

**Faculty of Arts  
and Sciences  
(FAS)**

# Faculty of Arts and Sciences (FAS)

## Officers of the Faculty

Fadlo R. Khuri	President of the University
Zaher Dawy	Provost
Saouma Boujaoude	Interim Dean
Pierre Karam	Associate Dean
Lyall Armstrong	Assistant Dean
Theodore Christidis	Assistant to the Dean
Wassim El-Hajj	Director of E-Learning and Innovation
Sabine El-Khoury	Director of Freshman Program
Bradley Jon Tucker	Registrar, ex-officio
Antoine Sabbagh	Director of Admissions, ex-officio
Fatmeh Charafeddine	Interim University Librarian, ex-officio

## Faculty Administrative Support

Bassel Baker	IT Service Desk Manager
Wadad Batrawi	Administrative Assistant
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Razan Harb	Senior IT Service Delivery Manager
Ghida Itani	Graduate Studies and Career Services Officer
Dina Khattab	Student Services Administrative Officer
Abeer Khoury	Financial Operations Manager
Yasmine Moubasher	Undergraduate Student Officer
Rima Rassi	FAS Research Initiatives and Special Projects Specialist
Nadine Rizk	Faculty and Staff Affairs Manager
Razan Sabbidine	Student Records Administrative Officer
Mohamad Ali Sheikh	Building Operator
Heghnar Tacouhie Yeghiayan	Faculty Affairs and Research Support Officer

## Historical Background

The Faculty of Arts and Sciences was established in 1866, the same year in which the Syrian Protestant College, now the American University of Beirut, was established. On December 13, 1866, the first class was held, attended by sixteen students, and in 1870 the first five students graduated. Arabic, which was the language of instruction since the inception of the college, was replaced by English in 1882.

AUB, in general, and the Faculty of Arts and Sciences, in particular, have survived many crises since 1866, including two world wars, regional and local wars, student strikes and economic crises. In spite of all these hardships, the faculty has continued to develop and maintain its high academic standards.

## Mission

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The Faculty of Arts and Sciences embodies AUB's core commitment to the liberal arts and sciences. It offers undergraduate and graduate programs in the arts, humanities, and social, natural and mathematical sciences, and is dedicated to advanced research in all these domains. Through its freshman and general education programs, it is the University's principal gateway to higher studies and professional education. The faculty, through its teaching and research, promotes free inquiry, critical thinking, academic integrity, and respect for diversity and equality.

## Vision

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Building upon its rich tradition, the Faculty of Arts and Sciences is determined to position itself at the heart of free inquiry in the Middle East. Liberal and critical thinking is central to the faculty's teaching, its research, its engagements with the wider community and its commitment to the thoughtful transformation of all its activities and structures. The faculty's enhanced undergraduate programs will graduate innovators with a breadth of vision who can be agents of positive change wherever they live and work. The faculty will strategically expand its graduate offerings, especially in areas where it can make a distinctive contribution, and it will educate graduate students who are themselves producers of knowledge. The faculty will be recognized internationally for the quality of its research and creative activities in the humanities, social sciences, natural sciences, mathematical sciences and interdisciplinary areas, whether undertaken in response to regional and global needs or to human curiosity and imagination. The faculty will provide a vital forum for open discussion and engage contemporary issues in ways that resonate far beyond our campus walls.

## Graduate Study

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Admission to the graduate programs in the Faculty of Arts and Sciences is competitively based on the applicant's academic record, achievements and research interests. All applicants to graduate study need the recommendation of the academic unit concerned. Academic units may add additional requirements that could assist in their admission recommendations, such as a writing sample, GRE (or GMAT, in the case of the Department of Economics) scores and/or interview. The GRE is required from the following departments only: Biology, Economics, History and Archaeology and Psychology. FAS also offers an MS in Environmental Policy Planning (as part of an Interfaculty Graduate Environmental Sciences Program).

The following includes admissions information specific to the Faculty of Arts and Sciences. Additional requirements are described in the General section on Admissions in this catalogue.

## RCR Requirement

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The Responsible Conduct of Research (RCR) Requirement must be completed by all newly admitted degree-seeking graduate students. The requirement consists of a course that must be completed within the first month and is marked by a passing grade. Failure to fulfill this requirement in a timely manner results in a registration hold that is removed once the requirement has been fulfilled. The specific course/section to be taken is assigned by the student advisor. For more details on the requirement, please refer to page 52. Below is the RCR course listing of FAS.

**RCRA 300      Responsible Conduct of Research in the Humanities      0 cr.**  
 An online RCR course (Responsible Conduct of Research) from the Collaborative Institutional Training Initiative (CITI Program). Required of all graduate students in the humanities. The course “covers core norms, principles, regulations, and rules governing the practice of research.” It consists of the following modules: Research Misconduct, Data Management, Authorship, Peer Review, Mentoring, Using Animal Subjects in Research, Conflicts of Interest, Collaborative Research, Research Involving Human Subjects and Case Study - Data Management. *Every term.*

**RCRA 301      Responsible Conduct of Research in the Sciences      0 cr.**  
 An online RCR course (Responsible Conduct of Research) from the Collaborative Institutional Training Initiative (CITI Program). Required of all graduate students in the sciences. The course “covers core norms, principles, regulations, and rules governing the practice of research.” It consists of the following modules: Research Misconduct, Data Management, Authorship, Peer Review, Mentoring, Using Animal Subjects in Research, Conflicts of Interest, Collaborative Research and Research Involving Human Subjects. *Every term.*

**RCRA 302      Responsible Conduct of Research in the Social Sciences      0 cr.**  
 An online RCR course (Responsible Conduct of Research) from the Collaborative Institutional Training Initiative (CITI Program). Required of all graduate students in the social and behavioral sciences. The course “covers core norms, principles, regulations, and rules governing the practice of research.” It consists of the following modules: Research Misconduct, Data Management, Authorship, Peer Review, Mentoring, Using Animal Subjects in Research, Conflicts of Interest, Collaborative Research and Research Involving Human Subjects. *Every term.*

## Admission as a Regular Graduate Student

An applicant is considered for admission as a regular student to a graduate program if s/he meets the following minimum admission requirements:

An undergraduate average of at least 3.2 (or 80 percent) (or standardized equivalent from other institutions of higher learning) in the major field of study and a cumulative average of at least 2.7 (or 75 percent) (or standardized equivalent) for all work done at the undergraduate level leading to a bachelor’s degree or its equivalent from AUB or another recognized institution of higher learning. Applicants to the Environmental Policy Planning specialization in the Master’s Degree Program in Environmental Sciences are required to have an average of at least 3.2 (or 80 percent) in the last two years of undergraduate study or its equivalent at AUB or other universities as determined by the faculty Graduate Studies Committee.

Further requirements for admission to graduate work are found in the General section on Admissions in this catalogue.

## Admission as a Graduate Student on Probation

An applicant is considered for admission on probation if s/he meets the following minimum admission requirements:

An undergraduate average of at least 2.9 (or 77 percent) (or standardized equivalent from other institutions of higher learning) in the major field of study and a cumulative average of at least 2.7 (or 75 percent) (or standardized equivalent) for all work done at the undergraduate level leading to a bachelor's degree or its equivalent from AUB or another recognized institution of higher learning. Applicants to the Environmental Policy Planning specialization in the Master's Degree Program in Environmental Sciences are required to have an average of 2.7 (or 75 percent) in the last two years of study or its equivalent at AUB or other universities as determined by the faculty Graduate Studies Committee.

Further requirements for admission to graduate work are found in the General section on Admissions in this catalogue.

## Admission as a Prospective Graduate Student

Applicants who hold a bachelor's degree in a major field of study, other than the one to which they are applying, and who do not have sufficient academic preparation in the field may be admitted as prospective graduate students who must complete specified undergraduate course requirements.

To be considered for admission as a prospective graduate student, the applicant must have attained an undergraduate average of 2.7 (or 75 percent) (or standardized equivalent) in all work done at the undergraduate level leading to a bachelor's degree or its equivalent from AUB or another recognized institution of higher learning.

Further requirements for admission to graduate work are found in the General section on Admissions in this catalogue: If an average of 2.9 to 3.2 (or 77-80 percent) is attained, the student may have her/his status changed to graduate student on probation pending departmental recommendation and approval of the faculty Graduate Studies Committee. The supplementary courses must be completed within four consecutive regular terms.

## Transfer of Credits

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### Transfer of Credits into a Master's Degree Program

Please refer to the General University Academic Information on page "Transfer of Credits" on page 57.

### Transfer of Credits from One Master's Degree to Another

Graduate courses taken at AUB (or at other recognized institutions), in which the applicant has earned an equivalent grade of B+ (or 80) or above, may be transferred toward another master's degree at AUB. No more than 9 credits are transferable provided they are not credits earned by an internship, thesis or practicum, and degree minimum residency requirement is maintained. Approval by the department or academic unit concerned and by the FAS Graduate Studies Committee is required for all transfers.

# Department of Arabic and Near Eastern Languages

Chairperson:	Orfali, Bilal W. (Sheikh Zayed Chair for Arabic & Islamic Studies)
Professors:	Baalbaki, Ramzi M. (Margaret Weyerhaeuser Jewett Professor of Arabic); Al-Batal, Mahmoud; Jarrar, Maher Z.; Orfali, Bilal W.
Associate Professor:	Halabi, Zeina G.
Assistant Professors:	AbdelMegeed, Maha; Khansa, Enass
Adjunct Professor:	El Sayed, Radwan
Senior Lecturers:	<sup>p</sup> Bazzi, Tarif; <sup>p</sup> Fakhreddine, Jawdat
Lecturers:	Atiyyah, Najah; <sup>p</sup> El Daif, Rachid; Korangy, Alireza; Moukaled, Sina
Instructors:	<sup>p</sup> El Hajj, Sandra; <sup>p</sup> El Mallah, Jihad; <sup>p</sup> Harb, Reem; Malti, Samir; Semaan, Rima; <sup>p</sup> Sultany, Kanawaty Rima; Zein, Raghida M.

The Department of Arabic and Near Eastern Languages offers graduate programs leading to the MA and PhD degrees. The requirements for both degrees are listed below.

For admission and graduation requirements, refer to the faculty and department web pages.<sup>1</sup>

## MA in Arabic Language and Literature

Students registered in the master's program in the Department of Arabic and Near Eastern Languages are required to take a minimum of 21 graduate credit hours and present a thesis based on independent research.

## Doctor of Philosophy in Arabic Language and Literature

The Department of Arabic and Near Eastern Languages is steeped in the Arabic philological and literary tradition. Its faculty is also experienced in the use of contemporary western methods of teaching and approaches to language and literature. For this reason, the department is well-positioned to train future leaders in the field.

Academic governance of the department complies with the practices and procedures currently applied by the Faculty of Arts and Sciences. The department seeks to augment its faculty as needed, mainly through exchange and visiting programs as well as through highly selective and rigorously defined recruitment.

## Goals and Objectives of the Doctoral Program

The program's objective is to train students to become technically competent in their

<sup>p</sup>) Part time

preferred field of specialization and play a principal role in enhancing education in the region.

## PhD candidates will acquire:

- critical, interpretive and analytical skills,
- benchmark methodologies leading to the conduct of advanced research,
- and deeper, more sophisticated and more nuanced understanding of Arabic language and literature.

## Curriculum

The offerings of the department fall within three broadly defined fields:

- Arabic language and related fields (phonetics, morphology, syntax, history of grammar, lexicology, stylistics, etc.)
- classical and pre-modern Arabic literature and thought (including poetry, prose, belles lettres and other forms of literary expression)
- modern Arabic literature and thought (including poetry, prose, literary theory, etc.)

## Admissions

Admission requirements are in line with those set by the Faculty of Arts and Sciences and may be found in the section entitled Admission to PhD Programs under Admissions. The department necessitates the following three requirements:

- a master's degree in Arabic from a recognized university, or an equivalent considered acceptable by the department, plus three recommendation letters and an interview (when considered necessary by the department). Students of exceptional promise may be admitted after finishing their BA.
- proven unimpaired Arabic.
- English proficiency. For the required level of proficiency, see the section entitled English Language Proficiency Requirement under Admissions.

## Financial Support

The department offers, on a selective basis, substantial support which fully covers tuition and includes a monthly stipend. In return, PhD students are expected to teach courses and perform other tasks assigned by the department. Students may also apply for support to carry out research in archives and libraries outside Lebanon and to attend international scholarly conferences.

## Requirements for the Completion of the PhD

- **Credits:** A minimum of 18 credits is required beyond the MA. These are comprised of six graduate courses (including a 3-credit tutorial) in the following required and optional fields.
- Required fields:
  - Arabic language and linguistics
  - Classical Arabic literature
  - Modern Arabic literature

- Optional fields:
  - Arab cultural history (Qur'an, Hadith, kalam, tasawwuf, heresiography, etc.)
  - Literary theory (comparative: Arab/Western)

In addition, the following is required: a 3-credit tutorial to be conducted by the candidate's advisor, leading to the production of the candidate's doctoral proposal.

- The distribution of the above requirements over the said fields will be decided by the department in each case on its own merit.
- **Language Requirements:** A working reading knowledge of a second European language, preferably French or German, must be shown before candidacy status is achieved.
- **Residence Requirements:** See Residence Requirements under General University Academic Information.
- **PhD Publication Requirements:** See PhD Publication Requirements under General University Academic Information.
- **Supervision:** During the first term of graduate study, the department will appoint an academic committee to draw up a program of study for the student and to follow up on her/his progress. At a later stage, the department, in consultation with the student, will assign the student an academic advisor.
- **Candidacy Status:** See Admission to Candidacy under General University Academic Information. The student must achieve candidacy status no later than three years from the date of admission and at least one year before graduation. Achieving candidacy is conditional upon completion of 18 credits, i.e. five courses plus the required tutorial for students with a master's degree or 39 credits and the equivalent of an MA thesis for students with a BA while also satisfying the proposal and language requirements. To achieve candidacy, a student must sit for a written comprehensive examination (PhD Qualification Exam Part I) comprising at least three different papers. The proto-examining committee, consisting of four AUB faculty members of professorial rank, will be in charge of writing questions and correcting answers. Within two weeks from the date of the written comprehensive, the student shall appear before the proto-examining committee to defend her/his answers.
- **Doctoral Proposal:** A detailed proposal defining the thesis problem, describing the pertinent literature and suggesting the proposed approach to solving it must be defended before and approved by the thesis examining committee (PhD Qualification Exam Part II). The committee membership must be approved by the Graduate Studies Committee of the Faculty of Arts and Sciences, and a copy of the proposal must be sent to the Graduate Council.
- **Thesis Examining Committee:** For the composition of the committee, refer to PhD Thesis Committee under General University Academic Information.
- **Thesis Defense:** Six copies of the pre-defense final manuscript must be submitted to the advisor at least eight weeks prior to the date of the defense session. This session shall be public. Candidates may, if they so elect, write their theses in English, provided members of the proto-examining committee expressly state their satisfaction with the candidate's capacity for acquisition of knowledge in Arabic.
- **Awarding/Withholding the Degree:** The decision of the thesis examining committee may be one of the following four:
  - Award: with or without demanding minor corrections
  - Award: provided certain specific and restricted alterations are implemented within three months and approved by the proto-committee
  - Suspend: major alterations are required and must be implemented within 6-12 months, after which the whole committee shall reconvene
  - Withhold: without further recourse

## Course Descriptions

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**ARAB 301 Seminar in Classical Arabic Literature (Poetry or Prose) 3.0; 3 cr.**  
 An overview of the formative elements (geographic, linguistic, ethnic, religious and cultural) and defining issues (identity, nature and economic drives), with selective focus on major trends and figures in classical Arabic literature before 1258/657. *The language of instruction in this course is Arabic.*

**ARAB 303 Graduate Seminar in an Epoch, a Trend or a Book in Classical Arabic Literature 3.0; 3 cr.**  
 Negotiating classical Arabic literature through the historical method, the thematic approach or direct textual engagement. The selective focuses of this course cover a wide spectrum of Arabic literary production before 1258/657. *The language of instruction in this course is Arabic.*

**ARAB 305 Graduate Seminar in Qur'anic Studies 3.0; 3 cr.**  
 A survey of the different problems in *Qur'anic studies*, such as compilation of the *Qur'an*, *al-nasikh wal-mansukh*, *al-muhkam wal-mutashabih*, the secret letters, and the different schools of tafsir. *The language of instruction in this course is Arabic.*

**ARAB 309 Graduate Seminar in Arabic Sources 3.0; 3 cr.**  
 A systematic survey of the major sources of Arabic literary and linguistic study. The different genres represented by these sources are emphasized. *The language of instruction in this course is Arabic.*

**ARAB 311 Graduate Seminar in an Epoch, a Trend or a Book in Modern Arab Literature 3.0; 3 cr.**  
 Focusing on a period, a trend, a particular author or book, this course is an in-depth study using modern, critical and comparative approaches to literature. *The language of instruction in this course is Arabic.*

**ARAB 313 Graduate Seminar in Folk Literature 3.0; 3 cr.**  
 An analytic study of Arabic folk literature and its development. Study includes the different influences on folk literature and folk literature's impact on Arabic literature during later centuries. *The language of instruction in this course is Arabic.*

**ARAB 315 Graduate Seminar in Comparative Literature 3.0; 3 cr.**  
 This course deals with the theories and methods current in comparative literature in Arabic and global literature, encouraging research on transcultural aspects of literary production, theory and criticism. *The language of instruction in this course is Arabic.*

**ARAB 317 Graduate Seminar in Advanced Semitics or Linguistics 3.0; 3 cr.**  
 A study of the Arabic grammatical tradition, with special emphasis on the development of the grammarians' analytic methods. Alternatively, and according to need, the course could offer a survey of comparative Semitic philology. *The language of instruction in this course is Arabic.*

**ARAB 319 Graduate Seminar in Arabic Literary Theory 3.0; 3 cr.**  
 A survey of schools of literary criticism, genres and issues pertaining to 20th century Arabic literature. *Annually.*

<b>ARAB 351</b>	<b>Special Topics in Arabic Language and Literature</b>	<b>1–3 cr.</b>
A course that varies in content and focuses on selected topics in language and literature. <i>The language of instruction in this course is Arabic.</i>		
<b>ARAB 390</b>	<b>Tutorial in Arabic Language or Literature</b>	<b>1–3 cr.</b>
<i>May not be repeated for credit.</i>		
<b>ARAB 395A/B</b>	<b>Comprehensive Exam</b>	<b>0 cr.</b>
<i>Prerequisite: Consent of advisor.</i>		
<b>ARAB 399</b>	<b>MA Thesis</b>	<b>9 cr.</b>
<b>ARAB 401</b>	<b>Tutorial in Arabic Language or Literature</b>	<b>3 cr.</b>
<b>ARAB 480</b>	<b>Qualifying Exam Part I: Comprehensive Exam</b>	<b>0 cr.</b>
<i>Every term.</i>		
<b>ARAB 481</b>	<b>Qualifying Exam Part II: Defense of Thesis Proposal</b>	<b>0 cr.</b>
<i>Every term.</i>		
<b>ARAB 484<sup>1</sup></b>	<b>PhD Thesis</b>	<b>30 cr.</b>
To be taken only by regular track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work. <i>Every term.</i>		
<b>ARAB 488<sup>1</sup></b>	<b>PhD Thesis</b>	<b>42 cr.</b>
To be taken only by accelerated track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work. <i>Every term.</i>		

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1) The choice to register for ARAB 488 should be done in consultation with the thesis advisor to ensure that the total number of PhD thesis credits and PhD course credits are met as per AUB rules and regulations.

# Department of Biology

Chairperson:	Knio, Khouzama M.
Professors:	Bariche, Michel J.; Baydoun, Elias H.; Gali-Muhtasib, Hala U.; Knio, Khouzama M.; Kreydiyyeh, Sawsan I.; Saoud, Imad P.; Smith, Colin A.; Talhouk, Rabih S.
Associate Professors:	Ghanem, Noel D.; Jaalouk, Diana E.; Kambris, Zakaria S.; Osta, Mike A.
Assistant Professors:	Dohna, Heinrich; Sadek, Riyadh A.
Lecturers:	Rizkallah, Hind D.; Sinno-Saoud, Nada
Instructors:	Hajjar, Layane A.M.; Al-Zein, Mohammad S.
Adjunct Faculty:	Parker, Bruce; Skinner, Margaret

## MS in Biology

The graduate program consists of an MS program in Biology and a PhD program in Cell and Molecular Biology.

The Graduate Record Examination (GRE) is required of all applicants for graduate work. Requirements for an MS degree in biology consist of a minimum of 21 credit hours in biology courses numbered 300 or above and a 9-credit thesis.

The following courses are core courses and should be taken by all master's students:

BIOL 310 (3 cr.), BIOL 315 (3 cr.) and BIOL 393 (1 cr.)

Unless otherwise stated, only senior undergraduate biology majors with an average of 3.2 (or 80) or above can register in biology graduate courses with the consent of the instructor.

## PhD in Cell and Molecular Biology

### Mission Statement

The doctoral program in Cell and Molecular Biology aims to provide the best training to students for their careers as research scientists in Cell and Molecular Biology. It provides students with the opportunity to develop their capacity for scholarly and independent work, critical analytical thinking, and the ability to communicate knowledge and ideas. It is intended to produce scientists who will make significant, original contributions to the biological sciences. The program exposes students to theoretical foundations and practical training in current laboratory techniques. It serves the AUB mission by providing Lebanon and the region with qualified researchers and preparing students for careers in research, teaching and public service.

## Admission Requirements

The PhD program is a five-year program. Admission to the program will be on a competitive basis. To be eligible for admission, applicants should have a good academic record, demonstrate genuine interest in Cell and Molecular Biology research and must:

- hold a bachelor's (BS) or master's (MS) degree in biological sciences or related fields from a recognized institution,
- present three letters of recommendation from previous tutors or employers,
- submit scores from the general Graduate Record Examination (GRE). This exam is required of both BS and MS holders,
- meet Readiness for University Studies in English (RUSE),
- present a statement of purpose,
- be interviewed by a select group of department faculty members (who may require the student to give a seminar presentation),
- and be recommended for admission by the Biology Department.

## Program Requirements

The program requirements for BS holders consist of a minimum of 36 credit hours of graduate level coursework and a minimum of 42 credit hours of thesis work. The requirements for MS holders are a minimum of 18 credit hours of graduate level coursework in addition to 30 credit hours of thesis work.

Upon admission into the program, each student will be assisted by the department head who will act as an academic advisor and help the student in the selection of courses. Each student's course of study is designed individually in light of her/his interests and career goals. All duties of the head are transferred to the thesis advisor once selected.

The program incorporates the existing master's program and consists of core courses that address basic principles of cell and protein function, gene expression, bioinformatics and biostatistics.

## Required Core Courses

All students are required to take the following six core courses and the seminar (plus tutorial if applicable):

<b>BIOL 310</b>	<b>Biostatistics</b>	<b>3 cr.</b>
<b>BIOL 315</b>	<b>Research Methods in Biology</b>	<b>3 cr.</b>
<b>BIOL 322</b>	<b>Advanced Biochemistry</b>	<b>3 cr.</b>
<b>BIOL 330</b>	<b>Molecular Genetics</b>	<b>3 cr.</b>
<b>BIOL 332</b>	<b>Advanced Cell Biology</b>	<b>3 cr.</b>
<b>BIOL 370</b>	<b>Bioinformatics</b>	<b>3 cr.</b>
<b>BIOL 491</b>	<b>CMBL Tutorial (required only by students holding a BS)</b>	<b>2 or 3 cr.</b>
<b>BIOL 493</b>	<b>CMBL Seminar</b>	<b>1 cr.</b>

If these courses have already been taken as part of the master's program, they may be replaced by others upon departmental approval to complete the 18-credit requirement.

## Elective Courses

Elective courses are taken to meet the credit requirements and emphasize the student's research work and field of specialty. These courses may be chosen from the Biology Department, graduate course offerings or from course offerings of other departments that fall within the student's field of interest and scope of the program.

## Laboratory Rotations

During the first year of study, students may take the laboratory rotation course (BIOL 494), conducting research in two different faculty laboratories within the Biology Department or the university. The department considers exposure to different research environments an essential part of training. Students entering with only a BS must also register for an additional 2- or 3-credit laboratory tutorial in their first year.

## Seminars

Students are required to attend and participate in seminars and journal clubs every term. Academic credit (1 credit) will be received only once during the first year. Subsequent terms will not be credited. *Graded: Pass/No Pass (or Fail)*.

## PhD Thesis Committee

Refer to PhD Thesis Committee (page 71).

## PhD Qualification Exams Part I and Part II

Refer to PhD Qualification Exam (page 69).

## Candidacy and Residency

Refer to General University Academic Information, Requirements for the Degree of Doctor of Philosophy section that has clearly defined candidacy and residency requirements.

## PhD Thesis and Thesis Defense

Refer to PhD Thesis Format and PhD Thesis Defense under General University Academic Information (page 72-73).

## Residence Requirements

For Residence Requirements, refer to Residence Requirements (page 61).

## Graduation Requirements

The following is a list of graduation requirements:

- completion and successful defense of a thesis
- teaching experience (theory or lab) equivalent to a 3-credit course at minimum
- yearly presentation, during candidacy, of research progress to the department
- acceptance or publication of at least two internationally refereed papers or one internationally refereed paper and one internationally refereed abstract or proceeding

In all other respects, the graduation requirements set forth in the catalogue for the PhD program will apply.



- BIOL 335                    Molecular Biology of Cancer                    3.0; 3 cr.**  
A course that deals with the regulatory mechanisms of neoplastic cell growth and cancer cell metastasis. This course includes a discussion of recent developments in molecular genetics of the intra- and/or inter-cellular mechanisms involved in tumor formation, cellular proliferation, apoptosis, invasion and metastasis. *Prerequisite: Graduate standing.*
- BIOL 338                    Cancer and Natural Products                    3.0; 3 cr.**  
This course is designed to introduce students to the numerous natural compounds that show promise in the treatment of cancer and the mechanism-based approaches to this treatment using these compounds. In addition, the course provides information on the research designs, protocols and assays involving natural compounds.
- BIOL 341                    Advanced Microbiology                    3.0; 3 cr.**  
A study of energy metabolism of various microbial groups emphasizing degradation of organic compounds under aerobic and anaerobic conditions. This course also deals with applications of microorganisms in industrial, medical and environmental fields.
- BIOL 362                    Advanced Ecology                    2.3; 3 cr.**  
A discussion and analysis of topics of current interest in ecology with emphasis on population and community dynamics, and methods of ecological investigation and analysis; includes field work.
- BIOL 363                    Population and Community Ecology                    3.0; 3 cr.**  
A course that introduces the various models and theories of population dynamics and community structure, and their applications in assessing the complex interactions that occur in natural plant-animal systems as a result of long co-evolution, with an emphasis on chemical ecology.
- BIOL 364                    Conservation and Restoration Ecology                    3.0; 3 cr.**  
A course that introduces various concepts and applications in the field of conservation and landscape ecology. Degradation processes, principles of restoration ecology, and models of conservation biology are discussed. Part of this course concentrates on the use of remote sensing, GIS and GPS as tools in landscape ecology.
- BIOL 370                    Bioinformatics                    2.3; 3 cr.**  
A project-based course that teaches computer and statistics skills to handle biological data efficiently and creatively. Projects can involve the analysis of any type of biological data, such as image data, survival data, microarray data, sequence data, next-generation sequencing data, etc. Students can either analyze data from their own work or recapitulate parts of a published analysis. During the course, each student writes analysis scripts in R that automatize an entire workflow from data pre-processing to analysis, output of results and plotting.
- BIOL 390                    Special Topics in Biology                    1, 2, 3 or 4 cr.**  
*Prerequisites: Graduate standing and consent of instructor. May be repeated for credit.*
- BIOL 391                    Tutorial                    2 or 3 cr.**  
*Every term. Prerequisites: Graduate standing and consent of instructor. Cannot be repeated for credit. Graded: Pass/No Pass (or Fail).*

<b>BIOL 393</b>	<b>Seminar</b>	<b>1 cr.</b>
<i>This course trains students on how to present research findings. Prerequisite: Graduate standing.</i>		
<b>BIOL 395A/ B</b>	<b>Comprehensive Exam</b>	<b>0 cr.</b>
<i>Prerequisite: Consent of advisor.</i>		
<b>BIOL 399 MS</b>	<b>Thesis</b>	<b>9 cr.</b>
<b>BIOL 480</b>	<b>Qualifying Exam Part I: Comprehensive Exam</b>	<b>0 cr.</b>
<i>Every term. Prerequisite: Completion of a minimum of 18 credit hours of coursework.</i>		
<b>BIOL 481</b>	<b>Qualifying Exam Part II: Defense of Thesis Proposal</b>	<b>0 cr.</b>
<i>Every term. Pre- or corequisite: BIOL 480.</i>		
<b>BIOL 484<sup>1</sup></b>	<b>PhD Thesis</b>	<b>30 cr.</b>
<i>Every term. To be taken only by regular track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L ; 0 credits) until completion of thesis work.</i>		
<b>BIOL 488<sup>1</sup></b>	<b>PhD Thesis</b>	<b>42 cr.</b>
<i>Every term. To be taken only by accelerated track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work.</i>		
<b>BIOL 491</b>	<b>Tutorial</b>	<b>2 or 3 cr.</b>
<i>Every term. Prerequisite: Consent of instructor. Students with an MS are exempted. Cannot be repeated for credit. Graded: Pass/No Pass (or Fail).</i>		
<b>BIOL 493/493A</b>	<b>CMBL Seminar</b>	<b>1 cr./0 cr.</b>
<i>Students enrolled in the CMBL program present research findings. Prerequisite: Enrollment in CMBL program. Academic credit will be received only once during the first year; subsequent terms will be recorded but not credited. Graded: Pass/No Pass (or Fail).</i>		
<b>BIOL 494</b>	<b>CMBL Laboratory Rotation</b>	<b>3 cr.</b>
<i>Students taking this course will be conducting a small research project in any area pertinent to the field of Cell and Molecular Biology. The research has to be conducted in two different laboratories under the supervision of a faculty member from the Biology Department. The supervisor should ensure that the student receives the necessary training in safety and technical issues required for the successful progress of the project and that the work involved meets the ethical criteria set by AUB Human Research Protection Program and Institutional Animal Care and Use Committee (IACUC). Graded: Pass/No Pass (or Fail).</i>		

1) The choice to register for BIOL 484 or BIOL 488 should be done in consultation with the thesis advisor to ensure that the total number of PhD thesis credits and PhD course credits are met as per AUB rules and regulations.

