

**Faculty of Health  
Sciences (FHS)**

# Faculty of Health Sciences (FHS)

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Lama El Kadi	Instructor (Graduate Public Health Program Administrator)
Nida' El Helou	Instructor (Practicum Coordination and Career Services)
Maya Abi Chahine	Instructor of Public Health Practice (University for Seniors)

## Adjunct Faculty

Rima Afifi	Marian Abouzeid
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## Historical Background

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The Faculty of Health Sciences (FHS) was established in 1954 as an independent School of Public Health, the first of its kind in the region. The name of the school was changed to the Faculty of Health Sciences in 1978 to accommodate programs in allied health.

FHS serves to educate and train professionals and competent leaders to help meet the health needs of Lebanon and the region. Currently, FHS hosts four departments which are Epidemiology and Population Health (EPH), Environmental Health (EH), Health Promotion and Community Health (HPCH), Health Management and Policy (HMP), and a Division of Health Professions. It also hosts programs in collaboration with the Faculty of Medicine, which include programs in Medical Laboratory Sciences, Medical Audiology Sciences<sup>1</sup> and Medical Imaging Sciences. FHS offers a BS degree in Environmental Health, Medical Laboratory Sciences, Medical Imaging Sciences and Medical Audiology Sciences<sup>2</sup>, a BA degree in Health Communication, as well as a Graduate Public Health Program including an MS degree in Public Health (MPH) (concentrations in Epidemiology and Biostatistics, Health Promotion and Community Health, and Health Management and Policy), an MS in Epidemiology. FHS also offers an MS in Environmental Sciences, major: Environmental Health (as part of an Interfaculty Graduate Environmental Sciences Program), an Executive Master in Health Care Leadership and a PhD in Epidemiology. In addition, FHS provides courses in public health to students in the Faculty of Medicine.

## Accreditation

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In October 2006, the Public Health Program (PHP) of the Faculty of Health Sciences (FHS) became accredited by the Council on Education for Public Health (CEPH) and was reaccredited in 2012 for seven years term extending to 2019. In December 2019, the CEPH Board voted to renew the accreditation of the program for another seven-year term ending in 2026. The PHP includes the Master of Public Health, Master of Science in Epidemiology, Master of Science in Environmental Health, and the PhD in Epidemiology, as well as the newly launched Bachelor of Arts in Health Communication. CEPH is an independent agency in the United States, which is recognized to accredit schools and programs of public health. The PHP at FHS was the first graduate public health program to be accredited by CEPH outside the Americas and remains the only program in the Arab region. Accreditation indicates that the PHP of the FHS meets standards for Public Health Education of leading schools of public health in the world.

## Mission

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To improve the health of populations and advance the public health discipline and field of health professions in the region and beyond, through excellence in education, research, and community engagement.

## Vision

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The leading academic voice and driver for equity, justice, and better health in the Arab region and beyond.

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1) Frozen

2) Frozen

# Graduate Public Health Program (GPHP)

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## Mission Statement

To build the next generation of public health leaders to advance knowledge, and impact practice and policy.

## GPHP Value Statement

Our teaching, research, and service are guided by core values. These values derive from our context as a leading graduate program of public health in a middle-income regional setting that has suffered from intermittent political conflict and unrest and from our adherence to basic principles of professional conduct, human rights, and service to underprivileged communities.

- **Equality & Social Justice:** We believe in equality among people; our work is oriented to enhance health equity and social justice by focusing on underserved communities.
- **Civic Responsibility:** We believe that each of us has a role to play in advancing knowledge and improving health, and we work to instill a sense of civic responsibility among students and partners organizations with whom we collaborate.
- **Integrity & Professional Ethics:** We bring a commitment to integrity and professional ethics in all our efforts.
- **Diversity:** We believe that diversity in our faculty, students, and in our practice sites enhances our ability to understand the perspectives and the circumstances that influence health.
- **Excellence:** We are committed to excel in all that we do, and believe that our faculty and alumni provide leadership and vision to improve the health of people and communities.
- **Peace:** We research and mitigate the public health effects of conflicts on population and systems as a contribution to achieving peace and justice.

# Master of Public Health (MPH)

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## Admission Requirements

A candidate is eligible to be considered for admission to the MPH program if s/he holds a bachelor's degree from AUB or an equivalent degree from another recognized institution with a cumulative Grade Point Average (GPA) of at least 2.7 (or 75) and GPA of at least 3.2 (or 80) or its equivalent in the major field of study, or holds a graduate degree from AUB or another recognized institution with a cumulative GPA of 3.2 (or 80) or its equivalent.

A candidate with a major and cumulative GPA of at least 2.7 (or 75), but less than 3.2 (or 80), may be considered for admission on probation if s/he holds a bachelor's degree from AUB or an equivalent degree from another recognized institution. When only a GPA is available, the applicant will qualify for this category if her/his average is between 2.7 (or 75) and 3.2 (or 80).

On an exceptional basis, only and upon the recommendation of the department, an applicant with a GPA below 2.7 (or 75) can be considered for admission as a non-degree graduate student. The concerned department has to provide the GSC with a clear justification for its recommendation.

A student registered as a non-degree graduate student can register for a minimum of 7 and a maximum of 12 core and concentration credits in the relevant department, and must obtain an overall GPA of at least 3.7 (or 85) in the registered courses to be considered for admission into the MPH program. The average of all the completed courses should be evaluated for admission into the MPH program.

Spring/Mid-year admissions are accepted on a case-by-case basis if places are available. Students admitted at mid-year may only register as part-timers.

Students who have had significant prior experience in a health-related field may be granted a partial waiver of practicum hours. Applications for partial waiver of practicum hours are assessed on a case-by-case basis (see policy on Practicum hours partial waiver). In the case in which waiver is granted, the waived practicum credit should be replaced with a one credit elective.

## Selection Criteria

Applicants to the MPH program must specify the area of concentration of their choice by priority on the application form. Admission into the concentration areas within the MPH program is based on the following criteria:

- **Choice of Faculty:** Priority for consideration for admission goes to applicants who indicate FHS as their first choice.
- **Choice of Concentration:** Priority for consideration for admission in a concentration area goes to applicants indicating that concentration as their first choice.
- **Grade Point Average:** Normally, priority for consideration for admission goes to applicants with a higher grade point average.

Other factors taken into consideration include background diversity (prior degree and previous academic institution), geographic diversity, years and type of work experience, personal statement, recommendation letters and interview when applicable.

## Graduation Requirements

All recommendations for graduation are made by vote of the faculty on the recommendation of the Graduate Studies Committee. To be eligible for graduation in the MPH program, a student must accomplish the following:

- pass all required courses with a minimum grade of C+ (70),
- earn an overall GPA of at least 3.2 (or 80),
- and successfully complete a minimum of 42 credit hours.

Credit requirements for the MPH program are tabulated below:

Course Type	Credits
Required core	23
Required concentration	10 - 11
Required public health experience	5
Electives	3 - 4
<b>Total number of credits required for graduation</b>	<b>42</b>

## Credit Load

A full-time student must carry a minimum load of 12 credits per term. Students can register for up to 18 credits per term. Students who wish to register for more than 18 credits must petition the Graduate Studies Committee for approval.

A part-time student must carry a minimum load of 5 credits per term. Students who wish to register for less than 5 credits must petition the Graduate Studies Committee for approval.

## Policy on Practicum Policy Registration

Students enrolled in the MPH program are required to complete the 42 credits of core, concentration and public health experience courses in addition to the zero credit mandatory workshops.

Those joining the program on a part time basis must start their enrolment with the core course(s) required for the concentration area they are joining.

Students can register for the Practicum and Integrative Learning Experience II (PBHL 399B) courses with only one core and/ or one concentration course (not including PBHL

305), as long as the course(s) not yet taken does/ (do) not consist of material needed to effectively undertake activities of the Practicum or the courses.

Students can only register for the PBHL 399B upon completion of the PBHL 399A.

The student needs to seek approval to be allowed to register a concentration course along with the practicum.

## Policy on Transferring to another Concentration

The MPH program has three options for concentration, which are Epidemiology and Biostatistics (EPBS), Health Promotion and Community Health (HPCH), and Health Management and Policy (HMP). Every year, a quota for admissions is set for each. Students are accepted into the program in a particular concentration area. Students may petition to transfer to another area of concentration. Petitions are reviewed in current and prospective departments in light of student academic performance, justification for transfer and implications on the quota. The final decision is made by the Graduate Studies Committee. Students cannot transfer to another concentration before the grades of the first term of enrolment in the current concentration are released.

## Policy on Course Exemption

Exemption from a required FHS course may only be considered when the student has proof that s/he has satisfactorily completed a comparable course in a recognized university normally with a minimum grade of B+ (or 80) or the equivalent. The requirement of this particular course may be waived but not its credits (i.e., the candidate has to replace the exempted course credits with another course(s) having the same number of credits). The course instructor may require that the petitioning student take an exam in order to demonstrate proficiency in the subject prior to the official registration period for the required course. In cases where students want to take a course in another faculty and equate it for a required course in the MPH program, the course instructor (or relevant department chairperson) must approve the petition for equating courses prior to the student registering for the course. Request for course exemption for MPH students is only possible if the student completed the course in which exemption is sought within the previous 5 years of the exemption request date. MPH students are allowed to be exempted from a maximum of 6 graduate credits.

## Policy on Practicum Hours Partial Waiver

A partial waiver of hours can be granted on a case-by-case basis. Students with the required level of experience prior to joining the MPH program may request a partial waiver to complete 150 hours of practicum work (instead of 300 hours), if they offer enough evidence of fulfilment of minimum four years of full time relevant and documented public health work experience prior to joining the MPH program. Decisions related to the practicum waiver are based on the submission of complete practicum waiver portfolio to the FHS practicum coordinator. The portfolio should include a) filled practicum waiver form; b) copy of CV with relevant public health workplace references; c) two-page report mapping previous work experience (prior to enrollment) to a minimum of two core and one concentration competencies; d) documentation of relevant tasks and respective outputs during employment prior to enrollment in the MPH program. The student should have his/her portfolio screened and approved by the Academic Advisor prior to its submission to the Practicum Coordinator by the end of the second month of enrollment. Decision regarding the practicum waiver needs to be in the student file prior to the advising period of the student's third term of enrolment. Students granted partial waiver register for a 1-credit practicum course (HMPD/HPCH/EPBS 366). The waived practicum credit should be replaced with a one-credit elective.

## Policy on Transfer of Credits

### For courses taken outside FHS or outside AUB

A transfer of credits may be considered when the student has satisfactorily completed a course with a minimum grade of B+ (or 80) or equivalent at a recognized university, faculty or program. The transferred credits are accepted in lieu of credits earned in a comparable course in FHS. Request for transfer of credits for MPH students is only possible if the student completed the course in which transfer is sought within the previous 5 years of the transfer request date. Normally, credits counted toward another graduate degree at AUB or another institution cannot be transferred if they have already been used to satisfy requirements for another awarded graduate degree.

The number of credits that can be transferred cannot exceed 12 credits of comparable courses at FHS.

For courses taken within FHS, a transfer of credits may be considered for all courses the student has passed.

### Procedure for Exemption and Transfer of Credits

To be exempt from or to transfer courses, the candidate should petition the Graduate Studies Committee and attach the following official documents after consulting with the advisor:

- the official catalogue of the transferring institution
- a detailed description of course content and syllabus
- an official statement of records/grades earned for the course(s)

For both the exemption from and transfer of credits, the transferring university must be deemed to have comparable academic standards to those of AUB.

The chairperson of the department offering the course should seek the opinion of the course instructor(s) and the departmental members in writing and submit the recommendation of the department, along with the supporting documents, to the FHS Graduate Studies Committee for final approval.

## Probation

### Placement on Probation

A student is placed on probation if one of the following occurs:

- s/he fails in any graduate course taken for credit (passing grade is C+ (or 70))
- s/he fails to obtain a minimum overall GPA of 3.2 (or 80) in graduate courses

Part-timers can only be evaluated after completion of at least 10 credits. Their cumulative average is evaluated every term thereafter.

A student with an admission score (major and cumulative GPA) of at least 2.7 (or 75), but less than 3.2 (or 80), will be admitted on probation.

### Removal of Probation

A full-time student will be removed from probation at the end of a term if s/he has passed all courses and attained an overall GPA of 3.2 (or 80).

Part-timers are first evaluated after completion of at least 10 credits. Their overall GPA is evaluated every term thereafter.

### Dismissal from the Program

A student on probation may be dismissed upon the recommendation of the Graduate Studies Committee if one of the following occurs:

- s/he fails to be removed from probation after one term or its equivalent for part-timers (10 credit hours)
- the Graduate Studies Committee members regard the student as not having made satisfactory academic progress, not having shown sufficient professional promise, or as not having behaved in accordance to the norms and values upheld by FHS and AUB
- placement on probation more than once (not counting the probation at admission time)

### Responsible Code of Conduct (RCR) Requirements

All newly admitted graduate students are required to successfully complete an online course on Responsible Conduct of Research (RCR) from the Collaborative Institutional Training Initiative (CITI Program). 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. FHS requires the completion of the following additional two modules, Social and Behavioral Responsible Conduct of Research Course, as well as Students - Class Projects.

### Curriculum

The Master of Public Health (MPH) curriculum is composed of three principal elements which include core courses, concentration courses and public health experience courses. Core courses emphasize critical public health competencies. Concentration courses provide students with an opportunity to specialize in a chosen discipline of public health. The public health experience courses provide an opportunity to practice the knowledge and skills acquired from the coursework (core and concentration courses) into hands-on experience that is then synthesized and linked to core and concentration competencies.

Students enrolled in the MPH program may choose to specialize in one of three different disciplines of Public Health which are Epidemiology and Biostatistics, Health Promotion and Community Health, and Health Management and Policy.

## I. Core Courses (Required of all MPH Students)

Core Courses		Lecture Hrs./ Week	Lab Hrs./ Week	Credit Hrs.
PBHL 312 <sup>1</sup>	Foundations of Public Health	1.5	0.5	2
ENHL 301	Environmental Health and Sustainable Development	1	0	1
PBHL 310	Research Methods in Public Health	2	2	3
EPHD 300	Principles of Epidemiology	1.5	0.5	2
EPHD 310	Basic Biostatistics	2	2	3
HMPD 300	Health Systems Management	3	0	3
HPCH 301	Health Communication	2	0	2
IPEC 300 <sup>2</sup>	Inter-professional Education	0	2	1
PBHL 303	Design and Evaluation of Public Health Programs	2	2	3
PBHL 304	Public Health Policy and Advocacy	3	0	3
PBHL 305	Contemporary issues in Public Health	0	1	0
PBHL 306A	Workshop Series: Library and Literature Search Skills	0	0	0
PBHL 306B	Workshop Series: Proposal Writing and Literature Synthesis for Public Health Research and Practice	0	0	0
PBHL 306C	Workshop Series: Conflict Resolution, Mediation and Negotiation Skills	0	0	0
<b>Public Health Experience Courses</b>				
PBHL 399A	Integrative Learning Experience I	0	0	1
PBHL 399B	Integrative Learning Experience II	0	0	2

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2) MPH students with a BS in Nursing from AUB should register a 1 credit to be considered as an elective if they had already taken IPEC 300 in their undergraduate studies. The elective should be from the list of approved electives posted on FHS website.

## II. Concentration Courses

### A. Epidemiology and Biostatistics (EPBS)

		Lecture Hrs./ Week	Lab Hrs./ Week	Credit Hrs.
<b>Required Concentration Courses</b>				
EPHD 312	Analysis of Continuous Data	1.5	0.5	2
EPHD 313	Analysis of Categorical Data	2	2	3
EPHD 316	Epidemiology, Prevention and Control of Communicable Diseases	2	0	2
EPHD 317	Epidemiology of NonCommunicable Diseases and Mental Health Disorders	1.5	0.5	2
EPHD 320	Epidemiology Beyond the Basics	1.5	0.5	2
<b>Required Public Health Experience Courses</b>		<b>340</b>		
EPHD 365	Practicum	0	30	2

Students in this group should take at least 3 credits of electives to complete their credit requirements.

### B. Health Promotion and Community Health (HPCH)

		Lecture Hrs./ Week	Lab Hrs./ Week	Credit Hrs.
<b>Required Concentration Courses</b>				
HPCH 331	Theories in Health Promotion	2	0	2
HPCH 332	Community Health Promotion, Mobilization and Advocacy	3	0	3
HPCH 333	Social Marketing for Health Promotion	2	0	2
HPCH 334	Qualitative Research in Health Promotion	2	0	2
HPCH 335	Implementation Research for Public Health	2	0	2
<b>Required Public Health Experience Courses</b>				
HPCH 365	Practicum	0	30	2

Students in this group should take at least 3 credits of electives to complete their credit requirements.

**C. Health Management and Policy (HMP) Health Service Management Track**

		<b>Lecture Hrs./ Week</b>	<b>Lab Hrs./ Week</b>	<b>Credit Hrs.</b>
<b>Required Concentration Courses</b>				
HMPD 306	A Workshop on Microeconomics for Healthcare	0	0	0
HMPD 315	Performance Improvement	3	0	3
HMPD 318	Policy and Decision Making in Health Systems	2	0	2
HMPD 342	Financial Management and Accounting in Health Care Organizations	3	0	3
HMPD 351	Health Economics	2	0	2
<b>Required Public Health Experience Courses</b>				
HMPD 365	Practicum	0	30	2

Students in this group should take at least 4 credits of electives to complete their credit requirements.

