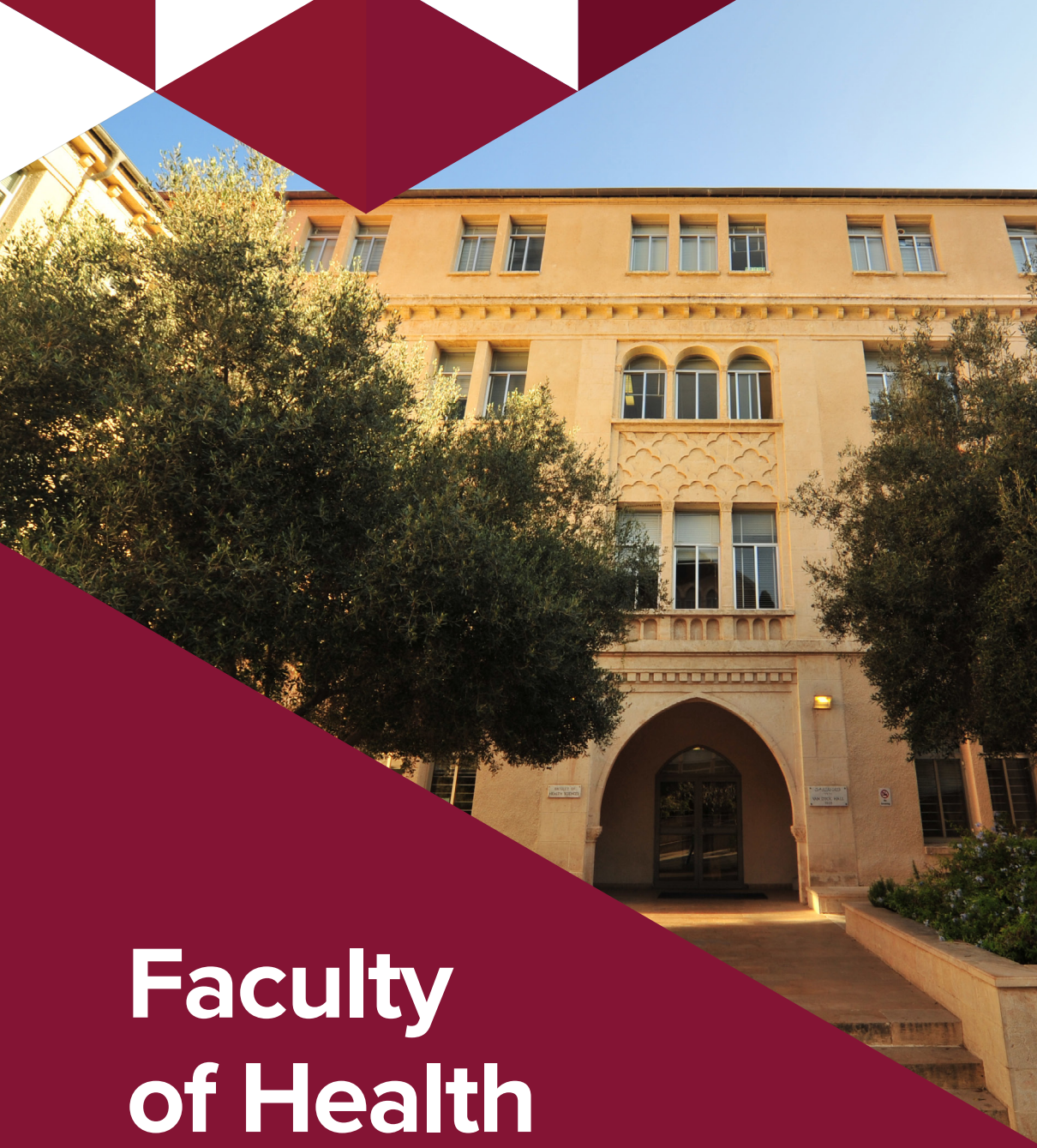

Faculty of Health Sciences (FHS)

Graduate Program

Officers of the Faculty

Fadlo R. Khuri	President of the University
Zaher Dawy	Provost
Abla Mehio Sibai	Dean
Monique Shaya	Associate Dean
Bradley Jon Tucker	Registrar
Antoine Sabbagh	Director of Admissions
Lokman Meho	University Librarian

Faculty Administrative Support

Mona Katul	Executive Officer
Amal El-Kassis	Student Services Manager
Daisy Nasr	Financial Officer
Diala Badreddine	Accreditation Officer
Maya Abou Khouzam	Events and Projects Officer
Gina Cordahi	Operations and Strategic Initiatives Manager
Maia Sieverding	Director, Public Health Education Office
Annie Tabakian	Project Manager

Faculty Administrative Support

Suzanne El Kheshen	Instructor (Assistant to Dean)
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

Historical Background

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 and Medical Imaging Sciences. FHS offers a BS degree in Environmental Health, Medical Laboratory Sciences, Medical Imaging Sciences and Medical Audiology Sciences, 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

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 Bachelor of Arts in Health Communication and the Bachelor of Science in Environmental Health. 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

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

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

[1] Frozen

Graduate Public Health Program (GPHP)

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)

Admission Requirements

Applicants for graduate study in the MPH program may be considered for admission in one of the following categories:

Graduate

A candidate qualifies for this category if he/she: (a) 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 3.0 and a GPA of at least 3.3 or its equivalent in the major field of study, (b) holds a graduate degree from AUB or another recognized institution with a cumulative GPA of 3.3 or its equivalent.

On a case-by-case basis, applicants to the program may be admitted to this category if the

GPA in the major field of study is between 3.0 and 3.3, provided their cumulative GPA is at least 3.3.