## Sample Student Programs of Study

<b>BS holder working for MS (21 cr.)</b>		<b>BS holder working for PhD (36 cr.)</b>	
<b>First term</b>		<b>First term</b>	
BIOL 315	3 cr.	BIOL 315	3 cr.
BIOL elective	3 cr.	BIOL 330	3 cr.
BIOL 393	1 cr.	BIOL 494	3 cr.
BIOL 391A	2 cr.	BIOL 493A	0 cr.
	<b>9 cr.</b>		<b>9 cr.</b>
<b>Second term</b>		<b>Second term</b>	
BIOL 310	3 cr.	BIOL 310	3 cr.
BIOL elective	3 cr.	BIOL 332	3 cr.
BIOL elective	3 cr.	BIOL 491	2 cr.
		BIOL 493	1 cr.
	<b>9 cr.</b>		<b>9 cr.</b>
<b>Third term</b>		<b>Third term</b>	
BIOL elective	3 cr.	BIOL 370	3 cr.
		BIOL 322	3 cr.
		BIOL elective	3 cr.
		BIOL 493A	0 cr.
	<b>3 cr.</b>		<b>9 cr.</b>
<b>Fourth term</b>		<b>Fourth term</b>	
		BIOL elective	3 cr.
		BIOL elective	3 cr.
		BIOL elective	3 cr.
		BIOL 493A	0 cr.
			<b>9 cr.</b>

<b>AUB MS holder working for PhD (18 cr.)</b>		<b>Non-AUB MS holder working for PhD (22 cr.)</b>	
<b>First term</b>		<b>First term</b>	
BIOL 330	3 cr.	BIOL 310	3 cr.
BIOL 332	3 cr.	BIOL 493	1 cr.
BIOL 494	3 cr.	BIOL 494	3 cr.
BIOL 493A	0 cr.		
	<b>9 cr.</b>		<b>7 cr.</b>
<b>Second term</b>		<b>Second term</b>	
BIOL 322	3 cr.	BIOL 315	3 cr.
BIOL 370	3 cr.	BIOL 322	3 cr.
BIOL 493	1 cr.	BIOL 370	3 cr.
Elective	2 or 3 cr.	BIOL 493A	0 cr.
	<b>9 or 10 cr.</b>		<b>9 cr.</b>
<b>Third term</b>		<b>Third term</b>	
		BIOL 330	3 cr.
		BIOL 332	3 cr.
		BIOL 493A	0 cr.
			<b>6 cr.</b>

# Department of Chemistry

Chairperson:	Patra, Digambara J.
Professors:	Al-Ghoul, Mazen H.; Bouhadir, Kamal H.; Ghaddar, Tarek H.; Ghauch, Antoine R.; Haddadin, Makhlof J.; Halaoui, Lara I.; Hasanayn, Faraj A.; Kaafarani, Bilal R.; Patra, Digambara J.; Saliba, Najat I.; Sultan, Rabih F.
Associate Professors:	Karam, Pierre M.; El-Rassy, Houssam T.; Hmadeh, Mohamad A.
Assistant Professor:	
Instructors:	Abi Rafii, Randa A.; Deeb, Hana H.; Sadek, Samar A.

## MS in Chemistry

The department offers the MS degree in Chemistry. Graduate students may specialize in analytical, inorganic, organic or physical chemistry. Of the minimum 21 graduate course credits required for the MS degree, a minimum of 6 credits must be graduate courses in the concentration field of chemistry, and 6 credits must be graduate courses in chemistry outside the student's field of specialization. CHEM 361 is a requirement for all graduate students. A 9-credit thesis, CHEM 399, is required.

The research interests of the chemistry faculty include synthetic heterocyclic chemistry, synthesis of biomaterials for drug delivery and synthesis of carbocyclic DNA analogs; reactive intermediates; cage compounds; coordination and organometallic chemistry; supramolecular chemistry; photocatalysis; photoelectrochemistry of semiconductors; synthesis, assembly and physical properties of nanostructured materials; surface chemistry; irreversible nonequilibrium thermodynamics and statistical mechanics; nonlinear dynamics in chemistry; generalized hydrodynamics; chemical waves; patterns and fractals in precipitate and metal electro-deposition systems; laboratory and field investigations of atmospheric chemistry processes; design and synthesis of dyes for dye sensitized solar cells; self-assembled mono-layers (SAMs) of bioactive material and poly-peptides on metal surfaces; study of electronic structure of unsaturated transition metal complexes and their reactions; discotic liquid crystals; synthesis of electron-deficient materials for organic electronics and opto-electronics applications; organic light emitting diodes (OLEDs); organic field effect transistors (OFETs); organic solar cells; molecular recognition; solid-state stacking of organic materials; biocatalysis; control of inorganic phase growth; developing new probe molecules based on nanocapsules, nanocrystals, curcumin and PAHs for physical and biophysical studies; fluorescence sensing and spectroscopic investigation on multi-component analysis and biosensor development; fluorescence spectroscopy, imaging and applications; hybrid solid materials; luminescence, solid surface room temperature phosphorescence (SS-RTP) and diffuse reflectance spectrometry (DRS); monitoring of organic and inorganic pollutants in industrial effluent under rigorous conditions; nanoscopy and single molecule studies in physical and biophysical chemistry; new methods for depollution of water contaminated by organic pollutants; photophysical and biophysical chemistry; probe chemistry; use of the reductive properties of Zero Valent Iron for the degradation of pesticides and chlorinated organic compounds in water; renewable energy, biosensing and photochemistry at the single molecule level.

## Course Descriptions

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**CHEM 301      Structure of Inorganic Compounds      3.0; 3 cr.**  
Electronic absorption spectra of complex inorganic molecules; vibrational, NMR, NQR, EPR and Mössbauer spectroscopy; physical methods of determination of the structure of inorganic molecules. *Annually.*

**CHEM 303      Chemistry of the Coordination Compounds      3.0; 3 cr.**  
Applications of Orgel and Tanabe-Sugano diagrams; factors affecting stability of coordination compounds; stereochemistry; trans-effect; stabilization of oxidation states; mechanisms of the reactions of coordination compounds; catalysis by coordination compounds. *Annually.*

**CHEM 304      Mechanisms of Inorganic Reactions      3.0; 3 cr.**  
Mechanisms of substitution reactions in octahedral and square planar metal complexes; mechanisms of oxidation-reduction, metal ion catalysis and photochemistry; application of symmetry rules to inorganic reactions; fluxional molecules. *Alternate years.*

**CHEM 311      Advanced Organic Chemistry      3.0; 3 cr.**  
Electronic interpretation of organic reactions; correlation of inductive, resonance and steric effects with reactivity of molecules; chemistry of carbocations, carbanions, carbenes, carbenoids and radicals as intermediates in characteristic organic reaction mechanisms. *Annually.*

**CHEM 313      Physical Organic Chemistry      3.0; 3 cr.**  
Organic reactions mechanisms, linear free energy relationships, solvent and reagent correlations, isotope effects, catalysis in weak and strong acid and base medium, organic photochemistry and pericyclic reactions. *Alternate years.*

**CHEM 314      Heterocyclic Chemistry      3.0; 3 cr.**  
A general survey of the synthesis and reactions of selected classes of heterocyclic compounds; spectroscopic properties and structural relationships. *Alternate years.*

**CHEM 315      Chemistry and Technology of High Polymers      3.0; 3 cr.**  
An introduction to the chemistry of high polymers; types, mechanisms and kinetics of polymerization; structure, characterization and properties of macromolecules; preparation, processing and uses of the more common condensation and addition polymers used in plastics, elastomers and fibers. *Alternate years.*

**CHEM 316      Chemistry of Synthetic Polymers      3.0; 3 cr.**  
**for Biomedical Applications**  
An introduction to the chemistry of synthetic polymers and their applications in the biomedical field; nomenclature, preparations, reactions, synthesis, mechanisms, characterization, biocompatibility and biodegradability. A general presentation of biomedical applications of synthetic polymers in bones, joints, teeth, artificial organs, synthetic skin, contact lenses, time-release drug delivery and gene delivery. *Alternate years.*

- CHEM 317 Synthetic Organic Chemistry 3.0; 3 cr.**  
A survey of new reagents and synthetic procedures used in advanced organic synthesis; oxidation and reduction reagents in organic synthesis; protecting groups; carbon-carbon bond formation; functional groups inter-conversions. *Alternate years.*
- CHEM 321 Quantum Chemistry 3.0; 3 cr.**  
Wave mechanics, solutions of time-independent Schrödinger equation, particle in a box, harmonic oscillator, angular momentum, H-atom, atomic orbitals, variational theorem, perturbation theory, polyelectronic atoms, Slater determinants, term symbols, Hückel MO theory, electronic wave functions, SCF and CI calculations. *Alternate years.*
- CHEM 322 Statistical Thermodynamics 3.0; 3 cr.**  
General statistical mechanics of independent particles; partition functions for atoms and molecules, and simple chemical equilibria; heat capacities of solids, configuration of polymers, ensembles, theory of imperfect gases and mixtures, lattice statistics, irreversible processes. *Alternate years.*
- CHEM 323 Chemical Kinetics 3.0; 3 cr.**  
Rate analysis, modern experimental techniques, theories of chemical kinetics, selected topics in gas phase and solution kinetics, characterization of transition states by ab-initio methods. *Alternate years.*
- CHEM 324 Electrochemistry 3.0; 3 cr.**  
Fundamentals and applications of electrochemistry. Overview of electrode processes, potentials and thermodynamics of cells; kinetics of electrode reactions; Marcus microscopic theory for charge transfer; treatment of mass transfer by migration and diffusion; electrochemical techniques including potential step methods, potential sweep methods, and hydrodynamic methods; electrode reactions with coupled homogeneous chemical reactions; instrumentation. *Alternate years.*
- CHEM 325 Molecular Spectroscopy 3.0; 3 cr.**  
Review of basic quantum mechanics; fundamental features of spectroscopy and experimental methods; atomic spectra; diatomic molecules; rotational spectroscopy; vibrational spectroscopy; electronic spectroscopy; polyatomic molecules; direct product representations and selection rules; re-emission of energy by excited molecules; fluorescence; fluorescence spectra; molecular beams and lasers. *Alternate years.*
- CHEM 331 Chemical Instrumentation for Environmental Analysis 3.0; 3 cr.**  
Qualitative and quantitative analytical methods; ultraviolet (UV) and infrared (IR) spectroscopy; atomic absorption (AA) and emission spectroscopy; introduction to chromatographic separations. Designed for the Master's Degree Programs in Environmental Sciences. *Annually.*
- CHEM 332 Chemical Separations in Environmental Analysis 3.0; 3 cr.**  
Fundamentals of analytical separations; distribution methods in discrete stages; methods in continuous stages; chromatographic methods: GC, HPLC, SFC; non-chromatographic methods: electrophoresis, field-flow fractionation, size exclusion; recent innovations. Designed for the Master's Degree Programs in Environmental Sciences. *Annually.*

**CHEM 351**      **Special Topics**      **3 cr.**  
*May be repeated for credit with consent of the department.*

**CHEM 361**      **Tutorial**      **3 cr.**  
A tutorial that should be taken during a student's second or third term of graduate studies, but not during a summer session. Students taking CHEM 361 are required to submit written reports to their advisors and to present a seminar to the students and faculty of the department. CHEM 361 is required of all graduate students in the department.

**CHEM 395A/B**      **Comprehensive Exam**      **0 cr.**  
*Prerequisite: Consent of advisor.*

**CHEM 399**      **MS Thesis**      **9 cr.**

# Department of Computer Science

Chairperson:	Safa, Haidar H.
Professors:	El-Hajj, Wassim; Safa, Haidar H.; Turkiyyah, George M.
Associate Professors:	Abu Salem, Fatima K.; Elbassuoni, Shady; Khabbaz, Maurice
Assistant Professors:	El Hajj, Izzat; Mouawad, Amer; Nassar, Mohamed
Senior Lecturer:	Jureidini, Wadi' N.
Lecturers:	Bdeir, Mahmoud; Raheel, Saeed
Instructors:	Aoude, Loa; Sidani-Bohsali, Hayat

The Department of Computer Science offers a program leading to the degree of Master of Science (MS) in Computer Science. For more information about the department, visit <https://website.aub.edu.lb/fas/cs/Pages/index.aspx>.

## Mission Statement

The department of Computer Science at the American University of Beirut prepares students for advanced studies and professional careers in the dynamically changing world of computing and information technology. Our programs combine the theoretical foundations of computing with the practical knowledge of software development vital to industry, to provide broad and integrated curriculums.

The department offers a Bachelor of Science (BS) degree in computer science, designed to be completed typically in three years. It also offers a Master of Science (MS) program designed to provide advanced and specialized education in computing, offered in formats that meet the needs of both working professionals and full-time students.

The department has vigorous research programs in theoretical computer science networking and security, machine learning and data science, high-performance computing, data mining and information retrieval, and software engineering. Our faculty members are committed to contributing to the advancement of the field of computing through scholarly activities, in which our students play a vital role.

## MS in Computer Science

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In addition to the university requirements for graduate study in the Faculty of Arts and Sciences, students must complete: (1) 21 credits and a thesis (thesis option), (2) 27 credits and a project (project option), or (3) 30 credits of course work (course-based option). For all options, the student must take 3 credits from each of the following 3 categories (9 credits in total): theory, systems, and applications. The remaining credits (12 for the thesis option, 18 for the project option, and 21 for the course-based option) are normally CMPS courses numbered 300 and above to be taken in coordination with the student's advisor. For more information about the program, visit <https://website.aub.edu.lb/fas/cs/Pages/index.aspx>.

## Course Descriptions

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### **CMPS 314      Design and Analysis of Algorithms      3.0; 3 cr.**

A course that studies advanced data structures and algorithms, with an emphasis on the design of algorithms. Topics include advanced graph and search algorithms, dynamic programming, amortized analysis, parallelism, greedy and approximate algorithms, string and pattern matching, computational geometry and an introduction to the class of NP-complete problems. *This course was previously numbered CMPS 356. Annually.*

### **CMPS 323      Parallel Computing      3.0; 3 cr.**

A course that discusses the design, analysis and implementation of algorithms for parallel computers. Topics include selection, merging, sorting, searching, matrix computations, numerical problems and fast fourier transforms. Students develop skills in designing parallel algorithms and analyzing their asymptotic running time and memory requirements, and develop medium-sized parallel codes using modern languages and libraries. *This course was previously numbered CMPS 373. Annually.*

### **CMPS 332      Compiler Construction      3.0; 3 cr.**

Graduate students may be required to do extra reading, a term paper and/or an additional project. *Same as CMPS 232. This course was previously numbered CMPS 374. Annually.*

### **CMPS 342      Advanced Computer Networks      3.0; 3 cr.**

This course enhances students' knowledge about up-to-date networking topics and improves their research skills in the field. It reviews the major protocols of TCP/IP stack then introduces modern Internet routing, IP multicasting, quality of service, Internet telephony, IPv6, MPLS, etc. The course also covers the architectures of wireless local area networks (IEEE 802.11), mobile IP networks, Mobile Ad hoc Networks (MANETS), GSM and its evolution to UMTS then LTE, Internet of Things and Wireless Sensor Networks. Although the course is a lecture-based course, discussions are always encouraged. To prepare you to conduct independent research, the course contains a term research project in which students working in small groups select a related research topic to survey, identify existing problems, and try to propose solutions. *This course was previously numbered CMPS 384. Annually.*

### **CMPS 345      Distributed Systems      3.0; 3 cr.**

A distributed system consists of a set of nodes located at networked computers and communicate only by passing messages. This course provides techniques to abstract, design and implement efficient, scalable and fault-tolerant distributed systems.

Topics include, but are not limited to, inter-process communication, distributed synchronization and consensus (e.g., paxos, blockchain), fault-tolerance, distributed file systems (e.g., HDFS), and Hadoop ecosystem. *This course was previously numbered CMPS 375. Annually.*

**CMPS 350      Discrete Models for Differential Equations      3.1; 3 cr.**

A detailed study of methods and tools used in deriving discrete algebraic systems of equations for ordinary and partial differential equations: finite difference and finite element discretization procedures; generation and decomposition of sparse matrices, finite-precision arithmetic, ill-conditioning and pre-conditioning, Scalar, vector and parallelized versions of the algorithms. The course includes tutorial “immersion” sessions in which students become acquainted with state-of-the-art scientific software tools on standard computational platforms. *Prerequisites: Linear algebra and the equivalent of MATH/CMPS 251 (which can be taken concurrently) or upon consent of the instructor. Same as MATH 350. Occasionally.*

**CMPS 351      Optimization and Nonlinear Problems      3.1; 3 cr.**

A study of practical methods for formulating and solving numerical optimization problems that arise in science, engineering and business applications. Newton’s method for nonlinear equations and unconstrained optimization. Simplex and interior-point methods for linear programming. Equality and inequality-constrained optimization. Sequential quadratic programming. Emphasis is on algorithmic description and analysis. The course includes an implementation component where students develop software and use state-of-the-art numerical libraries. *Same as MATH 351. Annually.*

**CMPS 354      The Finite Element Method      3.0; 3 cr.**

A course that presents the theoretical foundations of the finite element method and some of its applications to partial differential equations. Topics include Sobolev spaces, existence and uniqueness of weak solutions and the Lax-Milgram lemma, regularity of weak solutions and a priori estimates, the Galerkin method, piecewise polynomial approximations, approximating solutions of boundary value problems for elliptic equations, and initial value problems for parabolic and hyperbolic equations. *Occasionally.*

**CMPS 358      Introduction to Symbolic Computing      3.0; 3 cr.**

Introductory topics in computer algebra and algorithmic number theory that include fast multiplication of polynomials and integers, fast fourier transforms, primality testing and integers factorization. Applications to cryptography and pseudo-random number generation. Linear algebra and polynomial factorization over finite fields. Applications to error-correcting codes. Introduction to Grobner bases. *Same as MATH 358. Occasionally.*

**CMPS 359      Special Topics in Computational Science      3.0; 3 cr.**

A course on selected topics in computational science, which change according to the interests of visiting faculty, instructors and students. Selected topics cover state-of-the-art tools and applications in computational science. *Prerequisite: Consent of instructor. Same as MATH 360. This course was previously numbered CMPS 360. Occasionally.*

**CMPS 364      Advanced Machine Learning      3.0; 3 cr.**

This course focuses on Deep Learning and its applications. Deep Learning has revolutionized the field of Machine Learning and has turned Artificial Intelligence from a research endeavor into an actual reality. In this course, students will learn about the

fundamentals of Deep learning, and how to build Deep Learning models for various real-world applications, particularly in Computer Vision and Natural Language Processing. *This course was previously numbered CMPS 392. Annually.*

- CMPS 365 Information Retrieval and Web Search 3.0; 3 cr.**  
This course introduces graduate-level students to the basics of information retrieval, and the models and algorithms underlying modern search engines. Topics covered include: crawling; indexing; Boolean and vector space retrieval models; probabilistic information retrieval models; language models; top-k query processing; evaluation of information retrieval systems; relevance feedback; link analysis; latent semantic analysis; and information extraction. *This course was previously numbered CMPS 391 Occasionally.*
- CMPS 371 Advanced Software Engineering 3.0; 3 cr.**  
A course on state-of-the-art software engineering for large distributed and concurrent systems. Fundamental principles and concepts for specifying, designing, analyzing, implementing and testing such systems. Concurrent object oriented paradigms. Design patterns. Use of tools. Documentation using both formal and informal descriptions. *Students will develop at least one large software system as part of the course. This course was previously numbered CMPS 363. Annually.*
- CMPS 385 Advanced Computer Graphics 3.0; 3 cr.**  
A course that presents the basic concepts of 3D computer graphics. Topics include 3D object representations and manipulations, 3D transformation and viewing, hidden-surface and hidden-line removal, shading models, rendering, texture mapping, ray-tracing and animation techniques. *Occasionally.*
- CMPS 386 Computer-Aided Geometric Design 3.0; 3 cr.**  
Graduate students taking the course are assigned extra work in the form of outside reading, a term paper and/or an additional project. *Same as CMPS 286. Occasionally.*
- CMPS 388 Computer Animation 3.0; 3 cr.**  
A course that introduces the basic techniques and algorithms in computer animation. Topics include: history and applications of computer animation, modeling, interpolation, key framing, morphing, deformation, forward and inverse kinematics, particle systems and rigid body dynamics. *Occasionally.*
- CMPS 395A/B Comprehensive Exam 0 cr.**  
*Prerequisite: Consent of advisor.*
- CMPS 396 Special Topics in Computer Science 1 - 3 cr.**  
A course in which topics may vary each term and are expected to be in areas of active research. Students may register for this course twice (or more) on condition that course content differs. *Prerequisite: Consent of instructor. Annually.*
- CMPS 397 Computer Science Tutorial 1 - 3 cr.**
- CMPS 398 MS Project 3 cr.**
- CMPS 399 MS Thesis 9 cr.**



# Department of Economics

Chairperson:	Altug, Sumru Guler
Professor Emeritus:	Makdisi, Samir
Professor:	Neaime, Simon
Associate Professors:	Dagher Leila N.; Mabsout, Ramzi, R.; Salti, Nisreen I.
Assistant Professors:	Abboud, Ali; Canaan, Serena Patricia; El Joueidi, Sarah; Mouganie, Pierre; Radmard, Hossein; <sup>P</sup> Sadaka, Richard A.; Tuncay, Muhammed Alparlan
Lecturers:	<sup>P</sup> Bou Nassar, Makram; Ramadan, Usamah H.; <sup>P</sup> Robalino, David
Instructors:	<sup>P</sup> El Baba, Nora; <sup>P</sup> El-Khalil, Iyad A.; <sup>P</sup> Ghabboura, Yehya; <sup>P</sup> Halawi, Balsam; <sup>P</sup> Hamdan, Dana; <sup>P</sup> Hamadeh, Hiba; <sup>P</sup> Kanaan, Maya Z.; Makki, Ghina; <sup>P</sup> Makki, Malak, Z.; <sup>P</sup> Nader, Pamela; <sup>P</sup> Rebeiz, Sylvia; Sabra, Raja; <sup>P</sup> Tabsh, Ghina; <sup>P</sup> Tabsh, Hala M

The department offers two master's degree programs, which include a Master of Arts in Economics and a Master of Arts in Financial Economics.

Candidates for both master's degrees should hold a BA in economics. For holders of other bachelor's degrees (or their equivalent), candidates should complete the following undergraduate courses or their equivalent: ECON 214, ECON 217, ECON 227, MATH 201 and MATH 202. Moreover, all applicants must submit an official GRE or GMAT score with the application.<sup>1</sup>

## MA in Economics

Students wishing to obtain a Master of Arts in Economics are required to complete at least 24 credits, all of which should be at the graduate level, including ECON 305, ECON 317 and ECON 327, plus a 6-credit thesis. Of the remaining 15 graduate credits, at least 9 credits should be chosen from the available graduate courses in the department, and up to 6 credits may be chosen from available graduate courses at the university with the advisor's approval. In case of deficiencies in the student's undergraduate record, the department may require additional credits. Students are also required to pass the comprehensive exam.

Faculty in the Department have a wide range of research interests covering, among others, labor economics, theory-based and applied macroeconomics, financial economics, behavioral economics and economic methodology, public economics and the political economy of development.

**ECON 301**      **Graduate Tutorial**      **3.0; 3 cr. (each)**  
*May not be repeated for credit. Occasionally.*

**ECON 303**      **Graduate Seminar**      **3.0; 3 cr. (each)**  
*Occasionally.*

**ECON 305**      **Econometrics I**      **3.0; 3 cr.**

<sup>P</sup>) Part-time

Parameter estimation and hypothesis testing within the framework of the classical linear regression model. Subjects covered include general least squares and its applications (e.g. heteroskedasticity, autocorrelation, multivariate regression), GMM estimation, simultaneous equation models and panel data models. *Annually.*

**ECON 306 Econometrics II 3.0; 3 cr.**

Dynamic models, structural VARs (impulse response, variance decomposition), cointegration and error correction models, ARCH models, and forecasting methods. The course has a strong empirical component. *Prerequisite: ECON 305. Annually.*

**ECON 307 Urban Economics 3.0; 3 cr.**

A study of the development and growth of urban areas and analysis of specific urban issues such as pollution, housing, land use and public transportation. *Occasionally.*

**ECON 317 Microeconomic Theory I 3.0; 3 cr.**

Theory of demand and theory of consumer's choice: choice under uncertainty, theory of production and theory of costs, market equilibrium and market failure, externalities and the public good. *Annually.*

**ECON 318 Topics in Behavioral Economics 3.0; 3 cr.**

An introduction to behavioral and experimental methods; description of evidence collected in the laboratory and in the field; a comparison of the assumptions and predictions of the benchmark neoclassical model to the more recent and complex behavioral models. One of the following three areas will be covered: behavioral finance, behavioral game theory, or experimental markets. *Occasionally*

**ECON 326 Public Economics 3.0; 3 cr.**

A study of the theories of governmental taxation and spending, budgetary policies and their effects on the level of economic activity, welfare effects of taxation and expenditure policies. *Occasionally.*

**ECON 327 Macroeconomics 3.0; 3 cr.**

A study of macroeconomic theory including the classical and New Keynesian macroeconomic models, theories of intertemporal consumption and saving, investment dynamics, business cycle analysis and economic growth, inflation and unemployment trade-offs, monetary and fiscal policy, and macroeconomic stabilization. *Annually.*

**ECON 328 Monetary Economics 3.0; 3 cr.**

This is an advanced course on monetary economics based on a general equilibrium approach. Topics include models of money demand such as money-in-the-utility function and cash-in-advance models, New Keynesian monetary economics, and public finance and inflation. *Annually.*

**ECON 332 Political Economy of Development 3.0; 3 cr.**

Studies the role of factors such as geography, historical path dependence, institutions and culture in determining economic growth; introduces the basic tools of political economics; studies models of governance and mis-governance and the role of institutional failure; examines empirical issues in validating the effect of institutions and culture on economic outcomes. *Occasionally*

**ECON 333 Energy Economics and Policy 3.0; 3 cr.**

A study of the theories related to energy economics, such as economics of natural and energy resources, and the interrelationship between energy, economics and the environment, as well as some important issues in energy policy. *Students cannot receive credit for both ECON 333 and MECH 674. Occasionally.*

- ECON 335 International Trade Theory 3.0; 3 cr.**  
An intensive examination of the theory of comparative advantage: the classical and Heckscher-Ohlin statements, trade and welfare, tariffs, recent contributions to trade theory. *Occasionally.*
- ECON 336 International Monetary Economics 3.0; 3 cr.**  
An intensive examination of the theories of balance of payments adjustment, the international monetary system and the position of the developing countries in it. *Occasionally.*
- ECON 338 Economics of Natural Resources and the Environment 3.0; 3 cr.**  
An analysis of economic issues regarding the efficient use of natural resources and the management of environmental quality. *Occasionally.*
- ECON 339 Mathematical Economics 3.0; 3 cr.**  
General equilibrium theory, linear programming and dynamic optimization, economic dynamics, difference and differential equations, and the economics of uncertainty and information. *Prerequisites: ECON 239 and either MATH 218 or MATH 219. Occasionally.*
- ECON 395A/B Comprehensive Exam 0 cr.**  
*Prerequisite: Consent of advisor.*
- ECON 399 MA Thesis 6 cr.**

## MA in Financial Economics

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Students wishing to obtain a Master of Arts in Financial Economics are required to complete at least 27 credits, all of which should be at the graduate level, plus a 3-credit project. The coursework includes eight required courses (listed below) and one elective. In case of deficiencies in the student's undergraduate record, the department may require additional credits. Students are also required to pass the comprehensive exam.

The research interests of the faculty include macro-finance, industrial organization, international economics, applied econometrics, financial economics, financial econometrics, macroeconomics, monetary economics, energy economics and time-series econometrics.