## Master of Science in Epidemiology (MS-EPID)

### Admission Requirements

For full details on admission requirements to the Master of Science in Epidemiology, see the Admissions section of this catalogue. Mid-year admissions are only accepted for part-time students.

### Graduation Requirements

For information regarding graduation requirements, refer to the General University Requirements in this catalogue.

Credit requirements for the MS in Epidemiology are tabulated below:

<b>Course Type</b>	<b>Credits</b>
Required	21
Electives	3
Thesis	6
<b>Total number of credits required for graduation</b>	<b>30</b>

### Credit Load

A full-time student must carry a minimum load of 9 credits per term. Students can register for up to 12 credits per term. Students who wish to register for more than 12 credits must petition the Graduate Studies Committee for approval.

For full information on academic rules and regulations and general requirements for the Master of Science in Epidemiology and Master of Science in Environmental Sciences (Major: Environmental Health), refer to the General University Policy section in this catalogue.

## Responsible Code of Conduct (RCR) Requirements

All newly admitted graduate students are required to successfully complete an online course on Responsible Conduct of Research (RCR) from the Collaborative Institutional Training Initiative (CITI Program). 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. FHS requires the completion of the following additional two modules, Social and Behavioral Responsible Conduct of Research Course, as well as Students - Class Projects.

### Curriculum

		Lecture Hrs./ Week	Lab Hrs./ Week	Credit Hrs.
<b>Required Courses</b>				
PBHL 306A	Workshop Series: Library and Literature Search Skills	–	–	0
PBHL 306B	Workshop Series: Proposal Writing and Literature Synthesis for Public Health Research and Practice	–	–	0
PBHL 312 <sup>1</sup>	Foundations of Public Health	1.5	0.5	2
PBHL 305	Contemporary issues in Public Health	0	1	0
PBHL 310	Research Methods in Public Health	2	2	3
EPHD 300	Principles of Epidemiology	1.5	0.5	2
EPHD 310	Basic Biostatistics	2	2	3
EPHD 312	Analysis of Continuous Data	1.5	0.5	2
EPHD 313	Analysis of Categorical Data	2	2	3
EPHD 316 <sup>2</sup>	Epidemiology, Prevention and Control of Communicable Diseases	2	0	2
EPHD 317 <sup>3</sup>	Epidemiology of Non Communicable Diseases and Mental Health Disorders	1.5	0.5	2
EPHD 319	Advanced Quantitative Methods of Epidemiology	1	0	1
EPHD 320	Epidemiology Beyond the Basics	1.5	0.5	2
EPHD 395	Comprehensive Exam	–	–	0
<b>Electives</b>				
EPHD 320A	Causal Inference in Epidemiology	1	0	1
EPHD 321	Design and Analysis of Clinical Trials	1	2	2
EPHD 322	Special Topics in Epidemiology	2	0	2
EPHD 324	Special Topics in Biostatistics	–	–	1-3
Students should take at least 3 credits of electives.				
<b>Thesis</b>				
EPHD 399	Thesis			6

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2) Students can choose either one depending on their research interest

3) Students can choose either one depending on their research interest

# Master of Science in Environmental Sciences (Major: Environmental Health)

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## Admission Requirements

For full details on the admission requirements for this interfaculty program, see the Admissions section of this catalogue and the admission policies for the Interfaculty Graduate Environmental Sciences Program IGESP (page 39). *Mid-year admissions are only accepted for part-time students.*

## Graduation Requirements

For information regarding graduation requirements, refer to the General University Requirements in this catalogue.

Credit requirements are tabulated below:

Course Type	Credits
Core	15
Directed Electives	6
Free Electives	3-6
Project/Thesis	3/6
<b>Total number of credits required for graduation</b>	<b>30</b>

## Credit Load

A full-time student must carry a minimum load of 9 credits per term. Students can register for up to 12 credits per term. Students who wish to register for more than 12 credits must petition the Graduate Studies Committee for approval.

For full information on academic rules and regulations and general requirements for the Master of Science in Epidemiology and Master of Science in Environmental Sciences (Major: Environmental Health), refer to the General University Policy section in this catalogue.

## Responsible Code of Conduct (RCR) Requirements

All newly admitted graduate students are required to successfully complete an online course on Responsible Conduct of Research (RCR) from the Collaborative Institutional Training Initiative (CITI Program). 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. FHS requires the completion of the following additional two modules, Social and Behavioral Responsible Conduct of Research Course, as well as Students - Class Projects.

## Curriculum

Course Type		Credits
<b>A. Core Courses</b>		<b>15</b>
PBHL 306A	Library and Literature Search Skills 0 credit	0
PBHL 306B	Proposal Writing and Literature Synthesis for Public Health Research and Practice	0
ENSC 640	Toxicology and Environmental Health Hazards	3
PBHL 310	Research Methods in Public Health	3
PBHL 312 <sup>1</sup>	Foundations of Public Health	2
ENHL 301	Environmental Health and Sustainable Development	1
ENHL 312	Occupational Health	3
ENHL 314	Environmental Management Systems	3
ENSC 695	Comprehensive Exam	0
<b>B. Electives</b>		<b>9-12</b>
Directed Electives		6
Free Electives		3-6
<b>C. Thesis or Project</b>		<b>3-6</b>
ENSC 699	Thesis	6
ENSC 697	Project	3
<b>Total number of credits required for graduation</b>		<b>30</b>

1) Accepted applicants at the Faculty of Health Sciences with a background in public health are eligible to sit for the PBHL 312 exemption exam that assesses their knowledge and understanding of the foundational learning objectives covered in the course. Please refer to the policy on FHS website under Students-> Current Students->Academic Resources.

# Doctor of Philosophy (PhD) in Epidemiology

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## Mission

The mission of the PhD Program in Epidemiology is to provide advanced training in epidemiology, statistical skills and cutting-edge research methods. Graduates of the program acquire competencies to undertake high quality independent research, to assume professorial positions at universities, and to obtain leadership positions in research units in Ministries of Health and health care institutions in Lebanon, the region and beyond.

## Program Goals

The primary goals of the program are to:

- Graduate epidemiologists with advanced training, who can teach advanced courses, lead independent epidemiological research, and promote rigorous epidemiological practice.
- Strengthen epidemiological research, and support research collaborations and partnerships at FHS and beyond to improve data systems and address existing and emerging public health problems in Lebanon and the region.

## Admission Requirements

To be eligible for admission to the PhD program, a candidate must:

- Hold a master's degree in Epidemiology or a relevant discipline such as public health, nursing, statistics and health informatics, pharmacy, biological sciences and others, from AUB or other recognized institution of higher learning. A minimum cumulative course average of 85 (3.7) over 100, or its equivalent, is required for admission.
- Have achieved an acceptable score on the Graduate Record Exam (GRE) general component taken in the last five years.
- Demonstrate English proficiency as stipulated in the university Graduate Catalogue for requirement for admission into PhD studies
- Submit a complete application to the Office of Admissions that includes the following items: (1) Official transcripts and certified copies of degrees and certificates from previous universities, (2) official GRE scores on the general component, (3) letters of recommendation (a minimum of three letters), (4) personal statement outlining interest in the program of study focusing on research interests and experience, and (5) an updated CV.
- Shortlisted Applicants will also be required to complete an interview in person

## Financial Support

The department offers, on a selective basis, substantial support which fully covers tuition and includes a monthly stipend. There are also some funds available to support participation in international conferences; these funds are awarded on a competitive basis. In return, students help in teaching introductory courses. Their duties also include help in proctoring and correcting exams.

## Program Requirements

The PhD in Epidemiology Program requires the completion of 27.5 credit hours of coursework beyond the master's degree and 24 credit hours of thesis work. The coursework consists of 16 credits of core epidemiology and biostatistics courses, 1.5 credit of core research courses, 4-5 credits selected from a specified set of epidemiology and biostatistics courses and 5-6 credits of pre-approved elective courses. The last 10 credits provide the

opportunity for students, through a variety of choices, to specialize, focusing on a specific area of epidemiology. For the dissertation, primary data collection is highly encouraged.

Course	Course Name	Credit Hours
<b>Epidemiology/ Biostatistics core courses (16 cr.)</b>		
EPHD 403	Advanced Epidemiology Methods: Case Control and Cohort Studies	3
EPHD 404	Introduction to Causal Inference Methods	2
EPHD 405	Social and Behavioral Factors in Epidemiology	2
EPHD 406	Epidemiology in Action	3
EPHD 410	Applied Multivariate and Longitudinal Methods in Health Sciences	3
EPHD 411	Statistics for Psychosocial Research Psychometrics and measurement of Latent Constructs	3
<b>Research related core courses (1.5 cr.)</b>		
EPHD 440	Doctoral Seminar	0
EPHD 445	Writing Research Grants	0
SHARP 315	Introduction to Research Ethics and Responsible Conduct of Research	1.5
<b>Specified set of Epidemiology/Biostatistics courses (4-5 cr.)</b>		
EPHD 312	Analysis of Continuous Data	2
EPHD 315	Nonparametric Data Analysis	2
EPHD 321	Design and Analysis of Clinical Trials	2
EPHD 322	Special Topics in Epidemiology	2-3
EPHD 328	Systematic Review and Meta-Analysis	3
EPHD 407	Global Health	2
EPHD 412	Survival Analysis	2
Elective courses		5-6
Thesis courses		24
EPHD 480	Qualifying Exam Part I: Comprehensive Exam	0
EPHD 481	Qualifying Exam Part II: Defense of Thesis Proposal	0
EPHD 482 (3), EPHD 483 (6), EPHD 483A (6), EPHD 484 (9), EPHD486 (0):PhD Thesis		
EPHD 487	Thesis Defense	0

## Thesis Qualifying Exam: Parts 1 and 2

After taking and passing all core and required courses, students should register in two zero credit courses, the thesis proposal preparation and the comprehensive exam. They should pass both parts of the PhD Qualifying Exam: Part 1 which is the written comprehensive exam, administered by the department; and Part 2 which is the oral exam involving defense of the thesis proposal, administered by the thesis committee (please refer to the AUB Graduate Studies catalogue for details about the PhD Qualifying Exam).

## Thesis Defense

Students have to defend their thesis within at most three years following passing Part 2 of the PhD Qualifying Exam.

## Teaching Requirements

One of the competencies of the PhD program is for doctoral students to develop experience in teaching. This is accomplished by: (a) serving as a Teaching Assistant in a course taught by departmental faculty for at least one semester, and (b) attending a minimum of one workshop on Teaching Effectiveness organized by the Center for Teaching and Learning at AUB (CTL) or attending a course at EDUC department. These requirements need to be completed between year 2 and year 4 of the program.

## Residence Requirements

The program completion time frame for the regular track is 3 to 5 based on AUB residency requirements. Extension requires Graduate Council approval upon recommendation by the faculty Graduate Studies Committee. Authorized leaves of absence, approved by the PhD Program Committee/Department are the only means of waiving the residency and registration requirements. Policies concerning statute of limitations (for program completion) and leaves of absence are identified in the General Policies and Procedures section of the AUB Graduate Studies catalogue.

Core courses of the program should be taken at AUB, while further required or elective courses could be taken at a recognized institution of higher learning, preferably CEPH accredited, amounting to at most 12 credits that are transferable upon departmental approval. Courses are eligible for transfer only if they are taken beyond master's degree requirements and fulfill the criteria for type of eligible courses as outlined in the General University Academic Information section of the catalogue for PhD transfer of credits. Students will be encouraged to spend a full term or a shorter duration in a School of Public Health in the US, Canada or Europe to take courses or engage in research.

To fulfill the minimum residence requirements for the PhD degree, a student must register for at least six terms beyond the completion of the master's degree.

## Interdisciplinary Courses

### **PBHL 303                      Design and Evaluation of Public Health Programs                      2.2; 3 cr.**

This course introduces students to the concepts and methods of public health program design and evaluation. Students will develop skills for assessing population needs for the development of health programs. The course then covers public health program design, including developing measurable objectives, identifying evidence-based intervention strategies, and planning for program implementation. Students will learn to select appropriate methods for impact and process evaluation of health programs. *Prerequisite: PBHL 310 and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301 & HPCH 334 (concurrently)).*

### **PBHL 304                      Public Health Policy and Advocacy                      3.0; 3 cr.**

This course introduces students to the relevant concepts and approaches in public health policy and advocacy. It will provide students with a basic understanding of the public health policymaking process as well as the basic elements of advocacy. The aim is to make MPH students informed of the complex nature about public health policy development, be critical consumers of health policy research and evidence, and analytical of the influence of various actors on the policy process. Students will learn the stages of the policy process (i.e., agenda setting, policy development, policy implementation and policy evaluation). The field draws upon numerous disciplines. As such, course readings will be drawn from political science, sociology, biomedical sciences and policy studies. Students will also cover the basic elements of an advocacy process, including defining the

issue, understanding the audiences and crafting advocacy strategies. Case studies, class discussions, and guest speakers will provide tangible examples of public health policy and advocacy processes at the national, regional and international levels. Ethics and equity considerations will be included in discussions related to concepts and application.

**PBHL 305 Contemporary Issues in Public Health 0 cr.**

The seminar provides a platform to discuss contemporary issues in public health. Students integrate previously acquired knowledge and skills into analyzing local, regional, or global contemporary issues and their impact on public health and the environment. Course content will vary each year in light of salient issues and will be tailored to student interests. Students are expected to be active learners and to participate in the selection of relevant academic articles/media resources (in consultation with the course instructor), and to facilitate class discussions. *Prerequisite: Completion of all core and at least three concentration courses.*

**PBHL 306 A Workshop Series: Library and Literature Search Skills 0 cr.**

A 2 day hands-on compulsory workshop for all MPH students where learners acquire search skills to look for, identify, read, evaluate and save their literature searches in order to write a synthesis for their academic work. The workshop trains learners on the use of major resources at the University libraries (search engines, databases,...), search techniques, and the use of databases to search, store and save searches. It also provides them with skills to evaluate the extracted information, synthesize the literature and identify a gap. Based on this, they write-up a short synthesis of a selection of relevant literature.

**PBHL 306 B Workshop Series: Proposal Writing and Literature Synthesis for Public Health Research and Practice 0 cr.**

This is a required 2-day workshop for all MPH students that enables learners to develop skills for writing a concept note and draft proposal for public health research and practice on a question or topic of their interest that they have discussed or thought through in Public Health Research Methods or a similar course. Given that the field of public health entails both research and intervention, technical skills for developing a project proposal for research and intervention are necessary for the public health practitioner. The workshop addresses the types of concept notes and proposals, their elements and stages of writing. The workshop will also provide learners with an overview on traits of a good writer and tips from successful proposals as well as with examples of weak or unsuccessful applications. *Prerequisite: PBHL 310 and PBHL 306A.*

**PBHL 306 C Workshop Series: Conflict Resolution, Mediation and Negotiation Skills 0 cr.**

A two-day workshop where graduate students will be trained on how to manage interpersonal conflict effectively. During this workshop, learners will develop an understanding of different types of interpersonal conflict, as well as causes and prominent human behaviors in a conflict situation. They will also practice negotiation skills and conflict resolution strategies through simulations of various scenarios while using mediation and problem solving skills. *Prerequisite: HPCH 301.*

**PBHL 307 Public Health and Armed Conflict 3.0; 3 cr.**

This is a graduate (3-credit) course that applies a health lens analysis to understanding war and armed conflict. The health lens is useful because health is universal and we can deploy the rich tools of health analysis to wars/armed conflicts. On the one hand, through looking at health, we can appreciate the wide range of consequences of wars/armed conflicts. On the other hand, a health examination illuminates our understanding of

wars/armed conflicts themselves(e.g. analysis of attacks on health care give insights about conduct of war and the positions of belligerents towards applicable international laws during conflict).We can then build on the insights generated from a health lens analysis to develop interventions to safeguard health in war/armed conflict and to even impact war/armed conflict. Our approach is informed by human rights and humanitarian principles.

**PBHL 308                      Methods in Humanitarian Settings                      1.0;1cr.**  
This one-credit course is offered to FHS students who are enrolled in the Certificate of Public Health in Conflict and Protracted Crises. The course: 1) introduces students to the definition, types, and management of humanitarian emergencies; 2) enhances their methodological skills to conduct research and evaluation in complex humanitarian and disease outbreak settings; 3) prepares them to identify and discuss solutions to practical, conceptual, and ethical challenges in humanitarian response. *Prerequisites: PBHL 310 and PBHL 312*

**PBHL 310                      Research Methods in Public Health                      2.2; 3 cr.**  
This course addresses the principles of research design and the methods used in both quantitative and qualitative public health research. The course encourages students to think critically about public health evidence and how it is derived. Topics include the following: the distinct but complementary roles of quantitative and qualitative research approaches; synthesizing published literature to identify a research gap; formulating research questions; choosing appropriate methods of quantitative data collection for public health; the process of qualitative data collection and qualitative analysis using software; and ethical issues in public health research. Practical and conceptual issues are both discussed.

**PBHL 312                      Foundations of Public Health                      1.5:0.5; 2 cr.**  
This is a graduate course which introduces learners to the field of Public Health, its principles, values and functions. Students will learn how to use theory in public health to analyze contemporary local and global health issues and their determinants. Course material focuses on biological, psychological, environmental, behavioral, wider social and global determinants of health and their interrelationships. Throughout the course, students use a variety of learning material to apply theory, critical thinking and discuss public health ethics in a broad array of real world examples. The course will prepare graduate students for further course work and training in PH.