When only a cumulative GPA is available, the applicant will qualify for this category if his/her average is 3.3 or more.

On a case-by-case basis, applicants to the program with major and/or cumulative GPA between 3.0 and 3.3, who have sufficient and significant work experience (more than 5 years in the Public Health field), may be admitted to this category upon recommendation of the department and approval by the Graduate Studies Committee (GSC).

Graduate on Probation

A candidate qualifies for this category if he/she holds a bachelor's degree from AUB or an equivalent degree from another recognized institution with an undergraduate major and cumulative GPA between 3.0 and 3.3.

When only a cumulative GPA is available, the applicant will qualify for this category if his/her average is between 3.0 and 3.3.

Special Student Not Working for a Degree

On exceptional basis either upon the recommendation of the Department or based on the public health experience of the applicant, those with a cumulative GPA below 3.0 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. However, applicants who are considering admission to the MPH program should also have a relevant and sufficient work experience to be considered for admission as special students.

A student registered as a special, not working for a 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 a cumulative GPA of at least 3.7 in the registered courses to be considered for admission to the MPH program. The average of all completed courses will be evaluated for admission into the MPH along with the undergraduate average and public health experience.

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 Partial Practicum 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

MPH is a competency-based program where students are assessed on each foundational and concentration knowledge component and competency at least once.

Students must demonstrate that they have satisfied the minimum level of requirements in order to graduate from the program.

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+
- earn an overall GPA of at least 3.3
- 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
Total number of credits required for graduation	**42**

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 4 credits per term. Students who wish to register for less than 4 credits must get the registration advisor's approval to ensure that their residency does not exceed the maximum of 4 years as per AUB policy. These students must petition the Graduate Studies Committee for approval.

Policy on Practicum Registration

All MPH students are required to satisfactorily complete a 300-hour practical experience as part of the MPH program. The Practicum consists of 2-credit hours of public health practice which students are expected to register for upon completion of all core and concentration courses. In exceptional circumstances, part-time students working full-time who wish to complete their practicum hours over two semesters may petition to do so. Students

are allowed to register for the Practicum in the same semester with only one core and/or concentration course along with the Integrative Learning Experience (ILE) II course (as long as the course not yet taken does not consist of material needed to effectively undertake the activities of the practicum). To be allowed to register for a concentration course along with the practicum, the student needs to seek the approval of the concerned department. The student needs to seek approval to be allowed to register for 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

Some graduate courses may be exempted for students if the student has acquired the relevant knowledge components and satisfactorily completed the requirements of every competency.

- Exemption from a required FHS graduate course may only be considered when the student has proof that s/he has satisfactorily completed a comparable graduate level course in a recognized university normally with a minimum grade of B+ or the equivalent.
- Course exemption is possible if the course was taken in a period not exceeding the last 5 years.
- Graduate students are allowed to be exempted from courses with a maximum of 6 graduate credits.
- The requirement of this particular exempted course is waived but not its credits (i.e., the candidate has to replace the exempted course credits with other course(s) having the same number of credits). Students are still expected to complete the minimum number of credits required for graduation (MPH 42 credits; MS 30 credits).
- The course instructor assesses the equivalence of courses through comparison of course description and learning objectives. 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 or before the deadline of the drop and add period.
- In cases where students want to equate a course offered in another faculty for a required graduate course in the MPH/MS program, the course instructor (or relevant department chairperson) must approve the petition for equating courses prior to the student registering for the course. This could only happen when the required course is not offered during the term in which the student needs to complete the degree requirements.

- HMPD 306 course exemption policy: Students enrolled in the MPH-HMP program and who took in their undergraduate studies a microeconomics course, such as ECON 211 or AGSC 212 or their equivalent from other recognized universities, can petition to be exempt from the workshop course HMPD 306. The instructor of the HMPD 306 course or Chairperson of the HMP department reviews the petition for possible approval.

Procedure for exemption:

- The student submits a petition for course exemption attaching the syllabus and official university transcript from the other university/program.
- The course instructor decides if the course can be exempted based on the course syllabus and/or a test.
- If an exam is required, the student is asked by the Graduate officer to sit for the exam either prior to the start of the term when the course is offered or before the deadline of the drop and add period.
- As per the course instructor's decision, the petition is approved/rejected and forwarded to the Graduate Studies Committee then to the Office of the Registrar at AUB.

Policy on Partial Practicum Waiver

No exemption is granted from the Practicum experience. The Practicum must be completed while a student is enrolled in the MPH program with no exceptions. However, 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 the practicum waiver criteria. Students who have a minimum of four years of full-time, relevant and documented public health work experience prior to joining the MPH program, are eligible to apply for a partial waiver of 150 practicum hours. This experience should match a minimum of two core and one concentration competencies of the MPH program.

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 graduate course with a minimum grade of B+ or equivalent at a recognized university. 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. In this case, students might be considered for exemption from a course but not credits. The transferred credits are accepted after seeking approval of the course instructor.

Transfer of course credits from graduate academic and professional diploma programs at AUB to a graduate degree program is allowed following the academic rules and regulations specified by the American University of Beirut. However, the number of course credits that can be transferred is up to 12 credits for graduate academic diplomas and up to 6 credits for graduate professional diplomas (in reference to AUB policy on transfer of credits).

Transfer of credits from graduate programs that are jointly offered with FHS at AUB is possible

before the completion of the degree in the event that the student wants to change major. The number of credits that can be transferred from joint programs cannot exceed 12 credits of comparable courses at FHS. However, the maximum number of transferable credits from non-CEPH accredited programs is 6 core or concentration credits.

