### Dept. Epidemiology and Population Health

**Faculty of Health Sciences**

**Epidemiology & Biostatistics**

**EPHD 203 (3 credits)**

**Fall 2023/2024**

**COURSE SYLLABUS**

**Course Instructor**

Khalil El Asmar, PhD

Assistant Professor

Office : Van Dyck Bldg. / room: 215

Office hours : By appointment

Office extension : 4567

Email : [ke05@aub.edu.lb](mailto:ke05@aub.edu.lb)

**Lab Instructors**

Nour Abou Khalil: MSc, MPH

PhD candidate

Office : Van Dyck Bldg. / room: 218

Office hours : by appointment (via email)

Office extension : 4653

Email : nma122@mail.aub.edu

Fadia M. Shebbo, MSc

PhD candidate

Office : Van Dyck Bldg. / room: 218

Office hours : by appointment (via email)

Office extension : 4653

Email : fms38@mail.aub.edu

**Class time and location**

Lecture

Tuesday 16:30-17:59 (EH, HCOM, MIS)

Wednesday 14:00-15:29 (MLSP)

Lab sessions

Thursday (MLS) 15:00 - 17:00 Van Dyck Hall 103

Friday (MLS) 12:00 – 14:00 Van Dyck Hall 201

Friday (EH, HCOM, MIS) 13:00 – 15:00 Van Dyck Hall 103

Friday (EH, HCOM, MIS) 15:00 – 17:00 Van Dyck Hall 103

**Course Description**

An introductory course offered to undergraduates covering the basic principles of Epidemiology and Biostatistics. This course introduces students to the types and sources of epidemiological data, common measures of morbidity and mortality, the design and analysis of various epidemiological study designs, and the main biases and issues that threaten data validity. The course also covers exploratory data analysis; and introduces students to statistical techniques commonly used in the analysis of epidemiological data. The lab sessions for the epidemiology sessions will be in the form of discussion of practice questions or articles.

**By the end of the course, students should be able to:**

1. Identify and apply the rubrics of epidemiology for describing public health problems
2. Differentiate between various measures of morbidity and mortality
3. Identify and evaluate key sources of epidemiological data
4. Describe and compare various epidemiologic study designs
5. Calculate and interpret common measures of association
6. Summarize, organize, and interpret epidemiological data
7. Apply basic probability concepts
8. Apply basic principles of statistical inference
9. Carrying out hypothesis testing
10. Recognize ethical issues in all stages of epidemiological research

###### Recommended book(s) & Tool(s)

***Reference for Epidemiology***

Gordis L. Epidemiology. Philadelphia: Pennsylvania, WB Saunders Co.; 2019 6th edition.

***Reference for Biostatistics***

Lisa M. Sullivan: Essentials of biostatistics in Public Health, 4th Edition, Jones and Barlett Learning, 2019.

**Student Evaluation**

Class attendance: 5%

TBLs: 5 best grades out of the 8 TBLs: 10% each; 50% total. Learning objectives: 1 through 7

Exam 1: 20%: 1 through 8

Exam 2: 25%: 1 through 10

**Exams/assignments** Students are expected to take the examinations on the agreed upon scheduled date and time. Make-up examinations are not allowed except under very unusual and convincing circumstances. Students who fail to take the examinations on the scheduled date without written permission of the course instructor will receive a grade of F on the examination. Students are expected to attend all assigned lab sessions and to successfully complete all lab assignments. Failure to do so will be reflected in the overall course evaluation. Students will be asked to work on assignments individually.

**Absenteeism** Students who miss more than one-fifth of the sessions of any course in the first ten weeks of the semester are dropped from the course

**Cheating and Plagiarism** Cheating and plagiarism will not be tolerated. Review the Student Code of Conduct in your handbook and familiarize yourself with definitions and penalties. If you’re in doubt about what constitutes plagiarism, ask your instructor because it is *your* responsibility to know. The American University of Beirut has a strict anti-cheating policy. Penalties include failing marks on the assignment in question, suspension or expulsion from University and a permanent mention of the disciplinary action in the student’s records.

**Students with Special Needs**

AUB strives to make learning experiences accessible for all. If you anticipate or experience academic barriers due to a disability (such as ADHD, learning difficulties, mental health conditions, chronic or temporary medical conditions), please do not hesitate to inform the Accessible Education Office. In order to ensure that you receive the support you need and to facilitate a smooth accommodations process, you must register with the Accessible Education Office (AEO) as soon as possible: accessibility@aub.edu.lb; +961-1-350000, x3246; West Hall, 314.

**Non-Discrimination – Title IX – AUB**

AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University’s non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University’s Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at www.aub.edu.lb/titleix. To report an incident, contact the University's Title IX Coordinator Trudi Hodges at 01-350000 ext. 2514, or titleix@aub.edu.lb. An anonymous report may be submitted online via EthicsPoint at www.aub.ethicspoint.com.

**FALL 2023-2024 SCHEDULE**

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| **Week 1 (28 Aug-1 Sept)** | ***Lect #1: Introduction to epidemiology and its rubrics*** |
| *Lab: Assigning groups and introduction to lab instructors* |
| **Week 2 (4 – 8 Sept )** | ***Lect #2: Measures of Morbidity and Mortality (sources of epi data VOP)*** |
| *TBL: Application on Measures of Morbidity and Mortality* |
| **Week 3 (11-15 Sept)** | ***Lect #3: descriptive statistics*** |
| *TBL: descriptive statistics* |
| **Week 4 (18-22 Sept)** | ***Lect #4: Cross sectional study designs*** |
| *TBL: cross sectional studies* |
| **Week 5 (25-29 Sept)**  *\*27 sept Prophet’s birthday* | ***Lect #5: Case-Control (VOP)*** |
| *TBL: Case-Control* |
| **Week 6 (2-6 Oct)** | ***Lect #6: Cohort Studies (VOP)*** |
| *TBL: Cohort-Studies* |
| **Week 7 (9-13 Oct)** | ***Lect #7: Continuous probability*** |
| *TBL: continuous probability* |
| **Week 8 (16-20 Oct)** | ***Lect #8: Confidence interval estimation*** |
| *TBL: Confidence interval estimation + problem solving* |
| **Week 9 (23-27 Oct)** | ***Lect #9: Hypothesis testing 1*** |
| *Lab: Application on Hypothesis testing* |
| **Week 10 (30 oct-3 Nov)** | ***Lect #10: Hypothesis testing 2*** |
| *Lab: Application on Hypothesis testing* |
| **Week 11 (6 – 10 Nov)** | ***Exam I (lectures 1 to 10)*** |
| *No Lab* |
| **Week 12 (13-17 Nov)** | ***Lect #11: Hypothesis testing 2*** |
| *Lab: Application on HT2* |
| **Week 13 (20-24 Nov)**  *\*22 Nov Ind Day* | ***Lect #12: Experimental design (VOP)*** |
| *TBL: Experimental design* |
| **Week 14 (25 Nov–1 Dec)** | ***Lect #13: Ethics in epidemiology (Reading material)*** |
| *No Lab* |
| **TBA** | ***Final Exam (All lectures)*** |