**PBHL 320                      Special Topics in Public Health                      1-3 cr.**  
A course that explores special topics, contexts, populations, or skills that influence public health practice and research. The course is focused on applied experiences, dialogue and discussion, and critical thinking. *Repeated for credit under different topics. Offered occasionally.*

**PBHL 399                      Integrative Learning Experience I and II                      1-2 cr.**  
The Integrative Learning Experience (ILE) provides an opportunity for students to synthesize the competencies that they have gained during the MPH program by completing a substantive project of public health relevance. Over the course of two consecutive regular terms, students are expected to design and implement a project that addresses their interests while contributing to the field of public health. A variety of project forms are acceptable within the guidelines set by the Graduate Public Health Program. Each student will develop and implement the project under the guidance of a faculty advisor. The ILE is completed over two terms: Integrative

Learning Experience I (1 credit) and Integrative Learning Experience II (2 credits).  
*Pre-requisite: Completion of all but two of the concentration courses. Co-requisites: EPHD 310, PBHL 310 and EPHD 300. ILE I (PBHL 399A) is a pre-requisite for ILE II (PBHL 399B).*

## Interdepartmental Courses

**IDTH 210                      Fundamentals of Medical Research<sup>1</sup>                      40.10; 3 cr.**  
 This course provides first year medical students with their first exposure to research methodology. Fundamental principles and concepts of evidence-based medicine, epidemiology and biostatistics are presented and discussed.

**IDTH 215                      Becoming a Doctor-3: Global Health<sup>1</sup>                      21.21; 2 cr.**  
**and Social Medicine**  
 This course introduces students to central issues in the practice of social medicine and global health and the connection between them. It examines how social forces become embodied as pathologies; how political, economic and historic trends influence the distribution of disease among different populations; and how new trends in the organization of care affect the most vulnerable members of society.

**IDTH 268                      Clerkship in Preventive Medicine and Public Health<sup>1</sup>                      10.80**  
 A clerkship in which teams of senior medical students assess, critique and propose solutions to problems of public health or clinical significance. The students examine policy, organizational, social and individual challenges to these problems, addressing issues such as equity in health and setting public health programs, and identifying opportunities for change. Data collection and statistical analysis are secondary objectives.

**IPEC 300                      Inter-Professional Education and Collaboration                      1.1; 1 cr.**  
 In this course students from nursing and public health will learn how population health is best promoted and safe, patient-centered care is best provided through a collaborative health teams approach. This is a required course for senior undergraduate Nursing and Master of Public Health students. The course is case-based on health topics across the life-course on which inter-professional collaboration is necessary. Discussion groups combining public health and nursing students will be moderated by faculty members from the two professions. Students will learn the roles and responsibilities of other health professions and how to function in inter-professional teams. Prerequisites: For MPH students: Completion of all, or all but one, of the concentration course. Undergraduate Nursing students must be in their senior year. *Enrolment by other students is possible upon the approval of the course coordinator. Prerequisite: Completion of all but one of the concentration courses.*

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1) Public Health courses taught by FHS in the Faculty of Medicine.

## Other Programs

### Executive Master in Health Care Leadership (EMHCL)

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Program Director:	Kassak, Kassem
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The Executive Master in Health Care Leadership (EMHCL) is designed for professionals who have significant responsibility in the healthcare sector, including those from health care delivery, pharmaceutical and product manufacturing, healthcare consulting, health management systems, insurance, patient advocacy, public health, and policy and regulatory institutions. The program seeks to identify a highly qualified and diverse student cohort. Candidates representing a broad range of experience in the healthcare sector are chosen for each cohort to ensure a rich peer-to-peer learning experience.

### Admission Requirements

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An applicant is considered for admission to the program if s/he meets the minimum admission requirements outlined under the Admissions section of this catalogue. Applicants to the program will be evaluated based on their academic and professional achievements with a minimum of a bachelor's degree recognized by AUB, record of previous professional experience (a minimum of five years), two letters of recommendation (academic and professional), and a personal statement. Applicants must be currently employed in a managerial post and demonstrate leadership potential and prospects for academic and professional success. They must also meet the Readiness for University Studies in English (RUSE) as stipulated in the Admissions section of this catalogue.

Applicants who fail to meet the RUSE may be eligible to take the University Preparatory Program (UPP) Graduate Course or enroll in other intensive English courses depending on their test scores. Their enrolment will be contingent upon passing these courses. Furthermore, applicants will be interviewed as part of the selection process. The decision about admission to the program will be based on a thorough review of student applications, supporting documents and the interview.

# Program Outline

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## Curriculum

The EMHCL curriculum consists of 21 courses, totaling 45 credit hours, distributed across three healthcare themes which include Foundation, Advanced Managerial Functioning, and Health Systems Policy and Reform.

<b>Course Type</b>		<b>Credits</b>
<b>Theme I: Foundation</b>		
EHCL 300	Managing Healthcare Organizations	3
EHCL 301	Communication and Behavioral Change for Health	2
EHCL 303	Health Economics	2
EHCL 305	Research Methods and Application	3
EHCL 306	Evidence Based Management	1.5
EHCL 304	Statistical Tools and Analysis	2
EHCL 302	Epidemiology in Health Care	1.5
		<b>Total 15</b>
<b>Theme II: Advanced Managerial Functioning</b>		
EHCL 310	Health Informatics and Information Technology	2.5
EHCL 313	Data and Decision Making (Use of IT)	1.5
EHCL 307	Leadership	3
EHCL 314	Advanced Program Planning and Evaluation	2
EHCL 315	Strategic Planning and Management	2
EHCL 309	Financial Accounting and Management	2
EHCL 308	Marketing in Healthcare	1.5
EHCL 312	Performance Improvement and Innovation	1.5
EHCL 311	Human Resources Management	2
		<b>Total 18</b>
<b>Theme III: Health Systems Policy and Reform</b>		
EHCL 316	Organizational Restructure and Reform	1.5
EHCL 318	Policy, Politics and Decision Making	2
EHCL 317	Ethics and Law	1.5
EHCL 319	Communicating with Policy Makers	3
EHCL 320	Practicum and Capstone in Leadership	4
		<b>Total 12</b>
		<b>Grand Total: 45</b>

## Program Delivery

The EMHCL Program is delivered in a highly interactive modular blended learning format which takes approximately 18 months to complete. This flexible program is delivered through 15 intensive sessions, each of which is offered every five weeks. Each intensive session requires on-campus or residential attendance of 5 days for a total of 75 residential days over the 18-month period.

The program totals 45 credit hours. Each credit hour consists of 12.5 hours of class instruction corresponding to 1.5 on-campus days. Each on-campus day consists of 8 class hours of instruction.

## Credit Hour Equivalence to On-Campus Days

Credit Hours (per course)	Equivalent Teaching Days
1	1.5
1.5	2.5
2	3.5
2.5	4.5
3	5

## Academic Rules and Regulations

### Graduation Requirements

All recommendations for graduation are made by vote of the faculty on the recommendation of the Graduate Studies Committee.

To be eligible for graduation from the EMHCL Program, a student must accomplish the following:

- pass all required courses with a minimum grade of 70 (C+),
- earn a cumulative average of at least 80 (3.2),
- and successfully complete a minimum of 45 credit hours.

### Probation

Students are evaluated for potential placement or removal of probation upon their completion of every 9 credit hours (minimum) in the program.

### Placement on Probation

A student is placed on probation if one of the following occurs:

- s/he fails any graduate course taken for credit (passing grade is 70 or C+)
- or s/he fails to obtain a minimum average of 80 or GPA of 3.2 on at least 9 credit hours.

A student with an admission score (cumulative and major averages) between 75 (GPA: 2.7) and 80 (GPA: 3.2) will be admitted on probation.

## Removal of Probation

A student who is placed on probation because of grade and/or average is required to complete a three-week makeup plan mutually agreed upon with the EMHCL Program Director. After completion of the makeup plan, the student is re-evaluated for potential removal of probation.

To remove probation, the student should:

- attain a minimum grade of 70 (C+) in every registered course and
- have an evaluated average of at least 80 (GPA: 3.2).

A student admitted on probation will be removed from probation if after completion of at least 9 credit hours, s/he has passed all courses and attained an average of 80 (GPA: 3.2).

## Dismissal from the Program

A student on probation may be dismissed upon the recommendation of the EMHCL Program Director and the Graduate Studies Committee if one of the following occurs:

- s/he has failed to be removed from probation after the completion of the three-week makeup plan
- or the EMHCL Program Director and Graduate Studies Committee regard the student as not having made satisfactory academic progress or as not having behaved in accordance to the norms and values upheld by FHS or AUB.

## Policy on Transfer of Credits

A transfer of credits may be considered when a course is satisfactorily completed with a minimum grade of 80 or equivalent at a recognized university, faculty or program. The transferred credits are accepted in lieu of credits earned in a comparable course in or outside FHS. Request for transfer of credits for EMHCL students is only possible if the student completed the course in which transfer is sought within five years of the transfer request date.

The number of credits that can be transferred in comparable courses cannot exceed 9 credits.

For courses taken at FHS, a transfer of credits may be considered for all passed courses.

## Procedure for Transfer of Credits

For a student to be exempted from or to transfer courses from AUB or another university, the candidate should petition the FHS Graduate Studies Committee and attach the following official documents after consulting with the EMHCL Director:

- a letter of request for exemption and/or transfer
- the official catalogue of the transferring institution
- a detailed description of course content and syllabus
- an official statement of records/grades earned for the course(s)

Transferring universities must be considered to have comparable standards to those of AUB.

The EMHCL Director should seek the opinion of the course instructor(s) and the department faculty in writing and then submit the recommendation of the department, along with the supporting documents, to the FHS Graduate Studies Committee for final approval.

## Course Descriptions

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**EHCL 300                    Managing Healthcare Organizations                    3 cr.**  
The course addresses the main components, resources and functions of health care systems. It is designed for an experienced audience to identify organizational and health system problems and apply systems thinking in resolving them. Furthermore, the course introduces various management theories and management processes that pertain to the healthcare service sector. Topics covered include strategic management, human resources management, information management and material management. This course equips future leaders of healthcare organizations with the necessary managerial skills needed to reach and implement decisions about future activities.

**EHCL 301                    Communication and Behavior Change for Health                    2 cr.**  
The aim of this course is to discuss the communication concepts and frameworks that healthcare executives can employ to improve communication within their institution or with both the internal and external customer in order to enhance health and wellbeing. Major emphasis will be placed on the theoretical underpinnings in the field of communication including an understanding of influences on behavior and health, as well as the critical need for attention to ethics, justice and equity to achieve goals of communication for health.

**EHCL 302                    Epidemiology in Health Care                    1.5 cr.**  
This course presents ways in which epidemiology can support the decision-making process in health services research, policies, management and evaluation.

**EHCL 303                    Health Economics                    2 cr.**  
A course that covers the application of the principles of microeconomics to the health field, utilization of the techniques of microeconomics to the study of prices and markets in the health field, and developing competence in cost analysis and cost projections.

**EHCL 304                    Statistical Tools and Analysis                    2 cr.**  
This course introduces basic statistical experimentation methods in addition to general concepts of estimation and inferences. Simple and multiple regression, single factor and multifactor analysis of variance, multiple comparisons, goodness of fit tests, nonparametric procedures, and power of tests are covered. Statistical software packages, such as SPSS, are also introduced.

**EHCL 305                    Research Methods and Application                    3 cr.**  
The first component of this course presents an overview of the principles of quantitative and qualitative research methods. The second component aims at imparting to students some practical research skills. By becoming familiar with the research process, future healthcare leaders are equipped to critically appraise published research and communicate their research findings.

**EHCL 306                    Evidence Based Management                    1.5 cr.**  
This course acquaints participants with evidence-based approaches in health care organizations including how information and knowledge can cure organizational ills and dysfunctions and how to gain competitive advantage with evidence. It covers decision-making models and challenges of why leaders and managers do not use evidence in making decisions. The course provides guidance on evidence-based organizations and evidence-based leaders/managers (intuitive versus rational decision-making) and also on how to overcome decision inertia.

- EHCL 307 Leadership 3 cr.**  
This course describes the concept of leadership in healthcare organizations, identifies traditions through which leadership has been analyzed, considers the role of organizational culture, and explains the larger set of roles leaders may play in health care organizations while discussing the evidence from recent research literature on leadership in healthcare organizations.
- EHCL 308 Marketing in Healthcare 1.5 cr.**  
This course addresses the principles of marketing and their application to the healthcare sector. It also sheds light on how these marketing principles need to respond to the changing environmental forces that are shaping the healthcare service sector. Through the employment of case studies, healthcare leaders learn how to identify and prioritize marketing challenges facing their organizations and develop creative strategies for solving these problems.
- EHCL 309 Financial Accounting and Management 2 cr.**  
This course covers the most important principles and applications of healthcare finance including both accounting and financial management. It discusses the basic foundations of financial management and demonstrates how future healthcare leaders can apply financial management theory and principles to make better decisions that promote the financial wellbeing of their organizations.
- EHCL 310 Health Informatics and Information Technology 2.5 cr.**  
This course explores the theoretical framework of Health Informatics and Information Technology and examines critical issues and challenges within the field as well as opportunities for improving the management of healthcare through information technology. Topics include electronic health records, telemedicine, human computer interfaces, and e-Health among others.
- EHCL 311 Human Resources Management 2 cr.**  
This course highlights how to effectively deal with personnel management by focusing on the importance and impact of human resources on healthcare organizations. Topics to be discussed include: strategic HR management; planning, attracting and selecting human resources; placing, developing and evaluating HR; retention; HRH migration and brain drain.
- EHCL 312 Performance Improvement and Innovation 1.5 cr.**  
This course focuses on the principles and current practices of performance improvement in healthcare settings. It incorporates human technology and service excellence in improving performance within health care settings and ensuring that innovative improvement is an integrated part of organizational and individual behavior. Future healthcare leaders also explore the use of various quality improvement tools including, but not limited to: FOCUS-PDCA, balanced scorecards and reengineering, among others.
- EHCL 313 Data and Decision Making (Use of IT) 1.5 cr.**  
In an unstable and politically charged healthcare environment, the availability and understanding of objective and reliable data is crucial for determining healthcare needs and customer expectations as well as institutional service strategies. This course examines the generation of valid and reliable data and its functional use in decision making.

**EHCL 314                    Advanced Program Planning and Evaluation                    2 cr.**

This course aims to prepare healthcare leaders to become more competent planners and evaluators by applying the concepts and tools of planning and evaluation to real situations facing healthcare agencies, hospitals, and ministries of health. The opportunities and challenges that healthcare leaders face in planning and evaluating effective healthcare intervention programs are also covered.

**EHCL 315                    Strategic Planning and Management                    2 cr.**

This course imparts to healthcare leaders the skills needed to develop strategic plans to position their organization for long-term success. Major attention is placed on the management framework for identifying, communicating, crafting and managing strategic goals throughout a healthcare organization.

**EHCL 316                    Organizational Restructure and Reform                    1.5 cr.**

This course is designed to help future healthcare leaders develop a deeper understanding of the differences in organizational structures and the mechanisms and processes of coordination among different structures. It helps develop the capacity to influence the behavior of others in present-day health organizations. Emphasis is placed on small group relationships, communication networks, and the human side of the organization.

**EHCL 317                    Ethics and Law                    1.5 cr.**

This course examines the ethical and legal principles which health leaders in Lebanon and the region need to take into consideration when making systems decisions. The course draws a distinction between public health ethics and medical ethics, and it provides tools for ethical decision-making in healthcare.

**EHCL 318                    Policy, Politics and Decision Making                    2 cr.**

This course provides a comprehensive perspective of ‘systems thinking’ with regard to policy development and analysis processes. It introduces the participants to the field of health policy analysis and relevant concepts and methods in understanding the policy development cycle. Discussion includes the relationship between policy and politics, how politics can impede reform efforts and how policy analysts can influence policy makers and politicians during the policy process. The course is based on case studies debating policy issues at the national, regional and international levels.

**EHCL 319                    Communicating with Policy Makers                    3 cr.**

This course discusses the main tools to communicate with policy makers including evidence informed policy, priority setting and policy dialogues. It provides skills on how to prepare policy briefs and effective tips on how to communicate evidence (both published and tacit) with policy makers. Participants work on key questions that can be used to guide those preparing and using policy briefs to support evidence-informed policymaking.

**EHCL 320                    Practicum and Capstone in Leadership                    4 cr.**

This course offers the healthcare leader the chance to put into practice the theories and knowledge acquired in previous courses. Students need to identify and develop a healthcare project that puts their leadership skills and competencies into practice.

# Joint Programs

## Scholars in HeAlth Research Program (SHARP)

Director:	El Hajj Fuleihan, Ghada
Diploma Director:	Tamim, Hani
Executive Committee:	Tamim, Hani; Nabulsi, Mona; Huda; Sibai, Abla

## Background

The Scholars in HeAlth Research Program is a joint FM and FHS graduate program that consists of a 12-credit summer diploma, a 12-credit two-semester diploma, as well as a 35-credit master's degree. The summer diploma, two-semester diploma, and the MS degree are open to graduates of health fields. Social scientists and humanities graduates interested in Non-Communicable Diseases (NCD) can also enroll in the program, provided they fulfill admission and selection criteria and have the necessary background to follow the course curriculum. Credits earned for the SHARP summer diploma and two-semester diploma can be credited towards the Master of Science in Health Research requirements. These credits can also be credited in full or partly towards other post-graduate degrees at FM, FHS, FAFS, or HSON and possibly at other institutions.