**ECON 305      Econometrics I      3.0; 3 cr.**  
Parameter estimation and hypothesis testing within the framework of the classical linear regression model. Subjects covered include general least squares and its application (e.g. heteroskedasticity, autocorrelation, multivariate regression), GMM estimation, simultaneous equation models and panel data models. *Annually.*

**ECON 317      Price Theory I      3.0; 3 cr.**  
Theory of demand and theory of consumer's choice: choice under uncertainty, theory of production and theory of costs, market equilibrium and market failure, externalities and the public good. *Annually.*

**ECON 327      Macroeconomics      3.0; 3 cr.**  
A study of macroeconomic theory including the classical and New Keynesian macroeconomic models, theories of intertemporal consumption and saving, investment dynamics, business cycle analysis and economic growth, inflation and unemployment trade-offs, monetary and fiscal policy, and macroeconomic stabilization. *Annually.*

**ECON 328      Monetary Economics      3.0; 3 cr.**  
This is an advanced course on monetary economics based on a general equilibrium approach. Topics include models of money demand such as money-in-the-utility function and cash-in-advance models, New Keynesian monetary economics, and public finance and inflation. *Annually.*

**ECON 340      Asset Pricing I      3.0; 3 cr.**  
A primer in asset pricing emphasizing the underlying economic theory and recent empirical results; surveys the major asset pricing theories, tools, and results and portfolio choice. The course presents a general framework for pricing (financial) assets, and the economic foundations for how individual preferences impact these prices. The course also covers the role of financial markets in sharing risk in the economy and presents recent empirical evidence on the determinants of asset returns. Topics include pricing of stocks and bonds, portfolio theory, and the operation and efficiency of financial markets. *Occasionally*

**ECON 341      Corporate Finance I      3.0; 3 cr.**  
This course provides strong foundations in the principles of corporate finance. Theoretical and empirical models dealing with economic aspects of corporate finance and the financial decisions of firms are examined. Topics covered include debt and equity financing, the bankruptcy process, the costs of financial distress, and firm financing constraints and business cycles. *Occasionally*

**ECON 342      Asset Pricing II: Options and Derivatives Instruments      3.0; 3 cr.**  
 An analysis of basic derivative contracts such as forwards, futures, options and swaps; contract characteristics, payoffs from various strategies, as well as hedging arbitrage; and speculation activities using derivatives are analyzed. *Annually.*

**ECON 395A/B      Comprehensive Exam      0 cr.**  
*Prerequisite: Consent of advisor.*

## Electives (one course: 3 credits)

One elective course is chosen from the following list in consultation with the faculty advisor. Other electives may alternatively be chosen from available graduate courses at the university with the advisor's approval.

**ECON 336      International Monetary Economics      3.0; 3 cr.**  
 An intensive examination of the theories of balance of payments adjustment, the international monetary system and the position of the developing countries in it. *Occasionally.*

**ECON 344      Financial Markets and Institutions      3.0; 3 cr.**  
 An analysis of the institutional features of the international financial markets, instruments and application of financial economic theory, and analytical tools to achieve effective and efficient risk management in international environments *Occasionally.*

**ECON 345      International and Arab Emerging Financial Markets      3.0; 3 cr.**  
 Case studies and exercises of portfolio selection and management in selected Middle Eastern countries. *Occasionally.*

**ECON 346      Advanced Futures and Options      3.0; 3 cr.**  
 An analysis of pricing in continuous-time of contingent claims securities and a broad category of derivative instruments and investment strategies. *Prerequisite: ECON 342. Occasionally.*

**ECON 347      Economic Forecasting      3.0; 3 cr.**  
 A course that provides training in methods of forecasting used in commercial enterprises. This course also introduces the methods of macroeconomic forecasting. *Occasionally.*

**ECON 348      Advanced Monetary Economics      3.0; 3 cr.**  
 An examination of recent monetary economic developments intended to equip students with the technical details and workings of monetary economic models. *Prerequisite: ECON 328. Occasionally.*

<b>ECON 355</b>	<b>Corporate Finance II</b>	<b>3.0; 3 cr.</b>
This course selects topics in corporate finance. The financial landscape is rapidly evolving in the wake of the global financial crisis. Many of the themes of Corporate Finance II have special relevance today: the pros and cons of debt financing, the bankruptcy process, the costs of bankruptcy, and the role of private equity. Examining these issues will provide a holistic view of finance, capital markets, and the role of financial intermediaries.		
<b>ECON 356</b>	<b>Special Topics in Financial Economics</b>	<b>3.0; 3 cr.</b>
<i>May be repeated for credit. Occasionally.</i>		
<b>ECON 357</b>	<b>Special Topics in Monetary Economics</b>	<b>3.0; 3 cr.</b>
<i>May be repeated for credit. Occasionally.</i>		
<b>ECON 398</b>	<b>Project</b>	<b>3 cr.</b>

## Transfers Between the Two Programs

Students wishing to transfer from one program to another can do so after obtaining departmental approval and can be given credit for courses already passed that fall within the requirements of the other program.

Transfers between the two programs are permitted subject to the following:

Students enrolled in the MAE program who wish to transfer to the MAFE program are given credit for ECON 305, ECON 317, ECON 327 and ECON 328 if completed prior to the transfer. The four courses are required under the MAFE program.

Credit may be given for two other graduate courses completed under the MAE program.

With the above courses completed, this leaves 15 credits of additional required coursework (plus the project) to be completed to graduate with an MAFE. Any incomplete courses among the above-mentioned need to be completed. The remaining elective course(s) are chosen in consultation with the student advisor.

Students enrolled in the MAFE program who wish to transfer to the MAE program must complete ECON 317, ECON 327 and ECON 305. If completed prior to the transfer, these classes constitute part of the course requirements toward the MAE. With the completion of these three courses, the transferring student needs to complete an additional 15 credits of coursework, plus the thesis.

# Department of Education

Chairperson:	Karami-Akkary, Rima
Professors:	Al-Hroub, Anies M.; ; Boujaoude, Saouma B.; Ghaith, Ghazi M.; Jurdak, Murad E.; Khamis, Vivian E.
Associate Professors:	Amin, Tamer G.; Baytiyeh, Hoda M.; El-Mouhayar, Rabih R.; Karami-Akkary, Rima R.; Khishfe, Rola F.
Assistant Professor:	Khalil, Lina
Lecturers:	<sup>P</sup> Bachour, Najla A.; BouZeineddine, Amal R.; El Hassan, Karma
Instructors:	<sup>P</sup> El Khatib, Lara; <sup>P</sup> Jouni, Nidal; <sup>P</sup> Shukri Balaa, Rola; <sup>P</sup> Mouawad, Rim; <sup>P</sup> Hout, Hanin

The Department of Education offers programs at both the undergraduate and graduate levels. The undergraduate level program leads to a Bachelor of Arts degree. The post-BA Diploma Program leads to a Teaching Diploma, Diploma in Special Education, or Diploma in Educational Management and Leadership. The graduate program leads to a Master of Arts degree in Education.<sup>P</sup>

## MA in Education

The MA in Education aims to prepare students for further graduate study as well as to improve their professional practice. The program addresses the needs and interests of beginning and experienced teachers and other interested persons whose objective is to advance their knowledge of educational practice in schools. The MA program also prepares students for admission to doctoral study in a variety of related fields, such as educational psychology, research methodology, administrative and policy studies, and instruction and learning of subject matter in a variety of content areas.

The MA program comprises the following areas of concentration:

- Educational Foundations and Policy Studies (not offered at present)
- Educational Psychology (Tests and Measurement or School Guidance and Counseling)
- Educational Administration and Policy Studies
- Elementary Education
- Mathematics Education
- Science Education
- Teaching of English as a Foreign Language (TEFL)

<sup>P</sup>) Part-time

## Prerequisites

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Students may pursue their studies toward the MA in Education in any one of the areas of concentration above provided they meet the department and university requirements for admission to graduate work. The department prerequisites include a teaching diploma or equivalent professional certification. For Educational Administration and Policy Studies, a minimum of one year of relevant professional experience is required. However, and at the discretion of the department, students may be exempt from all or part of the teaching diploma requirements based on professional experience and/or previously completed graduate coursework. In case of deficiencies in undergraduate preparation, a student may be required to complete other prerequisite courses, such as courses in relevant subject matter before full admission to the program. For university admission requirements for all graduate students, refer to the Admissions section in this catalogue.

## Requirements

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The program includes a minimum of 21 credits and a thesis. A non-thesis option, which includes a minimum of 27 credits of course-work plus a 3-credit project, is also available. All MA candidates are required to complete the following two courses as a core program: EDUC 315; EDUC 321; and two graduate education electives or graduate courses relevant to the area of specialization as approved by the academic advisors. The balance of the program comprises primarily specialized courses related to the student's chosen area of concentration.

## Course Descriptions

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**EDUC 301 Seminar in the History and Philosophy of Education 3.0; 3 cr.**  
A course on the development of educational thought and practice through primary sources. Systems of educational theory are examined from the age of Pericles to post-World War II, with special emphasis on contemporary educational practice. *Annually.*

**EDUC 302 Seminar in the History and Philosophy of Arab Education 3.0; 3 cr.**  
A study of the development of Arab educational thought and practice through primary sources. Selected problems and representative thinkers from various periods are examined, beginning with Islam and ending in the early twentieth century. *Alternate years.*

**EDUC 303 Determinants of Educational Policy 3.0; 3 cr.**  
An examination of forces underlying policy making in education based on a theoretical and case study approach; developing scenarios for improvements. *Annually.*

**EDUC 305 Foundations of Science Education 3.0; 3 cr.**  
A study of the nature of science and its philosophical and sociological foundations with emphasis on educational implications; psychological bases of concept-learning in science and the contributions of research to science education. *Alternate years.*

**EDUC 306 Recent Developments in Science Education 3.0; 3 cr.**  
A study of recent developments in science curricula, methods of teaching, utilization of facilities, evaluation, and teacher education and supervision. *Alternate years.*

**EDUC 307 Seminar: Problems and Innovations in Elementary Education 3.0; 3 cr.**

A review and analysis of contemporary problems, innovations and trends in elementary education, organizational structures, teaching competencies, classroom logistics, student discipline and instructional improvement strategies. *Alternate years.*

**EDUC 308 Educational Planning and Policy Studies 3.0; 3 cr.**

Planning models at the micro level and applications in various countries; policy formulation, change and implementation issues as they relate to educational institutions and public and private educational systems. *Annually.*

**EDUC 309 Foundations of Mathematics Education 3.0; 3 cr.**

A study of the nature of mathematics and its philosophical, historical and sociological foundations, with emphasis on educational implications; psychological bases of concept learning in mathematics and the contributions of research in mathematics teaching. *Alternate years.*

**EDUC 310 Recent Developments in Mathematics Education 3.0; 3 cr.**

A study of recent developments in mathematics curricula, methods of teaching, utilization of instructional media, evaluation techniques, and teacher education and supervision. This course includes tryouts of some of these innovations in actual school situations. *Alternate years.*

**EDUC 311 Seminar in Supervision of Instruction 3.0; 3 cr.**

A seminar on the role of the supervisor as s/he works with teachers to improve instruction, and an examination of theoretical and practical aspects with special attention given to research in the field. *Annually.*

**EDUC 313 Management and Organization Theories in Education 3.0; 3 cr.**

An advanced theoretical study focusing on concepts of leadership, decision-making, group dynamics, and organizational behavior and change, with particular emphasis on research in the field. *Annually.*

**EDUC 314 Comparative Education 3.0; 3 cr.**

A study of theory and methods of comparative education, with an examination of schooling in a number of leading Western educational systems. This study concerns itself with historical, social, political and economic forces influencing and underlying these systems. *Alternate years.*

**EDUC 315 Psychology of Education (Advanced) 3.0; 3 cr.**

A comprehensive analysis of instructional theory, measurement skills, cognitive development, learning theory and methods of applying behavior modification in the classroom. *Annually.*

**EDUC 316 Comparative Study of Education in Arab Countries 3.0; 3 cr.**

A study of Arab educational systems, with a focus on their major problems in light of changing situations. *Annually.*

**EDUC 317 Theory and Methods of Testing 3.0; 3 cr.**

A study of theory and practice of test construction and use. The goal of this course is to build a broad background of information and skill for the proper evaluation of

psychological tests and the correct interpretation and use of test results. A wide variety of tests are examined, with emphasis on major tests of intelligence and aptitude, achievement and personality. *Alternate years.*

**EDUC 318      Test Construction in Education      3.0; 3 cr.**  
Development of testing techniques and skills for appraisal of the cognitive and affective objectives of instruction. *Alternate years.*

**EDUC 321      General Research Methodology in Education      3.0; 3 cr.**  
A course that aims at the development of a scientific orientation in the solution of educational problems. This course develops students' skills in identifying and developing research problems dealing with a variety of research designs. Basic statistical concepts are included. *Annually.*

**EDUC 322      Applied Behavior Analysis      3.0; 3 cr.**  
An analysis of respondent, instrumental and social learning theory as well as the application of experimentally derived principles of learning to problems of educational and social significance. *Annually.*

**EDUC 324      Principles and Practices of Teaching Reading and Literature      3.0; 3 cr.**  
Models of the reading process, research and pedagogical implications, and issues of comprehension and appreciation of literature. *Annually.*

**EDUC 325      Principles and Practices of Teaching  
Writing and Composition      3.0; 3 cr.**  
A consideration of various current approaches to teaching writing and the relationship of language, logic, rhetoric and culture. *Annually.*

**EDUC 326      Theory and Design of Curriculum      3.0; 3 cr.**  
An examination of the organization, scope and sequence of curricula, with special emphasis on various approaches to curriculum development. *Annually.*

**EDUC 328      Seminar in TEFL      3.0; 3 cr.**  
A seminar on selected topics in linguistics, psychology, or instructional aids and technology, and the application to classroom problems of teaching and evaluation. *Annually.*

**EDUC 329      Seminar in Education and Social Change      3.0; 3 cr.**  
A seminar on the different theories of social change, followed by an examination of the school system and the teacher as an agent of social change. *Annually.*

**EDUC 330      Theories in Guidance and Counseling      3.0; 3 cr.**  
A survey of various theories and approaches to the study and practice of guidance and counseling. *Annually.*

**EDUC 331      Field Experience in Guidance and Counseling      1.4; 3 cr.**  
Supervised experience in counseling in the school setting; observing, interviewing and testing as needed for educational and vocational objectives to meet pupil needs. *Prerequisite: EDUC 330 or EDUC 322. Annually.*

<b>EDUC 332</b>	<b>Seminar in Educational Planning for Social and Economic Development</b>	<b>3.0; 3 cr.</b>
Theory and practice of educational planning for social and economic development; techniques of assessing manpower needs and translating these into educational strategies and plans. <i>Alternate years.</i>		
<b>EDUC 333</b>	<b>Professional Development in Education</b>	<b>2.2; 3 cr.</b>
Survey of major models of professional development used primarily in schools and other educational settings. Students gain experience designing, conducting and evaluating professional development for education practitioners. Includes a field-based experience and should be taken late in the program. <i>Alternate years.</i>		
<b>EDUC 334</b>	<b>Qualitative Research Methods in Education</b>	<b>3.0; 3 cr.</b>
Aims primarily at developing students' skills in conducting cyclic, participative, qualitative and reflective research, with an emphasis on data collection and analysis methods. <i>Alternate years.</i>		
<b>EDUC 335</b>	<b>Curricula and Methodologies in Elementary Education Language Arts</b>	<b>3.0; 3 cr.</b>
Recent research, curricular and methodological developments in elementary language arts education. <i>Alternate years.</i>		
<b>EDUC 336</b>	<b>Curricula and Methodologies in Elementary Education: Science and Math</b>	<b>3.0; 3 cr.</b>
Recent research as well as curricular and methodological developments in elementary science and mathematics education. <i>Alternate years.</i>		
<b>EDUC 380</b>	<b>Graduate Tutorial in Education</b>	<b>3.0; 3 cr.</b>
A course offered to students on an individual basis. The topic can include any aspect of educational studies which may vary from term to term. <i>Occasionally.</i>		
<b>EDUC 390</b>	<b>Special Topics</b>	<b>3.0; 1-3 cr.</b>
A course that deals with special issues and concerns not included in regular courses. Topics offered during the last few years include economics of education in Lebanon. <i>May not be repeated for credit.</i>		
<b>EDUC 398</b>	<b>MA Project</b>	<b>3 cr.</b>
<b>EDUC 395A/B</b>	<b>Comprehensive Exam</b>	<b>0 cr.</b>
<i>Prerequisite: Consent of advisor.</i>		
<b>EDUC 399</b>	<b>MA Thesis</b>	<b>9 cr.</b>

# Certificate in Teaching in Higher Education (C-THE)

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The Certificate in Teaching in Higher Education (C-THE) provides training in teaching for PhD students at AUB. The certificate aims at equipping students with best practices and professional skills in teaching in higher education. It consists of two courses, one taken in the fall term (C-THE I) and the other taken in spring term (C-THE II). PhD students are required to enroll in the C-THE in the fall term that follows their first term of enrollment.

## Course Descriptions

**EDUC 401                    C-THE I: Teaching in Higher Education – Theory I                    0 cr.**

This course is an introduction to teaching in higher education, face-to-face and online. The course covers topics such as course syllabus design, learning outcomes, and teaching methodologies such as transformative learning, learner-centered classes and flipped classrooms. *Annually in fall term. Pre-requisite: consent of instructor.*

**EDUC 402                    C-THE II: Teaching in Higher Education – Theory II & Practicum                    0 cr.**

This course is a combination of in-class sessions and teaching field experience. The first part covers topics such as assessment, presentation skills, and teaching portfolio. The second part consists of practical observations and practice teaching under the supervision of designated mentors. *Annually in spring term. Pre-requisite: EDUC 401 and consent of instructor*



# Department of English

Chairperson:	Hout, Syrine C.
Professors:	Choueiri, Lina G.; Hout, Syrine C.; Myers, Robert E.; Shaaban, Kassim A.
Associate Professors:	Gonsalves, Joshua D.; Harb, Sirène H.; Mejcher-Atassi, Sonja; Khalaf, Roseanne S.; Mehmood Ali, Tariq; Zenger, Amy A.
Assistant Professors:	Avant, Doyle R.; Currell, David A.; Issa, Rana H.; Landes, David; Maude, Kathryn R; Waterman, Adam J.

The Department of English offers one writing course, ENGL 300, to all graduate students in the university who did not meet the RUSE.

**ENGL 300**      **Writing in the Disciplines**      **3.0; 0 cr.**  
 ENGL 300 Writing in the Disciplines 3.0; 0 cr. A course that prepares students for graduate-level academic writing, and covers such topics as academic writing in different disciplines, the writing process, argumentation and working with sources. Prerequisite: 500-529 on the AUB EEE (new EEE: 32-39) or 573-582 on the TOEFL (PBT) or 88-96 on the TOEFL (IBT). Each term.

The Department of English offers two graduate degree programs: the MA in English Literature and the MA in English Language.

## Mission Statement

The Department of English at AUB offers two graduate degree programs, which include an MA in English Literature and an MA in English Language. These graduate programs aim to ground students in literature and language studies. They provide students with opportunities to pursue advanced study in multiple linguistic, literary and cultural traditions through engagement with texts in English, in translation, between languages and across media. The programs provide a solid academic basis for those who wish to continue toward a PhD in literature or language studies, as well as for those who wish to pursue a career in writing, publishing, editing, teaching and related areas. Through an ongoing process of critical self-reflection, students will attain experience and abilities in linguistic and textual analysis, critical thought, writing and aesthetic appreciation that will contribute to their personal, academic and professional growth.

The requirements for an MA degree in English consist of 21 credit hours in courses numbered 300 or above, successful completion of a comprehensive examination, and a thesis along with any additional prerequisite courses determined by the department to make up for deficiencies in undergraduate preparation. General requirements for graduate study are found in the Admissions section of this catalogue and on the departmental website.

## MA in English Literature

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Students working for an MA degree in English Literature must complete ENGL 301A. Other literature courses are listed using one of the course numbers below (ENGL 302-315), with an additional letter suffix and course title reflecting the specific themes and readings of that course. Up to two courses with the same number but different letter suffixes and titles reflecting different themes and readings may be taken for credit.

In addition to ENGL 301A, students must take a minimum of one course in each of the following three categories: Literary History (courses in the range ENGL 302-305), Comparative Literature (courses in the range ENGL 306-309) and Literary and Cultural Studies (courses in the range ENGL 310-13). The remaining three courses may comprise any courses in English Literature with the additional provision that up to two may be taken in other programs or departments, subject to approval by the Department of English.

All students must complete the general requirements for graduate study detailed in the General University Academic Information section of this catalogue. Further details about the format of the comprehensive examination and the requirements of the thesis can be found on the departmental website.

## Literature Course Descriptions

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**ENGL 301A Introduction to Bibliography and Research Methods 3.0; 3 cr.**  
An introduction to bibliography and research methodologies in the study of literature, as well as elements of advanced literary theory. *Annually.*

### Literary History

**ENGL 302 Literatures of the Middle Ages 3.0; 3 cr.**  
(A, B, C, D, E...)

A course that covers major works of medieval literature, with attention to both form and cultural context. Some attention may be given to texts' original languages. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 303 Early Modern Literatures 3.0; 3 cr.**  
(A, B, C, D, E...)

A course that covers major works of Renaissance literature, including theatre, with attention to both form and cultural context. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 304 British Literatures 3.0; 3 cr.**  
(A, B, C, D, E...)

A course that covers major works of British literature, including theatre, from the 18th century to the contemporary period. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 305 American Literatures 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course that covers major works of American literature, including theatre and film, with some emphasis given to relations among the wide array of American literary traditions. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

## Comparative Literature

**ENGL 306 Transnational Literatures 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course exploring relationships among texts, including theatre, film, and other narrative and visual forms, emerging from a range of different locales, with an emphasis on historical contexts of migration, diaspora and crisis. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 307 Colonial and Postcolonial Literatures 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course exploring relationships among texts that circulate between the colonized and formerly colonized world, and sites of imperial and neo-imperial power. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 308 Literatures of the Global South 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course exploring relationships among texts that circulate through networks that link different sites of the colonized and formerly colonized world. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 309 World Literatures 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course exploring relationships among significant texts from different origins, time periods and genres, as well as their resonance in global contexts via translation, adaptation and rewriting. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

## Literary and Cultural Studies

**ENGL 310 Literature, Technology and Media 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course exploring relationships between established (e.g. theatre, print, film and visual media) and emergent media, and the changing conventions of genre, period and form. Themes and readings may vary from term to term, and might include interrogations of the histories of cinematic, theatrical and literary culture. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 311 Literature and Material Culture 3.0; 3 cr.**  
**(A, B, C, D, E...)**  
 A course exploring relationships between literary culture and the physical manifestations of culture in made objects. Themes and readings may vary from term to term, and might include examinations of capitalism and consumer culture as manifest in the representation of the domestic interior; or relations between the visual arts and literary, theatrical or cinematic representation. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 312 Literature, Gender and Sexuality 3.0; 3 cr.**  
**(A, B, C, D, E...)**  
 A course exploring literary cultures from the perspectives of gender and sexuality as interpretive frameworks and representational strategies. Themes and readings may vary from term to term, and might include considerations of third world feminisms, gender and performance theory, queer and post-queer theory. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 313 Literature and Translation 3.0; 3 cr.**  
**(A, B, C, D, E...)**  
 A course exploring translation as a technology of literary production and meaning-making. Works in translation will be considered through the lens of theories of translation and their practical applications. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

## Additional Course Options

**ENGL 314 Special Topics in Literature 3.0; 3 cr.**  
**(A, B, C, D, E...)**  
 A course offered to students on an individual basis. The topic can include any aspect of literary study. Themes and readings may vary from term to term. *Occasionally. May be repeated for credit for a maximum of 6 credits.*

**ENGL 315 Graduate Tutorial in Literature 3.0; 3 cr.**  
**(A, B, C, D, E...)**  
 A course offered to students on an individual basis. The topic can include any aspect of literary study. Themes and readings may vary from term to term. *Occasionally.*

**ENGL 395A/B Comprehensive Exam 0 cr.**  
*Prerequisite: Consent of advisor.*

**ENGL 399 MA Thesis 9 cr.**

## MA in English Language

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Students working for an MA degree in English Language must take ENGL 301B, ENGL 327, ENGL 341 or ENGL 342; and ENGL 345. Two additional elective English Language graduate courses from among those offered in the department must be taken. Students must take a further graduate course, which may be from outside the English language course offerings, subject to approval by the Department of English. Students working for the degree of MA in the Teaching of English as a Foreign Language (TEFL) should refer to the Department of Education catalogue section.

All students must complete the general requirements for graduate study detailed in the General University Academic Information section of this catalogue. Further details about the format of the comprehensive examination and the requirements of the thesis can be found on the departmental website.

### Language Course Descriptions

**ENGL 301B Introduction to Bibliography and Research Methods 3.0; 3 cr.**  
An introduction to bibliography and research methodologies in the study of language. *Annually.*

**ENGL 326 Advanced Translation Theory and Practice 3.0; 3 cr.**  
A close examination of major translation theories, both traditional and linguistic, and an application of these theories to the practice of translation, both literary and technical, in Arabic and English. *Annually.*

**ENGL 327 Sociolinguistics 3.0; 3 cr.**  
A course intended to provide in-depth analysis of issues related to the study of the interaction between language and society. This course covers such topics as geographical and social dialects, multilingualism, language and gender, ethnography of speaking, discourse analysis, language planning and language attitudes. *Annually.*

**ENGL 329 Grammatical Studies in Old and Middle English Literature 3.0; 3 cr.**  
A close reading and grammatical examination of selected texts in the original. Exact content to be determined by the instructor. *Occasionally.*

**ENGL 341 Phonology 3.0; 3 cr.**  
A survey of theories of phonological description including phonemics, distinctive features and generative phonology; an application of these theories to actual linguistic data from various languages with concentration by each student on one specific problem. *Annually.*

**ENGL 342 Theoretical Linguistics 3.0; 3 cr.**  
A study of readings in advanced grammar that have contributed to the formulation of theories of language description; e.g. transformational grammar, stratificational grammar, generative semantics, pragmatics, government and binding. *Annually.*

**ENGL 344 Graduate Tutorial in Linguistics 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A tutorial offered to students on an individual basis. The topics can include any aspect of the study of linguistics that both instructor and student agree upon. *Occasionally.*

**ENGL 345 Language Acquisition 3.0; 3 cr.**

A survey of studies in first and second language acquisition. Emphasis is placed on stages of acquisition and the strategies used by children in acquiring their native language. Comparisons between first and second language acquisition are drawn with implications for language teaching. *Annually.*

**ENGL 346 Issues in Applied Linguistics 3.0; 3 cr.**  
**(A, B, C, D, E...)**

A course whose topic varies from term to term. The course deals with major topics and issues in language study such as multilingualism and multiculturalism, assessment and evaluation, language and education, and intercultural communication. *Annually.*

**ENGL 395A/B Comprehensive Exam 0 cr.**

*Prerequisite: Consent of advisor.*

**ENGL 399 MA Thesis 9 cr.**

# Department of Fine Arts and Art History

Chairperson:	Sadek, Walid
Professor:	Sadek, Walid
Associate Professors:	Harutyunyan, Angela
Assistant Professors:	Assaf, Sahar; Auji, Hala; Esanu, Octavian; Genadry, Daniele; Hammond, Joseph
Instructors:	Abrahamian, Panos; <sup>P</sup> Al-Amine, Gheith; <sup>P</sup> Badran, Rayya; Chalabi, Fares; El-Hage, May; Gorra, Paul; <sup>P</sup> Harb, Nazha; Khcheich, Rima; Khoury, Joelle; Maalouf, Maya; Nader, Myrna; Raad, Joanna

## MA in Art History and Curating

The general requirements for graduate study can be found in the Admissions section of the catalogue.

Students are required to successfully complete 30 credit hours for graduation: 12 credits of core concentration in AHIS (AHIS 301, AHIS 311, AHIS 302, AHIS 325); 6 credits of core electives in AHIS; 6 credits of general electives; and 6 credits for the graduation thesis or exhibition.

Students who choose to specialize in Art History are required to submit a research-based argumentative art history or theory thesis for graduation. Students who specialize in Curating are required to submit a curatorial research paper and organize an exhibition in collaboration with art institutions and art spaces in Lebanon of the student's choosing.

