

HS329F: Introduction to Epidemiology
Dr. Amy Shafir
Fall 2017, Module 2, Heller

COURSE INFORMATION

Instructor: Amy Shafir, ScD, MSc
Brandeis University & Boston Children's Hospital
ashafir@brandeis.edu
Office hours: Thursdays 1-2pm, Location: G5

Teaching Assistant: Sidney Amankwah, MS
samankwah@brandeis.edu
Office hours: Wednesdays, Location: G54
2-3pm on 11/1, 11/8, 11/15
12-1pm on 11/29, 12/6, 12/13

Lecture: Thursdays, 2-4:50pm, Location: G2
Course dates: 10/26, 11/2, 11/9, 11/16, 11/30, 12/7
Exam: 12/14

COURSE DESCRIPTION

This course provides an introduction to the field and tools of epidemiology, enabling students to gain familiarity with the field, to become conversant in the methods and approaches used by epidemiologists, and to apply epidemiologic principles to issues in public health and medicine, and related fields. Key topics in the course will cover measures of disease occurrence and association, study design, and confounding and other biases.

Epidemiology is the study of health at the population level. In contrast to medicine, which is the study of health at the individual level, epidemiology looks at the causes and outcomes of disease in groups of people. Epidemiology is the science underlying public health, and is used by individuals in almost all arenas of health including issues of environmental health, medicine, injuries, genetics and social disparities, among other topics. Statistical methods are often used to investigate the epidemiology of a disease or health issue, and the course will introduce basic biostatistics as part of the science of population health. The goal of the course is to enable students to become informed and intelligent consumers of epidemiologic literature and to provide a basis for further studies and careers in the health and public health fields.

The course will emphasize understanding and interpretation. Assignments will focus on applying epidemiologic concepts to issues and understanding the use of the methods of this field. Quantitative reasoning underlies understanding of many epidemiologic concepts, so quantitative methods will be a substantial component of the course. Written and verbal communication is a critical component of understanding and interpretation, so these skills will be emphasized equally with quantitative skills. There are no prerequisites for this course; all concepts will be fully introduced and explained so that students from all academic backgrounds will be able to fully participate in and benefit from the course. Basic algebra concepts will be used in the course and assumed to be understood by all students.

This course is a core requirement in the Heller MS Program in Global Health Policy and Management but is open to all Brandeis graduate students.

DISABILITY STATUS

If you are a student with a documented disability on record at Brandeis University and wish to have an accommodation made for you in this class, please see me immediately.

ACADEMIC INTEGRITY

Academic integrity is central to the mission of educational excellence at Brandeis University. Violations of University policy on academic integrity may result in failure in the course or on the assignment, and could end in suspension from the University. ***If you are in doubt about the instructions for any assignment or exam in this course it is your personal responsibility to ask for clarification. Please make sure to read the full academic integrity policy.***

Plagiarism: Each student is expected to turn in work completed independently, except when assignments specifically authorize collaborative effort. Collaborations must be noted in writing on the first page of any assignment in which such is permitted. Failure to note collaborations will be considered plagiarism. **You must cite sources with proper citation whenever they are used, whether those sources are published or unpublished (e.g. internet web sites).** Assignments that appear to be instances of plagiarism may be returned to the student for revision, considered incomplete, or reported to the university, at the discretion of the instructor. Such behavior will also be considered a serious deficiency in grading pertaining to the particular assignment. ***If you are unsure about what constitutes plagiarism it is your personal responsibility to ask for clarification.***

COURSE MATERIALS

BOOK: Leon Gordis, *Epidemiology*, 5th Edition, Elsevier, 2014

The book may be obtained at the bookstore and is also available online through the library. The 4th edition of the book is available on reserve at the library.

LATTE: This will be our main platform for course communication. LATTE will have the most up-to-date course news, including information on readings, course cancellations (e.g. due to weather), lectures, and activities. **We expect you to be active on LATTE.**

Additional text resources (optional):

- Rothman, *Epidemiology: An Introduction*, Oxford University Press, 2002.
- Gonick and Smith, *The Cartoon Guide to Statistics*, HarperCollins, 1993.