SHARP provides graduates with the required foundation to pursue a career in clinical and translational research. Although focused on NCD, a major cause of mortality and morbidity in the region, the garnered skills are applicable to other areas of clinical research. The Program helps create and sustain a cadre of highly trained researchers who conduct patient-oriented and population-oriented studies on NCD. It also equips trainees with management and leadership skills needed to become “change agents” and lead research groups, academic departments or other health care settings. Management and leadership courses are offered in collaboration with faculty at the Olayan School of Business.

## Mission

The Mission of the Scholars in HeAlth Research Program (SHARP) at the American University of Beirut (AUB) is “To provide superior didactic education complemented with state-of-the-art interactive and practical training in health research, with a focus on Non-Communicable Diseases research. It is intended for physicians and other health care professionals, to improve and advance the health care agenda for Non-Communicable Diseases in Lebanon and the region.”

## SHARP Diploma Curriculum

The SHARP diploma is a 12-credit module that provides the essential foundations in quantitative methods and fundamental skills to conduct research. The core disciplines covered include epidemiology, biostatistics, research ethics and library sciences/informatics. These are complemented with a practical hands-on training course in the analysis and reporting of large health-related datasets in NCD. The SHARP diploma is offered as an intensive summer program and as a two-semester online program.

# SHARP Master of Science in Health Research

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## Admission to the Program

The application deadline for the summer diploma is in March, and the acceptance is in April of each academic year calendar. The application deadline for the two-semester diploma is in June, and the acceptance is in July of each academic year calendar. The application deadline for the two-semester diploma is in June, and the acceptance is in July of each academic year calendar. The application deadline for the MS degree in Health Research is in June, and the deadline for acceptance is in July of each academic year calendar. The SHARP diploma (either summer or two-semester) is a prerequisite for the SHARP MS program, and the performance in the diploma is evaluated to ensure the candidate is suitable for continuing on the MS path. Students should apply to the MS program by early June and are accepted upon successful completion of the diploma program (minimum GPA of 3.2 or 80 over 100). While the 2-year program is approved for all, the 1-year program is approved by the Lebanese Ministry of Education for medical doctors only. For more details, please refer to the Admissions section of the AUB graduate catalogue, page 34.

## Criteria for Admission

All applicants to the SHARP summer diploma and two-semester diploma and the Master of Science in Health Research must satisfy the criteria established at AUB for enrollment into a master's degree program, namely the Readiness for University Studies in English (RUSE) (see page 41 of this catalogue) and a minimum degree of BS with a minimum average of 80 or its equivalent.

In addition, applicants should express/demonstrate commitment to a career in NCD research in the statement of purpose submitted along with their application.

Applications for the summer program are reviewed by the SHARP executive committee.

Applications for the MS program are reviewed by the joint FM/FHS Graduate Studies Committee.

## The Application Process

An applicant is considered for admission to the SHARP summer diploma and two-semester diploma and the MS program if s/he meets the following minimum admission requirements:

- an undergraduate cumulative average of at least 3.2 or 80 (or standardized equivalent from other institutions of higher learning) leading to a bachelor's degree or its equivalent from recognized institutions of higher learning
- at least two letters of recommendation
- a statement of purpose (500-word limit) indicating the purpose for applying to the program and specifying the applicant's research interests and/or practical experience

Applicants to any graduate program, other than AUB graduates and graduates of recognized colleges or universities in North America, Great Britain, Australia and New Zealand must demonstrate proficiency in the English language. See Admissions section in this catalogue, page 41.

## Graduation Requirements

See General University Academic Information in this catalogue, page 55.

## Incompletes

See General University Academic Information in this catalogue, page 52.

## Probation

See General University Academic Information in this catalogue, page 59.

## Program Outline

The 35-credit master's degree requirements can be completed over one full-time year (available to Doctor of Medicine graduates only) or two part-time years. The total number of allowed credits per term is 16 unless otherwise approved by the joint FM/FHS Graduate Studies Committee. The degree consists of the 12-credit diploma in addition to 15 credits in required courses, 2 credits of electives and 6 credits for the thesis. The thesis is a mentored research project culminating in the completion of a project revolving around Non-Communicable Diseases. In compliance with AUB requirements, scholars must also sit for a 0-credit comprehensive exam (Pass/Fail) during their last term.

## Program Delivery

The 35-credit program is divided as indicated below:

- **Summer diploma and two-semester diploma:** The 12-credit diploma, taken as either an intensive diploma in the summer, or an online two-semester diploma, consists of five courses: Biostatistics (4 cr.), Principles of Epidemiology (4 cr.), Introduction to Research Ethics and Responsible Conduct of Research (1.5 cr.), Analysis and Reporting of Large Clinical Datasets (2 cr.) and Library Science/Informatics (0.5 cr.). These courses consist of didactic lectures, faculty-facilitated discussion groups, laboratory sessions and group projects. The courses in epidemiology and biostatistics are held in conjunction with the Faculty of Health Sciences (FHS), while the Introduction to Research Ethics and Responsible Conduct of Research is held in conjunction with the Salim El-Hoss Bioethics and Professionalism Program (SHBPP).
- **Courses:** Students are required to take a total of 15 credits in required courses, 2 credits of elective courses.
- **Thesis:** Each student is required to select a clinical research project and identify advisor(s) from among the Faculty of Medicine (FM) and FHS faculty engaged in clinical research. Mentors and projects are approved by the joint FM/FHS Graduate Studies Committee (GSC). For those pursuing the 2-year track, the research project typically begins in the Spring term of the student's first year and culminates in a thesis document and oral thesis defense delivered before the end of the second academic year. For those choosing the 1-year track, the process begins early in the Fall term and ends in the Spring term of the same academic year. All projects are supervised by a thesis committee.

## Comprehensive Examination

Each student is expected to pass a 0-credit comprehensive examination course after completion of all required courses. If a student does not pass the comprehensive exam, s/he is allowed to take it a second time in the following term as per AUB regulations. The Comprehensive Examination has a Pass (P) or Fail (F) format, and timing of the examination is set by the program.

## Tracks

### Master of Science: 1-Year Program\*\*\*

<b>12 credit diploma</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Principles of Epidemiology/ Design and Analysis of Epidemiological Studies	SHARP 300/320	SHARP	4 credits
Basic Biostatistics	SHARP 310	SHARP	4 credits
Introduction to Research Ethics and Responsible Conduct of Research	SHARP 315	SHARP	1.5 credits
Analysis and Reporting of Large Clinical Datasets	SHARP 330	SHARP	2 credits
Library Science /Informatics	SHARP 325	SHARP	0.5 credits
<b>Fall – 13 credits</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Design and Analysis of Clinical Trials	EPHD 321	FHS	2 credits
Clinical Trial Protocol	SHARP 321A	SHARP	2 credits
Leadership and Behavior in Organizations	MHRM 305	OSB	3 credits
Thesis	SHARP 400	SHARP	6 credits
<b>Spring – 10 credits</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Systematic Review and Meta- Analysis	EPHD 328	FHS	3 credits
Public Health Policy and Advocacy	PBHL 304	FHS	3 credits
Comprehensive Examination	SHARP 395A	-	0 credits
Elective*	-	-	2 credits
Advances in NCD Research**	SHARP 340	SHARP	2 credits
Thesis	SHARP 400A	SHARP	0 credits

\*) MS students are required to take a total of 2 credits as electives. They may take one course for 2 credits, or two courses for 1 credit each.

\*\*) Given in Spring term once every 2 years.

## Master of Science: 2-Year Program\*\*\*

<b>12 credit diploma</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Principles of Epidemiology/ Design and Analysis of Epidemiological Studies	SHARP 300/320	SHARP	4 credits
Basic Biostatistics	SHARP 310	SHARP	4 credits
Introduction to Research Ethics and Responsible Conduct of Research	SHARP 315	SHARP	1.5 credits
Analysis and Reporting of Large Clinical Datasets	SHARP 330	SHARP	2 credits
Library Science/informatics	SHARP 325	SHARP	0.5 credits
<b>Fall I – 4 credits</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Design and Analysis of Clinical Trials	EPHD 321	FHS	2 credits
Clinical Trial Protocol	SHARP 321A	SHARP	2 credits
<b>Spring I – 9 credits</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Systematic Review and Meta- Analysis	EPHD 328	FHS	3 credits
Thesis	SHARP 400	SHARP	6 credits
<b>Fall II – 5 credits</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Leadership and Behavior in Organizations	MHRM 305	OSB	3 credits
Thesis	SHARP 400A	SHARP	0 credits
Elective*	-	-	2 credits
<b>Spring II – 5 credits</b>	<b>Course Title</b>	<b>Faculty</b>	<b>Credits</b>
Public Health Policy and Advocacy	PBHL 304	FHS	3 credits
Advances in NCD Research**	SHARP 340	SHARP	2 credits
Thesis	SHARP 400B	SHARP	0 credits
Comprehensive Examination	SHARP 395A/B	-	0 credits

\*) MS students are required to take a total of 2 credits as electives. They may take one course for 2 credits, or two courses for 2 credits each.

\*\*) Given in Spring term once every 2 years.

## Course Descriptions

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### Required Courses

- SHARP 300 Principles of Epidemiology 2 cr.**  
 A course in principles, concepts and application of epidemiology tools relevant to public health and clinical practice. The course covers basic principles of epidemiology related to disease occurrence, distribution and determinants. Topics include rubrics of epidemiology, morbidity and mortality measures, sources of data, epidemiologic study (cross-sectional, case-control, cohort studies and clinical trials), casual inference and causation in epidemiology. The course consists of lectures, assigned readings and complementary practical sessions. *Equivalent to EPHD 300.*
- SHARP 320 Design and Analysis of Epidemiological Studies 2 cr.**  
 The course covers in detail methodological issues related to study design and conduct, data analysis, interpretation of results and inference in epidemiological research. Problems of exposure and disease definitions, information and selection biases, confounding and effect modification are considered. Students are required to critique and discuss epidemiological studies and to lead in the write-up of a research study protocol for design and conduct of an epidemiologic study. *Equivalent to EPHD 320. Equivalence to be discussed with FHS on a case-by-case basis and as needed.*
- SHARP 310 Basic Biostatistics 4 cr.**  
 This course is an introduction to basic statistical techniques applied to health sciences and related fields. The objectives are twofold: descriptive statistics, which encompass techniques for organizing and summarizing data, and inferential statistics, from estimation to confidence interval and testing of hypotheses. Applications include probability distribution, comparing population means (t-tests) or proportions (X<sup>2</sup> squares) for data obtained from paired or independent samples, significance testing, sample size calculation and power, stratified and matched analyses, and one-way ANOVA. Also, it introduces simple linear regression, correlations, logistic regression and nonparametric methods for data analysis. Focus will be on problems that are commonly encountered in health services and biomedical research. *Equivalent to EPHD 310.*
- SHARP 315 Introduction to Research Ethics and RCR 1.5 cr.**  
 This course introduces students to the fundamentals of responsible conduct of research, emphasizing the ethical practice of human and animal research. The course recaps the history of ethical principles and the development of research codes of conduct and ethical practices, familiarizes investigators and faculty members with the different kinds of ethical issues that they might come across throughout their careers, and allows scholars to reflect critically about what it means to be an ethical and responsible researcher. In RE & RCR, students will attend lectures, participate in discussions, analyze actual case studies and watch audio-visual material. Most importantly, they will know how to conduct and assess research from an ethical standpoint.
- SHARP 325 Library Science/Informatics 0.5 cr.**  
 This introductory course spans five 1.5 hours sessions, and focuses on effective and efficient searching skills of the various medical and health-related resources. It also includes an introduction to the evidence-based practice concept and where and how to locate such documents, in addition to how to design a high sensitive search strategy for systematic reviews. Delivery of this course is through a mixture of live demonstration, hands-on exercises, and solving clinical scenarios. *Offered only in Summer.*

**SHARP 330      Analysis and Reporting of Large Clinical Datasets I      2 cr.**

This course will put into practice the statistical analysis and other computing skills introduced to scholars in EPHD 300/SHARP 300, EPHD 310/SHARP 310 and SHARP 325. The training format is a mixture of demonstrations, hands-on exercises and clinical scenarios. The course will simulate previously executed/published analyses on previously collected de-identified health research datasets. Scholars will go through the entire process experience of data handling, hypothesis-driven analysis design and culminate in the execution of statistical analysis (modeling) and presentation of results. In addition, this course will use existing datasets to familiarize scholars with commonly used health data analysis methods including survival analysis methodology and Cox regression multivariate modeling of survival data, and finally introduce propensity score approaches for risk-adjustment.

**SHARP 340      Advances in Non-Communicable Diseases Research      2 cr.**

The course examines a number of selected non-communicable diseases (NCD) given their morbidity and mortality burden at the local and regional level. Expert guest speakers are invited to discuss the public health importance of the topic/its burden; epidemiology (prevalence, patterns, determinants); theoretical and practical methodological challenges and opportunities in the conduct of epidemiologic studies; most recent findings in NCD research conducted in Lebanon and the region; and strategies for the prevention and control of NCDs. The course is an opportunity for students to be acquainted with researchers in Lebanon active in the field and to appreciate the scope and findings of the NCD studies conducted in Lebanon and the region. Students are expected to lead on a scoping review of a selected research question. *Offered in Spring every 2 years.*

**EPHD 321      Design and Analysis of Clinical Trials      2 cr.**

A course that focuses on issues in the design and organization of randomized controlled clinical trials: ethical and legal issues, patient selection, recruitment, masking and randomization, endpoint definition, protocol development and statistical analysis.

**SHARP 321A      Clinical Trial Protocol      2 cr.**

This is a 2-credit course designed to complement EPHD 321 (Design and Analysis of Clinical Trials). It is structured around the development of a clinical trial protocol based on principles/concepts covered in parallel in EHPD 321. The course systematically covers all standard key items needed to describe a clinical trial protocol using the 33 items checklist of the 2013 SPIRIT (Standard Protocol Items: Recommendations for Intervention Trials) document. These items include detailed content description for: administrative information, protocol registration, participants, interventions, outcomes, assignment of interventions, data collection, data management, data analysis, monitoring, data sharing, ethics and dissemination. Weekly assignments are designed to guide students in the production of a clinical trial protocol, covering sequential items of the SPIRIT checklist. The final paper consists of a fully developed protocol to implement a clinical trial that is suitable for submission for competitive funding and for publication in a peer-reviewed journal. Students will also give a PowerPoint presentation at the end of the course describing the protocol developed prior to submission of their final paper.

**EPHD 328      Systematic Review and Meta-Analysis      3 cr.**

The course is structured around the steps of executing a systematic review of trials of interventions: specifying the PICO question, searching for potentially relevant articles, selecting eligible studies, abstracting data, assessing risk of bias, conducting a meta-analysis, grading the quality of evidence and interpreting results. Weekly assignments are designed to guide students in the production of a systematic review. The final paper

consists of a report of the systematic review suitable for publishing in a peer-reviewed journal. The course examines advances in Non-Communicable Disease (NCD) research and risk factors with special focus on methodological challenges and opportunities.

**MHRM 305 Leadership and Behavior in Organizations 3 cr.**  
This course introduces students to many of the basic principles of human behavior that effective managers apply when managing individuals and groups in organizations. These include individual differences in abilities and attitudes, perception, attribution and bias, motivation, group dynamics including teams and communication, power and politics, organizational culture, and organizational structure and design. Particular attention is given to the psychological aspects of the employment relationship. Leadership is also highlighted as a crucial underpinning of group processes and as a decisive factor in organizational success, with the tone of leadership having important implications for HRM success.

**PBHL 304 Public Health Policy and Advocacy 3 cr.**  
This course introduces students to the relevant concepts and approaches in public health policy and advocacy. It will provide students with a basic understanding of the public health policymaking process as well as the basic elements of advocacy. The aim is to make MPH students informed of the complex nature about public health policy development, be critical consumers of health policy research and evidence, and analytical of the influence of various actors on the policy. Students will learn the stages of the policy process (i.e., agenda setting, policy development, policy implementation and policy evaluation). The field draws upon numerous disciplines. As such, course readings will be drawn from political science, sociology, biomedical sciences and policy studies. Students will also cover the basic elements of an advocacy process, including defining the issue, understanding the audiences and crafting advocacy strategies. Case studies, class discussions, and guest speakers will provide tangible examples of public health policy and advocacy processes at the national, regional and international levels. Ethics and equity considerations will be included in discussions related to concepts and application.

**SHARP 395A Comprehensive Examination 0 cr.**  
Each student is expected to pass a comprehensive examination after completion of all required courses. Examinations may be written, oral or both. Timing of the examination is set by the program.

**SHARP 400 Research Thesis 6 cr.**  
This is a 6-credit master's research course generally completed over two-three terms or more, after the SHARP required summer certificate program. The thesis research track for the SHARP MS degree program will be flexible provided its primary focus is related to NCD. The focus would be clinical trial based, or pertaining to NCD related outcomes or clinical epidemiology, or to the formulation of a health policy related to NCD. A meta-analysis is allowed as a thesis topic pending approval of the joint FM/FHS GSC. A passing grade on the comprehensive exam is also required and it will be followed by a thesis defense and document submission as required by AUB academic guidelines.

