

January 15, 2015

PH150A Spring 2015
Introduction to Epidemiology and Human Disease
University of California, Berkeley School of Public Health

Professors:

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Graduate Student Instructors:

Calliope Hologue (*Head*)
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GSI Office Hours and Location:

**Hours and location will be announced
in first discussion section and posted
on bCourses (*subject to change*)**

Office Hours will be posted on bCourses for both Professors. Also, see “Face Time” Hours description below.

Lecture: Monday and Wednesday 2:00 – 4:00 PM
Room: 245 Li Ka Shing
CCN# 75482
Units: Four (4)

PH150A Section Schedules:

<u>Section #</u>	<u>Day</u>	<u>Time</u>	<u>Location</u>	<u>GSI</u>
101	Thursdays	01:00 - 02:00 PM	2062 VLSB	Calliope H.
102	Thursdays	01:00 - 02:00 PM	101 Wheeler	Brooke R.
103	Thursdays	01:00 - 02:00 PM	109 Morgan	Chris A.
104	Thursdays	08:00 - 09:00 AM	107 GPB	Amanda M.
105	Thursdays	08:00 - 09:00 AM	110 Barker	Erika G.
106	Thursdays	12:00 - 01:00 PM	2038 VLSB	Calliope H.
107	Fridays	09:00 - 10:00 AM	2011 VLSB	Hyunju K.
108	Fridays	11:00 - 12:00 PM	100 Wheeler	Amanda M.
111	Thursdays	04:00 - 05:00 PM	110 Barker	Erika G.
112	Thursdays	04:00 - 05:00 PM	2070 VLSB	Brooke R.
113	Thursdays	08:00 - 09:00 AM	201 Giannini	Chris A.
114	Fridays	10:00 - 11:00 AM	201 Giannini	Hyunju K.

Course Description:

Epidemiology is the study of the distribution and determinants of disease in human populations. This course introduces epidemiologic methods with the goal of teaching students to read critically and interpret published epidemiologic studies in humans. The course also exposes students to the epidemiology of diseases and conditions of current public health importance in the United States and internationally.

Course Materials:

The **required textbook** is *Gordis L., Epidemiology, 5th edition. 2014 WB Saunders Co. Philadelphia, Pennsylvania*. It is available at the campus bookstore for purchase and on reserve in the Public Health Library at University Hall.

Selected chapters will be assigned from the textbook: *Merrill R.M. Fundamentals of Epidemiology and Biostatistics. 2013 Jones and Bartlett*. See syllabus and bCourses. The textbook is also on reserve in the Public Health Library at University Hall.

An iClicker is **required**, and can be purchased new or used at the campus bookstore. See <http://ets.berkeley.edu/clickers> for information regarding iClicker if you have not had prior experience with the iClicker. You will need to register your iClicker online. Directions on how to do this will be posted on bCourses.

All additional course related materials such as videos, articles, websites, and pdf slide presentations will be posted on **bCourses** at bcourses.berkeley.edu. (Please note: Your log-in is your Calnet ID and Passphrase and you must be registered for PH150A.) Students on the waitlist should e-mail Tony Soyka at sphug@berkeley.edu after the first day of class to determine whether there is room to be registered. We encourage interested students who are on the wait list to attend the class for at least the first week.

Learning Objectives:

Through lectures, readings, and course activities, students will develop the capacity to:

- Explain the role of epidemiology as a tool to address public health problems.
- Classify and compare the most commonly used epidemiologic study designs, from implementation through analysis, including the strengths and weaknesses of each design for contributing knowledge about human disease.
- Identify sources of error, their impact on the usefulness of epidemiologic studies and methods for identifying and reducing error in research.
- Critically read and understand published epidemiologic studies.
- Conduct electronic library research into diseases and health conditions in the U.S. and internationally.

Course Requirements:

- A prior course in statistics (PH142 or STAT131A) is a requirement for this course. Students in this course should be familiar with basic concepts of probability, sampling distributions, p-values, confidence intervals, parametric and nonparametric test statistics, and simple regressions. PH142 may be taken concurrently.
- Read the Gordis text and other assigned readings and watch assigned videos before each lecture. Preparation for class is essential for participation.
- Bring your iClicker to every lecture session. **No excuses will be accepted for missed iClicker points.** These include but are not limited to: late to class, forgot it at home, dead batteries, iClicker not registered, etc. If your iClicker is not working, it is your responsibility to resolve the problem or get a new one.
- The iClicker will be used in most sessions to poll students' understanding of course material. **iClicker answers will be recorded and incorporated into your overall course grade.** At the end of semester, correct and incorrect answers to all questions will be tallied. A total of 10% of incorrect or missing answers will be dropped from each student's final iClicker participation points.
- A group project to be completed (**detailed information to be posted on bCourses and discussed in class**).
- Two in-class midterm quizzes. Midterm quizzes will be based on all homework, lecture material (including practice problems and guest lectures, and bCourses videos) and assigned readings, including Gordis chapters.