## Course Descriptions

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- AHIS 301 Seminar in Practices of Art History (Research Methods, Theories, Historiography) 3.0; 3 cr.**  
The seminar acquaints students with the main methods, theories and practices of art historical research. *Bi-annually.*
- AHIS 302 Seminar Critical Art History 2.2; 3 cr.**  
The seminar discusses the critical turn in Art History since the 1970s informed by linguistic formalism, structuralism, psychoanalysis and Marxism. *Bi-annually.*
- AHIS 311 Issues in Contemporary Art and Theory 2.2; 3 cr.**  
The course is about the relationship of contemporary art (artistic and institutional practices) to theory. *Annually.*
- AHIS 312 Seminar: Issues in Modern and Contemp. Art in the Middle East and the Arab World 3.0; 3 cr.**  
The seminar offers a topical treatment of issues related to modern and contemporary art in the Middle East and the Arab World. *Occasionally.*
- AHIS 315 Seminar: Issues in Global Art History 2.2; 3 cr.**  
The seminar situates the art historiographical canon and exhibition-making practices in the wake of the global turn. *Occasionally.*
- AHIS 318 Modernism and Its Discontents 3.0; 3 cr.**  
The course investigates 19th and 20th century canonical modernism from a comparative perspective, in relation to other modernisms and avant-gardes. *Occasionally.*
- AHIS 323 European Collections, Exhibitions and Institutions 2.2, 3 cr.**  
This course introduces students to collecting practices and to the history of institutionalization of collections in various historical contexts in the Western tradition. *Occasionally.*
- AHIS 324 Collecting and Exhibition Practices in the Islamic and Arab World 2.2, 3 cr.**  
This course offers a historiographical and theoretical approach to representations of art in museums, collections and expositions/fairs across various historical and geographic contexts pertaining to the Islamic and Arab world. *Occasionally.*
- AHIS 325 Issues in Curating: Practicum 3.0; 3 cr.**  
The course is a practicum in curating exhibitions. It offers a hands-on experience in organizing art exhibitions and related events. Students conduct curatorial research and implement their ideas practically, from writing curatorial concepts to selecting artworks and designing exhibitions at the AUB Art Galleries. *Annually.*
- AHIS 331 Workshop in Modalities of Art Writing (curatorial, critical, creative) 3.0; 3 cr.**  
The course is based on active participation and engagement in art writing practices. *Occasionally.*

- AHIS 335**      **Materials, Techniques, Technologies of Exhibition-Making**      **2.2; 3 cr.**  
Students will learn to work with spaces, design exhibitions and install art works, amongst other relevant technical skills. *Occasionally.*
- AHIS 313**      **Graduate Tutorial in Art History and Curating**      **1-3 cr.**
- AHIS 349**      **Special Topics in Art History**      **3.0; 3 cr.**  
The course focuses on specific topics of art historical significance and is framed around a key debate or discussion in the discipline.
- AHIS 350**      **Special Topics in Art Theory and Aesthetics**      **3.0; 3 cr.**  
The course deals with key concepts of aesthetics and theories of art from the epoch of Enlightenment to the present. Introduction to concepts and aesthetic theories is examined in the context of specific debates.
- AHIS 385**      **Special Topics in Curating**      **3.0; 3 cr.**  
The course offers a close study of curatorial practices framed around particular art historical and art institutional constellations, both historically and in contemporary times. The course includes methodological, theoretical and practical components.
- AHIS 390**      **Internship**      **0 cr.**  
Students are required to take a minimum of 40 hours of internship in an art and cultural institution. The internship program should be approved by the student's advisor and the Graduate Program Director.
- AHIS 395A/B**      **Comprehensive Exam**      **0 cr.**  
*Prerequisite: Consent of advisor.*
- AHIS 399**      **Graduate Thesis and Exhibition**      **6 cr.**

# Department of Geology

Chairperson:	Doummar, Joanna J.
Professor:	Abdel-Rahman, Abdel-Fattah M.
Associate Professors:	Doummar, Joanna J.; Salah, Mohamed K.
Assistant Professors:	Haidar, Ali T; Nemer, Tony.
Instructors:	<sup>P</sup> Khadra, Wisam M.; <sup>P</sup> Oueida, Raghida S.

## MS in Geology

Candidates pursuing the Master of Science program in Geology must complete seven graduate courses (21 cr.) and a thesis (9 cr.). Students may select courses from the graduate courses offered in the department according to their fields of interest.

## Course Descriptions

- GEOL 303      Geochemistry      3.0; 3 cr.**  
 An application of chemical concepts to the evolution of the Earth, particularly its weathering, magmatic and metamorphic cycles, and the distribution of elements; cosmochemistry, crystal chemistry and aqueous geo-chemistry. *Prerequisite: GEOL 211.*
- GEOL 304      Geophysics I      3.0; 3 cr.**  
 An introduction to seismic, gravitational and magnetic methods and their interpretation procedures and applications in the exploration of petroleum and other natural resources.
- GEOL 305      Geophysics II      3.0; 3 cr.**  
 A course on electrical, radiometric and thermal geophysical methods, in addition to well logging for general geophysical applications and their methods of interpretation. *Pre- or corequisites: GEOL 221 and GEOL 222.*
- GEOL 306      Economic Minerals Geology      3.0; 3 cr.**  
 A course on the occurrence and classification of mineral ore deposits and theories of their formation; ore forming processes and ore deposit models; advanced techniques to evaluate ore genesis; and mineral exploration techniques. *Prerequisite: GEOL 211.*
- GEOL 307      Advanced Petroleum Geology      3.0; 3 cr.**  
 A course that covers the origin, migration and accumulation of petroleum; applications of surface and subsurface geological and geophysical exploration methods, production, and development processes; and Middle East hydrocarbon exploration and development.

- GEOL 308      Alternate Energy Sources      3.0; 3 cr.**  
A course on energy and energy use, including a detailed treatment of non-fossil fuel energy options including nuclear, biomass, hydro, wind, solar and geothermal methods, with practical applications.
- GEOL 310      Global Tectonics      3.0; 3 cr.**  
A course on large-scale processes of rock deformation within the Earth, the theory of plate tectonics, and the origins and modes of deformation of major tectonic features. These include ocean ridges and continental rifts, transform and transcurrent faults, subduction zones and mountain ranges. *Prerequisite: GEOL 213.*
- GEOL 313      Photogeology      2.2; 3 cr.**  
A course on the principles of airphoto interpretation and remote sensing; the construction of planimetric geological maps, profiles and mosaics from vertical photographs using pocket and mirror stereoscopes, and an introduction to the analysis of satellite imagery.
- GEOL 317      Micropaleontology      2.2; 3 cr.**  
An introduction to the study of the main groups of microfossils, with emphasis on the foraminifera, and their application and techniques in preparation for examination.
- GEOL 318      Hydrogeology      3.0; 3 cr.**  
A course on the fundamentals of hydrogeology; groundwater occurrence, movement, development and management; pumping tests; and groundwater chemistry, quality and contamination.
- GEOL 319      Geostatistics      2.2; 3 cr.**  
This course deals with the study and application of different statistical techniques of interest to the geological sciences. Topics to be covered include analysis of sequences of data, map analysis and analysis of multivariate data. *Prerequisite: GEOL 213 or consent of instructor.*
- GEOL 320      Graduate Seminar      3.0; 3 cr.**  
Seminar given by the department. Graduate students attending the course are required to cover a particular theme on one of the various aspects of the geology of the Middle East, such as earthquakes, tectonism and stratigraphy of the region, magmatism in the Nubian shield.
- GEOL 321      Diagenesis I: Advanced Petrography of Sedimentary Rocks      3.0; 3 cr.**  
A course that covers some advanced petrographic techniques used in the study of sedimentary rocks (e.g., conventional and cathodoluminescence microscopy, scanning electron microscopy), major diagenetic processes and the resultant products in sedimentary environments. *Prerequisites: GEOL 212, GEOL 214 and GEOL 222; or consent of instructor. Biannually.*
- GEOL 322      Diagenesis II: Advanced Techniques in Geochemistry of Sedimentary Rocks      3.0; 3 cr.**  
A course on the various geochemical methods (e.g., trace elements, stable isotopes, radiogenic isotopes, fluid inclusions and microthermometry) commonly used in the study of diagenesis of both carbonate and clastic reservoirs. *Prerequisites: GEOL 212 and GEOL 222; corequisites: GEOL 214 and GEOL 222; or consent of instructor. Biannually.*

- GEOL 323 Geological Oceanography 3.0; 3 cr.**  
A general introduction to climatic and oceanographic interactions, characteristics of oceans, and a detailed analysis of near shore and coastal environments.
- GEOL 324 Engineering Geology I 2.2; 3 cr.**  
A course on engineering geology and earth materials that focuses on the interaction between engineering and geology in relation to the geotechnical properties of soil and rock mechanics and site investigations.
- GEOL 325 Engineering Geology II 3.0; 3 cr.**  
A course on environmental and applied engineering geology that deals with environmental planning, natural disasters and terrain evaluation, with special applications to mass movements, geology of man-made structures and the urban environment.
- GEOL 330 Selected Topics in Advanced Geology 3 cr.**  
*May be repeated for credit.*
- GEOL 395A/B Comprehensive Exam 0 cr.**  
*Prerequisite: Consent of advisor.*
- GEOL 399 MS Thesis 9 cr.**  
*Prerequisite: Consent of advisor.*

# Department of History and Archaeology

Chairperson:	Sader, Helene S.
Professor Emerita:	Seeden, Helga
Professors:	Abuhusayn, Abdul Rahim A.; Genz, Hermann P.; Sader, Helen S.; Saliba, George
Associate Professors:	Khuri-Makdisi, Ilham; Newson, Paul G.
Associate Professor of Practice:	Panayot, Nadine
Assistant Professors:	Armstrong, Lyall R. ; Malleson, Claire

The department offers programs leading to the BA, MA and PhD in Arab and Middle Eastern History. The department also offers programs leading to the BA and MA in Archaeology. For admission and graduation requirements, refer to the faculty and department web pages.

## MA in History

### Mission Statement

By means of a broad and diversified curriculum, our graduate program introduces students to the richness and complexity of Arab and Middle Eastern history. That program is intended to develop not only essential knowledge of the past, but also awareness of the methodological and theoretical complexities involved in the study of history as a discipline in the humanities. Students are motivated to be reflexive, to read, research and write critically, analytically and without prejudice or preconceptions.

### Requirements

Students registered in the master's program in history are required to take a minimum of 21 graduate credit hours and to present a thesis based on independent research.

# Doctor of Philosophy in Arab and Middle Eastern History

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## Mission Statement

The doctoral program in Arab and Middle Eastern History aims to create top-rank professional historians. Students in this program will acquire critical, interpretive and research skills, which will enable them to achieve excellence in their chosen field of specialization.

## Learning Outcomes

Upon receiving their degree, graduates of the program will be equipped with the methodological, language and research skills that will qualify them to serve as academicians or professional researchers in local, regional and international universities; in other advanced centers of higher learning in their fields of specialization; or in related cultural and inter-disciplinary studies. Their training will enable them to become eligible for administrative, journalistic, diplomatic and non-governmental posts as well.

## Admission Requirements

Admission to the doctoral program is competitive and selective and is dependent upon the recommendation of the Department of History and Archaeology and the approval of the faculty Graduate Studies Committee. Applicants normally hold an MA and have demonstrated outstanding academic ability (minimum average grade of 3.2 (or 80) or its equivalent) and the potential to conduct scholarly research. In certain cases, BA recipients whose academic performance is superior (minimum average grade of 3.7 (or 85) or its equivalent) will be considered for admission into the program. Depending on their point of entry, the completion of the program will extend between 3 to 5 years.

## Financial Assistance

The university will cover the cost of tuition and will provide stipends to PhD candidates in the form of Graduate Assistantship support on a merit or need basis. In addition to a housing subsidy, it will also assist in covering the cost of language education and research should this be sought outside the AUB campus. Student participation in scholarly conferences, which can lead to publications, is encouraged and will be supported financially.

## Study and Course Requirements

18 credits of graduate level courses are required for MA holders. 36 credits of graduate level courses are required for BA holders admitted directly into the program. The department may require students to take additional graduate or undergraduate courses if necessary. The language of instruction is English. Arabic, however, may be substituted for English depending on the area of specialization. Additionally, all students are required to attain working knowledge of either French or German and any other language required by their field of specialization. All students must submit a thesis.

## Admission to Candidacy

See section entitled Admission to Candidacy on page 70.

## Graduate Curriculum

The history graduate curriculum is subject to periodic departmental review. Overall, it is a flexible and individually-driven program, designed to build up a critical mass of knowledge based on the historical literature relating to the area of specialization. The curriculum adopts a problem-solving approach to historical research and writing, enabling graduates to think critically, work independently and take conscious ownership of their learning activity and align it with their own educational, academic and career aspirations.

## Course Description

Following is a list of existing graduate courses offered by the department:

**HIST 303/304      Graduate Seminar in Arab and Middle Eastern History      3.0; 3 cr. (each)**

A collaborative investigation of select topics in Arab and Middle Eastern History viewed from multiple perspectives. Periodic progress reports and the incorporation of findings in an interpretive term paper are required. *Students can receive credit for both HIST 303 and HIST 304.*

**HIST 305/306      Graduate Seminar in European History      3.0; 3 cr. (each)**

In-depth analysis of selected topics entailing extensive research and the submission of a final analytical term paper. *Students can receive credit for both HIST 305 and HIST 306.*

**HIST 321/322      The Arab Historians, I and II      3.0; 3 cr. (each)**

A systematic analysis of a select Arab historian in the context of his time, employing primary sources and recent secondary literature on the subject. *Students can receive credit for both HIST 321 and HIST 322.*

**HIST 323/324      Advanced Documentation and Research, I and II      3.0; 3 cr. (each)**

An applied training course in the identification, critical evaluation and utilization of primary and secondary sources; the techniques for their retrieval and modes of incorporation into a historical account. *Students can receive credit for either HIST 323 or HIST 324.*

**HIST 325/326      Social and Intellectual History of the Arabs, I and II      3.0; 3 cr. (each)**

A systematic study of social and intellectual trends in Arab history. Primary sources and recent theories and interpretations are emphasized. *Students can receive credit for both HIST 325 and HIST 326.*

**HIST 327/328      Social and Economic History of the Modern Middle East, I and II      3.0; 3 cr. (each)**

A detailed analysis of socioeconomic transformations in the modern Middle East based upon primary sources, considered in view of recent theories of development, modernization and globalization. *Students can receive credit for both HIST 327 and HIST 328.*

**HIST 330            Advanced Historical Interpretation            3.0; 3 cr.**  
A systematic examination of key modern interpretations of history and their impact upon historical methodology and historiography.

**HIST 331            Tutorial Topics in Arab and Middle Eastern History    3.0; 3 cr. (each)**  
A directed individual examination of a selected topic entailing an intensive reading program, research and the submission of a model term paper.

**HIST 332            Special Topics in History            3.0; 3 cr.**  
An in-depth course involving a detailed and systematic analysis of the history of a particular topic, area or region. *May be repeated for credit.*

**HIST 395A/B        Comprehensive Exam            0 cr.**  
*Prerequisite: Consent of advisor.*

**HIST 399            MA Thesis            9 cr.**

**HIST 480            Qualifying Exam Part I: Comprehensive Exam        0 cr.**  
*Every term.*

**HIST 481            Qualifying Exam Part II: Defense of Thesis Proposal    0 cr.**  
*Every term.*

**HIST 484<sup>1</sup>        PhD Thesis            30 cr.**  
*Every term. To be taken by regular track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work.*

**HIST 488<sup>1</sup>        PhD Thesis            42 cr.**  
*Every term. To be taken by accelerated track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work.*

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1) The choice to register for HIST 484 should be done in consultation with the thesis advisor to ensure that the total number of PhD thesis credits and PhD course credits are met as per AUB rules and regulations.

# MA in Archaeology

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## Mission Statement

The graduate program in Archaeology provides students with advanced working knowledge and critical understanding of the methodological and theoretical principles of archaeological investigation and fieldwork. In addition to developing essential knowledge about the material and cultural roots of past societies, the program enhances student awareness about the value and relevance of Lebanon's and the region's archaeological heritage.

## Requirements

Students registered in the master's program in archaeology are required to take a minimum of 21 graduate credit hours and to present a thesis based on independent research.

## Course Description

**AROL 301 Graduate Seminar: Introduction to Theory in Archaeology 3.0; 3 cr.**  
A seminar to introduce students to key theories and debates in archaeology. *Alternate years.*

**AROL 302 Advanced Seminar in Current Approaches to Archaeological Theory 3.0; 3 cr.**  
A seminar on current key theories and debates in archaeology, such as center/periphery, economics and world systems analysis, power and hierarchy, cognitive archaeology, critiques of ideology or the politics of interpretation and presentation of the past, native peoples and gender issues. *Alternate years.*

**AROL 303 Readings in Ancient Texts I 3.0; 3 cr.**  
An introduction to ancient Semitic epigraphy in general, and to one of the ancient Eastern or Western Semitic languages in particular. Alternately, Akkadian, Phoenician or Aramaic texts are studied. *Occasionally.*

**AROL 304 Readings in Ancient Texts II 3.0; 3 cr.**  
An in-depth study of a particular ancient Semitic language based on grammar and text analysis. Alternately, Akkadian, Phoenician or Aramaic texts are studied. *Occasionally.*

**AROL 305 Artifact Technology and Representation 3.0; 3 cr.**  
A technical analysis and representation of archaeological artifacts, including composition, production technique, description and drawing for publication of ceramic, metal, stone and bone artifacts. *May be repeated for credit.*

**AROL 307 Seminar in the Bronze Age Archaeology of the Near East 3.0; 3 cr.**  
A seminar that examines selected problems of the Bronze Age in the Levant during the 3rd and 2nd millennia BC. The course addresses topics such as the development of complex societies in urban communities and incipient territorial states, the incorporation of the Levant into larger empires, the development of palace economies, craft specialization, international trade and political relations as well as the breakdown of the Bronze Age system during the last centuries of the 2nd millennium BC. *May be repeated for credit.*

**AROL 308 Seminar in Iron Age Archaeology of the Near East 3.0; 3 cr.**

A seminar that examines important features of the material culture of the Near East from the 12th to the 4th century BC. The course addresses questions such as state formation, trade expansion and networks, international political relations, and the creation of new forms of art and architecture. *May be repeated for credit.*

**AROL 309 Seminar in Graeco-Roman Archaeology of the Near East 3.0; 3 cr.**

A seminar that examines important features of the material culture of the Near East from the 12th to the 4th century AD. The course addresses questions such as the growth of urbanization, local responses to Greek and Roman cultural institutions and the creation of new forms of art and architecture. *May be repeated for credit.*

**AROL 310 Seminar in Mediterranean Archaeology 3.0; 3 cr.**

This seminar explores the richness and complexity of past societies of the Mediterranean through aspects of the material culture. Through analysis of the development of prehistoric and historic Mediterranean peoples, the seminar considers how archaeological evidence reflects encounters and developments in major issues such as exchange, migration, identity and colonialism. *May be repeated for credit.*

**AROL 321 Graduate Tutorial 3.0; 3 cr.**

A study of particular sites and materials to train students in archaeological research and analysis.

**AROL 323 Advanced Fieldwork and Data Collection 3.0; 3 cr.**

A course of advanced training in archaeological surveys, excavations, artifact recording or ethnographic data collection related to archaeological fieldwork. *May be repeated for credit.*

**AROL 327 Special Topics in Archaeology 3.0; 3 cr.**

An in-depth course involving the detailed and systematic analysis of the archaeology of a particular area, region (e.g. Anatolia, the Arabian Peninsula, Egypt, Iran, the Mediterranean, etc.) or subject. *May be repeated for credit.*

**AROL 395A/B Comprehensive Exam 0 cr.**

*Prerequisite: Consent of advisor.*

**AROL 399 MA Thesis 9 cr.**

# Department of Mathematics

Chairperson:	Bertrand, Florian J.
Professor Emeritus:	Muwafi, Amin
Professors:	Abi-Khuzam, Faruk F.; Abu-Khuzam, Hazar M.; Khuri-Makdisi, Kamal F.; Nassif, Nabil R.; Shayya, Bassam H.
Associate Professors:	Alhakim, Abbas M.; Bertrand, Florian J.; El Khoury, Sabine S.; Raji, Wissam V.; Tlas, Tamer M.
Assistant Professors:	Andrist, Rafael; Aoun, Richard G.; Della Sala, Giuseppe; Monni, Stefano; Moufawad, Sophie M.; Roy, Tristan Cyrus; Sabra, Ahmad A.; Taati, Siamak; Taghavi-Chabert, Arman
Lecturers:	Fayyad, Dolly J.; Mroue, Fatima K.; Yamani, Hossam A.
Instructors:	Ashkar, Alice N.; Bou Eid, Michella J.; Fleihan, Najwa S.; Itani-Hatab, Maha S.; Khachadourian, Zador A.; Nassif, Rana G.; Rahhal, Lina A.; Tannous, Joumana A.

The Department of Mathematics offers programs leading to the degree of Master of Science (MS) in Mathematics and Statistics.

Under Mathematics, students may choose between two tracks: a track in Pure Mathematics and a track in Applied Mathematics.<sup>1</sup>

## MS in Mathematics

Students who are admitted to one of the two MATH tracks, Pure or Applied, must complete the university requirements for graduate study in the Faculty of Arts and Sciences with at least 24 credits at the graduate level and a thesis. These 24 credits must include the following required core courses for both tracks: MATH 303, MATH 304, MATH 309, and MATH 341.

Students following the Pure Mathematics Track are required to take at least one of MATH 306 or MATH 314 and complete the 24 credits by choosing any 3 elective courses offered in the department, totaling 9 credits, in addition to writing and defending a thesis in an area of Pure Mathematics.

Students following the Applied Mathematics Track are required to take at least one of MATH 350 or MATH/STAT 338 and complete the 24 credits by choosing any 3 elective courses offered in the department, totaling 9 credits, in addition to writing and defending a thesis in an area of Applied Mathematics.

<sup>1</sup> Part time



these linear differential equations in diffusion processes and population dynamics will be discussed throughout the course via examples from the literature. This course is self-contained. *Annually*

**MATH 314 Algebraic Topology I 3.0; 3 cr.**  
Homotopy, fundamental group, Seifert-van Kampen theorem, covering spaces, singular homology. *Prerequisites: MATH 214 and MATH 241, or graduate standing. Biennially.*

**MATH 315 Algebraic Topology II 3.0; 3 cr.**  
Singular cohomology, Poincaré duality, higher homotopy theory, fiber bundles. *Prerequisite: MATH 314. Occasionally.*

**MATH 316 Topics in Topology 3.0; 3 cr.**

**MATH 338 Introduction to Stochastic Processes 3.0; 3 cr.**  
This course gives an overview of stochastic processes. Topics will include discrete- and continuous-time Markov chains with discrete and continuous state space; basic martingale theory and Brownian motion. If time permits, integration with respect to Brownian motion will be covered to provide students with a first idea of stochastic integration. *Annually.*

**MATH 341 Modules and Rings 3.0; 3 cr.**  
Fundamental concepts of modules and rings, projective and injective modules, modules over a PID, Artinian and Noetherian modules and rings, semi-simplicity, and tensor products. *Prerequisite: MATH 241 or graduate standing. Annually.*

**MATH 342 Modules and Rings II 3.0; 3 cr.**  
A course covering more advanced topics in modules and rings. *Prerequisite: MATH 341. Occasionally.*

**MATH 343 Field Theory 3.0; 3 cr.**  
*Prerequisite: MATH 242. Occasionally.*

**MATH 344 Commutative Algebra 3.0; 3 cr.**  
*Prerequisites: MATH 242 and MATH 341. Occasionally.*

**MATH 345 Topics in Algebra 3.0; 3 cr.**  
*Occasionally.*

**MATH 348 Monte Carlo Methods 3.0; 3 cr.**  
Common techniques and basic principles of Monte Carlo simulations, including an overview of random number generation, rejection methods, importance sampling and variance reduction techniques, Monte Carlo integration, Markov chain Monte Carlo (Metropolis-Hastings and Gibbs sampler and some variants, e.g., cluster algorithms and multilevel samplers, as time allows). *Annually.*

**MATH 350      Discrete Models for Differential Equations      3.1; 3 cr.**

A detailed study of methods and tools used in deriving discrete algebraic systems of equations for ordinary and partial differential equations: finite difference and finite element discretization procedures; generation and decomposition of sparse matrices, finite-precision arithmetic, ill-conditioning and pre-conditioning, scalar, vector, and parallelized versions of the algorithms. The course includes tutorial immersion sessions in which students become acquainted with state-of-the-art scientific software tools on standard computational platforms. *Prerequisites: Linear algebra and the equivalent of MATH/CMPS 251 (which can be taken concurrently) or consent of instructor. Same as CMPS 350. Annually.*

**MATH 351      Optimization and Nonlinear Problems      3.1; 3 cr.**

A study of practical methods for formulating and solving numerical optimization problems that arise in science, engineering and business applications. Newton's method for nonlinear equations and unconstrained optimization. Simplex and interior-point methods for linear programming. Equality and inequality-constrained optimization. sequential quadratic programming. Emphasis is on algorithmic description and analysis. The course includes an implementation component where students develop software and use state-of-the-art numerical libraries. *Prerequisite: Graduate standing. Same as CMPS 351. Occasionally.*

**MATH 358      Introduction to Symbolic Computing      3.0; 3 cr.**

Introductory topics in computer algebra and algorithmic number theory that include fast multiplication of polynomials and integers, fast Fourier transforms, primality testing and integers factorization. Applications to cryptography and pseudo-random number generation. Linear algebra and polynomial factorization over finite fields. Applications to error-correcting codes. Introduction to Grobner bases. *Prerequisite: Good background in programming, linear algebra, discrete mathematics or consent of instructor. Same as CMPS 358. Occasionally.*

**MATH 360      Special Topics in Computational Science      3.0; 3 cr.**

A course on selected topics in computational science that changes according to the interests of visiting faculty, instructors and students. Selected topics cover state-of-the-art tools and applications in computational science. *Prerequisite: Consent of instructor. Same as CMPS 360. Occasionally.*

**MATH 395A/395B Comprehensive Exam      0 cr.**

*Prerequisite: Consent of advisor.*

**MATH 399      MS Thesis      6 cr.**

# Statistics

The graduate program in statistics is currently frozen.

**STAT 331      Advanced Probability Theory      3.0; 3 cr.**  
 Characteristic functions, types of convergence, limiting properties of distribution and characteristic functions, limit theorems, and multivariate functions. *Prerequisites: MATH 227, STAT 238 and MATH 303. Annually.*

**STAT 332      Advanced Mathematical Statistics      3.0; 3 cr.**  
 Distribution theory, decision theory, and advanced topics in estimation and inference. *Prerequisites: STAT 235 and STAT 238. Annually.*

**STAT 333      Multivariate Analysis      3.0; 3 cr.**  
 Multivariate distributions, correlation coefficients, classification and discrimination, Hotelling's  $T^2$ , tests of hypotheses for multivariate distributions and canonical variables. *Prerequisite: STAT 238. Annually.*

**STAT 334      Advanced Topics in Statistics      3.0; 3 cr.**  
*Annually.*

**STAT 335      Special Topics from Probability and Statistics      3.0; 3 cr.**  
*May be repeated for credit. Annually.*

**STAT 338      Introduction to Stochastic Processes      3.0; 3 cr.**  
 This course gives an overview of stochastic processes. Topics will include discrete- and continuous-time Markov chains with discrete and continuous state space; basic martingale theory and Brownian motion. If time permits, integration with respect to Brownian motion will be covered to provide students with a first idea of stochastic integration. *Annually*

**STAT 348      Monte Carlo Methods      3.0; 3 cr.**  
 Common techniques and basic principles of Monte Carlo simulations, including an overview of random number generation, rejection methods, importance sampling and variance reduction techniques, Monte Carlo integration, Markov chain Monte Carlo (Metropolis-Hastings and Gibbs sampler and some variants, e.g., cluster algorithms and multilevel samplers, as time allows). *Annually.*

**STAT 395A/B      Comprehensive Exam      0 cr.**  
*Prerequisite: Consent of advisor.*

**STAT 399      MA or MS Thesis      6 cr.**

# Department of Philosophy

Chairperson:	Johns, Christopher
Professors:	Brassier, Ray; Haydar, Bashshar H.
Associate Professors:	Bashour, Bana M.; Gannage, Emma; Johns, Christopher; Muller, Hans D.
Assistant Professor:	Gibson, Quinn
Lecturers:	Abou Zaki, Nadine; Agha, Saleh J.; Chalabi, Fares
Instructors:	Baassiri, Mahmoud; Dimerdji, Ali Hocine; Hassan, Hani; Hassanieh, Mahmoud; Sabra, Zainab; Salloum, Rabih

## MA in Philosophy

General requirements for graduate study are found in the Admissions section of this catalogue. The requirements for an MA in Philosophy consist of 21 credit hours in philosophy courses numbered 300 or above, a comprehensive exam, and a thesis, together with any additional prerequisite courses required by the department to make up for deficiencies in undergraduate preparation.

<b>PHIL 300</b>	<b>Special Topics in Logic</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 301</b>	<b>Special Topics in Ethics</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 302</b>	<b>Special Topics in Political Philosophy</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 303</b>	<b>Special Topics in Aesthetics</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 304</b>	<b>Special Topics in Metaphysics</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 305</b>	<b>Special Topics in Epistemology</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 306</b>	<b>Special Topics in the Philosophy of Science</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 307</b>	<b>Special Topics in the Philosophy of Language</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 308</b>	<b>Special Topics in the Philosophy of Mind</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		

<b>PHIL 310</b>	<b>Special Topics in the History of Philosophy</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 312</b>	<b>Special Topics in Contemporary Philosophy</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. May be repeated for credit. Occasionally.</i>		
<b>PHIL 320</b>	<b>Graduate Tutorials</b>	<b>3.0; 3 cr.</b>
<i>Prerequisite: Consent of instructor. Occasionally.</i>		
<b>PHIL 395A/B</b>	<b>Comprehensive Exam</b>	<b>0 cr.</b>
<i>Prerequisite: Consent of advisor.</i>		
<b>PHIL 399</b>	<b>MA Thesis</b>	<b>9 cr.</b>

# Department of Physics

Chairperson:	Touma, Jihad R.
Professor Emeritus:	Mavromatis, Harry A.
Professors:	Antar, Ghassan Y.; Bitar, Khalil M.; Chamseddine, Ali H.; El Eid, Mounib F.; Isber, Samih T.; Klushin, Leonid I.; Sabra, Wafic A.; Tabbal, Malek D.; Touma, Jihad R.
Associate Professors:	Christidis, Theodore C.; Kazan, Michel J.
Assistant Professors:	Haidar, Mohammad J.
Lecturers:	<sup>P</sup> Al-Sayegh, Amara A.; <sup>P</sup> Bodakian, Berjouhi H.; Malaeb, Ola

The department provides courses and facilities for graduate work leading to the MS and PhD degrees. The research activities of the department include material science, condensed and soft matter physics, plasma physics, paramagnetic resonance, nonlinear dynamics, astrophysics, high-energy physics, superstring theory and quantum gravity.