## Electives

SHARP MS students are allowed a total of 2 credits of electives that can be taken either as established offered courses at any of the following faculties: FM, FHS, OSB, FAFS and HSON (including those listed below), or as tutorials (credits) and seminars (1 credit), provided they are post-graduate courses and are approved by the SHARP Director.

**EPHD 324 Special Topics in Biostatistics 1-3 cr.**  
 A course that covers selected topics in biostatistics of special interest to researchers and trainees in epidemiology and population health. *Prerequisite: EPHD 310 or consent of instructor.*

**EPHD 312 Analysis of Continuous Data 3 cr.**  
 A course that deals with concepts and methods for the analysis of continuous outcomes. The main focus is on multiple linear regression. Analytical means to control for confounding and effect modification while maximizing precision is explored. The methods of regression diagnostics are explained. Basic theory is considered; however, the emphasis is on application. Applications of the statistical techniques are carried out using the statistical package SPSS. *Prerequisite: EPHD 310 or consent of instructor.*

**EPHD 313 Analysis of Categorical Data 3 cr.**  
 A course that covers univariate and multivariate statistical techniques for categorical data. Topics include distributions; measures of association and inference for categorical data; log-linear models for multicontingency tables; and logistic regression for binary, polytomous and ordinal responses. In addition, the concept of maximum likelihood estimation is introduced. Applications of the statistical techniques are carried out using the statistical package STATA. *Prerequisite: EPHD 310 or consent of instructor.*

**HPCH 334 Qualitative Health Research 2 cr.**  
 A course in which students advance their qualitative social research methodology and methods for public health research. Students revisit the underlying paradigms and use of qualitative methodology. Throughout this course, students refine their interviewing skills, train on how to manage qualitative data, apply systematic data analysis and produce a rigorous account of qualitative research findings through practical applications in Arabic and English. *Prerequisite: PBHL 310 and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301).*

**HMPD 300 Health Care Systems 3 cr.**  
 This course deals with all the main components, resources and functions of health care systems. It is designed for graduate students to identify organizational and health system problems and apply systems thinking in resolving them. The course also introduces graduate students to the policy making and analysis of health system issues with particular focus on Lebanon and the Middle East region.

**PBHL 310 Research Design 3 cr.**  
 This course discusses principles of research design and the methods used in both quantitative and qualitative social research methodologies. Topics include formulation of research questions, literature review, sampling issues, methods of data collection and analysis. Practical ethical issues are also discussed.

**HMPD 314 Project Management 2 cr.**  
 A course that exposes students to current project management trends, best practices, and strategies that can aid in better management of projects and programs in health care settings.

**BIOM 375 Principles of Learning and Assessment 2 cr.**  
 This course provides students with the theoretical background and approaches to teaching science at the university level with emphasis on the nature of science and

learner cognition. In addition, students are expected to apply principles and techniques of teaching and assessment of science in a teaching context. *Course offered to PhD students in Biomedical Sciences.*

**SHARP 345 Survival Analysis** **1 cr.**  
 This course provides students with the theoretical background and approaches to teaching science at the university level with emphasis on the nature of science and learner cognition. In addition, students are expected to apply principles and techniques of teaching and assessment of science in a teaching context. *Course offered to PhD students in Biomedical Sciences.*

**SHARP 329A Guideline Development and Adaptation** **1 cr.**  
 This course provides students with the theoretical background and approaches to teaching science at the university level with emphasis on the nature of science and learner cognition. In addition, students are expected to apply principles and techniques of teaching and assessment of science in a teaching context. *Course offered to PhD students in Biomedical Sciences.*

**SHARP 332 Applied Survival Analysis** **1 cr.**  
 This course introduces students to many of the basic principles of human behavior that effective managers apply when managing individuals and groups in organizations. These include individual differences in abilities and attitudes, perception, attribution and bias, motivation, group dynamics including teams and communication, power and politics, organizational culture, and organizational structure and design. Particular attention is given to the psychological aspects of the employment relationship. Leadership is also highlighted as a crucial underpinning of group processes and as a decisive factor in organizational success, with the tone of leadership having important implications for HRM success.

**SHARP 360 Introduction to Data Science** **2 cr.**  
 This introductory course will initiate trainees to the main concepts of the Data Science lifecycle, and to machine learning (ML) tools, their algorithms, to mine big data. During the 20 lectures students will learn: To develop an understanding of the data that one will use and how it was collected through significant exploration (exploration and understanding); To munge, wrangle, and manipulate data in order to get an informative, manageable data set; To explore the statistical relationships between the variables in the data, and generate hypotheses and intuition about the data prediction based on statistical learning tools such as regression, machine learning tools including classification and clustering, as well as deep learning techniques; To give the data back in a compelling form and structure, through visualization, stories, and interpretable summaries. The course will therefore allow students to understand the basics behind ML, their potential, as well as their limitations, and to learn data-driven protocols for assessing the quality of data sets. Students will use ML tools to develop and validate predictive models, in order to predict, diagnose, and design interventions to improve pre-defined outcomes. This will include health outcomes in population or cohort settings in general, and as they relate to NCDs in particular. Students will use trustworthy pre-selected large public data sets of relevance to NCDs including data sets on pollution, cancer and cardiovascular diseases, and learn how to pose and answer predictive questions around those data sets. The Data Science tools acquired by the trainees will culminate in a course project where they will apply knowledge and skills acquired on large (big) data sets on air pollution as well as on NCDs with a focus on cardiovascular diseases and cancer.

## MS in Public Health Nutrition

The Master of Science in Public Health Nutrition is a new graduate program offered jointly by the Faculty of Agricultural and Food Sciences (FAFS) and the Faculty of Health Sciences (FHS) at AUB. Students may pursue the Master of Science in Public Health Nutrition in either a thesis or a non-thesis track. The successful completion of the degree will require 40 credit hours for both tracks. Credits must be earned within the Faculty of Agricultural and Food Sciences and the Faculty of Health Sciences.

For the non-thesis track, 38 credits out of the required 40 credits should be earned as core program courses, including a culminating experience and a practicum. Two credits must be acquired as one or two elective courses either earned within or at both faculties.

For the thesis track, students must complete a total of 34 credits as core courses and must work on a 6-credit thesis under the supervision of a thesis advisor and thesis committee and defend their thesis as per AUB graduate program policies.

The credit requirements for both the thesis and non-thesis track options are tabulated below.

Credit requirements for both the thesis and non-thesis options for the Master of Science in Public Health Nutrition

		Non- Thesis Track Credits	Thesis Track Credits
<b>Year 1*</b>			
NFSC 301	Statistical Methods for Nutrition and Food Sciences	3	3
NFSC 306A	Community Nutrition	2	2
NFSC 307	Nutritional Epidemiology	3	3
PHNU 300	Fundamentals of Public Health Nutrition	3	3
PBHL 303	Design and Evaluation of Public Health Programs	3	3
PBHL 304	Public Health Policy and Advocacy	3	3
PBHL 306A	Workshop Series: Library and Literature Search Skills	0	0
PBHL 306B	Workshop Series: Proposal Writing and Literature Synthesis for Public Health Research and Practice	0	0
PHNU 304	Nutrition in Emergencies	2	2
HPCH 331	Theories in Health Promotion	2	2
HPCH 334	Qualitative Research in Health Promotion	2	2
<b>Total year credits</b>		<b>23</b>	<b>23</b>

\*) Pre-requisites may be needed as applicable (namely PBHL 312 (2 cr) if student does not have a Public Health background and/or NFSC 221 (3 cr) if student does not have a Nutrition background)

<b>Year 2</b>			
HPCH 333	Social Marketing in Health Promotion	2	2
FSEC 310	Food and Nutrition Security	3	3
PHNU 301	Nutrition in the Life Cycle	3	3
PHNU 302	Nutrition-related Chronic Disease	3	3
PHNU 390	Practicum	2	0
PHNU 391	Integrative Learning Experience	3	0
	Elective	1	0
PHNU 396	Comprehensive Exam	0	0
PHNU 399	Thesis	0	6
<b>Total year credits</b>		<b>17</b>	<b>17</b>
<b>Total credits</b>		<b>40</b>	<b>40</b>

## Core Courses (Thesis)

### **NFSC 301**      **Statistical Methods for Nutrition and Food Science**      **2.3; 3 cr.**

This is an intermediate level course of statistics. Topics include introduction to designs in Nutrition and Food Science research; critical appraisal of literature; methods of describing data; statistical inference for means and proportions; linear and logistic regression, and an introduction to multiple regression. *Prerequisites: STAT 210 or EDUC 227 and CMPS 209 or equivalent undergraduate course in statistics. Offered Fall and Spring.*

### **NFSC 306A**      **Community Nutrition**      **2.0; 2 cr.**

In this course, students will be trained on the role of nutrition in improving the health and wellbeing of communities and will be equipped with skills required to conduct community-based assessment, as well as plan, implement, and evaluate community nutrition programs and policies. The course combines theory and practice where students will discuss, analyze, and experiment with the theories of behavioral change and will apply the principles of nutrition education when tackling specific nutritional problems. Students will be provided with experiential learning opportunities to assess the health and nutrition needs of specific population groups. In addition, this course will give students the opportunity to plan, implement, and evaluate small-scale nutrition interventions to improve the health and well-being of individuals within select communities. *Offered Spring.*

### **NFSC 307**      **Nutritional Epidemiology**      **3.0; 3 cr.**

This course deals with the design, conduct, analysis, and interpretation of epidemiologic studies related to nutrition, particularly the relationship between nutritional status, diet and disease. *Prerequisites: STAT 210 or EDUC 227 and CMPS 209 or equivalent undergraduate course in statistics. Offered Fall.*

### **PHNU 300**      **Fundamentals of Public Health Nutrition**      **3 cr.**

This course introduces students to the field of public health nutrition, covering the fundamental pillars of the field; nutrition status and needs assessments and planning, monitoring, and evaluating nutrition interventions. Students will be exposed to the theories and conceptual frameworks behind addressing nutrition-related health issues at a population level. *Offered Fall.*

**HPCH 331 Theories in Health Promotion 2.0; 2 cr.**  
 This course focuses on theories utilized to understand health determinants and outcomes and to promote individual and population health. Students will critically examine perspectives from health promotion and other social science disciplines through theoretical readings and empirical case studies. They will also discuss the merits and challenges of using theory to analyze health and to intervene at multiple levels from the individual to the structural levels. *Pre-requisites- PBHL 312 or (PHNU 300 and NFSC 307). Offered Spring.*

**HPCH 334 Qualitative Health Research 2 cr.**  
 A course in which students advance their qualitative social research methodology and methods for public health research. Students revisit the underlying paradigms and use of qualitative methodology. Throughout this course, students refine their interviewing skills, train on how to manage qualitative data, apply systematic data analysis and produce a rigorous account of qualitative research findings through practical applications in Arabic and English. *Prerequisites: PBHL 310 and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301)*

**PHNU 301 Nutrition in the Life Cycle 3.0; 3 cr.**  
 This course covers the nutritional needs of individuals in different stages of the life cycle, with a focus on maternal and child nutrition and nutrition in the elderly. *Offered Fall.*

**PHNU 302 Nutrition-related Chronic Disease 3.0; 3 cr.**  
 This course covers the epidemiology, etiology, and the medical and nutritional management of chronic diseases whose etiologies are nutrition-related. *Offered Fall.*

**HPCH 333 Social Marketing in Health Promotion 2.0; 2 cr.**  
 In this course, students will learn the theoretical underpinnings of social marketing, a framework used to develop strategies aimed to address social and public health issues and to design effective, sustainable, and ethically sound public health campaigns. As a service-learning course, students apply concepts acquired into the development of a social marketing plan for a local community partner organization, responding to selected public health issues. This course is offered in blended learning format and is based on a combination of different modes of delivery (online and face-to-face) and diverse models of teaching and learning styles, providing students with an interactive and meaningful learning environment. *Prerequisites: HPCH 331 and PBHL 303. Offered Fall.*

**FSEC 310 Nutrition Security: Assessment and Intervention Strategies 3.0; 3 cr.**  
 This course introduces students to basic principles of nutrition security, community nutrition, and nutritional ecology; and highlights the role that nutrition plays in improving the health and wellbeing of communities. The course aims to equip students with the knowledge and skills required to conduct population-based nutrition research, assess the nutrition needs of a population, to plan, implement and evaluate community nutrition programs and policies based on evidence-based practice and taking into consideration cultural, social, and contextual dimensions. *Offered Spring.*

**PHNU 304 Nutrition in Emergencies 2.0; 2 cr.**  
 This course covers evidence-based community nutrition interventions in emergency situations that place vulnerable populations at risk of food insecurity and consequent malnutrition. *Offered Summer.*

**PBHL 303                      Design and Evaluation of Public Health Programs                      2.2; 3 cr.**

This course introduces students to the concepts and methods of public health program design and evaluation. Students will develop skills for assessing population needs for the development of health programs. The course then covers public health program design, including developing measurable objectives, identifying evidence-based intervention strategies, and planning for program implementation. Students will learn to select appropriate methods for impact and process evaluation of health programs. *Prerequisites: PBHL 310 (waived for PHNU students) and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301 & HPCH 334 (concurrently)). Offered Spring.*

**PBHL 304                      Public Health Policy and Advocacy                      3.0; 3 cr.**

This course introduces students to the relevant concepts and approaches in public health policy and advocacy. It will provide students with a basic understanding of the public health policymaking process as well as the basic elements of advocacy. The aim is to make MPH students informed of the complex nature about public health policy development, be critical consumers of health policy research and evidence, and analytical of the influence of various actors on the policy process. Students will learn the stages of the policy process (i.e., agenda setting, policy development, policy implementation and policy evaluation). The field draws upon numerous disciplines. As such, course readings will be drawn from political science, sociology, biomedical sciences and policy studies. Students will also cover the basic elements of an advocacy process, including defining the issue, understanding the audiences and crafting advocacy strategies. Case studies, class discussions, and guest speakers will provide tangible examples of public health policy and advocacy processes at the national, regional and international levels. Ethics and equity considerations will be included in discussions related to concepts and application. *Offered Spring.*

**PHNU 396                      Comprehensive Exam                      0 cr.**

**PHNU 399                      MS Thesis                      6 cr.**

## Core Courses (Non-Thesis)

- NFSC 301      Statistical Methods for Nutrition and Food Sciences      2.3; 3 cr.**  
 This is an intermediate level course of statistics. Topics include introduction to designs in Nutrition and Food Science research; critical appraisal of literature; methods of describing data; statistical inference for means and proportions; linear and logistic regression, and an introduction to multiple regression. *Prerequisites: STAT 210 or EDUC 227 and CMPS 209 or equivalent undergraduate course in statistics. Offered Fall and Spring.*
- NFSC 306A      Community Nutrition      2.0; 2 cr.**  
 In this course, students will be trained on the role of nutrition in improving the health and wellbeing of communities and will be equipped with skills required to conduct community-based assessment, as well as plan, implement, and evaluate community nutrition programs and policies. The course combines theory and practice where students will discuss, analyze, and experiment with the theories of behavioral change and will apply the principles of nutrition education when tackling specific nutritional problems. Students will be provided with experiential learning opportunities to assess the health and nutrition needs of specific population groups. In addition, this course will give students the opportunity to plan, implement, and evaluate small-scale nutrition interventions to improve the health and wellbeing of individuals within select communities. *Offered Spring.*
- NFSC 307      Nutritional Epidemiology      3.0; 3 cr.**  
 This course deals with the design, conduct, analysis, and interpretation of epidemiologic studies related to nutrition, particularly the relationship between nutritional status, diet and disease. *Prerequisites: STAT 210 or EDUC 227 and CMPS 209 or equivalent undergraduate course in statistics. Offered Fall.*
- PHNU 300      Fundamentals of Public Health Nutrition      3 cr.**  
 This course introduces students to the field of public health nutrition, covering the fundamental pillars of the field; nutrition status and needs assessments and planning, monitoring, and evaluating nutrition interventions. Students will be exposed to the theories and conceptual frameworks behind addressing nutrition-related health issues at a population level. *Offered Fall.*
- HPCH 331      Theories in Health Promotion      2.0; 2 cr.**  
 This course focuses on theories utilized to understand health determinants and outcomes and to promote individual and population health. Students will critically examine perspectives from health promotion and other social science disciplines through theoretical readings and empirical case studies. They will also discuss the merits and challenges of using theory to analyze health and to intervene at multiple levels from the individual to the structural levels. *Pre-requisites- PBHL 312 or (PHNU 300 and NFSC 307). Offered Spring.*
- HPCH 334      Qualitative Health Research      2 cr.**  
 A course in which students advance their qualitative social research methodology and methods for public health research. Students revisit the underlying paradigms and use of qualitative methodology. Throughout this course, students refine their interviewing skills, train on how to manage qualitative data, apply systematic data analysis and produce a rigorous account of qualitative research findings through practical applications in Arabic and English. *Prerequisites: PBHL 310 and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301).*
- PHNU 301      Nutrition in the Life Cycle      3.0; 3 cr.**  
 This course covers the nutritional needs of individuals in different stages of the life cycle, with a focus on maternal and child nutrition and nutrition in the elderly. *Offered Fall.*

**PHNU 302 Nutrition-related Chronic Disease 3.0; 3 cr.**  
 This course covers the epidemiology, etiology, and the medical and nutritional management of chronic diseases whose etiologies are nutrition-related. *Offered Fall.*

