



## **DRAFT SYLLABUS**

**Introduction to Epidemiology – West Africa**  
**Instructor: Adolphina Addoley Addo-Lartey, PhD**  
**Language of Instruction: English**  
**UO Credits: 5**  
**Contact Hours\*: 45**

**ACCRA, GHANA**

### **COURSE DESCRIPTION**

Epidemiology is the study of the distribution and determinants of health and illness in human populations and the application of this study to control health problems. The purpose of this course is to introduce students to the basic principles and methods of epidemiology and to demonstrate their applicability in the field of public health, especially focusing on the role of epidemiology in disease investigation in West Africa.

Introduction to Epidemiology – West Africa, starts with a definition of epidemiology, introduces the history of modern epidemiology, and provides examples of the uses and applications of epidemiology. Measurement of morbidity and mortality, and a summary of the different types of study designs and their strengths and limitations. An introduction to statistical methods sets the scene for understanding basic concepts and available tools for analyzing data and evaluating the impact of interventions. A fundamental task of epidemiologists is to understand the process of making causal judgements. The applications of epidemiology to broad areas of public health including chronic non-communicable disease, communicable disease epidemiology, and disease surveillance are also outlined in this course.

To provide practical context for understanding disease epidemiology and investigation, all examples, assigned readings and in-class discussions will make use of epidemiological publications from West Africa countries.

The course will comprise three major segments:

1. The epidemiologic approach to disease intervention
2. Using epidemiology to identify the cause of disease
3. The practice of epidemiology

### **COURSE OBJECTIVES**

The statements below describe the desired knowledge, skills, and behaviors that students should have obtained upon completing this course.

- Define what epidemiology is and explain the relevance of epidemiology in public health.
- Understand the historical context and scope of epidemiology.
- Identify basic measures in epidemiology and interpret health status indices based on these data.
- Explain the critical differences between epidemiologic descriptive and analytic study designs, the measures that can be estimated from each, as well as strengths and limitations of these designs.
- Interpret basic of measures of morbidity and mortality.
- Explain causality in epidemiological studies.
- Communicate the role of epidemiology in public health surveillance.
- Discuss the purpose and challenges in disease surveillance.
- Describe the steps of an outbreak investigation.

## **INSTRUCTIONAL METHODOLOGY**

The course structure will consist of assigned readings (case studies), lectures, in-class case study discussions, exercises and student presentations. Each class will involve a lecture as well as exercises which are meant to complement and apply (as opposed to repeat) the material in the text. Hence completing the assigned readings and homework on time is essential for success in the course. There will be one guest lecturer, who will introduce an area of public health epidemiology, reinforce epidemiological principles, and/or provide relevant examples to place epidemiological concepts in context. Additional reading materials will be provided as necessary.

## **METHOD OF EVALUATION (GRADING)**

### **Media Project/Presentation - Exam**

This project will address how epidemiological findings are filtered through the media. What do media reports convey correctly and what are conveyed incorrectly? Students will be asked to choose an epidemiologic health-related statement from the popular press (e.g. from a newspaper, magazine, or on a cereal box, wine bottle, billboard, general websites, etc.) Students will then find an epidemiologic journal article (e.g. medical or public health journal) which relates to this statement. In a brief, structured oral presentation, the student will compare the journal article's conclusions with those from the media report. Further instructions including length of presentation time will be given in class. The presentation will be graded on a 100 point scale. The grade will be based two-thirds on content: collection and analysis of literature, critical thinking, and application of course concepts; and one-third on form clear organization, well prepared and delivered presentation.

All assignments should reflect independent work with the exception of group projects which should reflect the contributions of each member of the group. Course grade for the class will be distributed as follows:

In class exercises	20 %
Homework Assignments	20 %
Media Presentation - Exam	60 %

## COURSE OUTLINE

### Course Delivery Schedule

Week	Date	Topic	Comments
1	08/15/18	Introduction to epidemiology	<ul style="list-style-type: none"><li>• Definition, scope and uses of epidemiology</li><li>• History of epidemiology</li><li>• Relevance of epidemiology</li><li>• Case study “Cholera”</li></ul>
2	08/22/18	Introduction to epidemics	<ul style="list-style-type: none"><li>• Define epidemic, endemic, pandemic</li><li>• Describe epidemic patterns</li><li>• Case study “Ebola: The Plague Fighters”</li></ul>
3	09/05/18	Disease surveillance and screening	<ul style="list-style-type: none"><li>• Define surveillance and uses of surveillance</li><li>• Case study “Tuberculosis”</li></ul>
4	09/12/18	Guest Lecture	Disease Surveillance and Outbreak Investigation in Ghana
5	09/19/18	The epidemiologic approach	<ul style="list-style-type: none"><li>• Case definitions</li><li>• Using counts and rates</li><li>• Case study “Measles”</li></ul>
6	09/26/18	Measures of disease Frequency	<ul style="list-style-type: none"><li>• Measures used for disease morbidity and mortality</li><li>• Examples of measures of morbidity and mortality</li></ul>
7	10/03/18	Introduction to epidemiological study designs	<ul style="list-style-type: none"><li>• Describe different epidemiological studies</li><li>• Understand when to use what study design</li></ul>
8	10/10/18	Concept of disease occurrence - Causation	<ul style="list-style-type: none"><li>• Understand what causality is in epidemiology</li><li>• Describe the role of hosts and agents in disease occurrence</li><li>• Case study “Anthrax”</li></ul>
9	10/17/18	Epidemiology for global health	<ul style="list-style-type: none"><li>• Demonstrate how epidemiology is all around us using an example from the Movie “Pandemic”</li></ul>
10	10/24/18	Literature critique	<ul style="list-style-type: none"><li>• Learn how to review an epidemiologic article<ul style="list-style-type: none"><li>• Evaluate alternative explanations for published findings</li></ul></li><li>• Case study “To be determined”</li></ul>