## MS in Physics

### Admission Requirements

Refer to the Faculty of Arts and Sciences section.<sup>1</sup>

### Course Work

The MS program requires the completion of 21 credits of courses and a research thesis. The courses consist of four core courses: PHYS 301, PHYS 302, PHYS 303 and PHYS 305, and 9 credits of physics graduate electives. After completion of the four core courses, the student must pass the GRE subject test\*, considered by the Physics Department as the Master's Comprehensive Exam.

### Master Thesis Proposal and Thesis Defense

Refer to the section on Thesis Proposal, Thesis Format and Thesis Defense under General University Academic Information.

### Residence Requirements

Refer to Residence Requirements section under General University Academic Information.

<sup>P</sup>) Part-time

\*<sup>)</sup> Due to the pandemic and the prevailing circumstances, the GRE subject test is replaced by an internal comprehensive exam.

# Doctor of Philosophy in Theoretical Physics

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## Mission Statement

The PhD program in the Department of Physics is intended to produce competent, independent researchers who are able to make original contributions to physical sciences. The program prepares students for careers in research, teaching or industry and thus provides qualified scientists for Lebanon and the region. It serves the AUB mission of promoting research and participating in the advancement of knowledge.

## Admission

Admission to the PhD program is done on a competitive basis. To be eligible for admission, applicants must have an excellent academic record and must demonstrate exceptional motivation and ability to pursue research in physics. The following items are required for an application:

- Degrees:
  - For the Regular Track<sup>1</sup>, a Master of Science (MS) degree in Physics or related fields from an institution recognized by AUB is required.
  - For the Accelerated Track<sup>2</sup>, a Bachelor of Science (BS) degree in Physics or related fields from an institution recognized by AUB is required.
- Three letters of recommendation
- GRE General Test as per AUB requirements. Subject GRE is required as per Physics Department requirements (No GRE is required for applicants to the MS program.)
- For English, refer to the Readiness for University Studies in English (RUSE) section in this catalogue.
- A statement of purpose
- A recommendation for admission by the AUB Department of Physics. A departmental committee may require an interview with the applicant before giving a recommendation.

## Governance

Refer to the section on the Supervision of Doctoral Thesis under General University Academic Information.

## Supervision of PhD Thesis

Refer to the section on the Supervision of Doctoral Thesis under General University Academic Information.

## PhD Publication Requirements

Refer to PhD Publication Requirements under General University Academic Information.

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1) Refer to the Study Section under General University Academic Information.

## Course Work

The PhD program requires the completion of at least 39 credit hours of course work for students admitted on the accelerated track (BS holders) and a minimum of 18 credit hours of course work for students admitted on the regular track (MS holders).

The required courses for students admitted on the regular track are PHYS 306 and 307 (6 credits) and at least 12 credits beyond the core program, out of which one course must be in the concentration area, while the others can be taken as electives. Students may take relevant courses outside the department provided they secure departmental approval.

The required courses for students admitted on the accelerated track are PHYS 301, PHYS 302, PHYS 303, PHYS 305, PHYS 306 and PHYS 307 (18 credits) and at least 21 credits beyond the core program, out of which one course must be in the concentration area, while the others can be taken as electives. Students may take relevant courses outside the department provided they secure departmental approval.

## PhD Qualification Exam Part I and Part II

Upon completion of a minimum of 15 credits of graduate courses with a cumulative average of 85 or above in the four core courses, the student should sit for PhD Qualification Exam Part I (written comprehensive examination) to determine whether s/he has acquired the background necessary to continue in the PhD program.

After choosing a thesis advisor, the student should pass the PhD Qualification Exam Part II; the student must formulate, submit and defend a thesis research proposal to demonstrate a capacity to pursue and complete a doctoral research project.

For more information, refer to the section on PhD Qualifying Exam under General University Academic Information.

## Candidacy

Refer to the section on Admission to Candidacy under General University Academic Information.

## PhD Thesis and Thesis Defense

Refer to the section on PhD Thesis Format and PhD Thesis Defense under General University Academic Information.

## Residence Requirements

Refer to Residence Requirements section under General University Academic Information.

## Graduation Requirements

A student is granted the PhD degree upon approval of the PhD thesis committee in a public session. In addition to the general graduation guidelines specified by the university, the Physics Department also requires that part of the PhD thesis work be published or accepted for publication in a refereed journal by the time of graduation.

## Timetable

A student is expected to abide by the following timetable:

- Finish the graduate course work (a minimum of 39 credits after the BS) within 8 terms of starting the graduate study program
- Pass the qualifying exam upon completion of 15 credits, within 3 terms of starting the graduate study program
- Students in the accelerated track should choose a thesis advisor within four terms of starting the graduate study program
- Defend the PhD thesis proposal within 6 terms and advance to candidacy within 7 terms of starting the graduate study program
- Present research work by submitting her/his thesis to the thesis committee and defending it in a public session. The total length of the PhD should not exceed 7 years.

## Financial Support

The Physics Department offers, on a competitive basis, substantial financial support. For full-time students, it covers tuition and includes a monthly stipend. There are also some funds available to support participation in two international conferences during PhD study. In return, students help in teaching undergraduate labs and recitations of introductory courses. Their duties may also include help in proctoring and correcting exams.

## Course Descriptions

**PHYS 301      Classical Mechanics      3.0; 3 cr.**  
D'Alembert's principle, variational principles and Euler Lagrange's equations, rigid bodies and small oscillations, Hamilton's mechanics, canonical transformations and Hamilton-Jacobi theory, stability, integrable systems and chaotic motion. *Annually.*

**PHYS 302      Statistical Mechanics      3.0; 3 cr.**  
Statistical ensembles, Boltzmann distribution, density matrix, Fermi-Dirac and Bose-Einstein statistics and applications, phase transitions, mean-field theory and applications. *Annually.*

**PHYS 303      Electromagnetic Theory      3.0; 3 cr.**  
Boundary-value problems in electrostatics, multipoles, dielectrics, magnetostatics, time-varying fields and Maxwell's equations, electromagnetic waves. *Annually.*

**PHYS 305      Quantum Mechanics      3.0; 3 cr.**  
Hilbert space formulation of quantum mechanics; theory of angular momentum; Euler rotation; addition of angular momenta; symmetries and conservation laws: time reversal, parity, discrete symmetry, path-integral formulation of quantum mechanics, approximation methods, identical particles, elementary scattering theory. *Annually.*

**PHYS 306      Introduction to Quantum Field Theory      3.0; 3 cr.**  
Unifying quantum theory and relativity; relativistic quantum mechanics: Klein-Gordon equation, scalar field, second quantization, Dirac's equation and Dirac's field. Interaction fields and Feynman diagrams, quantization of the electromagnetic field. *Prerequisite: PHYS 305.*

**PHYS 307                    Advanced Mathematical Methods of Physics                    3.0; 3 cr.**

Elements of group theory: Transformation and permutation groups, matrix groups, homomorphisms and isomorphisms, normal subgroups and factor groups, group action, symmetry groups. Lie groups and Lie algebras: Lie groups, the exponential map, Lie subgroups, Lie groups of transformations, groups of isometries, matrix groups, the classical groups. Differential geometry: Free vector spaces and tensor spaces, multilinear maps and tensors, basic representations of tensors, operations on tensors, differential manifolds, differentiable maps and curves, tangent, cotangent and tensor spaces, tangent maps and submanifolds, commutators, flows and Lie derivatives, differential forms and exterior derivative, Frobenius theorem and dual forms. Connections and Curvature: Linear connections and geodesics, covariant derivatives of tensor fields, curvature and torsion, pseudo-Riemannian manifolds., geodesic equation, the Riemann tensor and its symmetries. Complex Analysis: Analytic functions, the Cauchy-Riemann conditions, complex integration, Cauchy-Goursat theorem, Laurent series, the residue theorem, special functions and integral representations.

**PHYS 309                    Advanced Experimental Physics                    1.6; 3 cr.**

A weekly lecture on laboratory techniques and data analysis, and a selection of three experiments based on current research at AUB: fluid dynamics, thin films and nanostructured materials, Plasma physics, Thermal physics and optothermal techniques, magnetism and magnetic resonance, Microscopy for material characterization.

**PHYS 311                    Astrophysics I                    3.0; 3 cr.**

Stars: observational properties, population, spectra analysis; stellar matter: atomic processes, equation of state including degeneracy effects; stellar structure: differential equations of stellar structure, radiative and convective energy transport, thermonuclear reactions nuclear fusion processes; stellar evolution: discussion of the evolutionary phases of stars, stellar stability and pulsations; final stages of stars: supernovae, white dwarfs, neutron stars and black holes; star formation.

**PHYS 312                    Astrophysics II                    3.0; 3 cr.**

Close binary stars and accretion disks. Physics of interstellar medium: heating, cooling, radiative transfer, physics of interstellar dust grains. Dynamics of stellar systems: morphology and dynamics of stellar populations in Galaxies, N-body simulation, spiral structure. Galaxies: galactic morphology, stellar content of galaxies, general properties of galaxies. Galactic evolution: formation of galaxies, stellar populations. Expanding universe: cosmological models, primeval fireball, cosmological red shift.

**PHYS 313                    Differential Geometry and General Relativity                    3.0; 3 cr.**

Differential manifolds. Tangent vectors. Vectors and tensor fields. Lie derivatives. Differential forms. Affine connections: covariant derivatives. Curvature and torsion Tensors. Principal of equivalence. Einstein field equations. Schwarzschild solutions and classical test of general relativity. Weak gravitational fields. Post-Newtonian approximation.

**PHYS 314                    Non-Equilibrium Statistical Mechanics                    3.0; 3 cr.**

Phenomenological description of transport processes: diffusion, thermal conduction and Brownian motion. General microscopic approaches: Liouville's and von Neumann's equations. Boltzmann's equation and H-Theorem. Linear response theory: time-dependent correlation function, Green-Kubo formula, fluctuation-dissipation theorems. Stochastic evolution: Markoff process and master equation, correspondence

between Langevin and Fokker-Planck pictures, kinetics of phase transitions.  
*Prerequisite: PHYS 302.*

**PHYS 315 Particle Cosmology 3.0; 3 cr.**  
Relativistic cosmology: Friedmann equations and their solutions, Hubble diagram. Hot Big Bang model: statistical mechanics of the expanding universe, microwave background, primordial nucleosynthesis, GUT model for baryon asymmetry. Structure formation: Newtonian perturbation theory, gauge invariant relativistic perturbation theory, the large-scale structure of the universe. Inflation theory.  
*Prerequisite: PHYS 313.*

**PHYS 316 Physics of Soft Matter 3.0; 3 cr.**  
Overview: liquid crystals, polymers, colloids. Statistical mechanics of correlation and order: scattering, structure factor, response function. Application to liquid crystals: generalized elasticity, nematic-to-smectic transitions. Application to polymers: random and self-voiding walks, coil-to-globe transitions, self-organization of amphiphilic macromolecules. Application to colloids and foams. *Prerequisite: PHYS 302.*

**PHYS 317 Group Theory and Symmetry in Physics 3.0; 3 cr.**  
Group theory: subgroups, conjugate cases, direct products. Group representation: unitary spaces, unitary representations, Shur's Lemma, orthogonality, tensor products, conjugate classes, Young tableaux. Group theory and quantum mechanics. Point groups: proper rotation group, crystallographic point groups. Space groups. Continuous groups: transformation groups, generators, Lie groups and algebras, Jacobi identity. Application of SU(2). Isospin. Tensor products. Tensor methods: irreducible representations and symmetry, invariant tensors, Clebsch-Gordon decomposition. Application of Lie groups to particle classifications: SU(5) and SO(10).

**PHYS 318 Standard Model of Particle Physics 3.0; 3 cr.**  
Renormalization and renormalization group. Group theory and the quark model. Chiral anomaly. Gauge theories and quantization. Quantum Chromodynamics. Spontaneous symmetry breaking. Electroweak symmetry. Standard model of elementary particles. One loop structure and one loop processes.

**PHYS 319 String Theory 3.0; 3 cr.**  
Classical Bosonic string. Quantized bosonic string. Conformal field theory. String perturbation theory. Classical Fermionic string. Quantized fermionic string. Spin structures and superstring partition functions. Heterotic strings. D-branes. Orbifolds. Calabi-Yau compactification.

**PHYS 322 Thin Films Physics 3.0; 3 cr.**  
Introduction to surface and thin films physics: definitions, importance in basic research, impact on technology and society. Ultra high vacuum techniques and processes: kinetic theory concepts, surface preparation procedures; surface chemical composition: XPS, AES, SIMS, GIXRD. Thin film deposition: evaporation, plasma, laser and ion beam processing; physical and chemical vapor deposition techniques. Surface morphology and physical structure: surface energy, reconstruction, 2-D lattices, nucleation and growth of thin films, microscopy techniques. Theory of surface scattering; inelastic scattering and dielectric theory; electron-based techniques: LEED and RHEED, RBS. Epitaxy: atomistic models and rate equations; steps, ripening and interdiffusion; HRXRD. Conduction and magnetism in thin films; superconductivity; optical and mechanical properties. *Pre- or corequisite: PHYS 302.*

<b>PHYS 323</b>	<b>Plasma Physics</b>	<b>3.0; 3 cr.</b>
The motion of a single particle (electron or ion) subject to electromagnetic forces; fluid equations for electrons and ions; guiding center description; collisional phenomena occurring in plasmas and the resultant diffusion; propagation of high and low frequency electromagnetic waves in plasmas; description of the plasma as a single fluid; the magneto-hydrodynamic (MHD) equations; MHD instabilities and their effects on the plasma; applications of plasma physics. <i>Pre- or corequisite: PHYS 303.</i>		
<b>PHYS 324</b>	<b>Electron Paramagnetic Resonance</b>	<b>3.0; 3 cr.</b>
The electronic Zeeman interaction and the resonance phenomenon, group theory: the rotation group, the spin-Hamiltonian and the spectrum, the lanthanide 4f group, the actinide 5f, ions of the 3d group in intermediate ligand fields and some experimental aspects of EPR. <i>Pre- or corequisite: PHYS 305.</i>		
<b>PHYS 330</b>	<b>Principles of Environmental Physics</b>	<b>3.0; 3 cr.</b>
Scope of environmental physics, review of gas laws, transport laws, radiation environment, microclimatology of radiation, momentum transfer, heat transfer, mass transfer, steady state heat balance, crop meteorology, energy for human use and environmental spectroscopy. <i>Not open to physics graduate students. Prerequisites: PHYS 204 and PHYS 205 or equivalent, and some knowledge of calculus.</i>		
<b>PHYS 391</b>	<b>Graduate Tutorial</b>	<b>1-3 cr. (each)</b>
<i>May not be repeated for credit.</i>		
<b>PHYS 395A/B</b>	<b>Comprehensive Exam</b>	<b>0 cr.</b>
<i>Prerequisite: Consent of advisor.</i>		
<b>PHYS 399</b>	<b>MS Thesis</b>	<b>9 cr.</b>
<b>PHYS 480</b>	<b>Qualifying Exam Part I: Comprehensive Exam</b>	<b>0 cr.</b>
<i>Every term.</i>		
<b>PHYS 481</b>	<b>Qualifying Exam Part II: Defense of Thesis Proposal</b>	<b>0 cr.</b>
<i>Every term.</i>		
<b>PHYS 484<sup>1</sup></b>	<b>PhD Thesis</b>	<b>30 cr.</b>
<i>Every term. To be taken only by regular track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work.</i>		
<b>PHYS 488<sup>3</sup></b>	<b>PhD Thesis</b>	<b>42 cr.</b>
<i>Every term. To be taken only by accelerated track PhD students. Taken at first thesis registration, then registered for every subsequent term with sequential letter annotations (A-L; 0 credits) until completion of thesis work.</i>		

1) The choice to register for PHYS 484 or PHYS 488 should be done in consultation with the thesis advisor to ensure that the total number of PhD thesis credits and PhD course credits are met as per AUB rules and regulations.

# Department of Political Studies and Public Administration (PSPA)

Chairperson:	Geukjian, Ohannes
Professor:	Khashan, Hilal A.
Associate Professors:	<sup>P</sup> Bahout, Joseph; Frangie, Samer; Geha, Carmen; Goodfield, Eric; Khodr, Hiba; Makdisi, Karim; Pison-Hindawi, Coralie; Reiche, Danyel
Assistant Professors:	Geukjian, Ohannes; Haddad, Tania; Kosmatopoulos, Nikolas; Tell, Tariq
Lecturers:	<sup>P</sup> Al-Maleh, Rand; <sup>P</sup> Awada, Ghada; <sup>P</sup> Douaihy, Michel; <sup>P</sup> Hussein Mansour, Mohamad; <sup>P</sup> Maalouf, Rabih; <sup>P</sup> Mirza, Zeinab; Mouawad, Jamil; <sup>P</sup> Muhanna, Zeina; <sup>P</sup> Nahhas, Charbel; <sup>P</sup> Shaar, Rima; <sup>P</sup> Smaira, Dima
Instructors:	<sup>P</sup> Ajamian, Melissa; <sup>P</sup> Haidar, Mahmoud; <sup>P</sup> Hankir, Samer; <sup>P</sup> Haytayan, Laury; <sup>P</sup> Shibli, Rabih; <sup>P</sup> Yacoubian, Vera

The Department of Political Studies and Public Administration (PSPA) offers three graduate programs: one leading to the degree of Master of Arts in Political Studies (POLS), one leading to the degree of Master of Arts in Public Administration (PUBA), and one leading to the degree of Master of Arts in Public Policy and International Affairs (PPIA).

Graduate students in POLS and PUBA are required to complete 24 credit hours of courses (of which no more than 6 credit hours can be taken outside the major) and defend a thesis (worth 6 credits) in front of a thesis committee. PPIA students are required to complete 24 credit hours of courses (of which no more than 9 credits can be taken outside the program with the Director's permission) and defend either a thesis (worth 6 credits) or a project (worth 3 credits) and internship (3 credits).

## MA in Political Studies

Students majoring in Political Studies are required to take two core courses, which must include PSPA 300 and one of PSPA 301, PSPA 310 or PSPA 320. Students are encouraged to complete all core courses by the end of their second term. Other major courses can be taken from the following subfields: Political Theory: PSPA 301 to PSPA 309, International Politics: PSPA 310 to PSPA 319, Comparative Politics: PSPA 320 to PSPA 329, and Environmental Politics: PSPA 341 to PSPA 346. The remaining two elective courses can be taken within the major or any other relevant field (including a foreign language).

## MA in Public Administration

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Students majoring in Public Administration are required to take the following core courses which include PSPA 300, PSPA 350, PSPA 351 and PSPA 352. Students are encouraged to complete all core courses by the end of their second term. Three additional graduate courses are required from one of the following sub-disciplines: Public Management: PSPA 363, PSPA 370, PSPA 371, PSPA 372, PSPA 373 and PSPA 374 add PSPA 380; PSPA 382; and Public Policy: PSPA 360, PSPA 361, PSPA 362 and PSPA 381; PSPA 383. The remaining elective can be taken within or outside the major after consultation with the student's advisor. The MA program is currently under review. For the students interested in PA, please apply to the MA program in PS or PPIA.

### Course Descriptions

**PSPA 300                      Methodology and Research Design                      3.0; 3 cr.**  
 An introduction to the philosophy of science and how it influences the choice of research design. Emphasis is on developing skills that are useful for any method (survey, research, comparative historical analysis, game theory). The objective is to provide students with the practical tools they need to successfully complete original research. *Core course. Annually.*

**PSPA 301                      Political Theory                      3.0; 3 cr.**  
 A course that provides critical examination and analysis of the theoretical bases and perennial issues of political theory and ideologies. *Core course. Annually.*

**PSPA 302                      The Modern Project                      3.0; 3 cr.**  
 The aim of this course is to explore the various intellectual, academic and political debates around the notion of modernity. Topics covered in this seminar include: modernity; modernization and the modern project; reason and rationalization; religion and secularization; knowledge, post-colonialism and post-modernism; and other related topics. *Occasionally.*

**PSPA 303                      Islamic Political Thought                      3.0; 3 cr.**  
 An in-depth course on modern Islamic political thought. This course focuses on the historical and intellectual developments that have fueled both revolutionary and conservative trends in Islamic political movements and states. Discussions cover issues such as the relationships between religion and politics, political philosophy and ideology, and political action and revolution. *Occasionally.*

**PSPA 304                      Theories of Political Economy                      3.0; 3 cr.**  
 A course that surveys various theories and theorists such as Marxism, Polyani, rational choice and the new institutionalism. It introduces students to the study of how the political system and economy interact. *Occasionally.*

**PSPA 305                      Political Theory in the Arab World                      3.0; 3 cr.**  
 The aim of this course is to explore various intellectual and political debates in the modern Arab world. The course will provide an overview of the development of modern Arab political thought and will present some of the main intellectual and academic debates in this domain. Topics covered in this seminar include: modernity and tradition, orientalism and the West, nationalism, Marxism, liberalism and other related topics. *Alternate years.*

- PSPA 306                      Research Methods and Techniques                      3.0; 3 cr.**  
A course that deals with various methods of data collection and analysis. Specific research methods include both quantitative and qualitative techniques such as experimental, survey, field observation, content analysis, historical/comparative and evaluation. *Occasionally.*
- PSPA 307                      Knowledge and Power                      3.0; 3 cr.**  
The course explores different aspects of the relationship between knowledge and power. It draws on different philosophical and sociological traditions in political theory to shed light on core cognitive, social, and ethical aspects and dilemmas that concern social scientists both as knowledge-producers who reflect onto power as a conceptual and empirical reality, and as social agents who are themselves inscribed in structures and relations of power. *Occasionally.*
- PSPA 309                      Special Topics in Political Theory                      3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*
- PSPA 310                      International Politics                      3.0; 3 cr.**  
This seminar provides a survey of the discipline of international politics and contemporary research in the field. In addition to covering central theoretical perspectives in international relations theory, the course will introduce students to contemporary debates in international politics and policy with an emphasis on topics and themes relating to the Middle East. Students will develop critical thinking and analytical writing skills through close reading of key texts and writing exercises. *Core course. Annually.*
- PSPA 311                      International Politics and the Middle East                      3.0; 3 cr.**  
This seminar deals with issues and themes relevant to contemporary Middle Eastern politics within the context of international relations. It explores how the politics of the Middle East, US policy in the Middle East, and the Middle East as a regional system have been understood and represented through the lens of international relations theory and scholarship. Topics include: the evolution of the Middle East state system, Arab Nationalism and the Cold War, the Arab-Israeli conflict and US policy towards Israel and the Palestinians, the geopolitics of oil and the Gulf, the Iraq War and its regional consequences, Iran's role in the Arab world, the question of empire and the future of US grand strategy, and Lebanon's position in regional politics. *Annually.*
- PSPA 312                      Public International Law                      3.0; 3 cr.**  
A course that aims to provide an understanding of the principles underlying public international law, which facilitates relations among states, resolves disputes, protects human rights, allocates resources and restricts conduct during war time. Emphasis is placed on subfields of international law most closely connected to international politics such as the legal consequences of very serious violations of international law, the role played by the United Nations or the legal regulation of the use of force. Reflecting upon the kind of role international law plays in the conduct of international relations, this course includes many recent case studies and tackles some of the major debates in the field. *Annually.*
- PSPA 313                      International Security                      3.0; 3 cr.**  
Security motives play an essential role in international politics, particularly in the conduct of international relations. This course deals with major issues in international security that may include arms control, disarmament, as well as new types of threats, such as terrorism or environmental degradation. It covers traditional and less traditional perspectives on the field. *Occasionally.*

**PSPA 314                    The UN and International Politics                    3.0; 3 cr.**

This seminar examines the role of the United Nations (UN) within the context of international politics, security and development. It focuses on the UN role in the Global South, particularly the Arab region. The course explores theoretical perspectives on the role of the UN in world politics and traces the evolution of UN institutions, in particular UN peacekeeping, from the Cold War to post-Cold War period including the war on terror. It then considers a series of case studies in depth. The course will include, when possible, guest presentations from UN officials and a field trip to better appreciate the conditions within which UN operations work. *Occasionally.*

**PSPA 315                    Arab-Israeli Conflict                    3.0; 3 cr.**

This seminar examines whether a solution between Palestinians and Jewish Israelis is possible in the historic land of Palestine, and if so how. The course takes a historical approach to trace the root causes of the conflict and understand the main narratives that drive the Palestinian and Jewish national movements, as well as to understand the larger context and structure within which these narratives take place. It also tracks the long history of peace initiatives put forward by the great powers – starting with the UN partition plan and ending with the post Cold War, US-sponsored peace process – and how the shifting international rules and norms that underlie these initiatives have both shaped and reflected the realities on the ground in terms of both power and resistance. *Annually.*

**PSPA 316/                    International Environmental Policy                    3.0; 3 cr.  
ENSC 650**

A course that seeks to provide a broad overview of the key concepts, actors and issues related to global environmental policy. This course outlines the evolution of environmental policy in facing global environmental challenges and how such policies have become inherently intertwined with government policy, business practice and international trade. *Annually.*

**PSPA 317                    International Political Economy                    3.0; 3 cr.**

This course provides a critical examination of the politics of international economic relations, global economic development, and transnational economic activity with a special emphasis on the position and experiences of the Middle East states in the global political economy. The course offers a survey of theoretical approaches to international political economy and addresses themes critical to the experience of the Middle East such as state-led industrialization, trade and regionalism, finance, oil, labor migration, MNCs, transnational movements, globalization, neo liberalism, and the politics of development and global governance. *Occasionally.*

**PSPA 318                    Theories of International Relations                    3.0; 3 cr.**

The seminar offers a critical study of readings drawn from the major theoretical traditions (realism, liberalism, constructivism) in international relations theory as well as critical approaches and trends. *Occasionally.*

**PSPA 319                    Special Topics in International Politics                    3.0; 3 cr.**

*May be repeated for credit. Occasionally.*

**PSPA 320                    Theories of Comparative Politics                    3.0; 3 cr.**

A survey of various paradigms in comparative politics, focusing on behavioralist, institutional, development and radical approaches. Themes such as structure of power, state-society relations, political development, political culture and political economy are emphasized. *Core course. Annually.*

- PSPA 321 Contemporary Politics in Middle Eastern States 3.0; 3 cr.**  
A course that analyzes contemporary politics in selected Middle Eastern states. This course emphasizes the problems of political participation, effective governance and socio-economic development. *Occasionally.*
- PSPA 322 Contemporary Politics in Non-Middle Eastern States 3.0; 3 cr.**  
A course that examines political institutions, processes and problems facing governments in selected countries outside the Middle East. This course focuses on topics such as authoritarian systems, relations between the public and private sector, and politics of collective identity. *Occasionally.*
- PSPA 323 Communalism in the Middle East 3.0; 3 cr.**  
A course that deals with the emergence of ethnic and religious issues in the Middle East, with emphasis on post World War I developments. This course addresses the situation of minority groups, the nature of their demands and their prospects of achieving them. In addition, this course assesses the impact of localism on the nation-state in the region. *Annually.*
- PSPA 324 Government and Politics in Lebanon 3.0; 3 cr.**  
A course that examines the evolution of the political system and the different approaches to the study of government institutions in Lebanon. This course focuses on patterns of change involving state and society from the founding of the state in the early 1920s to the present. *Occasionally.*
- PSPA 325 Political Trends in the Middle East 3.0; 3 cr.**  
This course examines the genesis and evolution of major political trends that have been impacting the Middle East and North Africa since the latter part of the nineteenth century, especially colonialism, nationalism and nation-building, transnational political conflict, religious extremism, the politics of oil and security issues. *Occasionally.*
- PSPA 329 Special Topics in Comparative Politics 3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*
- PSPA 330 Graduate Tutorial in Political Science 3.0; 3 cr.**  
A graduate seminar in which selected topics are arranged on an individual basis where existing courses do not offer the required subject matter. *May be repeated for credit. Annually.*
- PSPA 341/ Environmental Regulation and Legislation 3.0; 3 cr.**  
**ENSC 657**  
An introduction to contemporary legislative approaches to environmental protection, the rationales for their embodiment in policies, and their effectiveness in achieving prescribed goals and alleviating environmental degradation. This course also examines the emergence of environmental initiatives in developing countries with a focus on the latest developments in Lebanon. *Occasionally.*
- PSPA 343/ Environmental Conflict Resolution 3.0; 3 cr.**  
**ENSC 658**  
An introduction to contemporary approaches to global environmental negotiation and conflict resolution, including the efforts of international organizations at risk communication, mediation and facilitation. This course focuses on procedures to

manage negotiations of environmental conflicts and disputes between governments, corporations, ecologists, the media and the general population. Information is also provided on environmental dispute cases successfully resolved. *Alternate years.*