**HPCH 333 Social Marketing in Health Promotion 2.0; 2 cr.**  
 In this course, students will learn the theoretical underpinnings of social marketing, a framework used to develop strategies aimed to address social and public health issues and to design effective, sustainable, and ethically sound public health campaigns. As a service-learning course, students apply concepts acquired into the development of a social marketing plan for a local community partner organization, responding to selected public health issues. This course is offered in blended learning format and is based on a combination of different modes of delivery (online and face-to-face) and diverse models of teaching and learning styles, providing students with an interactive and meaningful learning environment. *Prerequisites: HPCH 331 and PBHL 303. Offered Fall.*

**FSEC 310 Nutrition Security: Assessment and Intervention Strategies 3.0; 3 cr.**  
 This course introduces students to basic principles of nutrition security, community nutrition, and nutritional ecology; and highlights the role that nutrition plays in improving the health and wellbeing of communities. The course aims to equip students with the knowledge and skills required to conduct population-based nutrition research, assess the nutrition needs of a population, to plan, implement and evaluate community nutrition programs and policies based on evidence-based practice and taking into consideration cultural, social, and contextual dimensions. *Offered Spring.*

**PHNU 304 Nutrition in Emergencies 2.0; 2 cr.**  
 This course covers evidence-based community nutrition interventions in emergency situations that place vulnerable populations at risk of food insecurity and consequent malnutrition. *Offered Summer.*

**PBHL 303 Design and Evaluation of Public Health Programs 2.2; 3 cr.**  
 This course introduces students to the concepts and methods of public health program design and evaluation. Students will develop skills for assessing population needs for the development of health programs. The course then covers public health program design, including developing measurable objectives, identifying evidence-based intervention strategies, and planning for program implementation. Students will learn to select appropriate methods for impact and process evaluation of health programs. *Prerequisites: PBHL 310 (waived for PHNU students) and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301 & HPCH 334 (concurrently)) Offered Spring.*

**PBHL 304 Public Health Policy and Advocacy 3.0; 3 cr.**  
 This course introduces students to the relevant concepts and approaches in public health policy and advocacy. It will provide students with a basic understanding of the public health policymaking process as well as the basic elements of advocacy. The aim is to make MPH student informed of the complex nature of public health policy development, be critical consumers of health policy research and evidence, and analytical of the influence of various actors on the policy process. Students will learn the stages of the policy process (i.e., agenda setting, policy development, policy implementation and policy evaluation). The field draws upon numerous disciplines. As such, course readings will be drawn from political science, sociology, biomedical sciences and policy studies. Students will also cover the basic elements of an advocacy process, including defining the issue, understanding the audiences and crafting advocacy strategies. Case studies, class discussions, and guest speakers will provide tangible examples of public health policy and advocacy processes at the national, regional and international levels. *Offered Spring.*

**PHNU 390      Practicum****2.0; 2 cr.**

The practicum is considered an essential part of the curriculum of students. Students gain practical experience working with organizations engaged in developing, implementing and /or evaluating community-based public health nutrition programs. This experience may be purely research-based for students aiming for more academic careers. *Offered Spring.*

**PHNU 391      Integrative Learning Experience****3.0; 3 cr.**

This course will allow students to apply knowledge and skills acquired throughout their graduate courses. Through this course, students will develop an understanding of how to conduct a community-based project or a research project beginning with the conception of ideas and concluding with depicting written results and discussing them, along with proper citations and procedures. *Part I offered Fall and Part II offered spring.*

**SHARP 332      Applied Survival Analysis****1 cr.**

This course introduces students to many of the basic principles of human behavior that effective managers apply when managing individuals and groups in organizations. These include individual differences in abilities and attitudes, perception, attribution and bias, motivation, group dynamics including teams and communication, power and politics, organizational culture, and organizational structure and design. Particular attention is given to the psychological aspects of the employment relationship. Leadership is also highlighted as a crucial underpinning of group processes and as a decisive factor in organizational success, with the tone of leadership having important implications for HRM success.

**SHARP 360      Introduction to Data Science****2 cr.**

This introductory course will initiate trainees to the main concepts of the Data Science life cycle, and to machine learning (ML) tools, their algorithms, to mine big data. During the 20 lectures students will learn: To develop an understanding of the data that one will use and how it was collected through significant exploration (exploration and understanding); To munge, wrangle, and manipulate data in order to get an informative, manageable data set; To explore the statistical relationships between the variables in the data, and generate hypotheses and intuition about the data prediction based on statistical learning tools such as regression, machine learning tools including classification and clustering, as well as deep learning techniques; To give the data back in a compelling form and structure, through visualization, stories, and interpretable summaries. The course will therefore allow students to understand the basics behind ML, their potential, as well as their limitations, and to learn data-driven protocols for assessing the quality of data sets. Students will use ML tools to develop and validate predictive models, in order to predict, diagnose, and design interventions to improve pre-defined outcomes. This will include health outcomes in population or cohort settings in general, and as they relate to NCDs in particular. Students will use trustworthy pre-selected large public data sets of relevance to NCDs including data sets on pollution, cancer and cardiovascular diseases, and learn how to pose and answer predictive questions around those data sets. The Data Science tools acquired by the trainees will culminate in a course project where they will apply knowledge and skills acquired on large (big) data sets on air pollution as well as on NCDs with a focus on cardiovascular diseases and cancer.

# Department of Environmental Health

Chairperson:	Jurdi, Mey
Professors:	Habib, Rima; Jurdi, Mey; Nuwayhid, Iman
Associate Professor:	Massoud, May
Assistant Professor:	Dhaini, Hassan
Lecturer:	Nasr, Joumana
Instructor:	El Helou, Nida

The Department of Environmental Health offers a graduate program leading to the MS degree in Environmental Sciences (Major: Environmental Health). For details regarding the MS degree, refer to the Master Degree Program in Environmental Sciences section of this catalogue.

In view of the increasing interest in development and its impact on the human environment, a variety of courses offered by this department are made available to students in other fields.

Graduates of the MSES-Environmental Health program may occupy senior or intermediate posts in the following:

- governmental agencies, such as the Ministry of Health, Ministry of the Environment, municipalities or health centers
- the private sector, which offers a variety of job opportunities in industry, research institutions, universities, schools and private businesses
- international agencies

## **ENHL 301                      Environmental Health and Sustainable Development                      1.0; 1 cr.**

The course introduces the field of environmental health and highlights its role in contributing to sustainable development. Students discuss the environmental system and the interactions of its physical, socio-economic and political components impacting human health and ecologic vitality. Emphasis is placed on assessing, preventing, and controlling environmental hazards that pose major risks to humans, animals and ecosystems.

## **ENHL 307                      Food Safety and Health                      3.0; 3 cr.**

The course focuses on the safety and management of processed food products. It addresses the advantages and limitations of food processing techniques and, in specific, the application of food additives. Areas covered relate mainly to food safety and quality control, health impacts, types and limitations of food processing methods, use of food additives, exposure estimation, toxicological implications, risks and benefits governing use and quality control measures and applications both at the national and international levels.

## **ENHL 308                      Tutorial                      1–3 cr.**

A tutorial on special environmental health projects of interest to students. Students are required to submit a written report.

**ENHL 310/  
ENSC 640**                      **Toxicology and Environmental Health Hazards**                      **3.0; 3 cr.**

The course presents toxicology in three sections. In the first section, the fundamental principles and essentials of toxicology are introduced, particularly dose-response, toxicokinetics, and cellular mechanisms of action. In the second section, the course discusses toxicity of main organ systems. Classic toxicants that adversely affect health, emerging hazardous human exposures, and special topics are discussed in the last section of the course. The course includes lecture style presentations, collective case-studies activities and student-led discussions. Topics of local and regional relevance are also introduced through hosting guest speakers.

**ENHL311**                      **Human Health Risk Assessment**                      **(3.0; 3 cr.)**

Thousands of chemicals are currently in common use and hundreds are introduced newly every year. The toxic effects of these compounds on humans are of significant public health concern. Human health risk assessment (HHRA) studies the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media. HHRA is an essential basis for decision-makers in remediation of environmental contamination and public health protection. This course introduces students to concepts, sources of data, and methods, which are used in the field of human health risk assessment, and provide them with an understanding of current issues in this field. The course examines in detail the four components of risk assessment: hazard identification, dose-response evaluation, exposure assessment, and risk characterization. Additionally, concepts in risk management and risk communication are discussed. The course includes lecture-style presentations, in-class exercises and assignments, and student lead discussions of reports/articles. Students will obtain enough experience to be able to successfully evaluate a health risk assessment report, which will be demonstrated in the final student presentations.

**ENHL 312/  
ENSC 641**                      **Occupational Health**                      **2.3; 3 cr.**

This course overviews the general principles of occupational health, relating work, the work environment, and workers' health and wellbeing to general principles of social equity and justice. The course surveys research on the social, economic, political, environmental, and health elements of a workplace using multidisciplinary approaches. Students who join the course are able to identify occupational hazards and work-related injuries and illnesses in workplaces and propose monitoring, management and prevention strategies to lessen their impact on workers. With its emphasis on social justice, the course discusses the factors that make some workers' groups more vulnerable than others. Its unique approach emphasizes global perspectives and popular imaginations of workers through academic publications, newspaper journalism, cinema, lectures and class discussions. This course is designed for students of multiple educational and training backgrounds and does not require prerequisite knowledge.

**ENHL 320**                      **Special Topics in Environmental Health**                      **1-3 cr.**

A course that covers selected topics such as risk analysis, environmental ethics and justice, or environmental policy and allows focused examination of special topics of interest to trainees in Environmental Health.

**ENHL 314/  
ENSC 642**                      **Environmental Management Systems**                      **3.0; 3 cr.**

The implementation of an Environmental Management System (EMS) integrates the precautionary and polluter pays principles into firms' operations and demonstrates commitment to sustainable development. This course provides an overview of the most common international standards for environmental management systems, primarily the International Standards Organization (ISO) harmonized management systems, and its implications for different organizations. It provides students with the skills to formulate and evaluate such management systems. Though the first part of the course is mainly lecture based, student participation in the form of questions and discussion is always welcomed and encouraged. Critical thinking will be promoted throughout the course. Students will be expected to formulate an EMS for an organization and prepare a technical report to communicate project findings to their colleagues through verbal presentation. Emphasis is placed on solving environmental problems using an integrated management approach in order to achieve an optimized environmental performance. *Alternate years.*

**ENSC 695**                      **Comprehensive Exam**                      **0 cr.**

**ENSC 699**                      **Thesis**                      **6 cr.**

**ENSC 697**                      **Project**                      **3 cr.**

The project must be undertaken, in partial fulfillment of the requirements for the degree, upon the completion of at least 27 credits of core and elective courses.

A student who is unable to finish the project in one term can register for it one additional time.

# Department of Epidemiology and Population Health

Chairperson:	Chaaya, Monique
Professors:	Chaaya, Monique; DeJong, Jocelyn; Sibai, Aba
Professor of Public Health Practice:	Adib, Salim
Associate Professors:	Ghandour, Lilian; Jaffa, Miran
Associate Professor of Public Health Practice:	Fouad, Fouad
Associate Research Professor:	Ghattas, Hala
Assistant Professors:	El-Asmar, Khalil; Mumtaz, Ghina
Assistant Professor of Public Health Practice:	McCall, Stephan
Assistant Research Professor:	Akik, Chaza
Adjunct Professors:	Hajjeh, Rana
Instructor of Public Health Practice:	Schenck, Catherine
Affiliates:	Akl, Elie; El Bejjani, Martine

The Department of Epidemiology and Population Health offers courses in epidemiology, biostatistics, and population health to graduate students in the Faculty of Health Sciences and the Faculty of Medicine. The Department is committed to improving public health in Lebanon, the region, and beyond, by training students and public health professionals to become epidemiologists capable of undertaking independent quantitative research for advancing knowledge and informing policy and practice. Its academic programs, adapted to meet the needs of the region encourage learners to work on projects that address the public health needs of the region.

The course offerings to students in the Master of Public Health (MPH) program, the Master of Science (MS) in Epidemiology program, and Doctor of Philosophy (PhD) in Epidemiology are given as core, required, and elective courses. In addition, members of the department offer courses in statistics and epidemiology to students in the Medical Degree program and coordinate and participate in teaching courses in preventive medicine and public health programs in the Faculty of Medicine.

## **EPHD 300<sup>1</sup>**

### **Principles of Epidemiology**

**1.5:0.5; 2 cr.**

This course introduces graduate students to the basic principles and methods of epidemiology and the application of the epidemiological approach to public health research, policy and practice. The course consists of weekly lectures and practical application sessions. Students will learn about the rubrics of Epidemiology, dynamics of disease transmission, common sources of epidemiological data, measures of morbidity and mortality, observational study designs, measures of association, biases and confounding, and general principles of causation in epidemiology. The main concepts will be covered during the lecture. The application sessions (e.g., problem-solving exercises, case-studies, journal critiques, mapping...) will allow students to apply their acquired epidemiological knowledge and understand the role of epidemiological evidence in current practices of public health policy and practice.

**EPHD 310<sup>1</sup> Basic Biostatistics 2.2; 3 cr.**  
 This course is an introduction for graduate students to statistical techniques applied to health and biomedical related data. The objectives are twofold: descriptive and inferential statistics. This course will provide theoretical and applied foundation that are needed to: 1) Carry out statistical analyses appropriate for the data and the study design, 2) Deduce accurate inferences and conclusions that concern the study population, 3) Disseminate and interpret biostatistical results and conclusions in a proficient manner. At the end of this course, students will be well rounded with the different analytical techniques that range from basic descriptive analysis, to mid-level analysis that distinguishes between the various distributions and applies the tests suitable for the outcome under examination, in addition to advanced modelling techniques using regression approaches linear, logistic and non-parametric methods.

**EPHD 312 Analysis of Continuous Data 1.5-0.5; 2 cr.**  
 In this course, students will learn to use regression analysis to address a research question. It covers basic exploratory data analysis for univariate (outcome) continuous observations with single or multiple covariates, followed by regression methods and diagnostics with a main focus on multiple regression. The emphasis of the course is on the application of statistical techniques that are carried out using the statistical package STATA and R. Lectures include lab sessions, article reading and appraisal as well as group discussions. *Prerequisite: EPHD 310 or consent of instructor.*

**EPHD 313 Analysis of Categorical Data 2.2; 3 cr.**  
 This course aims at introducing biostatistical approaches to analyze categorical and count data. In particular, students will learn about (1) probability distribution for binomial and multinomial data, (2) measures of association and test of association for nominal and ordinal data, (3) analysis for Two Way and Three Way contingency tables including interaction and confounding (4) generalized linear models (5) logistic regression for independent, matched case-control data, and data with small sample size and rare events (6) Poisson and Negative Binomial regressions for count and rates with and without over-dispersion, (7) Multi-category logit for nominal and ordinal data. The statistical package STATA will be used in this course. *Prerequisite: EPHD 310 or consent of instructor.*

**EPHD 314 Data Management and Manipulation 1.2; 2 cr.**  
 The data management course is an introduction to data manipulation and management using Stata, SPSS and Epi-data. The course covers data structure design including data checking as well as data manipulation, data imputation and basic statistical programming. The course is offered at the computer lab where students can have hands-on experience in dealing with real data sets. In case an enrolled student has a project specific data, she/he has the chance to directly apply the acquired course material on the dataset. Weekly assignments are given to allow the students to explore advanced and customized application of the material offered in the classroom. *Prerequisite: EPHD 310, undergraduate or graduate basic Biostatistics course, or consent of instructor.*

**EPHD 315 Nonparametric Data Analysis 1.2; 2 cr.**  
 Nonparametric tests are often used in place of their parametric counterparts when certain assumptions about the underlying population are questionable. This course introduces the students to the theory and applications of nonparametric statistics. Methods include estimation and testing of hypotheses for the one sample location problem, two sample location problem, multi-sample location problem, correlation, regression and tests for proportions. *Prerequisite: EPHD 310 or graduate basic Biostatistics course.*<sup>1</sup>

**EPHD 316                      Epidemiology, Prevention and Control  
of Communicable Diseases                      2.0; 2 cr.**

The course explores the epidemiology, prevention and control of selected communicable diseases with major public health significance locally, regionally and globally. For each disease, the course will cover the morbidity, mortality, burden, associated risk factors, social and behavioral determinants, as well as public health strategies for prevention and control. *Prerequisite: EPHD 300 or consent of course instructor.*

**EPHD 317                      Epidemiology of Non Communicable Diseases  
and Mental Health Disorders                      1.5-0.5; 2 cr.**

The first part examines major non-communicable diseases (NCDs), (e.g., cardiovascular diseases, cancer, diabetes as well as chronic respiratory diseases) and their shared behavioural risk factors. The second part examines selected mental health disorders (MHDs) that are major sources of morbidity, mortality and disability worldwide and in the region. For all health outcomes covered in this course, students will study the epidemiological evidence focusing on the available estimates of morbidity, mortality and burden, as well as determinants. Students will also examine evidence-based and effective prevention strategies and interventions, as well as main methodological issues in the measurement, control/prevention of the selected health outcomes. *Prerequisite: EPHD 300 or consent of course instructor.*

**EPHD 318                      Introduction to Mathematical Modelling  
of Infectious Diseases                      1.5-0.5; 2 cr.**

Mathematical modelling of infections is increasingly developing as a key tool for understanding transmission patterns, emergency planning, and assessing control strategies - hence playing a critical role in policy making. This graduate course introduces students to the basic concepts of mathematical modelling of infectious diseases and allows them to acquire a hands-on practical experience in designing simple, yet informative models to predict the course of epidemics and estimate the impact of interventions. The course consists of lectures and practical sessions that include class exercises and discussion, computer applications, and article discussion. Applications to different types of infectious diseases and control interventions will be discussed. Students will build and run basic disease models using Berkeley Madonna, a user-friendly mathematical package. Students should be comfortable with basic calculus and have an interest in infectious diseases epidemiology.