Request for transfer of credits for MPH/MS students is only possible if the student has completed the course within the previous 5 years of the transfer request date.

Procedure for transferring credits:

To transfer credits, the candidate submits a course equivalence petition through the online petition system and attaches the following official documents after consulting with the academic and registration advisors:

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

For transfer of credits, the Graduate Officer verifies that the transferring university has comparable academic standards to those of the American university of Beirut.

The instructor of the specific course reviews the syllabus and recommends on the equivalence of the course.

The online petition passes through a chain of approvals until the final decision is taken by the Graduate Studies Committee.

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+)
- s/he fails to obtain a minimum overall GPA of 3.3 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 3.0, but less than 3.3 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 3.3.

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).
- placement on probation more than once (not counting the probation at admission time).
- The student attains a cumulative average of less than GPA 2.3 after completion of 10 credits or fails two courses in one term.
- The student attains a cumulative average of GPA 2.3 or above but less than GPA 3.3 in any term, and fails one course in that term (This rule does not apply to the first term of study).
- In the judgment of the GSC, is not making satisfactory academic progress, or hasn't behaved in contempt of the norms and values upheld by the Faculty. Additional information about personal circumstances and general academic performance will be sought.

GSC will make their decisions based on all the above points.

Responsible Code of Conduct (RCR) Requirement

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)

		Lecture Hrs./ Week	Lab Hrs./ Week	Credits
PBHL 312	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	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
Public Health Experience Courses				
PBHL 399A	Integrative Learning Experience I	0	0	1
PBHL 399B	Integrative Learning Experience II	0	0	2

II. Concentration Courses

A. Epidemiology and Biostatistics (EPBS)

		Lecture Hrs./ Week	Lab Hrs./ Week	Credits
Required Concentration Courses				
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 Non-Communicable Diseases and Mental Health Disorders	1.5	0.5	2
EPHD 320	Epidemiology Beyond the Basics	1.5	0.5	2
Required Public Health Experience Courses				
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	Credits
Required Concentration Courses				
HPCH 331	Theories in Health Promotion	2	0	2
HPCH 332	Community Health Promotion, Organizing and Advocacy	2	0	2
HPCH 333	Social Marketing for Health Promotion	2	0	2
HPCH 334	Qualitative Research in Health Promotion	3	0	3
HPCH 335	Implementation Research for Public Health	2	0	2
Required Public Health Experience Courses				
HPCH 365	Practicum	0	30	2
Students in this group should take at least 4 credits of electives to complete their credit requirements.				

C. Health Management and Policy (HMP)

		Lecture Hrs./ Week	Lab Hrs./ Week	Credits
Required Concentration Courses				
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
Required Public Health Experience Courses				
HPCH 365	Practicum	0	30	2
Students in this group should take at least 3 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:

Course Type	Credits
Required	21
Electives	3
Thesis	6
Total number of credits required for graduation	**30**

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	Credits
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	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 or EPHD 317[2]	Epidemiology, Prevention and Control of Communicable Diseases or Epidemiology of Non-Communicable Diseases and Mental Health Disorders	2 or 1.5	0 0.5	2 2
EPHD 319	Advanced Quantitative Methods of Epidemiology	1	0	1
EPHD 320	Epidemiology Beyond the Basics	1.5	0.5	2

[2] Students can choose either one depending on their research interest.

EPHD 320A	Epidemiology Beyond the Basics 2	0.5	1.5	1
EPHD 395	Comprehensive Exam	-	-	0
Electives				
EPHD 314	Data Management and Manipulation	1	2	1
EPHD 318	Introduction to Mathematical Modeling for Infectious Diseases	1.5	1.5	2
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.				
Thesis				
EPHD 399	Thesis			6

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

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).

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
Total number of credits required for graduation	**30**

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**
A. Core Courses		15
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	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. Electives		**9-12**
Directed Electives		6
Free Electives		3-6
C. Thesis or Project		**3-6**
ENSC 699	Thesis	6
ENSC 697	Project	3
Total number of credits required for graduation		**30**

Doctor of Philosophy (PhD) in Epidemiology

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 PhD in Epidemiology aims to:

- graduate epidemiologists with advanced training, who can teach advanced courses, lead independent epidemiological research, and promote rigorous epidemiological practice.
- Strengthen epidemiological research, collaborations and partnerships 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 GPA of 3.7 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, with a minimum score of 152 in Quantitative and 151 in Verbal.
- 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.

Following the review of applications, shortlisted applicants will be contacted for an interview.

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 (preparing and delivering) introductory courses, proctoring, and correcting exams among other related tasks.

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 credit load for the PhD in Epidemiology program is detailed below:

Course Type	Credits
Core PhD-level Courses (including 1.5 credit of research ethics course)	17.5
Required Master's level courses in Epidemiology and Biostatistics	4-5
Electives	5-6
Thesis	24
Total number of credits required for graduation	51.5

Course	Course name	Credits
Epidemiology/Biostatistics core courses (16 cr.)		
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
Research related core courses (1.5 cr.)		
EPHD 440	Doctoral Seminar	0
EPHD 445	Writing Research Grants	0
SHRP 315	Introduction to Research Ethics and Responsible Conduct of Research	1.5
Specified set of Epidemiology/Biostatistics courses (5-4 cr.)		
EPHD 312	Analysis of Continuous Data	2
EPHD 313	Analysis of Categorical Data	3
EPHD 314	Data Management and Manipulation	1
EPHD 315	Nonparametric Data Analysis	2
EPHD 319	Advanced Quantitative Methods in Epidemiology	1
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
SHRP 332	Applied Survival Analysis	1
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), EPHD 486 (0): PhD Thesis		
EPHD 487	Thesis Defense	0
Teaching Requirement Courses		
EDUC 401	C-THE I: Teaching in Higher Education – Theory	0
EDUC 402	C-THE II: Teaching in Higher Education – Theory II & Practicum	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 one or more courses (minimum of 3 credits in total) taught by departmental faculty, and (b) registering, and successfully completing the requirements of two zero-credit courses-EDUC 401 and EDUC 402, as required by the Graduate Council.