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- One final examination. The final exam will be based on all homework, lecture material (including practice problems and guest lectures) and assigned readings, including Gordis chapters.
- Homework assignments due in weekly discussion sections.
- Participation in discussion session is required. Attendance and participation in lecture is strongly recommended, as it will be factored into your course participation and iClicker grade, and therefore will have an impact on your overall course grade.

*****Laptop and phone policy: PH150A has a strict laptop, iPad and cell/smart phone use policy. They are not allowed during lecture or discussion sections. This important policy will be discussed the first day of class.**

Grading Breakdown:

- In-class Midterm Quiz #1 15%
- In-class Midterm Quiz #2 15%
- Final Exam 30%
- Group Project 15%
- Homework/Discussion Attendance/Participation..... 10%
- iClicker and Lecture Attendance/Participation..... 10%
- Professor “Face Time..... 5%

Statistics Assessment:

- A prior course in statistics (PH142 or STAT131A) is a requirement for this course. If you have not successfully completed PH142 or STAT131A at Berkeley, you will be asked to complete a short statistics assessment in order to stay enrolled in the course. This assessment of your current understanding of statistical concepts relevant to epidemiology is an important part of ensuring student success in the course. **The test will be held the first day of class, Wednesday, Jan 21st,** and a passing grade is required to remain enrolled in the course. Concurrent enrollment in an appropriate statistics course will be taken into consideration.

Lecture Slides:

- Draft lectures slides for each session will be posted by 10 a.m or earlier, so they will be available to students before class at 2 p.m. Following each lecture, a final version of lecture slides will be posted. Slides for guest speakers may not be available until after class. **Students will be responsible for all material included in the final (labeled) version of each lecture, including guest speakers, and video material on bCourses.**

Guest Lectures:

- These sessions are **mandatory, interactive and require student participation.** The format for guest lectures will be described in class.

Discussion Sections:

- Discussion sections will begin on Thursday, January 22nd and Friday, January 23rd. You must attend the discussion section for which you are enrolled. We won't be able to move students around and cannot accommodate section hopping, so please make sure you can attend your enrolled section. Locations of discussion sections are listed above.
- Homework assignments will be posted on bCourses a week before they are due to be discussed and reviewed in section (see below).

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- A mini-quiz will be given at the beginning of each section. There are no make-ups! Be sure to get to class on time.

Homework Assignments:

- Assignments are required and due at the end of the discussion section as a hard copy. Emailed assignments will **not** be accepted.
- Assignments must be typed. Tables, diagrams, formulas, and graphs may be hand written.
- The GSIs will review select homework problems in class. You can correct wrong answers on your paper and add additional comments in pen.
- Assignments will be graded as:
 - 1 point = Not all problems attempted at home.
 - 2 points = All problems attempted at home with sufficient effort.
 - 3 points = All problems attempted at home with sufficient effort, any incorrect answers corrected based on class discussion, and additional information added from discussion section. **Attendance in discussion section is required on the date the assignment is due.**
- If you are not able to attend a discussion section, speak with your GSI to make arrangements to turn in your homework *before* that week's discussion section; this assignment can receive a maximum of 2 points. Sometimes discussion section will have an in-class activity. If you miss an in-class activity because you miss a discussion section, you will have one week to complete the activity and submit it to your GSI; you can receive a maximum of 2 points on this activity.
- Late assignments will **NOT** be accepted.
- Answers to the assignments will be posted to bCourses Friday evening. It is your responsibility to check your answers against the posted answer key.

Professor "Face Time":

Sometime within the first 3-4 weeks of the semester, you will be **required** to attend the office hours of either Professor Barcellos or Mujahid for a 5-minute introduction called "Face Time." This is an opportunity for you and the Professors to break the ice. Extended office hours will be available during these first four weeks. If your last name begins with the letters **A-L**, you are assigned to see **Professor Barcellos**. If your last name begins with the letters **M-Z**, you are assigned to see **Professor Mujahid**. "Face Time" hours via web link for sign-up will be posted on bCourses. Professors Barcellos and Mujahid will monitor attendance of these sessions.