**PSPA 345 Special Topics in Environmental Policy and Politics 3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*

**PSPA 346 Special Topics in Natural Resource Policy and Politics 3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*

**PSPA 350 Foundations of Organization Theory 3.0; 3 cr.**  
This seminar is an advanced study and analysis of the development of organization theory, from its foundations and origins up to the present. It takes an interdisciplinary approach that reviews the key critical readings and debates with their different levels of abstraction and analysis as well as their lasting contributions. It also discusses the contemporary research activities and findings in the field of organization theory. *Core course. Annually.*

**PSPA 351 Foundations of Public Administration 3.0; 3 cr.**  
This seminar is an advanced study and analysis of the field of public administration, from its foundations and origins up to the present. It covers topics such as: historical public administration, the traditional model of public administration, new public management and collaborative public administration. The course will also review contemporary research activities and findings related to public administration. *Core course. Annually.*

**PSPA 352 Foundations of Public Policy 3.0; 3 cr.**  
This seminar covers topics related to the substance, methods and frameworks of public policy in a variety of disciplines including: welfare economics, political science, political economy and organization theory. Emphasizing the role of theory in empirical policy research, the course illuminates the various policies and policy challenges in the following substantive areas: economics, education, the environment, national security and immigration. *Core course. Annually.*

**PSPA 360 Public Policy Research and Analysis 3.0; 3 cr.**  
This seminar provides an introduction to policy analysis typologies, policy tools and the factors that shape the utilization of policy analysis. It is designed to give students the theoretical and practical exposure to the process of analyzing public policy as well as to its relevant qualitative, survey and mixed method approaches and techniques. *Annually.*

**PSPA 361 Public and Non-Profit Program Evaluation 3.0; 3 cr.**  
This seminar introduces students to the theoretical and practical foundations underlying the use of program evaluation in the public and non-profit sectors. Based in large part on the logic-model process of program evaluation, it reviews the quantitative and qualitative techniques used by managers to analyze program processes, outputs and outcomes. It also considers issues such as client management, data collection, data presentation and research ethics. *Annually.*

**PSPA 362 Public Policy and Administration 3.0; 3 cr.**  
This seminar covers topics and frameworks related to the substance and approaches of public policy as they relate to public administration. Students will engage in a serious

analysis of the economic, social and cultural assumptions that underpin government and its relationship to the polity. The course is also designed to give students an organized opportunity to investigate their own interests within a specific key policy area. *Annually.*

**PSPA 363                      Public Financial Management                      3.0; 3 cr.**  
This seminar examines the theory, practice, concepts and problems related to the administrative and political management of public financial resources and public sector budgeting. It reviews how economic, political, social and institutional factors, and resources are transformed into budgetary policy. It analyzes the organizational, structural, managerial and legal aspects of the public budget, as well as the most important problems in the phases of the public budget cycle. *Annually.*

**PSPA 370                      Human Resource Management and Development                      3.0; 3 cr.**  
This seminar explores theories and models of human resource management, including the policies and processes that relate to governmental personnel. It acquaints students with the authority, responsibility, functions and problems of the human resource management in areas such as staffing, human resource development, performance appraisal, teamwork and compensation. The seminar examines personal and professional issues related to modern Human Resource Management (HRM) from recruitment to termination. The emphasis is on developing familiarity with the real world applications required of employers and managers. *Annually.*

**PSPA 371                      Public Management                      3.0; 3 cr.**  
This seminar investigates the conceptual and practical boundaries of public management reform initiatives from a comparative perspective. Moving beyond the foundations of traditional public administration, topics covered include performance and personnel management, privatization, e-government and accountability. The limits of public management will also be considered. *Annually.*

**PSPA 372                      Leadership and Management of Public Organizations                      3.0; 3 cr.**  
This seminar examines the distinction between leadership and management from theoretical and applied perspectives. It also analyzes the major theories of leadership and assesses their impact on group and individual behavior in light of personality differences and cross-cultural management. *Alternate years.*

**PSPA 373                      The Ethics of Public Administration                      3.0; 3 cr.**  
This seminar covers contemporary perspectives on ethics and ethical behavior in government. It focuses on the interactions between government and society and analyzes the political, legal, economic and social environments of societal organizations. Some of the contemporary issues addressed are: transparency, accountability and responsiveness, corruptive practices in public administration, administrative discretion and social justice. *Alternate years.*

**PSPA 374                      Non-Profit Management                      3.0; 3 cr.**  
A course that examines the development and characteristics of non-profit management systems, managerial challenges, and the application of theories and mechanisms relevant to non-profit management. This course covers topics such as organizational structure, financial management, board-executive relations and public-private cooperation. *Alternate years.*

**PSPA 380                      Special Topics in Public Administration                      3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*

**PSPA 381**                    **Special Topics in Public Policy**                    **3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*

**PSPA 382**                    **Graduate Tutorial in Public Administration**                    **3.0; 3 cr.**  
 A tutorial in which selected topics are arranged on an individual basis where existing courses do not offer the required subject matter. *May not be repeated for credit. Annually.*

**PSPA 383**                    **Graduate Tutorial in Public Policy**                    **3.0; 3 cr.**  
 A tutorial in which selected topics are arranged on an individual basis where existing courses do not offer the required subject matter. *May not be repeated for credit. Annually.*

**PSPA 395A/395B Comprehensive Exam**                    **0 cr.**  
*Prerequisite: Consent of advisor.*

**PSPA 399**                    **MA Thesis**                    **6 cr.**

## MA in Public Policy and International Affairs

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### Program Goals and Learning Outcomes

Students who earn a Master's degree in Public Policy and International Affairs (PPIA) will be able to analyze the policy process in Lebanon and the Arab region within the global context. The PPIA program is professionally-oriented, that seeks to expose students to perspectives and approaches from practitioners in public policy and international affairs.

Upon successful completion of this interdisciplinary course of study, PPIA students are expected to be able to develop knowledge and skills in the following core areas:

- **Research Methods:** Identify essential research questions, design research proposals and conduct qualitative and/or quantitative research on public policy and international affairs.
- **Advanced Core Knowledge:** Analyze core concepts, research and theories in relevant and multi-disciplinary areas of study in public policy and international affairs.
- **Scholarly Communication Skills:** Demonstrate scholarly communication skills in clear, detailed and well-structured written and oral formats consistent with high standards of the social sciences and public affairs.
- **Professionalism and Ethical Research Conduct:** Apply professionalism and ethical research conduct in the relevant areas of study.
- **Applying Research to Practice:** Translating qualitative and quantitative research findings to policy and international affairs settings and general public.
- **Outreach to Policy Actors:** Develop skills to inform and engage with relevant policy actors at the national, regional, and international levels.

### Admission Requirements

Admission requirements to the program will follow FAS admissions policies. Admission to the MA in PPIA is restricted to the fall term. Applicants are generally expected to have a BA degree in a social science field (broadly defined) or one relevant to public policy and/or international affairs, or else professional experience in public policy and/or international affairs as it relates to the Arab region. In all cases, a minimum of one-year work/policy experience is strongly recommended and more is encouraged.

Applicants must have a strong academic record, two letters of recommendation (at least one must assess academic rather than professional abilities), and a statement of purpose that clearly outlines applicant's background and goals. In addition, applicants are recommended to submit a relevant writing sample of no longer than 5,000 words.

## Degree Requirements

The program permits full-time or part-time enrollments. To obtain a Master of Arts degree in Public Policy and International Affairs, the student must complete a minimum of 24 credits of graduate coursework and a thesis (6 cr.) or a final project (3 cr.) plus an internship (3 cr.). Course work must include the three core courses (PPIA 301, PPIA 302, PPIA 308) and two additional PPIA courses plus any three courses in PPIA, PSPA, or other program relevant to the student's program of study.

## Credit Summary

Required courses	
Core courses (2)	6 cr.
PPIA 308 <sup>1</sup> Research Methods (or equivalent approved by director)	3 cr.
Additional PPIA courses (2)	6 cr.
Open Elective courses (3)	9 cr.
Thesis (6 cr.) or (Internship (3 cr.) + Project (3 cr.))	6 cr.
	<b>30 cr.</b>

Core Courses	
PPIA 301	Public Policy and Practice
PPIA 302	International Affairs and Policy

## Thesis and Project Tracks

### Thesis Track

To follow the thesis track, students must first gain approval of a thesis committee that includes members of the PPIA program faculty, and of the FAS Graduate Studies Committee, of a thesis proposal and then defend the completed Master's thesis. Students are expected to uphold the highest standards of academic integrity, scientific rigor and professional relevance while presenting their findings. All accepted projects should be deposited at the library.

### Project Track

Students are expected to complete an internship (3 cr.) plus a project (3 cr.).

This option for a final project allows students to investigate an issue of relevance to public policy or international affairs in line with their personal research interests. Each student is assigned a committee consisting of an advisor (first reader) and a second reader who jointly supervise and guide the student throughout. It is the responsibility of the student to select a topic and submit a project proposal to be approved by her/his readers and then by the FAS Graduate Studies Committee. While the projects can be presented in diverse forms, students are expected to uphold the highest standards of academic integrity, scientific rigor and professional relevance while presenting their

1) Upon approval of the PPIA director, a student may substitute a relevant methods course for PPIA 308 Research Methods.

findings. All accepted projects should be deposited at the library. A student who is unable to finish the project within the allotted time period can petition to be allowed an additional semester subject to consent of his committee.

## Internship

All project track students are required to complete an internship. Internships offer an exploration of public policy and international affairs through work experience in governmental, non-governmental, or private sector organizations. Students are responsible for securing their internships and having the PPIA program confirm that they meet AUB guidelines. Internships for credit require about 45 contact hours with about 90 hours of work beyond this (total 135 hours or about 10 hr/wk for 3 months). To register for internship the student must have his/her supervisor confirm to the PPIA program in writing at the beginning of the internships that the internships meets these guidelines. At the end of the internship, the supervisor must confirm in writing that these guidelines have been met. Upon completion, the student will write up a short report about the internship that will form a PPIA internship database. Internships can also be taken as an elective course for those on the thesis track.

## Course Descriptions

**PPIA 301                      Public Policy and Practice                      3.0; 3 cr.**  
The course covers topics related to the formation, development and evolution of frameworks of public policy. It compares theories and models of policy-making and decision-making to illustrate the special requirements of the country's context and environment. It examines the roles of various participants in the policy process: legislators, political parties, interest groups, civil society groups, media, administrative structures, citizens and the judiciary. Using a comparative perspective, the course discusses how public policy is formulated, and how and why it changes. The course also examines the role of formal and informal institutions, actors, structures and networks including challenges. The course provides students with an increased understanding of theories of public policy, and the ability to critically analyze and compare public policy. *Annually.*

**PPIA 302                      International Affairs and Policy                      3.0, 3 cr.**  
The seminar provides a survey of international affairs and policy. In addition to covering central theoretical perspectives, the course will introduce students to contemporary political, economic, social, and/or environmental issues as well as relevant actors and institutions with a special focus on those relevant to Lebanon and the Arab world. Students will develop critical thinking and analytical writing skills through close reading of key texts and writing exercises. Student engagement will include activities such as class presentations and participation in policy simulations. *Annually.*

**PPIA 304                      Development                      3.0; 3 cr.**  
This course offers students historical, political and policy analysis of development both as a reality and as a concept and discipline in the social sciences. It explains the emergence and continuing relevance of development, offering particular critical attention to the close interdependence between development paradigms, international institutions (UN System, World Bank) and global political economy. The course deepens and broadens students' historical understanding of the antecedents behind contemporaneous global and local development issues and challenges with a critical focus on the interdependence between science, advocacy and policy. *Annually.*

**PPIA 306 Political Economy 3.0; 3 cr.**  
 This course starts from the premise that history matters and that a long-term view of production, power and social change is essential for understanding enduring patterns of wealth and poverty in the contemporary world. It goes on to provide students with an overview of scholarly debates on the causes and consequences of the rise of Europe, asking whether the historical literature on state formation and capitalist development helps us understand socio-political developmental success and failure in the Global South after WWII. By emphasizing the historical specificity of the structure of social power inherited from the agrarian past, the course tries to highlight the pitfalls of deploying models based on European example for understanding development and social change in other parts of the globe. *Annually.*

**PPIA 307 Politics of Policy-Making 3.0; 3 cr.**  
 The course provides an analysis of the politics of the policy-making process in its different stages, from elaboration to implementation, through the examination of a range of policy case studies (urban/spatial, development, environment, energy, social, health, etc.) at different scales (neighborhood, city, region, state, groups of states) and in different contexts (local, regional and international). It equips students to understand how policy ideas are framed into technical and normative discourses that depoliticize policy issues and neutralize power and inequalities. It trains them to identify, trace and deconstruct the political elements that determine how policy paradigms emerge, how policy windows come to be created, how policy actors mobilize, network and advocate their positions, and how policy agendas and tools are negotiated and assembled. It also approaches policy-making as a hybrid space between expertise and politics, science and democracy, nature and humanity. *Occasionally.*

**PPIA 308 Research Methods 3.0; 3 cr.**  
 This course provides students with an understanding of research language, concepts and ethics for the purpose of generating evidence-based research for policy-making. It introduces the elements of the research process within quantitative, qualitative and mixed methods approaches, with an emphasis on problem formulation, research design, data collection, analysis and reporting. The students will engage in identifying their main research question, selecting appropriate research methods, and designing the relevant data collection and fieldwork to address their research question. They will also learn how to present their research ideas as research proposals for academic, professional and other audiences. Students will also, throughout the course, be exposed to the variety of public policy tools used to communicate with different publics (memos, briefs, reports, etc.). *Annually.*

**PPIA 309 Evidence, Policy and Communication 3.0; 3 cr.**  
 This course introduces students to the types of questions that need to be answered to address and make improvements to public policy concerns and priorities, including what's the problem, what policy and programmatic options are best suited to address the problem, and how can change be brought about. This course will train students to use the knowledge translation tools and resources available to public policymakers and stakeholders in order to support their use of research evidence; and will enhance students' skills in assessing, selecting, adapting and applying research evidence. Students will experiment with key tools and resources to communicate with different types of policy makers including priority setting, evidence briefs, policy briefs, policy memos, personalized briefing and policy dialogues. This course will provide skills on how to prepare briefs and effective tips on how to communicate evidence (both published and tacit) to policy makers and the public. *Annually.*



# Department of Psychology

Chairperson:	Hussain, Zahra
Professors:	Dietrich, Arne; Harb, Charles
Assistant Professors:	Ayoub, Mona; Badaan, Vivienne; Besle, Julien; Bosqui, Tania; Hussain, Zahra; Ismail, Ghena; Saade, Sabine
Lecturers:	Awaida, May A.K.; <sup>P</sup> Dandan, Nadia; Fisher, Jennifer; <sup>P</sup> Seguias, Lana
Instructors:	Majzoub, Hana; Merhi, Lea
Professor Emeritus:	Kazarian, Shahe

The Department of Psychology offers a Master's Program in General Psychology and a Master's Program in Clinical Psychology. Applicants to the Master's Program in Clinical Psychology are welcome to apply for fall admission only. There will be no spring admission into the Clinical Psychology program. Applicants to the Master's Program in Clinical Psychology must have completed a major, minor or the equivalent (15 credits) in Psychology<sup>1</sup>.

## MA in General Psychology

### Mission Statement

The overall mission of the graduate program in General Psychology is to provide students with a strong foundation in psychological science. The program is characterized by both an emphasis on advanced research and statistical training as well as on a strong commitment to critical thinking. The faculty possesses expertise in social, cultural and political psychology, and in areas of learning, cognition and neuroscience. In realizing its mission, the Master's Program in General Psychology is committed to the following goals and objectives: to provide education and training in the use of the scientific method in psychological research; to provide education and training in ethical practices in psychology; and to provide supervision of an empirical research study of publishable quality.

A candidate for the MA degree in General Psychology is required to complete 21 graduate credit hours in addition to 9 thesis hours. The student must complete PSYC 301 and PSYC 302 and five additional graduate-level courses in psychology. One of these courses can be chosen from other graduate-level courses outside the department, according to the student's interest and with the consent of the advisor.

General MA students will follow the following stream of courses:

### General Psychology Stream

PSYC 301, PSYC 302 and five of the following: PSYC 305, PSYC 310, PSYC 312, PSYC 314, PSYC 316, PSYC 318, PSYC 320, PSYC 350, PSYC 352, PSYC 360; in addition to the Comprehensive Exam, PSYC 395 and Thesis, and GPSY 399. Students are required to pass PSYC 302 to be allowed to sit for the Comprehensive Exam.

<sup>P</sup>) Part-time

<sup>1</sup>) the graduate program in Psychology is currently frozen. It is expected to be available in the near future.

# MA in Clinical Psychology

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## Mission Statement

The mission of the Master's Program in Clinical Psychology is to educate and train graduate students in the science and practice of clinical psychology. Following the scientist-practitioner model, students will be prepared for doctoral study in clinical psychology or competent, ethical and socially responsible professional practice. In realizing its mission, the Master's Program in Clinical Psychology is committed to the following goals and objectives: to provide education and training in the scientific and professional foundations of the field of clinical psychology; to provide education and training in consideration of cultural diversity in the science and practice of clinical psychology; and to provide education and training in the ethics of research and professional practice.

The clinical psychology program has a two-track option. A candidate for the MA degree in Clinical Psychology must select either the research-track or the practitioner-track. Both tracks involve the completion of 30 credit hours in graduate coursework and 6 credit hours of Clinical Training Practicum. Students in the research-track must also complete 6 credit hours of Thesis, which involves the completion of an independent, empirical study, for a total of 42 credits. Student in the practitioner-track must complete 3 credit hours of a Clinical Project involving a comprehensive case study for a total of 39 credits.

Clinical MA students will follow the following stream of courses:

## Clinical Psychology Stream

PSYC 301, PSYC 302, PSYC 305, PSYC 350, PSYC 352, PSYC 354, PSYC 356, PSYC 358, PSYC 360, PSYC 362, PSYC 364, PSYC 366; in addition to the Comprehensive Exam, PSYC 395 and Thesis, CPSY 399 or Clinical Project, CPSY 398. Students are required to pass PSYC 302 to be allowed to sit for the Comprehensive Exam.

## Course Descriptions

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**PSYC 301                      Research Design in Psychology                      3.0; 3 cr.**  
 This course is the first part of the core research requirements for graduate students in psychology. It provides students with a solid foundation in the basic quantitative research methods and designs, addresses ethical issues in psychological research, and introduces students to statistical analyses that will be needed for PSYC 302 and the master's thesis. *Annually.*

**PSYC 302                      Statistical Analyses in Psychology                      3.0; 3 cr.**  
 An advanced course in statistical analyses for the social sciences. The course explores bivariate, multivariate and structural statistical analysis using SPSS; the course combines both lecture- and lab-based sessions. *Prerequisite: PSYC 301. Annually.*

**PSYC 305                      Ethics and Community-Based Learning in Psychology                      3.0; 3 cr.**  
 An in-depth-exploration of the ethical and professional issues in scientific and applied psychology, with a special focus on the role psychology plays in civic engagement and community-based learning. Topics include confidentiality, informed consent, competence, integrity and social responsibility. Optional opportunities to engage in community-based learning are available to students registered in this course. *Annually.*

- PSYC 310      Advanced Social Psychology      3.0; 3 cr.**  
A critical survey of social-psychological theory and research, with special emphasis on cross-cultural variations; the course covers topics in social cognition and group processes. *Alternate years.*
- PSYC 312      Systems Neuroscience      3.0; 3 cr.**  
An advanced course on the underlying neural mechanisms of human mental processes. Using primary and secondary literature, topics are approached from a systems level and include but are not limited to: decision-making, social cognition, control of action, creativity, language, cultural evolution, attention, memory, consciousness and brain-computer interfaces. *Alternate years.*
- PSYC 314      Cognitive Methods      3.0; 3 cr.**  
This course provides students with an in-depth review of a theoretical or computational approach to studying human behavior (e.g., signal detection theory, Bayesian inference), with an emphasis on experimental techniques and procedures used to study one or more aspects of cognition, including perception, attention, memory and decision-making. *Alternate years.*
- PSYC 316      Experimental Analysis of Behavior      3.0; 3 cr.**  
An advanced course in the psychology of learning and behavior analysis concerned with the theories of associative learning and operant conditioning. It explores the classical and operant conditioning paradigms from an experimental perspective. *Alternate years.*
- PSYC 318      Special Topics in Psychology      3.0; 3 cr.**  
The topic varies from term to term. May be repeated for credit. *Prerequisite: Consent of instructor.*
- PSYC 320      Graduate Tutorial in Psychology      3.0; 3 cr.**  
May be repeated for credit. *Prerequisites: graduate standing and consent of instructor. Annually.*
- PSYC 350      Advanced Psychopathology I      3.0; 3 cr.**  
A critical examination of the symptomatology, etiology and treatment of adult psychological disorders including but not limited to mood and anxiety, psychotic, personality, eating and substance-related disorders. *Annually.*
- PSYC 352      Advanced Psychopathology II      3.0; 3 cr.**  
A course on the critical examination of childhood disorders including disruptive behavioral disorders, various anxiety and mood disorders and pervasive development disorders. Focus is placed on diagnosis and etiology including environmental and neurobiological influences of childhood psychopathology. *Annually.*
- PSYC 354      Psychological Assessment      3.0; 3 cr.**  
The objective of this course is to provide students with the knowledge base and skills required to conduct a psychological assessment of a variety of mental health and neurological disorders. The course covers both psychometric and behavioral approaches to psychological assessment. *Annually.*
- PSYC 356      Introduction to Cognitive and Behavioral Interventions      3.0; 3 cr.**  
This course provides an introduction to the theory and practice of cognitive and

behavioral psychological interventions. These approaches will be contextualized within a critical discussion of the empirically supported treatments and evidence-based practice movements. The course will survey key cognitive and behavioral approaches, including mindfulness and acceptance based “third wave” approaches. *Annually.*

**PSYC 358 Introduction to Family Therapy 3.0; 3 cr.**  
A course on theories and practices of psychotherapy with families, couples and children. Students will gain a broad theoretical understanding of the various approaches to conducting family and couples therapy, including family systems, structural, strategic, solution-focused, behavioral and emotion-focused approaches. *Annually.*

**PSYC 360 Psychopharmacology 3.0; 3 cr.**  
A course on the principles of neuropharmacology, neurochemical systems, and the current medications used to treat psychological disorders, including psychotic disorders, mood disorders, anxiety disorders, eating disorders, drug addictions, conduct disorders and attention deficit hyperactivity disorder. *Annually.*

**PSYC 362A Clinical Practicum 3.12; 3 cr.**  
Clinical training at AUBMC, an approved clinical setting, under the direct supervision of qualified clinical academic faculty and/or qualified clinical staff in the practicum setting. 14 hours per week. *Annually.*

**PSYC 362B Clinical Practicum 3.12; 3 cr.**  
Clinical training in an approved clinical setting outside AUBMC, under the direct supervision of qualified clinical academic faculty and/or qualified clinical staff in the practicum setting. 14 hours per week. *Annually.*

**PSYC 364A Advanced Clinical Practicum 3.12; 3 cr.**  
Advanced clinical training at AUBMC, an approved clinical setting, under the direct supervision of qualified clinical academic faculty and/or qualified clinical staff in the practicum setting. 14 hours per week. *Annually.*

**PSYC 364B Advanced Clinical Practicum 3.12; 3 cr.**  
Advanced clinical training in an approved clinical setting outside AUBMC under the direct supervision of qualified clinical academic faculty and/or qualified clinical staff in the practicum setting. 14 hours per week. *Annually.*

**PSYC 366 Introduction to Psychodynamic Clinical Methods 3.0; 3 cr.**  
This course provides an introduction to the theory and practice of contemporary psychodynamic interventions. The course will cover current evidence-based psychodynamic approaches including transference-based psychotherapy, dynamic interpersonal therapy and mentalization therapy. *Annually.*

**PSYC 395A/B Comprehensive Exam 0.0; 0 cr.**  
*Prerequisite: PSYC 302 and consent of advisor.*

**GPSY 399 General MA Thesis 9.0; 9 cr.**  
*Annually.*

**CPSY 399 Clinical MA Thesis 6.0; 6 cr.**  
*Annually.*

# Department of Sociology, Anthropology, and Media Studies

Chairperson:	Atwood, Blake
Director of Media Studies:	Farah, May
Professor:	Hanafi, Sari
Associate Professors:	Atwood, Blake; Burris, Greg; Scheid, Kirsten; Wick, Livia
Assistant Professors:	Al-Hardan, Anaheed; Bou Ali, Nadia; Carney, Josh; Enzerink, Suzanne; Farah, May; Kosmatopoulos, Michael, Marc; Nikolas; Majed, Rima; Mourad, Sara; Perdigon, Sylvain; Saleh, Elizabeth; Tarraf, Zeina
Lecturers:	Barakat, Rabie; Fathallah, Zeina; Hamdar, Sarah; Kanafani, Samar; Trabulsi, Fawwaz
Instructors:	Azar, George; Osman, Zeina
Affiliated:	Sbaiti, Nadya
Part- Time Instructors:	Agha, Dina; Aprahamian, Panos; Boustany, Nora; Daou, Marc; Ghanem, Samar; Khoury, Rami, Khoury, Rana; Kassir, Alexandra; Sukarieh, Rana

## Admission

Requirements for admission into the MA program in Anthropology or Sociology are consistent with those of the Faculty of Arts of Sciences. Admission to the MA in Anthropology is restricted to the fall term. Applicants are required to submit two letters of recommendation and a statement of goals/research interests and experiences. Each student may be interviewed upon application to determine her/his background and qualification.

## MA in Anthropology

The anthropology MA program offers students general training in sociocultural anthropology. AUB's program, especially with regard to its faculty's expertise in creative expression and arts production; mental health and well-being; cultural ethics; refugees; and medical, legal and historical anthropology, is distinguished by offering students the opportunity to develop a strong foundation in classical anthropological paradigms and to relate them to emerging concerns of modern Arab societies. Students will have the opportunity to study the development of the discipline by exploring classical and contemporary theories and by conducting original fieldwork or doing research on secondary sources. The program is designed to sensitize students to their responsibilities as anthropologists, expose them to fieldwork, help them acquire an understanding of anthropological theory and history, and inspire experimentation with the medium and form of ethnographic writing.

## MA in Sociology

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The MA in Sociology program offers students the opportunity to develop solid training and to acquire the necessary knowledge in the field of sociology. The department's faculty members cover several areas of research expertise, including contemporary sociological theory, comparative sociology, economic and political sociology, and cultural sociology. Other substantive issues include citizenship and civil society, knowledge production, ethnicity and sectarianism, sociology of religion, transnationalism, migration and refugee studies, sexuality and gender studies, and sociology of war and violence. The program provides students with the opportunity to develop their knowledge and understanding of key theoretical approaches in sociology in addition to getting a strong grounding in research methodology with training in both qualitative and quantitative methods of inquiry. Students are expected to further develop their intellectual skills through the critical examination of contemporary social issues, especially as they pertain to the Arab world. In addition, the program encourages students to critically consider the relationship between theory, research, policy and practice, and to reflect on ethical considerations in doing social research. At the end of the program, students will put their acquired skills and knowledge to conduct original empirical research through a thesis.

## Graduate Studies in Anthropology and Sociology

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Students pursuing either an MA in Anthropology or Sociology are encouraged to work with faculty from other humanities and social sciences departments, in particular, media studies, political science, and the Center for Arab and Middle Eastern Studies. A master's degree in either field has a very wide application. Graduates in Anthropology and Sociology will be qualified to pursue doctoral level studies in their field. Alternatively, they will have acquired the research methods, exposure to scholarship and intercultural skills to work effectively in multicultural settings such as non-governmental and governmental organizations, as well as expertise applicable in such domains as business, education, law and public policy.

### Requirements

A candidate for the MA degree in Sociology or Anthropology is required to complete 21 graduate credit hours in addition to a thesis. Sociology students must complete SOAN 300 and SOAN 312, in addition to three courses in sociology; and anthropology students must complete SOAN 304 and SOAN 310, in addition to three courses in anthropology. Students wishing to learn Arabic for purposes of fieldwork may complete up to 6 credits of Arabic language classes towards their MA degree. Sociology students choosing a concentration in communication are also required to complete SOAN 313. The remainder of the requirements may be selected from other offerings in the department or in the FAS and other schools and faculties on campus, with the consent of the advisor and according to the interest of the graduate student.