Residency 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 the 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 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. 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: PBHL 399A or (EPHD 300, EPHD 310, PBHL 310, and PBHL 312).

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 of the traits of a good writer and tips from successful proposals as well as with examples of weak or unsuccessful applications. Prerequisites: PBHL 306A & (PBHL 310 or NFSC 301).

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 315 Global Health Equity 3 cr.

This course focuses on a critical discussion of social and structural determinants of health equity globally. Students are enrolled at the Faculty of Health Sciences, American University of Beirut, Lebanon; College of Health Sciences, School of Public Health, Universidad San Francisco de Quito, Ecuador; The School of Nursing, University of Victoria, British Columbia; and the College of Public Health, University of Iowa, Iowa City. Each site will also have a faculty mentor. The students and faculty mentors will meet virtually in 'real time' around a set of readings which will establish the common base of understanding of health inequities, social and structural determinants of equity and health, and historical injustices in each site. This will be followed by the development of a common photovoice project to highlight common and differing inequities and their impact on wellbeing. Our aim is to leverage technology to create a platform to connect public health students across continents, thereby providing novel perspectives and deepening discussions of health equity. This course is open to upper-level undergraduates with instructor permission.

PBHL 316 Injury as Public Health Priority 2.0; 2 cr.

This course introduces students to injury as a growing public health problem. It provides students with an overview of the concept of injury, injury classification, root causes and factors that affect both risk to and protection from injury. Students will learn about the burden of disease associated with injury both locally in Lebanon and globally. Student will examine key determinants of injury and the factors influencing injury events (e.g., the Haddon Matrix), as well as understand the various types of injury intervention programs. The course also explores sources of injury data that can be used to conduct injury research. The course is comprised of 30 didactic sessions and field visits to expose students to the real-world environments where injuries occur and are treated and analyzed. Field sessions will include visits to the National Traffic Safety Council, and the AUBMC Emergency Department to learn about post-injury care and clinical research, and to learn about surveillance systems for injury. These visits will give students practical insights into the sources of injury data and the challenges of conducting injury research in different environments and introduce students to key stakeholders in the injury ecosystem in Lebanon. Prerequisites: PBHL 310 or its equivalent.

PBHL 317 Injury Seminar 0 cr.

This injury seminar exposes students to various topics of injury research and methodologies.

It advances students' understanding of injury as a public health problem. Seminar topics include methodological approaches to several injuries, traumatic brain injury, occupational injury, road traffic injury, substance use and overdose and other emerging injury topics, as well as the application of policies and laws for injury prevention and control. Throughout the course, students are expected to learn about and understand injury-related topics via: (1) Reading and evaluation of the required journal articles and (2) Active engagement in class discussion related to a) Identification and appraisal of research and grey literature, b) Systematic Review and meta-analysis, c) Critical appraisal of research methodologies.

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, PBHL 399A (1 credit) and Integrative Learning Experience II, PBHL 399B (2 credits).

Pre-requisite for PBHL 399A: Completion of all but two of the concentration courses. ENHL 301 (concurrent) & PBHL 303 & PBHL 304 & PBHL 310 (concurrent) & PBHL 312 & EPHD 300 (concurrent) & EPHD 310 (concurrent) & HMPD 300 (concurrent) & HPCH 301. Pre-requisite for PBHL 399B: PBHL 399A.

Interdepartmental Courses

IDTH 210 Fundamentals of Medical Research 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 and Social Medicine 21.21; 2 cr.

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 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.

This is a required one-credit course for students in the senior year of the Bachelor of Science in Nursing (BSN) and final year of the Master of Public Health (MPH) degree. Students will be introduced to the philosophy of and learn necessary skills for interprofessional practice. The course is taught through case studies on health topics where interprofessional collaboration is critical. Students will attend two plenary sessions and discuss cases together in small groups in four discussion sessions that are facilitated by a faculty member from one of the above professions. At these discussion sessions, students will rotate to serve in the roles of moderator, note taker, and timekeeper. Student learning outcomes have been aligned with both nursing and public health curricula. Prerequisites: For MPH students: Completion of all, or all but one, of the concentration course; PBHL 305 (concurrent). Undergraduate Nursing students must be in their senior year. Enrolment by other students is possible upon the approval of the course coordinator. *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.*

Other Programs

Executive Master in Health Care Leadership (EMHCL)

Program Director:	Kassak, Kassem

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

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

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."

Course Type		Credits
Theme I: Foundation		
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
		Total 15
Theme II: Advanced Managerial Functioning		
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
		Total 18
Theme III: Health Systems Policy and Reform		
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
		Total 12
		Grand Total: 45

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

Credits (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 (C+)
- earn a cumulative GPA of at least 3.3
- 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 C+)
- or s/he fails to obtain a minimum GPA of 3.3 on at least 9 credit hours.

A student with an admission score (cumulative and major averages) between GPA 3.0 and 3.3 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 (C+) in every registered course and
- have an evaluated GPA of at least 3.3

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 a GPA 3.3.