CLASS PERFORMANCE AND EXPECTATIONS

Classroom etiquette

- Cell phones off, per Heller School classroom policy.
- Please do not attend class if you are ill. Please let the TA know you'll be absent before the start of class, when at all possible. Notification is not required.
- Come to class prepared and on-time.
- Class participation, including asking questions and active listening, is expected. Respect of fellow students and instructors is of utmost importance at all times to create a collaborative, productive learning environment.

Homework assignments:

Homework assignments are an opportunity to practice the concepts covered in class. They will include practice with calculations, interpretation of epidemiologic concepts, and writing about epidemiologic topics (not necessarily all in each assignment). **You may consult with other students in the class in the completion of these assignments but you must each turn in your own copy of the completed work, and you must indicate on the first page anyone with whom you consulted during your completion of the assignment.** Failure to indicate collaborators in writing will be considered an instance of plagiarism and handled as described above. Please keep in mind that you and your collaborators might receive different grades on an assignment on which you collaborated because each student writes his or her own homework, and the final written responses may be different. As noted above, writing in epidemiology is an important part of accurately conveying the information.

There will be **5 written homework assignments** (see 'Class Schedule' for due dates). Homework assignments will be made available to you on the course website usually one week before the due date. All homework assignments must be submitted as either a Word document or PDF document **online through the course LATTE site by 2:00pm** on the due date.

Late homeworks will be penalized by 50%. *If something unforeseen arises and you are not able to submit your homework on the due date, we expect you to email the instructor *ahead of time*.*

Homework must be type-written. Pay close attention to specified length limits on each question. ***Points will be deducted or sections unread if these specifications are not followed.*** Part of completing the assignment is doing so as outlined. Concise and precise writing is a crucial component of public health.

Exams: There will be 1 in-class exam at the end of the semester. The exam may include any material (e.g. lectures, readings and homework) covered since the beginning of the course. The exam will be closed-book though you may bring one double-sided hand-written 8 ½ x11 page of notes and a calculator [not your phone] to assist you during the exam if you choose. **There are no makeups for the exam, with the exception of documented medical or similar reasons. If you arrive late, you must complete the exam during the time allotted.**

We will hold an optional review session for the final exam on **Monday, December 11th from 12-1pm in G1.**

Regrading policy: Students who wish to dispute the grading of homeworks or exams for reasons other than administrative errors may submit their work to the course instructor to be regraded. **However, students should be aware the entire homework/exam will be re-evaluated.**

Class participation: Class participation and attendance, including active listening and class discussions, is expected. In-class submission and discussion of discussion questions are also included.

Grading:

5 Homework assignments @12% each	60%
Final Exam	30%
Class Participation	10%
Total	100%

Note: There may be minor changes to the course schedule during the semester and some reading will be announced closer to the assigned dates. Updates will be announced in class and posted to LATTE. Please make sure to keep track of updates, additions and modifications to schedule, topics and particularly assigned readings. ***It is your responsibility to keep track of announced changes.***

SESSION	DATE	TOPIC/EXERCISE	READINGS (GORDIS, 5 TH EDITION)	ASSIGNMENT DUE
<i>UNIT 1: EPIDEMIOLOGIC DESCRIPTION</i>				
1	10/26	1. Course Overview 2. Introduction to epidemiology 3. Measures of occurrence	Chapters 3 & 4	
2	11/2	4. Measures of association 5. Descriptive studies	Chapters 10, 11, & 12	Hmwk 1
<i>UNIT 2: ANALYTIC STUDY DESIGNS</i>				
3	11/9	6. Cohort 7. Case-control	Chapters 9 & 10	Hmwk 2
4	11/16	8. Randomized trials	Chapter 7	Hmwk 3
<i>UNIT 3: UNDERSTANDING CAUSES OF DISEASE</i>				
		9. Causal inference	Chapter 14	
	11/23	NO CLASS – Thanksgiving		
5	11/30	10. Confounding 11. Effect modification	Chapter 15	Hmwk 4
6	12/7	12. Other biases 13. Study critique	Chapter 15	Hmwk 5
7	12/11	<i>Optional review session (12-1pm) – Room G1</i>		
8	12/14	FINAL EXAM		