11	10/31/18	Natural History and Spectrum of Disease	<ul style="list-style-type: none"> <li>• Understand the progression of a disease process</li> <li>• Know what is meant by incubation period</li> <li>• Case study “HIV”</li> </ul>
12	11/07/18	Chain of Infection	<ul style="list-style-type: none"> <li>• Understand the concept of human reservoir</li> <li>• Identify Modes of disease transmission</li> <li>• Case study “Dengue and Rift Valley Fever”</li> </ul>
13	11/14/18	Epidemiology and disease prevention – Chronic non-communicable diseases	<ul style="list-style-type: none"> <li>• Understand the importance of disease prevention – non communicable diseases</li> <li>• Know the levels of disease prevention</li> <li>• Case study “Diabetes, Hypertension, Cardiovascular disease &amp; Cancer”</li> </ul>
14	11/21/18	Communicable diseases – epidemiology surveillance and response	<ul style="list-style-type: none"> <li>• Understand the burden of communicable diseases</li> <li>• Examine some emerging and re-emerging infections</li> <li>• Case study “Yellow Fever and Influenza”</li> </ul>
15	11/28/18	Media Presentation – Exam	<ul style="list-style-type: none"> <li>• Locate an epidemiologic article that underlies a health condition/statement in the media</li> <li>• Summarize the article by describing the methods, indicating the principal findings, and highlighting the potential pitfalls</li> <li>• Assimilate information from the media and the article to create own conclusions</li> </ul>

## **COURSE READINGS**

Epidemiology: with STUDENT CONSULT Online Access, 4e (Gordis, Epidemiology)

Author: Leon Gordis MD MPH DrPH

Publisher: Saunders; 4th edition (May 28, 2008)

ISBN-13: 978-1416040026

ISBN-10: 1416040021

Basic Epidemiology, 2nd Edition. Authors: R. Bonita, R. Beaglehole, T. Kjellström.

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Standard citation needs to include: APA

## **COURSE INSTRUCTOR**

Dr. Adolphina Addo-Lartey holds a BSc (Honors) from the University of Ghana in Biochemistry and Nutrition, an MS from Iowa State University in Human Nutrition, and a PhD in Public Health from the University of Massachusetts, Amherst, USA. Her research primarily focuses on epidemiological studies in women’s health and maternal/infant health care. She has done extensive research relating to nutritional factors influencing reproductive health outcomes and chronic disease risk and health issues in Ghana. She is experienced in research and trial design, proposal development, data management and statistical analysis. Dr. Addo-Lartey is faculty at the University of Ghana’s School of Public Health, where she teaches undergraduate and postgraduate courses in the Department of

Epidemiology and Disease Control. Dr. Addo-Lartey is also an adjunct faculty at the College of Global Public Health (NYU) and NYU Accra where she teaches “Assessing Community Health Needs and Resources” and “Epidemiology for Global Health”, respectively.

### **Academic Misconduct**

The University Student Conduct Code (available at [conduct.uoregon.edu](http://conduct.uoregon.edu)) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students’ obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at [researchguides.uoregon.edu/citing-plagiarism](http://researchguides.uoregon.edu/citing-plagiarism).

### **Prohibited Discrimination and Harassment Reporting**

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at [safe.uoregon.edu](http://safe.uoregon.edu). To get help by phone, a student can also call either the UO’s 24-hour hotline at 541-346-7244 [SAFE], or the non-confidential Title IX Coordinator at 541-346-8136. From the SAFE website, students may also connect to Callisto, a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at [respect.uoregon.edu](http://respect.uoregon.edu) or [aaeo.uoregon.edu](http://aaeo.uoregon.edu) or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216 for help. As UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at [Discrimination & Harassment](#).

The instructor of this class, as a Student Directed Employee, will direct students who disclose sexual harassment or sexual violence to resources that can help and will only report the information shared to the university administration when the student requests that the information be reported (unless someone is in imminent risk of serious harm or a minor). The instructor of this class is required to report all other forms of prohibited discrimination or harassment to the university administration.

Specific details about confidentiality of information and reporting obligations of employees can be found at [titleix.uoregon.edu](http://titleix.uoregon.edu).

### **Mandatory Reporting of Child Abuse**

UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. This statement is to advise you that your disclosure of information about child abuse to a UO employee may trigger the UO employee’s duty to report that information to the designated

authorities. Please refer to the following links for detailed information about mandatory reporting: [Mandatory Reporting of Child Abuse and Neglect](#).