal Financial Aid Coordinator, Ms. Linda Strauss, anytime at: Linda.Strauss@lau.edu.lb.

APPLYING FOR FINANCIAL AID

To apply for financial aid, undergraduate students must fill out the Application for Financial Aid, available online, and submit it with the required documents, within set deadlines. The applicant must then schedule an interview for him/her and a parent/guardian.

Financial aid is granted for one regular academic year, and may be renewed, upon re-application, if the student's eligibility is maintained.

For more information check the LAU website: <http://aid.lau.edu.lb/undergraduate/aid/> or contact the Financial Aid and Scholarships Offices on either campus.

Beirut Campus:

Tel: +961 1 786 456 / 786 464
+961 3 791 314 Ext.1461

Fax: +961 1 786456 Ext. 1662

Email: finaid.beirut@lau.edu.lb

Byblos Campus:

Tel: +961 9 547254 / 547262
+961 3 791 314 Ext. 2159

Fax: +961 1 791630 Ext. 2157

Email: finaid.byblos@lau.edu.lb

Centers and Institutes

INSTITUTE FOR WOMEN'S STUDIES IN THE ARAB WORLD (IWSAW)

This institute was established and sponsored by LAU, and is located on the Beirut campus. IWSAW is a center for documentation, research, action programs, and the communication of issues and data, relating to Arab women and children.

UNIVERSITY ENTERPRISE OFFICE

The University Enterprise Office (UEO) serves as a strategic advisor to and coordinator of LAU's projects throughout the Middle East. The office provides advisory services to universities in the Middle East and North Africa region. Consulting services include: strategic, operational and academic planning, accreditation advisory, enrollment management, and implementation and performance-monitoring services.

INSTITUTE FOR BANKING & FINANCE (IBAF)

(Refer to Business school under Centers and Institutes)

INSTITUTE FOR MEDIA TRAINING & RESEARCH (IMTAR)

(Refer to Arts & Science under Centers and Institutes)

INSTITUTE OF FAMILY & ENTREPRENEURIAL BUSINESSES (IFEB)

(Refer to Business school under Centers and Institutes)

INSTITUTE OF HOSPITALITY & TOURISM MANAGEMENT STUDIES (IHTMS)

(Refer to Business school under Centers and Institutes)

HUMAN RESOURCE INSTITUTE

(Refer to Business school under Centers and Institutes)

INSTITUTE FOR PEACE AND JUSTICE EDUCATION (IPJE)

(Refer to Arts & Science under Centers and Institutes)

SOFTWARE INSTITUTE

(Refer to Arts & Science under Centers and Institutes)

SUMMER INSTITUTE FOR INTENSIVE ARABIC & CULTURE (SINARC)

The Summer Institute for Intensive Arabic Language and Culture (SINARC) is a multi-faceted language and cultural immersion program that

welcomes students from all over the world. SINARC offers courses in Arabic language and culture at various levels of proficiency. Each level provides twenty hours per week of intensive classroom instruction, including five hours per week of Lebanese Dialect. Formal language instruction 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. In addition, students partake in a series of excursions to historical, cultural and tourist sites throughout Lebanon. Students have a Summer, Fall and Spring program option:

The six-week Summer program (last week of June - first week of August) is offered at four levels: Elementary, Upper Elementary, Intermediate and Advanced. A separate eight-credit course in Lebanese Dialect will be offered provided there is sufficient enrollment.

The 15-week Fall program (First week of September - Second week of December) is offered at two levels: Intermediate and Advanced. In addition, two special courses are available: Arabic Language Writing Skills and Middle East Challenges of the 21st Century.

The 15-week Spring program (Last week of January - First week of May) is offered at two levels: Intermediate and Advanced. In addition, two special courses are available: Arabic Language Writing Skills and Principles of Translation.

For more information check our website:
<http://www.lau.edu.lb/centers-institutes/sinarc/>

TEACHER TRAINING INSTITUTE (TTI)

(Refer to Arts & Science under Centers and Institutes)

URBAN PLANNING INSTITUTE (UPI)

(Refer to SARd under Institutes)

INSTITUTE FOR WATER RESOURCES & ENVIRONMENTAL TECHNOLOGIES (IWRET)

(Refer to Engineering school under Institutes)

CISCO ACADEMY TRAINING CENTER

(Refer to Engineering school under Institutes)

INSTITUTE OF ISLAMIC ART & ARCHITECTURE (IIAA)

(Refer to SARd under Institutes)

Centers and Institutes

INSTITUTE FOR DIPLOMACY & CONFLICT TRANSFORMATION (IDCT)

(Refer to Arts & Science under Centers and Institutes)

INSTITUTE FOR MIGRATION STUDIES (IMS)

(Refer to Arts & Science under Centers and Institutes)

LAU INTSTITUE FOR HUMAN GENETICS (LAUIHG)

(Refer to School of Medicine under Institutes)

CENTER FOR PROGRAM & LEARNING ASSESSMENT (CPLA)

This center focuses on quality improvement through addressing the teaching, learning and outcome assessment practices. It is a regional pioneer in providing support for faculty to develop excellence in teaching and is committed to student learning. CPLA is managing the Teaching Learning and Outcome Assessment (TLOA) Project funded by the Ford Foundation, which focuses on liberal and general education programs.

CENTER FOR LEBANESE HERITAGE (CLH)

CLH aims at collecting, preserving and promoting Lebanese heritage in its various forms, including printed material, manuscripts, artifacts, and private possessions of pioneering Lebanese intellectuals. The center disseminates and provides easy access to its assets to students and researchers. It collects, preserves and archives Lebanese heritage materials, and serves as an academic and cultural resource center for research on Lebanese heritage. It also functions as a caucus center for the community on topics concerning Lebanese heritage.



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