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 with 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 B+ 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

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; Sibai, Abla; Kanafani, Zeina

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

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 March, and the acceptance is in May of each academic year calendar. The application deadline for the MS degree in Health Research is in June, and the 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 in 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 3.3). 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 in this catalogue, page 35.

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 38 of this catalogue) and a minimum degree of BS with a minimum GPA of 3.3 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, two-semester diploma and the MS program if s/he meets the following minimum admission requirements:

- an undergraduate cumulative GPA of at least 3.3 for MS and 3.0 for diploma (or standardized equivalent from other institutions of higher learning) leading to a bachelor's degree or its equivalent from recognized institutions of higher learning
- Have a graduate degree
- Have good quantitative skills as assessed by MCAT, GRE or GMAT with a score of at least 50th percentile (Applicants with MD or master's degree from AUB are exempted)
- Have good oral and written English skills as assessed by IELTS, TOEFL iBT, or Duolingo (AUB graduates are exempted)
- 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 29.

Graduation Requirements

See General University Academic Information in this catalogue, page 72.

Incompletes

See General University Academic Information in this catalogue, page 72.

Probation

See General University Academic Information in this catalogue, page 72.

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

12 Credit Diploma / Course Title	Course Number	Faculty	Credits
Principles of Epidemiology/Design and Analysis of Epidemiological Studies	SHRP 300/320	FM	4
Basic Biostatistics	SHRP 310	FM	4
Introduction to Research Ethics and Responsible Conduct of Research	SHRP 315	FM	1.5
Analysis and Reporting of Large Clinical Datasets	SHRP 330	FM	2
Library Science /Informatics	SHRP 325	FM	0.5
Fall – 13 credits	**Course Number**	**Faculty**	**Credits**
Design and Analysis of Clinical Trials	EPHD 321	FHS	2
Clinical Trial Protocol	SHRP 321A	FM	2
Leadership and Behavior in Organizations	MNGT 306	OSB	3
Thesis	SHRP 400	FM	6
Spring – 10 credits	**Course Number**	**Faculty**	**Credits**
Systematic Review and Meta-Analysis	EPHD 328	FHS	3
Public Health Policy and Advocacy	PBHL 304	FHS	3
Comprehensive Examination	SHRP 395A	-	0
Elective	-	-	0
Advances in NCD Research	SHRP 340	FM	2
Thesis	SHRP 400A	FM	0

Master of Science: 2-Year Program

12 Credit Diploma / Course Title	Course Number	Faculty	Credits
Principles of Epidemiology/Design and Analysis of Epidemiological Studies	SHRP 300/320	FM	4
Basic Biostatistics	SHRP 310	FM	4
Introduction to Research Ethics and Responsible Conduct of Research	SHRP 315	FM	1.5
Analysis and Reporting of Large Clinical Datasets	SHRP 330	FM	2
Library Science /Informatics	SHRP 325	FM	0.5
Fall I – 4 credits	**Course Number**	**Faculty**	**Credits**
Design and Analysis of Clinical Trials	EPHD 321	FHS	2
Clinical Trial Protocol	SHRP 321A	FM	2
Spring I – 9 credits	**Course Number**	**Faculty**	**Credits**
Systematic Review and Meta-Analysis	EPHD 328	FHS	3
Thesis	SHRP 400	FHS	6
Fall II – 5 credits	**Course Number**	**Faculty**	**Credits**
Leadership and Behavior in Organizations	MNGT 306	OSB	3
Thesis	SHRP 400A	FM	0
Elective	-	-	2
Spring II – 5 credits	**Course Number**	**Faculty**	**Credits**
Public Health Policy and Advocacy	PBHL 304	FHS	3
Advances in NCD Research	SHRP 340	FM	2
Thesis	SHRP 400B	FM	0
Comprehensive Examination	SHRP 395A/B	-	0

Course Descriptions

Required Courses

SHRP 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.

SHRP 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.

SHRP 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 (X2 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.

SHRP 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.

SHRP 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 on 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.

SHRP 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/SHRP 300, EPHD 310/SHRP 310 and SHRP 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.

SHRP 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.

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.

SHRP 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 certainty 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. Prerequisites: EPHD 310 and EPHD 300 or their equivalent courses (SHRP 310 and 300), or consent of instructor.

MNGT 306 Leadership and Behavior in Organizations 3 cr.
This course sets the base for proper understanding and micro-level analysis of the role of individual and group behavior in organizations. It is designed as two independent modules. Module I concerns organizational behavior while Module II concerns leadership. The course will serve as an introduction to behavioral aspects of the modern workplace, including such processes as leadership, communication, motivation, conflict resolution and team building, and the influence that the environment has on such behavioral patterns. The course will help students assimilate the different roles people play in an organization irrespective of their departmental positions or functional affiliations, and recognize the interactions inherent among people, structures and environments. Particular attention is accorded to leadership as a focal point of group processes and a critical ingredient in successful organizational endeavors and transformations. Through this course students will analyze, evaluate and apply management and organizational behavior concepts, approaches and tools to both novel business problems and situations and to managerial decision-making situations.

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.

SHRP 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.

SHRP 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 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 multi-contingency 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 3 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.

SHRP 333 Longitudinal correlated measures 1 cr.
This course builds on the basic biostatistics course by developing regression models to analyze studies that involve correlated outcome data. Correlated outcomes occur in many study designs ranging from classic longitudinal follow-up studies to hierarchical designs

where patient level outcomes are influenced by their physician and their health clinic. The correlation may adversely or beneficially affect the power of the study, leading to the need to estimate and adjust for the degree of correlation during analysis, as well as to adjust sample size calculations during the design of the study. Thirteen lectures will cover relevant topics including the concept of correlation, its impact on study design, the specific forms a correlation matrix can assume, and a detailed investigation of modeling longitudinal outcome data. Alternative methods for fitting correlated data including generalized estimating equations, random effects models, and fixed effects models, will be covered.