**EPHD 319                      Advanced Quantitative Methods  
in Epidemiology                      0.5-0.5; 1 cr.**

This course will provide students with an overview of the theory and applications of advanced quantitative methods in epidemiology. The purpose of the course is to assist students in answering complex etiological research questions in epidemiology. The course includes two main modules: 1) Cox proportional hazards model and competing risk analysis; and 2) statistical modelling of partially observed data using multiple imputation.

**EPHD 320                      Epidemiology Beyond the Basics                      1.5-0.5; 2 cr.**

The course provides advanced knowledge of epidemiologic studies and covers in details methodological issues concerning the design and the analysis of observational studies (cross sectional, case control and cohort studies). It also introduces design and analysis of randomized clinical trials. The course addresses key validity issues related to selection of study subjects, accuracy of measures of measures, confounding bias, and discusses effect modification. The course is blended and relies on didactic teaching, applications on and class discussion of selected articles, online discussion sessions,

and designing of two observational studies Ethical considerations in epidemiologic research are discussed throughout the course. *Prerequisites: EPHD 300 and EPHD 310, or consent of instructor. Equivalent to SHARP 320*

**EPHD 321                      Design and Analysis of Clinical Trials                      1.2; 2 cr.**  
A course that focuses on issues in the design and organization of randomized controlled clinical trials: ethical and legal issues, patient selection, recruitment, masking and randomization, endpoint definition, protocol development, and statistical analysis. Designs such as cross-over designs, factorial-designs, and meta-analysis are discussed. *Prerequisites: EPHD 300 and EPHD 310, or consent of instructor .*

**EPHD 322                      Special Topics in Epidemiology                      1-3 cr.**  
A course that covers selected topics of special interest to trainees in epidemiology. Examples include assessment of disease burden using epidemiological studies, occupational epidemiology, epidemiology of aging, epidemiology of maternal-child problems, or nutritional epidemiology. *Prerequisite: EPHD 300 or consent of instructor.*

**EPHD 324                      Special Topics in Biostatistics                      1–3 cr.**  
A course that covers selected topics in biostatistics of special interest to researchers and trainees in epidemiology and population health. *Prerequisite: EPHD 310 or consent of instructor.*

**EPHD 327                      Field Epidemiology                      0.2; 1 cr.**  
The field epidemiology course is an introduction to the concepts of epidemiology as it relates to applied field epidemiology. This course covers the key steps of an outbreak investigation and introduces main concepts of surveillance, its analysis and importance. This course focuses on problem-based, interactive methods: students can have a hands-on experience in dealing with basic outbreak investigation steps and surveillance data through real life case-studies which are discussed in group-work in class. *Prerequisite: EPHD 300 or any undergraduate or graduate basic epidemiology course.*

**EPHD 328                      Systematic Review and Meta-Analysis                      2.2; 3 cr.**  
The course is structured around the steps of executing a systematic review of trials of interventions: specifying the Population Intervention Comparison Outcomes (PICO) question, searching for potentially relevant articles; selecting eligible studies; abstracting data; assessing risk of bias, conducting a meta-analysis; grading the quality of evidence; and interpreting results. PICO is an acronym referring to the components of the question forming the basis for a research study, a systematic review in this case: Population, Intervention, Comparison, Outcomes. Weekly assignments are designed to guide students in the production of a systematic review. The final paper consists of a report of the systematic review suitable for publishing in a peer-reviewed journal. This is a relatively intensive course and students need to allocate adequate time and effort. *Prerequisites: EPHD 310 and EPHD 300 or their equivalent courses, or consent of instructor.*

**EPHD 331                      Population Change and Health                      3.0; 3 cr.**  
Population change is central to public health. This course provides a broad introduction to the field of population. It identifies core topics in population, discusses their relation to development and health, and emphasizes measurement issues. Topics covered include population size and growth as they relate to resources and to population health; components of population change including fertility and mortality, their links to development and consequences for health; population composition by age and gender and by socioeconomic status, and related inequalities; and population movements

including forced, internal and international migration as factors of population change and health. Special focus is given to the Arab World and the Middle East Region.

**EPHD 332                      Population and Health Policy                      3.0; 3 cr.**  
A course designed to explore the links between population, health, and development issues, with a focus on population policies and programs in the Middle East and North Africa. Topics include demographic trends and their implications for health policies; family planning programs and policies; the reproductive health paradigm; HIV/AIDS; gender and population policy; special health needs posed by the youth 'bulge' and population aging; political dimensions of population policies; and debates between the policy objectives of reducing population growth at the macro level and promoting individual well-being.

**EPHD 333                      Special Topics in Population Health                      1- 3 cr.**  
An examination of specific topics in population health such as aging, burden of disease, reproductive health, fertility of adolescents, social determinants of population health, and the demography of refugee populations.

**EPHD 334                      Reproductive Health                      3.0; 3 cr.**  
A course that examines selected issues in reproductive health with a focus on developing countries. Topics covered include pregnancy and childbirth, unintended pregnancy, maternal mortality, infertility, gynecological morbidity including sexually transmitted infections, sexuality, birth spacing and family planning, and reproductive rights. Particular emphasis is placed on conceptual issues and recent debates about reproductive health within the context of the international agenda on reproductive rights established at the 1994 Cairo Conference on Population and Development.

**EPHD 336                      Tutorial in Epidemiology                      1-3 cr.**

**EPHD 337                      Tutorial in Biostatistics                      1-3 cr.**

**EPHD 338                      Tutorial in Population Health                      1-3 cr.**

**EPHD 365                      Practicum in Epidemiology and Biostatistics                      0.30; 2 cr.**  
The practicum offers students the opportunity to practice their obtained knowledge and gain research experience in epidemiology and biostatistics mainly through the design of epidemiological studies or data collection and analyses of various types of data. Students are advised internally by a faculty member and externally by an outside preceptor in the practicum site. Practicum sites may include the Ministry of Public Health, Ministry of Social Affairs, non-governmental agencies, UN agencies (UNICEF, ESCWA, UNFPA), and health services organizations. *Prerequisites: Completion of all, or all but one, of the core and/or concentration courses.*

**EPHD 395                      Comprehensive Exam                      0 cr.**

**EPHD 399                      Thesis                      6 cr.**

**EPHD 403                      Advanced Epidemiology Methods:  
Case Control and Cohort Studies                      2.2; 3 cr.**

The main objective of the course is to enhance students' ability to design and conduct unbiased and efficient research. It is specifically designed to expand students' understanding of the methods of sampling for case control and cohort studies, and train students on hybrid designs (case cross over designs, nested case controls and case-cohort). *Prerequisite: EPHD 320 or its equivalent.*

**EPHD 404 Introduction to Causal Inference Methods 2.0; 2 cr.**  
 This course provides an overview and understanding of key concepts and theoretical frameworks of causal inference without and with models. The course will cover causation in health research, Directed Acyclic Graphs (DAGs), and epidemiologic methods for causal inference such as inverse probability weighting and marginal structural models. Other topics such as mediation and instrumental variables will also be covered. The course will involve lectures and practical applications through journal club, lab sessions with data, homework, and class projects. *Prerequisite: EPHD 320 or SHARP 300/320 (or any equivalent intermediate level course in Epidemiology and Basic Biostatistics).*

**EPHD 405 Social and Behavioral Factors in Epidemiology 2.0; 2 cr.**  
 This course is about the influence of the social context on the distribution of disease and its consequences, and about conducting epidemiological and public health research that is mindful of social and behavioral factors. While social epidemiology has come to be identified with the study of social inequalities, understanding how society and culture influence health requires a broader view of social determinants than the statistical analysis of the effects of socioeconomic variables on health outcomes. The course situates itself at the intersection of epidemiology and the social sciences. It draws on a range of approaches to illustrate the ways that social forces affect health. *Prerequisites: PBHL 310, EPHD 300, and EPHD 310 (or an equivalent basic epidemiology course).*

**EPHD 406 Epidemiology in Action 2.2; 3 cr.**  
 This course aims at exploring different public health modalities, strategies, interventions and approaches during man-made (conflict) and natural disasters. It also enables public health practitioners capable to select those most relevant to each situation's type, context and type of population affected. Skills needed in the management of disaster situation will be introduced as an integrated component, such as coordination and communication skills. In natural disasters, outbreak investigation methods will be included, using case studies of local, regional and global disease outbreaks. The response plan to natural and man-made disasters such as storms and earthquakes, injuries from armed conflicts will be developed. *Prerequisites: EPHD 300 (or its equivalent of basic epidemiology course) and EPHD 316 (or its equivalent in infectious epidemiology).*

**EPHD 407 Global Health 2.0; 2 cr.**  
 The course reviews the evidence on the distribution and determinants of major causes of death and ill-health in the world, the initiatives that have been launched to address them and the challenges to improving health in different parts of the world. It provides students with the knowledge and skills to examine how mortality and morbidity vary over time and across countries, the determinants of these changes, and the role of interventions to improve health. The course draws on epidemiology, economics, health policy and the social sciences to compare health across populations, assess the factors that account for variations, and review major policies and programs designed to improve health.

**EPHD 410 Applied Multivariate and Longitudinal Methods in Health Sciences 2.2; 3 cr.**  
 Data are often complicated by high dimensionality and inter-observation correlations. This course aims at providing a solid grounding in the analysis of multivariate data, repeated measure data and correlated data. Specifically, students will learn to (1) distinguish between univariate and multivariate outcomes, (2) group comparison for multivariate outcomes using One-Way and Two-Way MANOVA, (3) multivariate analysis using General Linear Model, (4) analysis of longitudinal data and (5) analysis of correlated clustered data. SAS, STATA and SPSS will be used in this course as statistical packages. *Prerequisites: EPHD 310, EPHD 313, and EPHD 312.*

**EPHD 411                      Statistics for Psychosocial Research                      2.2; 3 cr.**  
**Psychometrics and Measurement of Latent Constructs**

This course will introduce students to the principles of measurement, reliability and validity, as well as latent-variable based measurement models, including factor analysis. By the end of the course, students should be able to describe the basic principles of classical test theory and latent variables; conduct reliability and validity tests; conduct exploratory factor analysis; describe the basic steps and components of scale development, and critically appraise the process of validation of a scale. Students will be able to also read and evaluate scientific articles relevant to measurement in public health. The instructional method consists of lectures, in-class exercises, hands-on sessions in the computer lab, and assigned problem sets. Problem sets will require active manipulation of datasets provided by the instructor, using Stata and Mplus. *Prerequisites: EPHD 300 and EPHD 310.*

**EPHD 412                      Survival Analysis                      1.2; 2 cr.**

The course introduces fundamental concepts in survival analysis. The emphasis is on statistical methods which are useful in medical follow-up studies and in general time-to-event studies. The following topics are included in this course: censoring, truncation, hazard and survival functions, Kaplan-Meier estimator, log-rank tests, and Cox proportional hazards model.

**EPHD 440                      Doctoral Seminar                      0 cr.**

**EPHD 445                      Writing Research Grants                      0 cr.**

## Thesis Courses

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

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

**EPHD 482                      PhD Thesis                      3 cr.**  
*Every term.*

**EPHD 483                      PhD Thesis                      6 cr.**  
*Every term.*

Listed as 483A when registered the second time.

**EPHD 484                      PhD Thesis                      9 cr.**  
*Every term.*

**EPHD 486                      PhD Thesis                      0 cr.**  
*Every term.* Taken after 24 credits of thesis are completed in case further thesis work is necessary.

**EPHD 487                      PhD Thesis Defense                      0 cr.**

# Department of Health Promotion and Community Health

Chairperson:	Makhoul, Jihad
Professor:	Makhoul, Jihad
Associate Professors:	Abdulrahim, Sawsan; Kabakian-Khasholian, Tamar; Nakkash, Rima <sup>1</sup>
Assistant Professor:	Sieverding, Maia
Senior Lecturer:	<sup>2</sup> El Kak, Faysal
Instructor:	Kanj, Mayada
Lecturer:	Al Barazi, Rana
Affiliates:	Kalot, Joumana; Najem, Martine
Research Associate:	Salloum, Ramzi

Departmental courses are designed to introduce students to the field of health promotion and community health. Health promotion is the process of enabling people to increase control over and improve their health through a wide range of social and health-related interventions. Community health is concerned with the improvement or maintenance of the health characteristics of communities. Emphasis is placed on the role of health promotion specialists to design, implement and evaluate health-promoting interventions with participation of communities and groups. Ethical issues in health promotion and community health are emphasized in all courses.

The following courses are offered by the department:

**HPCH 301 Health Communication 2.0; 2 cr.**  
 Health communication is an area of study that examines how human and mediated communication can influence the outcomes of health-care and health promotion efforts. This core MPH course introduces the students to the basic concepts of health communication and its scholarship, including the focal areas of health literacy and patient-provider communication, social marketing, health campaigns, risk communication, crisis communication, and health advocacy. In the course, students will discuss the ways communicating about health is influenced by individual, social, and societal factors. The course will provide students with tools to critically evaluate existing health campaigns and to outline strategies to effectively communicate with different audiences about health-related topics. They will also design culturally appropriate, evidence-based health messages, designed for specific publics. Through this course, students will also learn how to effectively communicate scientific information with different audiences (e.g., general population, experts, the media), appropriately choosing oral and written materials and communication channels.

**HPCH 331 Theories in Health Promotion 2.0; 2 cr.**  
 This course focuses on theories utilized to understand health determinants and outcomes and to promote individual and population health. Students will critically examine perspectives from health promotion and other social science disciplines through theoretical readings and empirical case studies. They will also discuss the merits and challenges of using theory to analyze health and to intervene at multiple levels from the individual to the structural levels. *Prerequisite: PBHL 312 or (PHNU 300*

<sup>1</sup>) On leave

<sup>2</sup>) Part Time

and NFSC 307).

**HPCH 332 Community Health Promotion, Mobilization and Advocacy 3.0; 3 cr.**

In this course, students learn about the notion of community health, and the principles of community organizing to identify needs, values and resources in a community setting in order to develop an advocacy plan that will address a priority community health issue. Topical areas cover community organizing, types of community assessments, prioritization, community based participatory approaches, advocacy strategies, and community organizing and advocacy ethics. *Prerequisite: PBHL 312.*

**HPCH 333 Social Marketing for Health Promotion 2.0; 2 cr.**

In this course, students will learn the theoretical underpinnings of social marketing, a framework used to develop strategies aimed to address social and public health issues and to design effective, sustainable, and ethically sound public health campaigns. As a service-learning course, students apply concepts acquired into the development of a social marketing plan for a local community partner organization, responding to selected public health issues. This course is offered in blended learning format, which means based on a mix of different modes of delivery (online and face-to-face), models of teaching and learning styles, providing students with an interactive and meaningful learning environment. *Prerequisites: HPCH 331 and PBHL 303.*

**HPCH 334 Qualitative Research in Health Promotion 2.0; 2 cr.**

The course develops learners' qualitative research skills to address a research question relevant to health promotion. Students engage through classroom discussions, role play and assignments to gain hands on experience in conducting qualitative research beyond class settings. Students learn about qualitative research designs and methods and then apply the research process by generating data, and analyzing the data to answer a research question of their choice. They will also learn how to evaluate the quality or rigor of a qualitative research proposal or manuscript. Topics include in-depth interviews, observations, focus groups, thematic analysis, research rigor and research ethics. *Prerequisites: PBHL 310 and PBHL 312 or (PHNU 300 & NFSC 307 & NFSC 301).*

**HPCH 335 Implementation Research for Public Health 2.0; 2 cr.**

This course introduces implementation research, its frameworks, methods, and applications. Through readings and case studies, students will develop an understanding of implementation strategies at the individual, organizational and policy levels, and will discuss issues related to sustainability and scaling-up. They will develop a project where they articulate an implementation research problem of importance in their context, identify implementation strategies, select the appropriate study design, and consider the ethical aspects of the work. This is a required course for all students enrolled in the graduate program on the WHO-TDR scholarship scheme. *Prerequisite: PBHL 303.*

**HPCH 339 Tutorial in Health Promotion and Community health 1–3 cr.**

A guided study in particular topics in health behavior and health education as defined by instructor and student.

**HPCH 341 Special Topics in Health Promotion and Community Health - Special Populations 1-3 cr.**

A course in which students explore the personal, social and community determinants that influence the health of special populations such as women, children and adolescents, or an aging population. Issues of assessment as well as design, implementation, and

evaluation of interventions at a variety of levels to promote the health of such special populations are discussed.

**HPCH 342                      Special Topics in Health Promotion and Community Health - Exploring the Context of Intervention                      1-3 cr.**

A course in which students explore social and political determinants affecting health and health behavior in Lebanon, generally, and in rural and urban contexts, among others. Through group projects and investigations, students learn how culture, laws, policies, economics, kinship and communal ties interact and produce health inequalities in Lebanon today. At the end of this course, students build up case studies analyzing social and political forces surrounding a contemporary health issue of their choice within a particular context.