## Course Descriptions

### **SOAN 300 Graduate Research Methods 3.0; 3 cr.**

An advanced course in the formulation of research problems, research designs, and techniques of data collection including quantitative and qualitative methods and micro versus macro approaches to social reality. Students participate in actual research projects and apply various techniques of data collection and analysis to interpret research findings. *Annually.*

### **SOAN 301 The Ethnographer's Craft 3.0; 3 cr.**

Anthropology or any sociocultural research is not simply the gathering of data. The course will expose students to the classic and cutting-edge texts in anthropology today. Readings include the works of Mauss, Evans-Pritchard, Malinowski and texts that have had the most impact in the field in the last decade. Close attention to the crafting of ethnographies will teach students an analytical method of reading that will help them understand the choices of theory, methodology and style that have been made to create classic anthropological knowledge. Thus, this course will enable students to conceive, devise and write-up their own ethnographic research. *Alternate years.*

### **SOAN 302 Culture and Mental Health 3.0; 3 cr.**

This graduate seminar explores anthropological approaches to the study of mental health and illness. It will introduce students to theoretical traditions in medical and psychological anthropology. Addressing ethnographies from different settings, the course treats works on subjective experiences, becoming cultural beings as well as on mental health as scientific practice and objects of knowledge and intervention. *Occasionally.*

### **SOAN 303 Art, Aesthetics and Social Change 3.0; 3 cr.**

This course combines cultural anthropology, art studies, urban studies and history to look at the role of sensuality and aesthetics in social movements that involve envisioning a different future. Focusing on case studies from the Arab world, the US and the former Soviet Union, the course will expose students to the most recent literature in affect theory, critical art theory and Middle East studies, as well as the classic texts on power, social hierarchy and structuralism. *Occasionally.*

### **SOAN 304 Anthropological Research Methods 3.0; 3 cr.**

This course is about the various methods of enquiry and interpretation used in anthropological research. Though ethnographic methods are shaped by each research situation and its particular historical and cultural circumstances, they are also guided by broad theoretical questions. This course takes the perspective that research is comprised of three interrelated domains: creative theoretical speculation, methodological 'operationalization' of theoretical questions and concrete research practices. The trick (or 'magic') of ethnographic research is to relate empirical and observational data in many forms to the theories that motivate their collection. We explore the politics and ethics of research, kinds of observation, effective interviewing strategies, note-taking, conducting surveys, examining archives, ways of 'coding' or indexing information, data analysis and approaches to writing. *Annually.*

**SOAN 307 Graduate Seminar in Transitional Justice 3.0; 3 cr.**  
 The seminar is an exploration of the strategies and courses of action for post-conflict societies. Consistent with the perspectives and premises of transnational justice, this seminar examines the ways in which states and the international community attempt to achieve justice in periods of political transition. Some of the leading theories and applied dimensions will be critically assessed in light of the operation of international and domestic criminal, historical and administrative justice. *Annually.*

**SOAN 308 Empires, Colonialism, Decolonization 3.0;3 cr.**  
 his course provides students with an overview of the decolonization processes and their main intellectual legacies and outcomes in the formerly colonized world. It engages the main debates in post-colonial and later decolonial theory, and the major themes and thinkers of the anti-colonial struggles of the 20th century. *Occasionally.*

**SOAN 310 Seminar in Anthropological Theory 3.0; 3 cr.**  
 An in-depth survey of the major theoretical developments in sociocultural anthropology. The seminar focuses on both chronological treatment of issues and theories as well as on the contributions of leading theorists. *Prerequisite: Graduate standing or consent of instructor. Annually.*

**SOAN 312 Seminar in Sociological Theory 3.0; 3 cr.**  
 The seminar critically explores some of the enduring controversies and major developments in sociological theory. An effort is first made to elucidate the origins, strategies, and ideological antecedents and components of sociological theory. A special focus is placed on the reformulations of the classic tradition and recent postmodern and other promising directions. *Annually.*

**SOAN 313/ MCOM 301 Seminar in Communication Theory and Research 3.0; 3 cr.**  
 The seminar introduces student to trends in mass communication research and theoretical approaches to the communication process and communication context (small group communication, media processing and effects, media and society, culture and communication). Focus is placed on contemporary communication theories that have emerged in the discipline since the 1950s. *Annually.*

**SOAN 314 Palestinians in the Arab World**  
 This course provides an overview of the contemporary social, political and cultural experience of the Palestinians through case studies of different Palestinian communities. It identifies key events and themes in the modern Palestinian experience, and draws on different full-time and visiting faculty research expertise to examine themes relating to the Nakba and memory, settler-colonialism, transnational Palestine, refugees and migration, art, medicine, religion and kinship, among others. *Occasionally.*

**SOAN 315 Seminar in Middle Eastern Culture and Society 3.0; 3 cr.**  
 A seminar exploring social structures, cultural patterns, processes and agents of social and cultural change. This course includes presentation and analysis of field data. *Occasionally.*

- SOAN 317/  
MCOM 302**      **Seminar in Arab Media and Society**      **3.0; 3 cr.**  
A seminar on the political, social and economic effects of the new communication technologies on modern Arab society. Special attention is given to the effects of cultural deviance in the media on children and the effects of communication media on social and cultural change. *Alternate years.*
- SOAN 318**      **Human Migration**      **3.0; 3 cr.**  
This graduate seminar explores sociological and anthropological approaches and theories to the study of migration. A comparative study of the causes and effects of human migration worldwide. This course covers issues concerned with voluntary and forced migration as well as with temporary labor migration and voluntary migration and resettlement, with an emphasis on current refugee crises in the Arab region and diasporic movements. *Alternate years.*
- SOAN 320**      **Graduate Tutorial in Anthropology**      **3.0; 3 cr.**  
This, like other graduate tutorials in sociology and communication, is open to graduate students preferably during the second term of their first year of program study. Tutorials provide opportunities for students to pursue directed readings and preliminary grounded research of relevance to their envisaged fields of concentration. *May not be repeated for credit. Occasionally.*
- SOAN 321**      **Graduate Tutorial in Sociology**      **3.0; 3 cr.**  
*May not be repeated for credit. Occasionally.*
- SOAN 323**      **Special Topics in Anthropology**      **3.0; 3 cr.**  
This, like other special topics in sociology and communication, is normally devoted to SOAN faculty or visiting professors and recognized scholars to explore topics of current interest. *May be repeated for credit. Occasionally.*
- SOAN 324**      **Special Topics in Sociology**      **3.0; 3 cr.**  
*May be repeated for credit. Occasionally.*
- SOAN 395A**      **Comprehensive Exam in Anthropology**      **0 cr.**  
Successful defense of thesis proposal. *Prerequisite: Consent of advisor.*
- SOAN 395B**      **Comprehensive Exam in Sociology**      **0 cr.**  
Successful defense of thesis proposal and 3000- to 5000- word report of 10 public lectures/events (organized by SOAM) attended during graduate years of enrollment. *Prerequisite: Consent of advisor.*
- SOAN 399**      **Thesis**      **9 cr.**

# MA in Media Studies

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## Mission Statement

The AUB MA in Media Studies offers students a broad-based multidisciplinary liberal arts curriculum grounded in the social sciences that teaches students media theory and research, and focuses on the role of media in society. The program offers a regional and global scope and stresses a liberal arts approach that emphasizes theory, research and critical skills. In addition to exploring media theories, students learn different research methods and critical inquiry into the nature, processes and consequences of traditional and new media. The program stresses the university's commitment "to creative and critical thinking and civic responsibility."

## Admission

Requirements for admission into the MA program are consistent with those of the Faculty of Arts of Sciences. Admission to the MA in Media Studies is restricted to the fall term. Applicants are required to submit the following: two letters of recommendation, and a statement of goals/research interests and experiences. Each student may be interviewed upon application to determine her/his background and qualification.

## Requirements

The MA in Media Studies follows a liberal curriculum grounded in the social sciences. Its curriculum is intended for returning professionals, and AUB and non-AUB graduates who aim to build fundamental knowledge in the theories, research methods and critical skills of the field.

The MA program offers two tracks. Students may choose either a thesis option or a project option. Both options require 30 credits. Students must decide which track they want to pursue by the time they successfully complete the comprehensive exam, which is normally at the end of the second term for full-time students. Based on their comprehensive exam performance, students will be advised to pursue one track or the other.

- The thesis option requires seven courses (21 credits), the comprehensive exam (0 credits) and a 9-credit thesis (MCOM 399).
- The project option requires nine courses (27credits), the comprehensive exam (0 credits) and a 3-credit project (MCOM 398).

All candidates for the MA in Media Studies must complete MCOM 300, MCOM 301, MCOM 302 and MCOM 395 (comprehensive exam), and at least two courses from the list of department electives. The remainder of the courses may be selected from the department electives, the approved general electives or other unlisted graduate courses upon the advisor's consent.

**Core Courses:** MCOM 300, MCOM 301 and MCOM 302.

**Department Electives:** MCOM 313, MCOM 314, MCOM 315, MCOM 316, MCOM 317, MCOM 362, MCOM 363, MCOM 390, MCOM 391, SOAN 310, SOAN 312, SOAN 315.

## Course Descriptions

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**MCOM 300 Graduate Research Methods in Media Studies 2.2; 3 cr.**  
 This course teaches students how to critically read, design and implement scientific research and use quantitative, qualitative, and mixed methods and data analysis techniques to address research questions common in the field of media studies. Students participate in actual research projects and apply various techniques of data collection, analysis and interpretation. *Prerequisite: Restricted to major or instructor consent. Annually.*

**MCOM 301/ Seminar in Communication Theory and Research 3.0; 3 cr.**  
**SOAN 313**  
 The seminar introduces students to trends in media studies research and theoretical approaches to the media and communication process. Focus is placed on contemporary media and communication theories. *Prerequisite: Restricted to major or instructor consent. Annually.*

**MCOM 302/ Seminar in Arab Media and Society 3.0; 3 cr.**  
**SOAN 317**  
 A seminar on the political, social and economic effects of the Arab media on modern Arab society. Special attention is given to the relationship between communication media on social and sociocultural change. *Prerequisite: Restricted to major or instructor consent. Annually.*

**MCOM 313 Seminar in Communication and Development 3.0; 3 cr.**  
 A seminar on the role of communication in developing societies, with focus on the media as a modernizing agent and on questions that are relevant to the understanding of the socioeconomic developmental process in less developed cultures. *Occasionally.*

**MCOM 314 Issues in Transnational Media Studies 3.0; 3 cr.**  
 In this graduate seminar, students will be introduced to some of the key debates and issues facing the field of media studies in our increasingly global era. In the last twenty years, “globalization” has become an academic buzzword. What does globalization mean for the production, distribution and reception of media texts, including film, television, social media and music? In this course, students will be introduced to a variety of issues in transnational media studies. Readings will deal with questions of media industries, transnational distribution practices, methods of surveillance and security, and social media activism. *Occasionally.*

**MCOM 315 Race and Media 3.0; 3 cr.**  
 In this graduate seminar, students will be introduced to several important ongoing debates regarding the intersection of race and media. After looking at a variety of scholarly approaches to race, students will closely examine an array of contemporary interventions in media and race studies. Topics may include lynching photography, Hollywood orientalism, music videos, race on the Internet, zombie horror cinema and the racialization of bodies in the era of drone warfare. *Occasionally.*

**MCOM 316 Media, Belief and Conflict 3.0; 3 cr.**  
 This course examines the complex relationship between media, modern forms of belief, and their role in contemporary social and political conflict. The course takes

a comparative approach, drawing connections between critical theory and current interdisciplinary conversations to open up the three terms in the title. *Occasionally.*

- MCOM 317      Sex, Gender and Media in the Middle East      3.0; 3 cr.**  
 This seminar examines media's central role in the production and circulation of narratives and counter-narratives of gender oppression and sexual liberation in the region. Through critical readings in film, television and literature, we consider how representations of male dominance, women's emancipation and LGBT rights have shaped Middle Eastern politics with particular emphasis on decolonization, the War on Terror and immigration. *Occasionally.*
- MCOM 362      Media Representations      3.0; 3 cr.**  
 This course examines the role of the media in constructing our social reality through an examination of media practices both historically and in the present. It particularly examines the representations of Arabs and the Arab world in the Western media, and the US in the Arab media. It covers politics of culture and identity as they shape and intersect with today's globalized media. *Occasionally.*
- MCOM 363      Historical Approaches to Media      3.0; 3 cr.**  
 This course situates the history of communication – from the telegraph to today's social media – as more than a history of technology, and discusses the complexity with which the social world is constructed. Both technology and history enter into conversation, opening up points of critical engagement of modern understandings of the world. *Occasionally.*
- MCOM 390      Special Topics in Media Studies      3.0; 3 cr.**  
 This course is normally devoted to MCOM faculty or visiting professors and recognized scholars to explore topics of current interest. *May be repeated for credit. Occasionally.*
- MCOM 391      Graduate Tutorial in Media Studies      3.0; 3 cr.**  
 This course is open to graduate students preferably during the second term of their first year of program study. Tutorials provide opportunities for students to pursue directed readings and preliminary grounded research of relevance to their envisaged fields of concentration. *May not be repeated for credit.*
- MCOM 395A/B      Comprehensive Exam      0 cr.**  
*Prerequisite: Consent of advisor.*
- MCOM 398      MA Project      3 cr.**
- MCOM 399      MA Thesis      6 cr.**

# The Anis Makdisi Program in Literature (AMPL)

Director:	Jarrar, Maher
Advisory Committee:	El-Bizri, Nader; Harb, Sirene; Jarrar, Maher; Kozah, Mario; Makdisi, Saree (UCLA)

The Anis Makdisi Program in Literature (AMPL) was inaugurated in October 2002.

## Objectives

The AMPL promotes and supports interdisciplinary dialogue and different approaches in the study of literature following the tradition initiated by Anis K. Makdisi. The aim of this program is to encourage and develop scholarly interest in the humanities in general and in literature in particular, and to foster intellectual exchange among members of different departments, students, and visiting scholars.

## Activities

Program activities include:

- an annual Anis K. Makdisi memorial lecture by a leading scholar in literature or a noted author of poetry or prose. All lectures are published by the program.
- a series of seminars on various issues and topics in literature and cultural studies offered by local, regional, and international scholars, novelists, and artists. The primary aim of the seminars is to enrich the study and the teaching of literature at AUB by providing wide discussion forums.
- informal gatherings (lectures, discussions, colloquia) as a venue for scholarly debate for the academic community in Beirut.

## Scholarships

The Program offers two scholarships every year:

- The Anis K. Makdisi Graduate Fellowship to support graduate studies in literature at AUB
- The Anis K. Makdisi Scholarship in Literature for undergraduate studies

Website: <http://www.aub.edu.lb/fas/ampl/Pages/index.aspx>

# Center for Arab and Middle Eastern Studies (CAMES)

Director:	Hanafi, Sari
Assistant Director:	Saidi, Aliya R.
Lecturer:	Kozah, Mario
Instructors:	<sup>P</sup> Kanawati, Rima; Semaan, Rima
CAMES Steering Committee:	Frangie, Samer; Gannage, Emma; Halabi, Zeina; Hanafi, Sari; Issa, Rana; Kozah, Mario; Orfali, Bilal; Saidi, Aliya; Saleh, Elizabeth

The Center for Arab and Middle Eastern Studies (CAMES) offers interdisciplinary MA degrees in Middle Eastern Studies and Islamic Studies. CAMES's goal is to enhance the understanding of the Middle East and Islamic civilization and to encourage informed scholarship in all related academic disciplines. The MA programs aim to assist students in acquiring a sound grounding in one or more aspects of the study of the Middle East and Islamic civilization, and in the Arabic language. The Center offers seminars in Middle Eastern and Islamic Studies as well as a full range of Arabic language courses for non-native speakers. CAMES is an interdepartmental, interdisciplinary unit. The MA programs draw on other departments to provide coursework and thesis advising for their students. To complement students' coursework and promote scholarship about Middle Eastern and Islamic Studies at AUB, the Center also sponsors visiting lectures and conferences, and holds occasional events such as film screenings and readings.

CAMES focuses on current methodologies and approaches in the fields of Middle Eastern and Islamic Studies. Students structure their own coursework in Middle Eastern and Islamic Studies, and in fields such as history, Arabic language and literature, contemporary politics, international relations, archaeology, anthropology, sociology, media studies and philosophy. The courses, thesis and project requirements encourage students to think critically and independently while undertaking analytical, in-depth research.

CAMES is committed to the study of the Arabic language and offers courses at all levels, as well as seven-week intensive language courses in Modern Standard Arabic and Lebanese colloquial Arabic in the summer, in coordination with the Department of Arabic and Near Eastern Languages.

## Requirements

General requirements for graduate study are found in the Admissions section of this catalogue. Applicants to the MA in Islamic Studies track must submit an Arabic writing sample with their application. The submission of official GRE scores is optional.

<sup>P</sup>) Part time

# MA in Middle Eastern Studies

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The MA program in Middle Eastern Studies is designed for students who wish to obtain broad knowledge of the contemporary Middle East and study the Arabic language. The interdisciplinary nature of the program encourages students to develop a critical understanding of the history, culture and politics of the region as well as to conduct in-depth, independent research.

## Thesis Option

Students following the thesis option are required to complete a minimum of 21 credit hours in courses numbered 300 and above in addition to a 9-credit thesis. They are also required to take the two core courses, MEST 300 Making of the Modern Middle East and MEST 301 Introduction to Middle Eastern Studies. Non-native speakers of Arabic are required to complete a minimum of 6 credits of Arabic language study and may take up to 9 credits of Arabic. Students may take their remaining courses at CAMES or at departments other than CAMES in topics related to Middle Eastern Studies.

## Project Option

Students following the project option are required to complete a minimum of 27 credit hours in courses numbered 300 and above in addition to a 3-credit project. They are also required to take the two core courses, MEST 300 Making of the Modern Middle East and MEST 301 Introduction to Middle Eastern Studies. Non-native speakers of Arabic are required to complete a minimum of 6 credits of Arabic language study and may take up to 12 credits of Arabic.

## Courses

**MEST 300                      Making of the Modern Middle East                      3.0; 3 cr.**  
 This course is a survey of the modern history of the Middle East with a focus on the late 18th century to the present. It examines the main political, economic, social and cultural institutions and forces at work, with an emphasis on identifying how specific events as well as long-term processes defined social and political realities in the region. Topics covered include: Ottoman reform and legacy; political ideologies including Arab nationalism, state nationalisms, communism and Islamism, among others; interactions with imperialist and colonial powers; regional conflicts; social movements (including women and peasants); and cultural changes. *Annually.*

**MEST 301                      Introduction to Middle Eastern Studies                      3.0; 3 cr.**  
 A general course in modern Middle Eastern studies designed to introduce students to the interdisciplinary study of the Middle East. Faculty from the various departments associated with CAMES, such as History and Archaeology, Philosophy, Arabic, Economics, Political Studies, Sociology, Anthropology and Media Studies are asked to present a seminar that illustrates the approaches and methodologies used in their respective fields to study the region. *Consent of instructor required. Annually.*

**MEST 302                      Graduate Tutorial                      3 cr.**

**MEST 310                      Seminar in Early Islamic History                      3.0; 3 cr.**  
 A seminar course that provides a social and intellectual introduction to approximately the first five hundred years of Arabic Islamic history, using a thematic rather than a chronological approach. *Consent of instructor required. Annually.*

**MEST 311 Special Topics in Medieval Islamic Cultural History 3.0; 3 cr.**  
*Consent of instructor required. Biennially.*

**MEST 315 Special Topics in Modern Middle Eastern Social and Political History 3.0; 3 cr.**  
*Consent of instructor required. Biennially.*

**MEST 316 Special Topics in Modern Arabic Cultural and Intellectual History 3.0; 3 cr.**  
*Consent of instructor required. Biennially.*

**MEST 317 Special Topics in Contemporary Middle Eastern Politics 3.0; 3 cr.**  
*Consent of instructor required. Biennially.*

**MEST 318 Special Topics in Contemporary Middle Eastern Society 3.0; 3 cr.**  
*Consent of instructor required. Biennially.*

**MEST 321/322 Arabic as a Foreign Language I and II 5.0; 3 cr. (each)**  
 This sequence of courses introduces students who have no previous knowledge of Arabic to the Arabic language and culture within its Lebanese setting. The course utilizes an integrated approach to Arabic and emphasizes communicative tasks and contexts. By the end of the course, students will be able to speak and write simple connected sentences about themselves, their families and their immediate environment, and read and listen to short authentic texts. By the end of the course sequence, students reach Intermediate-Low to Intermediate-Mid proficiency in Arabic on the ACTFL scale. *Consent of instructor required. Each term.*

**MEST 323/324 Arabic as a Foreign Language III and IV 5.0; 3 cr. (each)**  
 This course sequence aims to further enhance students' proficiency in the various skills by expanding their vocabulary, control of pronunciation and grammatical structures, and cultural knowledge. The course utilizes an integrated approach to Arabic that is based on communicative tasks and contexts. Students' activities at this level involve giving oral presentations and doing writing projects. By the end of this course sequence, students reach Intermediate-Mid to Intermediate-High proficiency in Arabic following the ACTFL scale. *Prerequisites: MEST 321 and MEST 322 or equivalent, or placement based on a placement examination. Each term.*

**MEST 325/326 Arabic as a Foreign Language V and VI 3.0; 3 cr. (each)**  
 This course sequence aims to enable students to reach advanced proficiency in Arabic in all skills. Students are required to do extensive readings on a variety of topics and genres, such as literature, language and the social sciences. They are also expected to engage in debates, give oral presentations and write short research papers. The course utilizes an integrated approach to Arabic and is based on communicative tasks and contexts. By the end of this course sequence, students reach Advanced-Low to Advanced-Mid proficiency in Arabic following the ACTFL scale. *Prerequisites: MEST 323 and MEST 324 or the equivalent, or placement based on a placement examination. Every term.*

**MEST 327/328 Arabic as a Foreign Language VII and VIII 3.0; 3 cr. (each)**  
 This course sequence aims to take students to the Advanced-High level in the various skills in Arabic. Readings at this level are extensive and span a variety of genres. Listening skills are sharpened through extensive work with news broadcasts, documentaries,

and television shows in both Standard and Lebanese Arabic. The course also features extended oral presentations in class and extensive writing activities. Special emphasis is placed on understanding the nuances of the language and the use of idiomatic expressions and rhetorical devices in all language skills. *Prerequisites: MEST 325 and 326 or the equivalent, or placement based on a placement examination. Every term.*

**MEST 329**                    **Special Topics in Arabic Language and Literature**                    **3.0; 3 cr.**  
*Occasionally.*

**MEST 330**                    **Introductory Syriac**                    **3.0; 3 cr.**  
The course provides students with working knowledge of the Syriac language and grammar. With the help of a lexicon, students are expected to read and translate simple Syriac texts. *Occasionally.*

**MEST 331**                    **Introduction to Syriac Literature**                    **3.0; 3 cr.**  
The aim of this introductory course is to provide the student with an overview of Syriac literature from its origins to the present day. *Prerequisite: ARAB 215/MEST 330, or consent of instructor. Occasionally. Students who receive credit for MEST 331 cannot receive credit for ARAB 217.*

**MEST 332**                    **Intermediate Syriac**                    **3.0; 3 cr.**  
This course complements ARAB 215/MEST 330 'Introduction to Syriac Language', focusing on the reading, translation, and analysis of Syriac texts from various authors, genres, and time periods. In addition, the course provides a review of Syriac grammar. It is intended for those students who had taken the introductory course ARAB 215/MEST 330 or who already have a basic knowledge of Syriac and wish to continue studying the Syriac language for a second term. *Prerequisite: MEST 331 or consent of instructor. Annually.*

**MEST 340**                    **Introduction to Lebanese Arabic**                    **5.0; 3 cr.**  
This course is for foreign speakers of Arabic only. The course builds proficiency in Lebanese Arabic through the introduction of grammatical features of the Lebanese dialect and the practice of interactive functional skills, including listening comprehension, conversation tasks and vocabulary building. *For undergraduate and graduate students. Consent of instructor required. Each term.*

**MEST 341**                    **Intermediate Lebanese Arabic**                    **5.0; 3 cr.**  
This course is for foreign speakers of Arabic only. Intermediate Lebanese Arabic is a continuation of MEST 240/340 Introduction to Lebanese Arabic. The course emphasizes the further development of conversational skills in Lebanese Arabic, and therefore primarily targets speaking and listening skills. Knowledge of the Arabic alphabet is required to join MEST 241/341. This course concentrates on increasing vocabulary and command of syntax enabling students to reach a higher level of fluency. *For undergraduate and graduate students. Consent of instructor required. Prerequisite: MEST 240/340 or placement based on a placement interview. Each term.*

**MEST 342**                    **Advanced Lebanese Arabic**                    **3.0; 3 cr.**  
This course is the continuation of the sequence begun in MEST 241/341 Intermediate Lebanese Arabic and MEST 240/340 Introduction to Lebanese Arabic. Like the preceding courses, it focuses on spoken rather than written Arabic, and will therefore primarily target the oral/aural skills, speaking and listening. Knowledge of the Arabic alphabet is required to join MEST 242/342. The course is designed to meet the needs

and expectations of non-native young adults and adults who are seeking to develop a comfortable level of proficiency in a variety of complicated communicative tasks and social situations. *For undergraduate and graduate students. Consent of instructor required. Prerequisite: MEST 241/341 or placement based on a placement interview. Each term.*

**MEST 395A/B Middle Eastern Studies Comprehensive Exam** **0 cr.**  
*Prerequisite: Consent of advisor.*

**MEST 398 MA in Middle Eastern Studies Project** **3 cr.**

**MEST 399 MA in Middle Eastern Studies Thesis** **9 cr.**

## MA in Islamic Studies

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The MA program in Islamic Studies is an interdisciplinary program with the goal of providing students with the background to expand their knowledge and understanding of classical and modern Islamic religious thought, context and textual traditions. It highlights ethics as the overarching principle and the fiqh as highly informed by the spirit of ethics. Framed in the paradigm of ethical pluralism, this program will be about text and context and offer a shared space where social scientists and scholars in Islamic jurisprudence collaborate in an effort to provide maqasidic fiqh and new interpretation of Islamic corpus.

### Thesis Option

Students following the thesis option are required to complete a minimum of 24 credit hours in courses numbered 300 and above, in addition to a 6-credit thesis. Students are required to complete a minimum of 24 credit hours in courses numbered 300 and above, in addition to a 6- credit thesis. They are also required to take the 5 core courses: ISLM 300/ARAB 309 Sources and Methods; ISLM 302 Seminar in Maqasidic Fiqh; ISLM303/PHIL 301J Seminar in Islamic Ethics; ISLM 304/SOAN 309 Sociology of Islam (or any courses that deal with Islam and Society, upon the approval of the Islamic Studies program director).

Non-native speakers of Arabic are required to take intensive Arabic language classes, which are not counted as part of the degree credits. The program recommends the study of a second European language other than English, and for native speakers of Arabic to also develop a reading proficiency in a second language central to literature in Islamic civilizations and cultures, or a second Semitic language, depending on the field of specialization.

## Course Descriptions

### **ISLM 300 Graduate Seminar in Qur'anic Studies 3.0; 3 cr.**

A survey of the different problems in Qur'anic studies, such as the compilation of the Qur'an, al-nasikh wal-mansukh, the secret letters, and the different schools of tasfir. The language of instruction in this course is Arabic.