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.

SHRP 329A Guideline Development and Adaptation 1 cr.
This course familiarizes the students with the process of developing guidelines in the clinical, public health and health policy fields. It discusses local adaptation of international guidelines. It provides students with the methodology for developing recommendations and guideline adaptation.

SHRP 332 Applied Survival Analysis 1 cr.
This course is focused on the analysis of studies with time to event outcomes. It includes understanding the concept of censoring, applying the Kaplan Meier Method to obtain summary statistics, comparing two survival curves using log rank test, performing bivariate and multivariate analyses including Cox regression, testing for assumptions for statistical methods used and discussing alternatives when such assumptions are not met. The course will also include sample size computation for randomized clinical trials whose main outcome is of the time to event type. The course is applied in nature focusing on hands on application using a statistical software such as STATA or IBM-SPSS.

SHRP 355 Global Health and Cardiovascular Diseases 1 cr.
The course is offered as an elective to graduate students. This course will focus on cardiovascular burden, preventative interventions, and care in low and middle-income countries (LMICs). CVD disease prevention and interventions that have been implemented in LMICs will be discussed by students through addressing both the disease and its risk factors. Scientific literature will be drawn upon to help students understand and critique available cutting-edge research in the field.

MS in Public Health Nutrition

The Master of Science in Public Health Nutrition is a 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 requires 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.

Students who do not have a Public Health background are required to take PBHL 312 (2 cr.) as a pre-requisite. Students who do not have a Nutrition background are required to take NFSC 221 (3 cr.) as a pre-requisite.

Credit requirements for the Master of Science in Public Health Nutrition

		Non-Thesis Track Credits	Thesis Track Credits
Year 1			
Course	Title	Crs	Crs
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
PHNU 304	Nutrition in Emergencies	2	2
HPCH 331	Theories in Health Promotion	2	2
HPCH 334	Qualitative Research in Health Promotion	3	3
Total year credits		**24**	**24**
Year 2			
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

PHNU 396	Comprehensive Exam	0	0
PHNU 399	Thesis	0	6
Total year credits		**17**	**17**
Total credits		**40**	**40**

Core Courses

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 nutritional 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.

For thesis track:

PHNU 396 Comprehensive Exam 0 cr.
Comprehensive Exam.

PHNU 399 MS Thesis 6 cr.
MS Thesis.

For non-thesis track:

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.

List of Elective Courses

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 healthcare 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.

NFSC 395 Graduate Seminar in Nutrition and Food Science 1.0; 1 cr.
Offered Fall and Spring.

Diplomas

Diploma in Humanitarian Engineering and Public Health Innovations

The **Diploma in Humanitarian Engineering and Public Health Innovations** is a joint FHS/MSFEA interdisciplinary diploma.

The Diploma is open to professionals as well as AUB students currently enrolled in graduate programs from all majors wishing to gain academic knowledge and skills in the field of Humanitarian Engineering and Health Innovations. The program is a multidisciplinary offering that provides graduate students and professionals with the skills required to find innovative design solutions for challenges faced in humanitarian settings by taking into consideration two complementary perspectives, public health perspective and engineering perspective.

Learning Outcomes of the Diploma

Students who complete the diploma will be able to:

1. Apply participatory needs assessment tools and analyze the different dimensions of a public health problem
2. Apply formal design methods to develop practical, feasible, scalable, and sustainable humanitarian engineering and public health innovations and interventions
3. Apply skills required to manage complex projects while working in multidisciplinary teams
4. Demonstrate entrepreneurial skills to take a solution/intervention from prototype to product
5. Articulate and adhere to ethical standards in the process followed and, in the intervention, designed
6. Present and document a problem and its solution to a diverse target audience

Requirements for the Diploma

It is composed of 15 credits of course work, that include:

- HEHI 301, “Foundations of Humanitarian Engineering and Public Health Innovations”
- HEHI 302, “Capstone: Humanitarian Engineering and Public Health Innovations”
- One design course from the following list: AGSC 330, ARCH 344, CHEN 619, CHEN 798A , CIVE 552, CIVE 601, CIVE 628, CIVE 686, EECE 675, ENMG 663, ENMG 698E, ENSC 633, ENST 300, FSEC 310, FSEC 315, LDEM 633, NFSC 306, PBHL 303, URDS 664, URPL 641
- One ethics course from the following list: MHRM 304 , PSYC 305
- One social entrepreneurship course from the following list: ENMG 654, ENTM 320, MFIN 359

HEHI 301 - "Foundations of Humanitarian Engineering and Public Health Innovations"; 3 cr.
This is a multidisciplinary course that covers the fundamentals of designing solutions for health challenges faced by disadvantaged populations. It introduces tools for identifying humanitarian and/or development needs and designing practical, scalable and sustainable solutions and interventions. The course is offered to students from all majors. Students will be exposed to health and health system challenges in addition to design fundamentals including participatory needs assessment, formal multidisciplinary design processes, and relevant technologies and tools with real world applications and case studies.