**HPCH 343                      Forced Migration and the Humanitarian Relief System                      3.0; 3 cr.**

This course provides: 1) an introduction to key legal and theoretical frameworks on forced migration (internal and cross-border) and the meanings of the term refugee as a political and social construct; 2) a survey of global actors in the vast field of refugee humanitarian relief; and 3) a description and critique of the refugee “humanitarian relief industry.” The course addresses forced migration as a global phenomenon, but synthesizes conceptual and legal writings on the subject with refugee experiences in the Arab region. It incorporates readings from multiple disciplines (including literature), invited talks by practitioners and activists, and learning opportunities outside the classroom. The course’s thematic focus is health, broadly conceived, and its philosophical orientation is embedded in demands for human rights and justice for all refugees.

**HPCH 365                      Practicum in Health Promotion and Community Health                      0.30; 2 cr.**

A practicum in which students gain field experience in the assessment, development, implementation and/or evaluation of interventions for health promotion at the individual, interpersonal, organizational, community or policy levels. Students integrate knowledge and theory learned in the classroom setting with the realities of public health practice. Sites for practicum can include community health centers, hospitals, local or international NGOs, governmental organizations, schools or academic field projects. *Prerequisites: Completion of all, or all but one, of the core and/or concentration courses.*

# Department of Health Management and Policy

Chairperson:	Kassak, Kassem
Professors:	El-Jardali, Fadi; Saleh, Shadi
Professor of Public Health Practice:	Jabbour, Samer
Associate Professor:	Yassin, Nasser <sup>1</sup>
Associate Professor of Public Health Practice:	Kassak, Kassem
Instructor:	Germani, Aline
Instructors of Public Health Practice:	Abou Samra, Clara; Bou Karroum, Lama; Fadlallah, Racha; Jamal, Diana;

The Health Management and Policy Department (HMPD) advances the field of health systems, policy and management through excellence in education, research and practice that is relevant to Lebanon and the Global south. HMPD is considered as a leader in producing health systems and policy research in the Arab World. Through the Master of Public Health (MPH) program, HMPD provides graduate students with the skills they need to lead and manage health care organizations and systems. Research interests of departmental members include areas related to health policy, policymaking, health financing and management, human resources for health, quality of care, patient safety, accreditation, role of civil society in policy, health in conflict, and the role of community networks in impacting health.

HMPD prepares students and learners to become leaders and influencers in health care organizations and systems. The multidisciplinary curriculum at HMPD allows students to gain conceptual, analytical and practical skills in health management, health policy and decision-making, strategic planning, human resources management, performance improvement, health information systems, budgeting, program and policy evaluation and knowledge translation.

Throughout the years, HMPD has informed and influenced health systems, management practices and policies in Lebanon and the region. HMPD has strong connections to overseas institutions, and its faculty members have direct links with policymakers, stakeholders and influencers in Lebanon and the region. Our departmental members have a wide range of expertise not limited to Lebanon but also extending to the Arab region and beyond. In addition to their teaching, they are also engaged in research that is impact oriented and aims to improve health systems. Departmental members regularly engage with policymakers and stakeholders in effort to build and sustain collaborations and partnerships; students are regularly exposed to these interactions through course work and get the opportunity to listen to real life experiences and understand the roles of different stakeholders in the decision making process.

Graduates from HMPD have assumed leadership roles in public health systems at the national, regional and global levels. The department hosts the Executive Master of Healthcare Leadership (EMHCL) which is designed for professionals who have significant responsibility in the healthcare sector - including those from care delivery, pharmaceutical and product manufacturing, healthcare consulting, health management

1) on leave

systems, insurance, patient advocacy, public health, policy and regulation institutions. HMPD also have a Health Leadership Academy (HLA), an Executive Program that offers a set of consecutive modules, three days each, addressing key topics under the broad theme of leadership in healthcare and bringing hands-on experience of leading experts in the field.

The following courses are offered by the department:

**HMPD 300 Health Systems Management 3.0; 3 cr.**

This course is designed for public health graduate students to identify organizational and health system challenges and apply systems thinking in resolving them. The course is a core MPH module that examines the organization, delivery and funding of health care and addresses the main components, resources and functions of health systems at several levels including national, regional and international. It critically integrates analyses of structural biases and social inequities as barriers to equitable public health and health care systems. Although the course topics have relevance to national and regional challenges, an international comparative approach is adopted.

**HMPD 306 A Workshop on Microeconomics for Healthcare 0 cr.**

The goal of this workshop is to teach basic economic principles in preparation for HMPD 351. Topics to be studied include: What is Economics? Principles of Economics, Opportunity Cost, Demand/supply for health care, Elasticity, Costing, Monopoly, Perfect competition, Monopolistic competition, and Oligopoly. The course will use examples from Lebanon, the Region, Europe and the U.S. health care sector to illustrate the role of Health Economics. This Economics course will follow the traditional lecture structure of an introductory course but will also include discussion and case studies.

**HMPD 314 Project Management 2.0; 2 cr.**

A course that exposes students to current project management trends, best practices, and strategies that can aid in better management of projects and programs in health care settings.

**HMPD 315 Performance Improvement 3.0; 3 cr.**

HMPD 315 is a service-learning course that blends the theory and practice of performance improvement in health care settings. Special attention will be dedicated to discussing organizational culture for quality improvement, and the application of quality improvement tools to healthcare from a global perspective. *Prerequisite: HMPD 300.*

**HMPD 318 Policy and Decision Making in Health Systems 2.0; 2 cr.**

This course introduces students to concepts, approaches and strategies to promote evidence-informed policy making in health systems. It provides students with the knowledge and skills of how to define and frame health systems and policy problems and assess underlying factors; develop and frame policy options; and assess options in terms of benefits, harms, risks, stakeholder reactions and implementation considerations. Students will be introduced to ways to use knowledge translation tools such as briefing notes, policy briefs and rapid response in order to promote the use of evidence in policy and to effectively communicate with policy makers to influence action. Real world health systems case studies will be provided in class. *Prerequisites: PBHL 304 and HMPD 300.*

**HMPD 319 Strategic Management of Health Care Organizations 2.0; 2 cr.**

A course that provides knowledge of fundamental strategic management skills applicable in health care organizations. Its purpose is to prepare students to think strategically

and build knowledge to develop, implement and evaluate effective strategies in health care organization.

**HMPD 320                    Governance in Health Care                    2.0; 2 cr.**  
The course examines the multiple levels of governance in health care systems, including theory, dynamics, approaches, dysfunctions and challenges. The objectives of the course are to: (1) introduce students to governance and accountability at the organizational, clinical, national, regional, and global levels (2) convey an understanding of governance and accountability of different healthcare structures; and (3) examine actors roles, responsibilities, interactions and challenges at each level of governance, including the international; (4) Factual interaction with principal stakeholders to grasp the governance decision making process and the operation inside concerned institutions. This course will assist students in understanding the theory and practice of governance and accountability of health care. What does governance at different levels mean; how these levels are interrelated; how this operates in the real world; what are the implications of the existing challenges to achieving change – represent issues among the key questions that will be explored in this course.

**HMPD 321                    Foundations of Health Administration II                    3.0; 3 cr.**  
A course that deals with current issues in health care, such as primary health care, health care reform, and integration of social sciences in health sciences.

**HMPD 325                    Quality Management and Accreditation in Health Care                    2.0; 2 cr.**  
A course that examines at multiple levels the theory and practice of quality management and accreditation in health care organizations. The objectives of the course are to: (1) convey an understanding of quality of care, with particular attention to conceptual frameworks for continuous quality improvement, quality assessment, improvement and patient safety including approaches, methods and tools, (2) explain how to develop a quality improvement plan, performance indicators and measurement systems for quality and accreditation; and (3) address ethical issues related to quality management, risk management and patient safety with particular attention to Lebanon and the region.

**HMPD 339                    Tutorial in Health Management and Policy                    1–3 cr.**

**HMPD 342                    Financial Management and Accounting  
in Health Care Organizations                    3.0; 3 cr.**

Financial Management and Accounting in Health Care Organizations covers significant issues in the areas of cost accounting, financial ratios and statement, working capital management, capital financing, cost analysis and rate setting, budgeting, reimbursement, contracting, and cost controls. The course has been developed to maximize student opportunities for independent analysis through the development of PC-based problem solving applications, and through in-class discussion and evaluation of pertinent financial issues and problems. An emphasis is placed on uses of information generated through accounting and financial management systems to control operations in health care organizations. To promote such understanding, students receive problem oriented assignments and examinations in which they can apply knowledge and reasoning techniques gained from this and other courses to reach logical decisions that would effectively control operations in the simulated exercises. *Prerequisite: HMPD 300 or NURS 507.*

**HMPD 351                    Health Economics                    2.0; 2 cr.**  
A course that covers the application of the principles of microeconomics to the health

field, utilization of the techniques of microeconomics to the study of prices and markets in the health field, and developing competence in cost analysis and cost projections.  
*Prerequisites: HMPD 251, ECON 203, AGSC 212 or any undergraduate course in economics, and HMPD 300.*

**HMPD 354                      Special Topics in Health Management and Policy                      1-3 cr.**

A course that presents students with analytical tools for an in-depth understanding of current or emerging health policies that are debated in the health care industry, as well as tools for generating health policy documents.

**HMPD 365                      Practicum in Health Management and Policy                      0.30; 2 cr.**

A course that constitutes an administrative residency program in a health care setting such as a hospital, insurance facility, governmental or non-governmental agency, or any other health care facility. Through hands-on experience, this practicum prepares students to assume increasing levels of responsibility with competence in these settings.  
*Prerequisites: Completion of all, or all but one, of the core and/or concentration courses.*

# Center for Research on Population and Health (CRPH)

Director:	Ghattas, Hala
Assistant Professor of Public Health Practice:	McCall, Stephen
Assistant Research Professor:	Akik, Chaza
Instructor of Public Health Practice:	Schenck, Catherine
Affiliates:	Millet, Christopher; Campbell, Oona; Makhoul, Carla
Research Affiliate	Rebeiz, Marie Claire

The mission of the Center for Research on Population and Health is to support research on issues at the intersection of population and health in Lebanon, the region and internationally, and to disseminate findings to scientists, policymakers and the public. The Center has led a multi-disciplinary research program on a variety of regional public health issues, including reproductive health, mental health, childbirth, youth, tobacco control, HIV and community interventions to improve nutrition. Members and affiliates of the Center are epidemiologists, physicians, social scientists and public health professionals, with concern for social determinants of health and how new evidence can contribute to policies and interventions to improve health, who combine expertise in particular public health issues.

The Center hosts a number of regional research networks. It conducts reviews of evidence and produces research syntheses on public health issues of importance in Arab countries. The Center promotes interdisciplinary research and innovative approaches to research, and fosters exchanges and collaborations among AUB faculty, graduate students and colleagues in the Arab region and beyond through conferences, workshops and seminars.

The Center hosts MPH practicum students, MS thesis projects and provides students and researchers at FHS with support in survey development and data management and analyses; access to regional data sets; and support for new areas of research. Pending availability of funds, CRPH also hosts researchers who wish to visit the Faculty of Health Sciences with the goal of collaborating with FHS faculty or of pursuing innovative research or writing activities.

# Center for Public Health Practice (CPHP)

Director:	Germani, Aline
Instructors of Public Health Practice:	Kalot, Joumana; Najem, Martine

The Center for Public Health Practice advances evidence-based public health practice in Lebanon and the region. It creates opportunities for innovation and engagement that enrich the academic experience of students and faculty. The Center nurtures the culture of collective responsibility, partnership building, diversity and social justice.

Within the framework of its mission, CPHP has adopted the following strategic goals:

- Generate and disseminate knowledge to inform public health practice, research, policy and curriculum.
- Respond to public health priorities and emerging crisis through innovative programming and sustained partnerships for health and development.
- Lead the field of workforce development in public health locally and regionally.
- Establish platforms for meaningful community engagement of FHS students, faculty and staff.

CPHP collaborates closely with a variety of partners including national, regional and international entities such as academic institutions, ministries, UN agencies, NGOs, municipalities and local communities in Lebanon and throughout the Arab world.

## CPHP Tracks

- Training and Workforce Development; in person and e-courses
- Evaluation of Programs/Implementation Research
- Designing Health and Development Programs
- Documenting Best Practices/Knowledge Dissemination
- Developing Resource Material
- Organizing and Delivering Courses for Students
- Creating joint courses and programs with other faculties and universities

## CPHP Themes

Youth development, refugee health, sexual and reproductive health, maternal and child health, ageing, health communication, school health and environment, tobacco, child protection and child rights, gender and gender-based violence, NGO management, among others

## CPHP Reach

Egypt, Iraq, Jordan, Kuwait, Libya, Oman, Syria, Tunisia, Lebanon

# Knowledge to Policy Center (K2P)

Director:	El-Jardali, Fadi
Associate Director:	Nakkash, Rima
Instructors of Public Health Practice:	Jamal, Diana; Fadlallah, Racha; Bou Karroum, Lama; Abou Samra, Clara

Knowledge to Policy (K2P) Center draws on an unparalleled breadth of synthesized evidence and context-specific knowledge by producing briefs and conducting policy dialogues to impact policy agendas and action. K2P produces high quality policy products to help policymakers and stakeholders have the clearest understanding of the most important messages, options and recommendations to address pressing health and social system problems.

K2P harnesses the best available evidence on pressing health and social systems priorities; convenes concerned policy makers, stakeholders, thinkers, researchers and doers; and prepares leaders to meet pressing health issues by building their capacity in public policymaking.

The K2P team comprises a program manager, communication officer, an advocacy lead and several evidence lead specialists.

## K2P Functions and Activities:

- Inform the production, packaging and sharing of research data and evidence in an objective manner and based on current and emerging policymaking priorities
- Utilize a rapid response system to inform policymaking in an objective manner using the best available evidence that can be prepared and packaged within time and resource constraints
- Conduct evidence informed advocacy and support implementation in policy and practice
- Conduct policy tracing research and develop models for knowledge translation that are context-specific, culturally appropriate, relevant and effective for the region
- Support research networks, civil society, researchers, policy makers and the media
- Engage with citizens to enhance their involvement in the decision and policymaking process on high priority issues
- Build the capacity of researchers, policymakers and media in knowledge translation (KT) and evidence communication methods to influence policy, practice and action

K2P develops a diverse set of KT products including K2P Policy Briefs, K2P Briefing Notes, K2P Rapid Response, K2P Evidence Summaries, K2P Dialogue Summaries, K2P Advocacy Briefs, K2P Citizens Briefs, K2P Citizen Consultation Summary, and K2P Media Bites. The center has the K2P Mentorship Program that supports research and policy organizations in the six regions of the World Health Organization (WHO). K2P leads the COVID-19 Rapid Response Series.

## Collaborations

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K2P collaborates with national and international partners including Center for Systematic Reviews on Health Policy and Systems Research (SPARK) and Issam Fares Institute for Public Policy and International Affairs (IFI) at the American University of Beirut; and McMaster Health Forum in Canada and the Evidence Informed Policy Network (EVIPNet) at the World Health Organization (WHO) in Geneva.

### **WHO Collaborating Center for Evidence-Informed Policy and Practice**

Since 2015, the World Health Organization (WHO) has designated K2P Center twice as a WHO Collaborating Center for Evidence-Informed Policy and Practice. This designation, effective for another four-year term, is unique since the K2P Center is the only WHO Collaborating Center for Evidence-Informed Policy and Practice in Lebanon and the region, and is the second WHO Collaborating Center of this kind globally after McMaster Health Forum in Canada.

# The Center for Systematic Reviews on Health Policy and Systems Research (SPARK)

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Co-Directors: El-Jardali, Fadi; Akl, Elie

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The Center for Systematic Reviews on Health Policy and Systems Research (SPARK) at the American University of Beirut (AUB) is one of four Systematic Review Centers on Health Policy and Systems Research and the first of its kind in the Region. The Center is a joint collaboration between the Faculty of Health Sciences (FHS) and the Faculty of Medicine (FM). SPARK Center was appointed as the General Secretariat of the Global Evidence Synthesis Initiative (GESI).

SPARK specializes in the production of high-quality and timely systematic reviews and rapid reviews that respond to health policy and systems research priority issues at the national and the regional level. SPARK also invests in developing individual and institutional capacity in the Region in conducting systematic reviews and rapid reviews of Health Policy and Systems Research.

## SPARK Activities

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- Conduct priority setting exercises with policymakers and other stakeholders, researchers, and civil society to prioritize review topics on health policy and systems research
- Produce timely systematic reviews and rapid reviews on prioritized topics and review questions
- Hold national and regional capacity-building workshops to develop individual and institutional capacities in conducting different types of research evidence syntheses
- Prepare SUPPORT summaries and hold deliberative dialogues to promote the uptake of evidence from systematic reviews and rapid reviews into policies
- Contribute to the methodology of research synthesis and knowledge production

SPARK develops a diverse set of products including systematic reviews, rapid reviews, scoping reviews, SUPPORT summaries, and evidence gap maps.

## Collaborations

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SPARK collaborates with national and international partners including the Knowledge to Policy (K2P) Center at the American University of Beirut; WHO Alliance-funded Centers for systematic reviews in China, South Africa and Chile.