### **ISLM 301 Sources and Methods 3.0; 3 cr.**

This course familiarizes students with the sources, research tools and methods in Islamic Studies by also looking at the history of the discipline and surveying its major research areas; including history, language, literature, religious sciences, intellectual sciences and social studies. *Arabic native speakers can replace ISLM 301 with the equivalent Arabic course: ARAB 309. Annually.*

### **ISLM 302 Islamic Civilizations 3.0; 3 cr.**

This course examines key aspects of Islamic civilizations, cultures and thought. It will focus on the political, social and religious institutions that shaped Islamic civilizations as well as on the intellectual and scholarly traditions, which characterized the Muslim world from the foundation of Islam onwards, and across various geographical regions and cultures. Beginning with the geographical, cultural and historical context of the rise of Islam, the life of the Prophet, and the Qur'an, it will extend through modernity and beyond, with a special emphasis on texts. The readings consist of a selection of translated primary sources from languages that are central to the literature of Islam, as well as complementary secondary source literature. *Annually.*

### **ISLM/ PHIL 301 J Seminar in Islamic Ethics 3.0; 3 cr.**

This course covers key concepts, theoretical principles, and the doctrines of Islamic Ethics. The course critically examines how these principles and their applications have been addressing contemporary issues related to various fields including finance and business, social and political affairs, intercultural issues, as well as biomedical sciences. By the end of the course, students will work on developing a framework for ethical reasoning around specific ethical dilemma, as part of the training in problem solving. *Annually.*

### **ISLM 304 Sociology of Islam 3.0; 3 cr.**

This course provides the students with knowledge on contemporary Islam and Muslim communities from a sociological perspective and explores a critical understanding and analysis of Muslim intellectual, religious, and cultural productions and traditions. By assessing notions of "Religion", "modernity", and "secularism", the course inquires how different Islamic trends negotiated them in their self-understanding of Islam. This course is cross-listed with SOAN 309. *Annually.*

### **ISLM 315 Seminar in Maqasidic Fiqh 3.0; 3 cr.**

The seminar will undertake to study the Islamic legal theory (usul al-fiqh) and practice (fiqh) in conjunction with Islamic ethics, which serves as an integral part of the juridical tradition of Islam. The sources of fiqh like the Qur'an, the Tradition (Sunnah), consensus (ijma'), analogy (qiyas) and reason (agl) will be examined in connection with Maqsid al-sharia (high objectives of Islam) and the process by which legal decisions in Islam are made. *Annually.*

**SOAN 309/ ISLM 304**                      **Sociology of Islam**                      **3.0; 3 cr.**

This course provides the students with knowledge on contemporary Islam and Muslim communities from a sociological perspective and explores a critical understanding and analysis of Muslim intellectual, religious, and cultural productions and traditions. By assessing notions of “Religion”, “modernity”, and “secularism”, the course inquires how different Islamic trends negotiated them in their self-understanding of Islam. This course is cross-listed with SOAN 309. *Annually.*

**ISLM 315**                      **The Qur’an in History**                      **3.0; 3 cr.**

A historical study of the Qur’an and other allied disciplines. Themes include the Islamic concept of the Qur’an; thematic and formal aspects of the Qur’an; modes of interpretation and principles of exegesis; and medieval and modern controversies regarding its history, formal structure, authorship and authority. *Biennially.*

**ISLM 316**                      **Art and Architecture in Islamic Civilizations**                      **3.0; 3 cr.**

This course examines Islamic art, material culture and architecture, with a focus on key cities in the Ottoman and Qajar regions. The course also studies local perceptions of modernity and how these views related to or diverged from those of the European, British and American colonialists/missionaries in the region. This also includes a study of identity politics, archaeology, collecting practices and museums. *Biennially.*

**ISLM 317**                      **Approaches to the Qur’an**                      **3.0; 3 cr.**

This interactive graduate seminar presents an introduction to the corpus of Sunni Islamic exegesis (tafsir) from the 9th to the 20th century. *Biennially.*

**ISLM 321**                      **Graduate Seminar in Islamic Philosophy and Theology**                      **3.0; 3 cr.**

This course is intended to cover the major debates, concepts, modes of reasoning, figures and texts of Islamic philosophy (falsafa) and theology (kalam) in their intellectual historical contexts. *Biennially.*

**ISLM 325**                      **Graduate Seminar in Sufism**                      **3.0; 3 cr.**

A general presentation of Sufism that, while not aiming at exhaustiveness, will seek to acquaint students with the place and function of Sufism in Islam; the main outlines of its history; doctrinal and ritual features; the relationship between Sufism and literature, especially poetry. The course will give an overview of the sources of classical Sufism. Students will read Islamic mystical texts dealing with the Sufi Path, the nature of God and the hidden meanings of the Qur’an, dreams and miraculous powers, and the different Sufi stations. *Biennially.*

**ISLM 331**                      **Islamic Movements and Reform**                      **3.0; 3 cr.**

An in-depth course on modern Islamic political thought. This course focuses on the historical and intellectual developments that have fueled both revolutionary and conservative trends in Islamic political movements and states. Discussions over issues such as the relationships between religion and politics, political philosophy and ideology, and political action and revolution. *Biennially.*

**ISLM 333**                      **Islamic Thought and Modernity**                      **3.0; 3 cr.**

This course starts by examining the main reform movements of the eighteenth and nineteenth centuries and the transformations in Islamic thought in the wake of the encounter with Europe. The course then explores various models of Islamic political and

social activism, and major themes addressed by leading thinkers of Islamic movements in the twentieth century. The focus is on Islamic movements from Egypt and the Arab Middle East, India/Pakistan and Iran. Topics include the intellectual networks of scholars in the eighteenth century, the contexts of various forms of reform and revival, questions of continuity and European influence, the effects of the encounter with colonialism and imperialism, the attitude toward nationalism and other modern ideologies, and Islamic discussions of modernity and liberalism. In addition to background essays, primary sources in translation will be studied; the selected texts are classics that have wide circulation within contemporary Islamic movements. *Biennially*.

<b>ISLM 341</b>	<b>Christian-Muslim Encounters</b>	<b>3.0; 3 cr.</b>
A collaborative investigation of select topics in Arab and Middle Eastern History viewed from multiple perspectives. Periodic progress reports and the incorporation of findings in an interpretive term paper are required. <i>Students who receive credit for ISLM 341 cannot receive credit for ARAB 248. Biennially.</i>		
<b>ISLM 395A/B</b>	<b>Islamic Studies Comprehensive Exam</b>	<b>0 cr.</b>
<i>Prerequisite: Consent of advisor.</i>		
<b>ISLM 396</b>	<b>Special Topics in Islamic Studies</b>	<b>3.0; 3 cr.</b>
<i>May be repeated for credit.</i>		
<b>ISLM 399</b>	<b>MA in Islamic Studies Thesis</b>	<b>6 cr.</b>

## Intensive Summer Arabic Programs

### Modern Standard Arabic

**MEST 360**      **Elementary Arabic (Intensive)**      **9 cr.**  
 This course is designed to introduce students who have no previous knowledge of Arabic to the Arabic language and culture within its Lebanese setting. The course utilizes an integrated approach that teaches both Standard and Lebanese Arabic based on communicative tasks and contexts. By the end of the course, students will be able to speak and write simple connected sentences about themselves, their families and their immediate environment. They will also be able to read and listen to short authentic texts (announcements, advertisements, short weather reports, menus, daily schedules, etc.) During the course, students will become familiar with Arab culture in general and various aspects of Lebanese culture and society. The course will use *Alif Baa: Introduction to Arabic Letters and Sounds* (3rd Edition) as well as part of *Al-Kitaab fii Ta'allum al-'Arabiyya: Part One* (3rd Edition). At the end of this course, students are expected to reach Intermediate-Low to Intermediate-Mid proficiency in Arabic on the (ACTFL) scale. *Annually*.

**MEST 361**      **High Elementary Arabic (Intensive)**      **9 cr.**  
 This course is designed for students who have had the equivalent of one semester of Arabic instruction. It is also appropriate for students who have already had some limited exposure to the Arabic language, for instance, those who have lived in an Arab country or an Arabic-speaking environment, as well as those who have received some tutoring in Arabic. Students who enroll at this level are expected to know the Arabic alphabet and have limited reading, writing and conversational skills. The course utilizes an integrated approach that teaches both Standard and Lebanese Arabic based on communicative tasks and contexts and will use *Al-Kitaab fii Ta'allum al-'Arabiyya: Part One* (3rd Edition).

By the end of the course, students are expected to reach Intermediate-Mid proficiency in Arabic following the ACTFL scale. *Annually.*

**MEST 362 Intermediate Arabic (Intensive) 9 cr.**  
 This course is designed for students who have completed at least two semesters of Arabic in an academic setting but whose placement results require that they go at a slower pace than the intermediate class. The course is also appropriate for students who have been away from the language for some time. The objectives of this course, in general, are to further develop the students' skills and strategies, expand active vocabulary in a wide variety of topics and settings, enhance knowledge of basic Arabic grammar, and further develop intercultural competence. The course utilizes an integrated approach that teaches both Standard and Lebanese Arabic based on communicative tasks and contexts and will use *Al-Kitaab fii Ta'allum al-'Arabiyya: Part One* (3rd Edition) and a part of *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Two* (3rd Edition). By the end of the course, students are expected to reach Intermediate-Mid to Intermediate-High proficiency in Arabic following the ACTFL scale. *Annually.*

**MEST 363 Intermediate Mid Arabic (Intensive) 9 cr.**  
 This course is designed for students who have had the equivalent of two to three semesters of Arabic instruction. The course aims to further enhance students' proficiency in the various skills, expand their cultural knowledge, expand their vocabulary, and enhance their control of grammatical structures and pronunciation. All communications between instructors and students are carried out strictly in Arabic. Part of the students' activities at this level involves giving oral presentations and doing a lengthy writing project. The course utilizes an integrated approach that teaches both Standard and Lebanese Arabic based on communicative tasks and contexts and will use *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Two* (3rd Edition) and parts of *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Two* (2nd Edition). By the end of the course, students are expected to reach Intermediate-High proficiency in Arabic following the ACTFL scale. *Annually.*

**MEST 364 Intermediate High Arabic (Intensive) 9 cr.**  
 This course is designed for students who have already had the equivalent of four to five semesters of Arabic instruction. The objective of the course is to further enhance students' proficiency in the various skills, expand their cultural knowledge, expand their vocabulary, and enhance their control of complex grammatical structures and pronunciation. The course utilizes an integrated approach that teaches both Standard and Lebanese Arabic based on communicative tasks and contexts. By the end of the class, students are expected to comprehend lengthy authentic listening material and to give long oral presentations with facility. They are also expected to be able to write extensive compositions and to read authentic Arabic texts for research purposes. The course will use part of *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Two* (2nd Edition) and part of *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Three*. By the end of the course, students are expected to reach Advanced-Low to Advanced-Mid proficiency in Arabic following the ACTFL scale. *Annually.*

**MEST 365 Advanced Arabic (Intensive) 9 cr.**  
 This course is designed for students who have already had the equivalent of six semesters of Arabic instruction. It aims to enable students to reach higher levels of advanced proficiency in all skills. Students are required to do extensive readings on a variety of topics and genres, such as literature, language and the social sciences. They are also expected to engage in debates, give oral presentations and write short research papers. The course utilizes an integrated approach that teaches both Standard and Lebanese Arabic based on communicative tasks and contexts and will use *Al-Kitaab*

*fii Ta'allum al-'Arabiyya: Part Three*, to be supplemented by extra material as needed. By the end of the course, students are expected to reach Advanced-Mid to Advanced-High proficiency in Arabic following the ACTFL scale. *Annually.*

**MEST 366                      Advanced High Arabic (Intensive)                      9 cr.**

This course is designed for students who are placed at the Advanced-Mid level of proficiency of Arabic upon entering the program and it aims to take them to the Advanced-High level in the various language skills. Readings at this level are extensive and span a variety of genres; readings will cover at least one novel, short stories, academic articles, lengthy newspaper articles, and selections from medieval texts. Listening skills are sharpened through extensive work with news broadcasts, documentaries, and television shows in both Standard and Lebanese Arabic. Special emphasis is placed on understanding the nuances of the language and the use of idiomatic expressions and rhetorical devices in all the language skills. The course also features extended oral presentations in class where students demonstrate the oral skills of an educated native or near native speaker of Arabic. The course will use *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Three* in addition to other readings assigned by the teachers. By the end of the course, students are expected to reach Advanced-High proficiency in Arabic following the ACTFL scale. *Annually.*

**MEST 367                      Superior Arabic (Intensive)                      9 cr.**

Students entering this level are expected to have Advanced-High proficiency in Arabic and are expected to make progress towards Superior proficiency. This level features extensive readings that cover a wide variety of genres including novels, short stories, academic articles, lengthy newspaper articles, and selections from medieval texts. Listening skills are enhanced through extensive work with news broadcasts, documentaries, and television shows in both Standard and Lebanese Arabic. Special emphasis is placed on understanding the nuances of the language and the use of idiomatic expressions and rhetorical devices in all the language skills. The course also features extended oral presentations in class where students demonstrate the oral skills of an educated native or near native speaker of Arabic. The course will use *Al-Kitaab fii Ta'allum al-'Arabiyya: Part Three* in addition to other readings assigned by the teachers in a variety of genres. *Annually.*

# The Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research (CASAR)

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Director: Myers, Robert

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Assistant Professor of  
American Studies and Media Enzerink, Suzzane  
Studies:

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*Note: The MA Program is frozen. Please contact CASAR faculty for more details.*

## MA in Transnational American Studies

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The Center for American Studies and Research offers a Master of Arts in Transnational American Studies. We conceive of transnational American Studies in terms of the cultural, political and social relations between, among and across the Americas and the Middle East/North Africa region. CASAR's goals are to increase understanding of the interdependencies between America and the MENA region, as well as to understand how culture and U.S. geopolitical power circulate beyond American borders. The MA program aims to assist students in acquiring an academic grounding in the theories and methods of the discipline of American Studies, as well as to foster transnational scholarship at the intersections of interdisciplinary American and MENA Studies. The MA program is interdisciplinary: CASAR offers seminars in transnational American Studies, and students also draw on faculty expertise in other departments for elective course offerings and thesis advising. To complement students' coursework and promote scholarship related to transnational American Studies at AUB, the Center sponsors conferences, lectures and other events.

Students structure their own course of study by specializing in areas such as Arab and Middle East Studies, contemporary politics, international relations, history, anthropology, sociology, fine arts, media studies or literary studies. The courses and thesis or project requirements offer students the opportunity to engage in critical, independent thinking and to undertake in-depth research.

Admission to the MA in Transnational American Studies is restricted to the fall term.

All students are required to take three Transnational American Studies core courses: AMST 300, AMST 301 and AMST 302.

The MA in Transnational American Studies offers a thesis option and a project option. Students are strongly encouraged to select the project option.

## Project Option

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Students following the project option are required to complete a minimum of 27 credit hours in courses numbered 300 and above, as well as a 3-credit project. In addition, students will choose electives in consultation with the director of the program. No more than 3 credits of the program of study can be in Arabic language study, unless the student petitions to include additional Arabic credits in her/his program of study.

## Thesis Option

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Students following the thesis option are required to complete a minimum of 21 credit hours in courses numbered 300 and above, as well as a 9-credit thesis. In addition, students will choose electives in consultation with the director of CASAR. No more than 3 credits can be in Arabic, unless the student petitions to include additional Arabic credits in her/his program of study.

The MA in Transnational American Studies is currently frozen.

## Course Descriptions

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**AMST 300 Introduction to Transnational American Studies 3.0; 3 cr.**  
This graduate seminar introduces students (1) to current theories and methods in the field, (2) to the history of American Studies nationally and transnationally and (3) to the participating faculty in the program. It is the required introductory seminar for all Transnational American Studies graduate students and is open only to those who have been accepted into the MA program. During the course of the term, other affiliated American Studies participating faculty members will visit the seminar to introduce themselves and their fields of specialization.

**AMST 301 America in the Middle East 3.0; 3 cr.**  
Although the United States' encounter with the Middle East may appear to be a relatively recent phenomenon, this course illustrates that America has imagined the Middle East ever since the beginning of North American colonization. Moreover, America has been in the Middle East for a period that extends long before U.S. military and diplomatic presence in the region. In addition to documenting various moments of encounter between America and the Middle East, this course also problematizes the very terms "America" and "Middle East" by introducing each region as a geographic imaginary. In this way, the course first asks what are the borders and limits of "America" and "the Middle East" and how and when are these borders and limits produced? *Prerequisite: AMST 300.*



# Center for Language Research and Teaching (CeLRT)

Director:	Shaaban, Kassim A.
Professors:	Choueiri, Lina G.; Ghaith, Ghazi M.; Shaaban, Kassim A.
Associate Professors:	Hanafi, Sari; Orfali, Bilal W.
Assistant Professors:	Allen, Ira J.; Avant, Doyle R.; Kelly, Niamh; Majed, Rima; Nish, Jennifer M.; Vermy, A. Michael; Zimmerman, Erin.

CeLRT is currently inactive. For more information, please contact the Center Director.

The proposed functions of the Center are the following:

- Providing language practitioners with professional support through workshops, panel discussions, forums, seminars, and discussions
- Establishing connections with professional organizations and supporting their goals and mission
- Holding a biannual conference on different topics in theoretical and applied linguistics and related fields (sociolinguistics, language acquisition, pragmatics, and mass communication)
- Publishing an electronic journal that addresses generic language issues as well as issues specific to the language situation and language education in the Middle East region
- Working on offering new postgraduate degrees in language related areas such as Creative Writing, Rhetoric and Composition, and Translation
- Offering consultation services in language-related areas
- Hosting visiting scholars and post-doctoral fellows
- Working on the establishment of new language-based interdisciplinary graduate programs at AUB, and
- Engaging in research in theoretical and applied linguistics and in language teaching and language learning

# Kamal A. Shair Central Research Science Laboratory<sup>1</sup> (KAS CRSL)

Director:	Oweini, Rami i, PhD
Laboratory Manager:	Shatila, Rania, MS
Laboratory Scientist:	El Khoury, Wendy, MS

The Kamal A. Shair Central Research Science Laboratory (KAS CRSL) at the American University of Beirut is a five-million-dollar laboratory facility housing more than 30 major equipment distributed between Four Areas (Central Wing, East Wing, West Wing, and Basement; ~400 m<sup>2</sup>) and a multitude of other multi-user equipment and facilities. The KAS CRSL is considered as the pride of FAS and AUB, as it serves research in most disciplines across AUB (mainly FAS, MSFEA, FAFS, FHS, FM) and constitutes a state-of-the-art platform essential for a thriving and progressive university research environment.

The KAS CRSL is comprised of Five Main Sections and a Cell Culture Facility: Chromatography, Imaging, Magnetism, Spectroscopy, Surface Science. The KAS CRSL complements other specialized departmental and faculty research laboratories, and as such aims at promoting individual as well as joint and multidisciplinary cooperative research.

The KAS CRSL is designed primarily to serve AUB faculty members, their graduate students, and their collaborators whether from industry or other universities within Lebanon, the MENA region, or internationally. Furthermore, the KAS CRSL contributes to excellence in undergraduate teaching by providing students with hands-on learning experience on advanced instrumentations and a head-start in scientific research.

The KAS CRSL is a testimony to AUB's commitment in advancing science, technology, research, and innovation at the highest levels of quality and safety. There are more than 250 active users working and conducting their research studies at the KAS CRSL and producing more than 116 publications per year. The KAS CRSL is constantly offering its users with top-of-the-line and day-to-day training sessions and workshops, troubleshooting, as well as method validation, equipment calibration, and occasional data analysis. Its mission is to provide cutting-edge technologies and facilities that enables our researchers to compete on the global scale.

The KAS CRSL is located in Emile Bustani Hall, Room 120. Contact the KAS CRSL by email at [crsl@aub.edu.lb](mailto:crsl@aub.edu.lb) or by phone at AUB extension 4300.

<sup>1</sup> An overview of the KAS CRSL facilities and activities can be found on its website: [www.aub.edu.lb/fas/crsl](http://www.aub.edu.lb/fas/crsl).

# Graduate Program in Computational Science (GPCS)

Director:	Touma, Jihad (Physics, FAS)
	Dohna, Heinrich (Biology, FAS)
	Doummar, Joanna (Geology, FAS)
	Kazan, Michel (Physics, FAS)
	Monni, Stefano (Mathematics, FAS)
Executive Committee Members:	Mouawad, Amer A. (Computer Science, FAS)
	Najem, Sara A. (Physics, FAS)
	Shehadeh, Mu'tasem (Mechanical Engineering, MSFEA)
	Zaraket, Fadi (Electrical and Computer Engineering, MSFEA)

The practice of computational science combines domain expertise in mathematical modeling and computing disciplines as vital tools in solving fundamental and challenging application problems in science, engineering, finance, economics and recently new disciplines in health and medical sciences. The scope of the program curriculum includes fundamental material from computer science (sequential and parallel algorithms, networks), numerical and symbolic computing, discrete and continuous mathematics (logic, number theory, graphs, differential equations and Fourier analysis, optimization, statistics and data analysis), and scientific software environments (UNIX, C, MATLAB, MPI and OpenMP, statistical packages). It also requires sufficient knowledge in at least one application area selected from the sciences (natural, social, engineering, health medical, management and finance).

The mission of the interdisciplinary master's program in computational science is to provide a sufficiently broad educational environment that qualifies its holders to design and implement computational models in at least one application area. The program offers two tracks: a research master's degree for students who intend to join a PhD program after their graduation and a professional master's degree.

## Admission Requirements

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Admission to the master's program in computational science follows basic AUB regulations. Regular students should be either: 1) holders of a bachelor's degree in biology, business, computer science, economics, engineering, chemistry, mathematics and physics; have successfully completed the equivalent of CMPS 201, MATH 201, MATH 202, MATH 218 or 219; and have sufficient maturity in discrete mathematics (at the level of MATH/CMPS 211), MATH/CMPS 251, STAT 230(233); or 2) should be holders of a bachelor's degree, having completed the equivalent of MATH 202, STAT 230 and the FAS core courses requirements for a minor in computational science.

Some candidates may be admitted as prospective students until full completion of the required undergraduate courses. The supplementary courses must be completed within four consecutive, regular terms.

Graduate fellowship and assistantship programs (GFAP) are available for some applicants to the program based on qualifications.

## Graduation Requirements

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- 9 credits of computational science courses: MATH/CMPS 350 Discrete Models of Differential Equations, MATH/CMPS 351 Optimization and Nonlinear Problems, MATH/CMPS 358 Introduction to Symbolic Computing
- 12 credits, approved by the program director, from a list of well-specified courses in computer science (CMPS), computational science (MATH/CMPS), engineering science (CIVE, MECH), mathematics (MATH), natural sciences (PHYS, CHEM, BIOL), decision sciences (STAT, ECON, ENMG)
- a 9-credit thesis (CMTS 399) in which candidates demonstrate ability of using computational science tools to design a computational model for a specific problem emanating from one application area.

## Core Courses Offered in Computational Science

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All computational science courses are cross-listed under mathematics and computer science departments (MATH/CMPS).

<b>CMPS 350/ MATH 350</b>	<b>Computational Methods for Differential Equations</b>	<b>3.1; 3 cr.</b>
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A detailed study of methods and tools used in deriving discrete algebraic systems of equations for ordinary and partial differential equations: finite difference and finite element discretization procedures; generation and decomposition of sparse matrices, finite-precision arithmetic, ill-conditioning and pre-conditioning, and Scalar, vector and parallelized versions of the algorithms. The course includes tutorial "immersion" sessions in which students become acquainted with state-of-the-art scientific software tools on standard computational platforms. *Prerequisite: Equivalent of MATH 218 and STAT 230. Corequisite: MATH/CMPS 251 or consent of instructor. Annually.*

**MATH 351/**                    **Optimization and Nonlinear Problems**                    **3.1; 3 cr.**  
**CMPS 351**

A study of practical methods for formulating and solving numerical optimization problems that arise in science, engineering and business applications. Newton's method for nonlinear equations and unconstrained optimization. Simplex and interior-point methods for linear programming. Equality and inequality-constrained optimization. Sequential quadratic programming. Emphasis is on algorithmic description and analysis. The course includes an implementation component where students develop software and use state-of-the-art numerical libraries. *Prerequisite: MATH/CMPS 350 or consent of instructor. Annually.*

**MATH 358/**                    **Introduction to Symbolic Computing**                    **3.0; 3 cr.**  
**CMPS 358**

Introductory topics in computer algebra and algorithmic number theory that includes fast multiplication of polynomials and integers, fast Fourier transforms, primality testing and integers factorization. Applications to cryptography and pseudo-random number generation. Linear algebra and polynomial factorization over finite fields. Applications to error-correcting codes. Introduction to Grobner bases. *Prerequisite: Consent of instructor. Annually.*

**MATH 360/**                    **Special Topics in Computational Science**                    **3.0; 3 cr.**  
**CMPS 359**

A course on selected topics in computational science, which change according to the interests of visiting faculty, instructors and students. Selected topics will cover state-of-the-art tools and applications in computational science. *May be repeated for credit. Prerequisite: Consent of instructor. Annually.*

**CMTS 399**                    **Thesis**                    **9 cr.**

# Institute of Financial Economics (IFE)

Director:	Neaime, Simon
Senior Fellows:	Makdisi, Samir A.; Altug, Sumru
Fellows:	Neaime, Simon E.; El Joueidi, Sarah

## Steering Committee

Simon Neaime, Chairperson, Professor, Department of Economics
Sumru Altug, Member, Professor, Department of Economics
Samir Makdisi, Member, Professor Emeritus, Department of Economics
Selim Chahine, Member, Professor, Olayan School of Business
Ali Chehab, Member, Professor, Department of Engineering
Assem Safieddine, Member, Professor, Department of Computer Science
Nabil Nassif, Member, Professor, Department of Mathematics
George Turkiyyah, Member, Professor, Department of Computer Science

## Objectives

Effective October 2001, the Institute of Money and Banking, founded in 1984 at the initiative of Samir Makdisi, was restructured as the Institute of Financial Economics to be engaged in research work, seminars and workshops primarily in the areas of financial, monetary, international and political economics.

In tandem with the ongoing process of globalization, there has been a growing emphasis on the fields of financial, monetary and international economics. A major objective of the Institute is to promote research and other academic activities in these fields and thereby build it up into a major research center particularly as concerns Arab and other developing economies. The Institute encourages collaborative work with appropriate national, regional and international organizations, and research centers.

The principal goals of the Institute may be briefly outlined as follows:

- Its first goal is to conduct, organize and sponsor high-level research work related in particular (but not exclusively) to financial, monetary and international economics as well as to political economy. Emphasis will be placed on policy-oriented empirical work pertaining to the Arab region and other developing areas, and collaborative teamwork will be promoted. Such research will prove beneficial to governments and organizations concerned with the design of economic and financial policies, especially in the Arab region.
- Its second goal is to hold seminars, workshops and lectures on various topics related to the above areas. The first two types of activities will, among other things, bring together academicians, financial managers and experts, and policy makers to analyze issues of relevance at the policy level.
- Finally, it aims to accommodate visiting scholars and experts, for various intervals of time, to conduct research at the Institute and sponsor public lectures in financial, monetary and related fields.

## Activities

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- A Seminar Series consisting of lectures given by invited scholars and experts in the field.
- A Working Paper Series which the Institute publishes as part of its role in making available ongoing research within and outside the University.

## Membership and Governance

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The Institute is an independent academic entity within the Faculty of Arts and Sciences with its own endowment fund. It is managed by a director and staffed with research fellows, visiting scholars, post-doctoral fellows, research assistants and associates, graduate research assistants and an assistant to the director.

# Science and Mathematics Education Center (SMEC)

Director:	El Mouhayar, Rabih
Professors:	BouJaoude, Saouma; Jurdak, Murad
Associate Professors:	Amin, Tamer; El Mouhayar, Rabih; Khishfe, Rola; Osman, Enja

The overall mission of the Science and Mathematics Education Center is four-fold:

- to conduct and support quality research on the teaching and learning of science and mathematics at the pre-school, elementary, and secondary levels,
- to contribute to the development of quality science and mathematics teaching and research professionals,
- to design and provide ongoing professional development for science and mathematics teachers in Lebanon and abroad,
- and to effect a positive influence on the quality and status of school science and mathematics education locally, regionally, and internationally.

The Center currently accomplishes its mission through the performance of a variety of functions including, but not limited to:

- designing and teaching science and mathematics education courses for pre-service teachers and master's level graduate students in cooperation with the Department of Education,
- designing and conducting research on teaching, learning, and teacher professional development in science and mathematics,
- designing and developing instructional materials in science and mathematics for students and teachers,
- maintaining a current science and mathematics curriculum library for use by pre-service and in-service teaching professionals,
- providing outreach consultation in science and mathematics education for schools, institutions, and governments regarding curriculum design, the design of instructional environments, methods of evaluation, and professional development for teachers, and
- providing in-service professional development for teachers and subject-matter coordinators through special courses, workshops, institutes, conferences, or through participation in professional development initiatives sponsored by AUB or other institutions and organizations.

# University Preparatory Program (UPP)

Director:	Harkous-Rihan, Samar
Lecturer:	Harkous-Rihan, Samar
Instructors:	El-Harake, Rima; Peltekian, Katia

The University Preparatory Program (UPP) is a unit within the Faculty of Arts and Sciences. Its main objective is to address the specific English language needs of students who have completed high school with strong academic records but are unprepared to function in all-English curricula at the university level.

The UPP also offers two intensive English summer courses for newly admitted graduate students coming from outside AUB who have not fulfilled the English Language requirement. These courses aim at enabling such students to function effectively in all English curricula.

## **UPGR 001A First Intensive English Summer Course for Graduate Students 0 cr.**

This course is a graduate level intensive English course (a minimum of 34 contact hours per week), which prepares students from various disciplines with the requisite English language skills and competencies to succeed in their graduate studies at AUB. *Prerequisite: 25-28 on the EEE or 490-549 on the paper-based TOEFL (or 57-80 on the internet-based TOEFL).*

Students who have not yet taken any English test or who have taken the test and achieved the scores below are eligible for enrolment in UPGR 001A.

Students who take this course and pass it with a minimum grade of 70 (C+) will be allowed to directly enroll in ENGL 300 without taking any English entrance exam again.

However, students who had not initially taken an English test will have to pass the course with a minimum grade of 70 (C+) and should take an English test and achieve the scores listed in the table below.

TOEFL IBT	TOEFL PBT	EEE
57-80	490-549	25-28

## **UPGR 001B Intensive English Summer Course for Graduate Students 0 cr.**

This course is a graduate level intensive English course (a minimum of 20 contact hours per week) designed to equip students independent of their disciplines with the requisite English language skills and competencies for success in their graduate studies at AUB. *Prerequisite: 29-31 on the EEE, or 550 -572 on the paper-based TOEFL (or 213-229 on the computer-based TOEFL or 81-87 on the internet-based TOEFL), or 6.0-6.5 on the IELTS.*

Students who take this course and pass it with a minimum grade of 70 (C+) will be allowed to directly enroll in ENGL 300 without taking any other English entrance exam.

# The Zaki Nassif Program for Music (ZNPM)

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Chairperson:	Nassif, Nabil
Academic Committee:	Jureidini, Wadi; Sadek, Walid ; Kurani, David; Orfali, Bilal; Taher, Ali; Touma, Jihad

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The Zaki Nassif Program for Music was inaugurated in December 2004.

## Objectives

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The Program aims to preserve and promote the musical heritage of Zaki Nassif and to foster excellence in the teaching of music by contributing to its advancement through a variety of activities that include:

- Reinstating and sustaining musical studies programs and music curricula at AUB
- Recruiting scholars and new faculty members to initiate music courses and programs at the department of Fine Arts and Arts History in the AUB Faculty of Arts and Sciences
- Organizing competitions, concerts, conferences, and seminars
- Inviting professional musicians and academics to the university
- Awarding prizes, scholarships, and fellowships to students in the name of Zaki Nassif