HEHI 302 - "Capstone: Humanitarian Engineering and Public Health Innovations Capstone"; 3 cr.
The capstone project course is an interdisciplinary service-learning design course focused on development and humanitarian engineering solutions for health challenges. In the capstone, students apply all tools learned in HEHI 301. Students work in multidisciplinary teams with disadvantaged communities, under joint supervision of at least two mentors from MSFEA, FHS, and other faculties.
The capstone is divided into two sub-courses, HEHI 302A (1cr.) and HEHI 302B (2cr.), and must be registered in 2 consecutive semesters. HEHI 302A has as a prerequisite: HEHI 301. HEHI 302B has as a prerequisite HEHI 302A.
If the student has achieved one or more of the core competencies in Ethics or Entrepreneurship through previously passed undergraduate or graduate courses, only one elective course can be waived. The student will have to register at least one course from the approved list of Design courses, and another course from either the list of Ethics courses or the list of Entrepreneurship courses.
If the student has achieved two or all of the core competencies through undergraduate courses, only one course can be waived, and the student will have to register at least one course from the approved list of Design courses, and another course from either the list of Ethics courses or the list of Entrepreneurship courses.
Thesis/capstones of graduate students can be counted towards the fulfillment of the diploma. Students interested to enroll in the diploma are encouraged to inform the coordinators of the program at healthengineering@aub.edu.lb to benefit from adequate advising on study plans and ensure completion of all requirements.
The diploma is planned to include arrangements to encourage on-going graduate students to enroll with no or limited additional credit burdens. It is composed of 15 credits of graduate course work.

Eligibility criteria

For professionals:

To be eligible for admission to the diploma program, an applicant must hold an undergraduate university degree recognized by AUB with an average of at least 75 or demonstrate "reasonable potential for academic success".

For AUB students:

To be eligible for admission to the diploma program, an applicant must be in good academic standing. Applications are reviewed by the Steering Committee of the Humanitarian Engineering Initiative, and admissions recommendations are voted on by both MSFEA and FHS Graduate Studies Committee.

Registration process

Professionals who want to pursue the diploma should submit an application to the Office of Admissions. Current AUB graduate students need to fill out a petition form for completion of diploma.

Department of Environmental Health

Chairperson:	Jurdi, Mey
Professors:	Habib, Rima; Jurdi, Mey; Massoud, May; Nuwayhid, Iman
Associate 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

Course Descriptions

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.

ENHL 311 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 315 Environmental and Occupational Health Seminar 0 cr.
The Environmental and Occupational Health (EOH) seminar series presents information on current research topics and emerging issues in the EOH field. It exposes students to a broad range of environmental and occupational research, practice, and policy issues. Throughout the seminar series, students will learn about and understand EOH-related topics of current importance to the health of workers and the general population via: (1) careful reading and evaluation of assigned journal articles and (2) active listening to EOH experts and participation during the seminar.
Seminar topics would cover multiple themes, such as occupational health and safety in different work settings, toxicology, qualitative and quantitative methodologies and tools used

for the recognition, assessment, and evaluation of environmental and occupational hazards, and environmental and occupational health ethics. Issues related to environmental justice, sustainable development, and policymaking will run across the series.

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.

ENHL 325 Environmental Exposure Assessment; 2 cr.
The course will introduce students to the tools and strategies used to evaluate air, water and physical stressors encountered by individuals and populations in indoor, outdoor and occupational environments. Indirect and direct methods of assessing exposures in environmental and occupational settings are reviewed. Criteria for evaluating the quality of an exposure assessment and exposure data in occupational and environmental epidemiology studies are discussed. This course will cover the design of exposure assessment strategies for research and public health practice, the techniques and methods for sampling and analysis, and interpretation of data. In addition, this course will incorporate aspects of inequities in environmental exposures (environmental justice). The class will consist of lectures, discussions of readings and exposure data, and hands-on exposure monitoring.

ENSC 699 Thesis 6 cr.
Thesis.

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, Abla
Professor of Public Health Practice:	Adib, Salim
Associate Professors:	Ghandour, Lilian; Jaffa, Miran
Associate Professor of Public Health Practice:	Fouad, Fouad
Assistant Professors:	El-Asmar, Khalil; Mumtaz, Ghina
Assistant Professor of Public Health Practice:	McCall, Stephen
Instructors of Public Health Practice:	Akl, Christelle; Saad, Ghada
Affiliates:	Akl, Elie; El Bejjani, Martine; Tamim, Hani
Adjunct:	Al Hazoury, Adina

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 Principles of Epidemiology 1.5:1.5; 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 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 1.5-1.5; 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; 1 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.

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.

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 1.5-1.5; 2 cr.
The course will begin with a comprehensive overview of Non-Communicable Diseases (NCDs) and Mental Health Disorders (MHDs), and then proceed with the two modules. Module 1 focuses on the epidemiology of select MHDs that are major sources of morbidity, mortality and disability worldwide and in the region. The second module focuses on major NCDs and their shared behavioral risk factors. The course is designed to advance both epidemiological knowledge and skills. The lectures will provide the students with a summary of the epidemiological evidence of a select NCD/MHD, presenting the latest available estimates on morbidity, mortality and burden, as the main commercial and psychosocial determinants, as well as evidence-based effective prevention strategies and interventions. During the discussion session, and through various learning modalities (article discussion, case scenarios, short videos) the students will address the issue from an epidemiological perspective, critically appraising the methodological issues related to measurement, study design, data interpretation as well as control/prevention strategies. Throughout the course, students are expected to learn about and understand the epidemiology of the selected NCDs and MHDs via: (1) active listening and participation during the lectures and discussion sessions; (2) careful reading and evaluation of the required peer-reviewed journal articles and other sources of information; and (3) critically reviewing the literature when working on their own paper. Prerequisites for the course include EPHD300 or any equivalent graduate or undergraduate-level course in Epidemiology.

EPHD 318 Introduction to Mathematical Modelling of Infectious Diseases 1.5-1.5; 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 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 models with time varying coefficients, and (2) Competing risk analysis. Pre-requisites: EPHD 320, EPHD 313 or Instructor's approval.

EPHD 320 Epidemiology Beyond the Basics 1.5-1.5; 2 cr.
The course provides advanced knowledge of epidemiologic studies and covers in detail 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, 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 PICO question; searching for potentially relevant articles; selecting eligible studies; abstracting data; assessing risk of bias, conducting a meta-analysis; grading the certainty 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. Prerequisites: EPHD 310 and EPHD 300 or their equivalent courses (SHRP 310 and 300), 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.

Tutorial in Epidemiology.

EPHD 337 Tutorial in Biostatistics 1–3 cr.

Tutorial in Biostatistics.

EPHD 338 Tutorial in Population Health 1–3 cr.

Tutorial in Population Health.

EPHD 365 Practicum 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. Prerequisites: PBHL 399A.

EPHD 395 Comprehensive Exam 0 cr.

Comprehensive Exam.

EPHD 399 Thesis 6 cr.

Thesis.

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 SHRP 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 of selecting 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).

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 Psychometrics and Measurement of Latent Constructs 2.2; 3 cr.

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 M-plus. 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.

Doctoral Seminar.

EPHD 445 Writing Research Grants 0 cr.

Writing Research Grants.

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.

PhD Thesis Defense.

EPHD 366 Practicum 0.30; 1 cr.

Practicum for students who receive a partial waiver. Prerequisite: PBHL 399A.

EPHD 320A Epidemiology Beyond the Basics 2 0.5-1.5; 1 cr.

The course complements and expands on materials and activities covered in EPHD 320 (Epidemiology beyond the Basic), which 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) as well as key validity issues. EPHD 320A aims at reinforcing students' skills in designing and evaluating observational epidemiological studies. Topics discussed include causality, potential outcomes and counterfactuals, Confounding and DAGS, interaction and effect modifications, biases, and key features of setting up a cohort study and challenges in follow up. Prerequisites: EPHD 300, EPHD 310 and EPHD 320 (could be taken concurrently).

Department of Health Promotion and Community Health

Chairperson:	Makhoul, Jihad
Professors:	Abdulrahim, Sawsan[3] ; Makhoul, Jihad
Associate Professors:	Kabakian-Khasholian, Tamar
Assistant Professor:	Sieverding, Maia
Senior Lecturer:	El Kak, Faysal[4]
Lecturers:	Al Barazi, Rana[4]; Kanj, Mayada; Khawam, Grace
Instructor:	Maddah, Diana
Instructors of Public Health Practice:	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 healthcare 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.

[3] On leave (LWOP)
[4] Part-Time

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 and NFSC 307).

HPCH 332 Community Health Promotion, Organizing and Advocacy 2.0; 2 cr.
In this course, students learn about the notion of community health, and the principles of community organizing to identify needs, values and resources, and priority public health issues in a community setting. Students will use community-based participatory approaches to conduct a community assessment and prioritization exercise. Topical areas cover community organizing, types of community assessments, community-based participatory approaches, advocacy strategies, 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 3.0; 3 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.
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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 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 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. Prerequisite: PBHL 399A.

HPCH 366 Practicum 0.30; 1 cr.
Practicum for students who receive a partial waiver. Prerequisite: PBHL 399A.

Department of Health Management and Policy

Chairperson:	Kassak, Kassem
Professors:	El-Jardali, Fadi; Saleh, Shadi
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 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.
This course aims to introduce students to the basic economic principles and its application in healthcare as a prerequisite for the advanced Health Economics course; HMPD 351. The course shall cover the basic economic principles, including costing, opportunity cost, demand and supply for health care, consumer behavior and elasticity, as well as market equilibrium, monopoly, oligopoly and types of competitions in the health sector.

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 healthcare 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 healthcare 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 healthcare 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; (3) examine actors roles, responsibilities, interactions and challenges at each level of governance, including the international; and (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 healthcare, such as primary healthcare, healthcare 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 healthcare 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.
Tutorial in Health Management and Policy.

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 healthcare 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.
This course builds on HMPD 306 and expands on the application of micro- and macroeconomics to healthcare. It will focus on the study of prices and markets in the health sector to help students develop competence in cost analysis and cost projections. Furthermore, it will examine socioeconomic disparities, provider payment mechanisms, and economic evaluations. Prerequisites: HMPD 300 and any of the following courses: HMPD 306, ECON 211, AGSC 212 or other undergraduate micro-economics course pending approval of course instructor.

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 healthcare industry, as well as tools for generating health policy documents.

HMPD 365 Practicum 0.30; 2 cr.
A course that constitutes an administrative residency program in a healthcare setting such as a hospital, insurance facility, governmental or non-governmental agency, or any other healthcare 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. PBHL 399A.

HMPD 366 Practicum 0.30; 1 cr.
Practicum for students who receive a partial waiver. Prerequisite: PBHL 399A.

Center for Research on Population and Health (CRPH)

A/Director:	McCall, Stephen
Affiliates:	Campbell, Oona; Fahme, Sasha; Jamaluddine, Zein; Makhlouf, Carla; Millet, Christopher

The Center for Research on Population and Health (CRPH) leads and supports methodologically robust research at the intersection of population and health to improve the health and well-being of populations in Lebanon, the Arab region and globally.

CRPH is a hub for high-impact population and health research. We invest in people through training and capacity building and provide infrastructure for the conduct of rigorous research.

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. 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
Affiliates:	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
Instructors of Public Health Practice:	Abou Samra, Clara; Bou Karroum, Lama; Fadlallah, Racha; Jamal, Diana

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

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)

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

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

- 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

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.