Meet Your Classmates:

Before each lecture, a few students will be "introduced" very briefly to the class through the presentation of their pictures and select facts (e.g. name, year, major, what he/she likes about public health, etc.). During the first lecture, you will fill out an information sheet and indicate whether or not you are willing to participate.

Exam Conflicts:

If you have a conflict with either of the midterm quizzes or the final examination, please notify one of the course instructors by the end of the second week in writing. **The only acceptable reason for missing an exam is a medical or family emergency with supporting documentation.** Please note that at this time, no alternative exam dates will be given.

The final exam will be held **Tuesday, May 12, 2015** from **11:30 am – 2:30 pm**.

Students with Disabilities:

Accommodations will be made for students with disabilities; please see: <http://www.dsp.berkeley.edu/> for details. Please provide your written request to the instructor(s) and your GSI within the first 2 weeks of the course.

Mental Health:

If you are experiencing stress, anxiety, or other forms of distress during the semester, there are many resources available to you.

All registered Berkeley students are eligible to use Counseling Psychological Services. You do not have to purchase the Student Health Insurance Plan to use these services. The first five counseling sessions are free for registered Berkeley students.

UC Berkeley, Counseling Psychological Services:

- Please call (510) 642-9494 or stop by the office on the 3rd floor of the Tang Center to make an appointment with a counselor.
- **Drop-in counseling for emergencies:** Monday - Friday, 10:00am - 5:00pm
- **After hours counseling:** In the case of emergencies at night or on weekends, call [\(510\) 643-7197](tel:5106437197) for free assistance and referrals. Request to speak with a counselor.

24 Hour Crisis Hotlines:

- Alameda County Crisis Line: (offers confidentiality, TDD services for deaf and hearing impaired callers and translation in 140 languages) Call 1-800-309-2131
- National Suicide Prevention Lifeline: Call 1-800-273-TALK.
- National HopeLine Network: Call 1-800-SUICIDE

Academic Dishonesty:

As with all courses at UC Berkeley, academic dishonesty is not acceptable. The following definitions and guidance are from the Student Judicial Affairs Office of Student Life at UC Berkeley – *Report of Academic Dishonesty and Plagiarism Subcommittee (June 2004)*.

“Academic dishonesty is any action that may result in creating an unfair academic advantage for oneself or unfair academic disadvantage for another member of the academic community. Therefore, any test, paper, and/or homework assignment submitted by you that bears your name should be your own original work.”

“In all of your assignments, including your homework or drafts of papers, you may use words or ideas written by other individuals in publications, web sites, or other sources, **but only with proper attribution**. ‘Proper attribution’ means that you have fully identified the original source and extent of your use of the words or ideas of others that you reproduce in your work for this course, usually in the form of a footnote or parenthesis. If you are not clear about the expectations for completing an assignment or taking a test or examination, be sure to seek clarification from your instructor or GSI **beforehand**.” Please refer to bCourses (Policies and Procedures for PH150A, Spring 2015) for resources on plagiarism and proper citation guidelines.

Cheating and plagiarism are forms of academic dishonesty and are NOT TOLERATED under any circumstance. Any evidence of academic dishonesty will result in a score of zero (0) on that assignment or exam, and will be reported to the Student Judicial Affairs. This will result in a permanent scar on your academic record.

“You should keep in mind that as a member of the campus community, you are expected to demonstrate integrity in all of your academic endeavors and will be evaluated on your own merits. So be proud of your academic accomplishments and help to protect and promote academic integrity at Berkeley. The consequences of cheating and academic dishonesty—

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including a formal discipline file, possible loss of future internship, scholarship, or employment opportunities, and denial of admission to graduate school—are simply not worth it.”

PH150A Course Schedule:

***All chapters under assigned reading refer to Gordis, unless otherwise noted.**

Date of Instruction	Topic	Instructor	Reading*
Week 1			
Wed - Jan 21, 2015	Lect 1: Introduction to Epidemiology/Course Overview	L. Barcellos M. Mujahid	Chapter 1
	Lect 2: Natural History and Transmission of Disease <i>Statistics Assessment (see bCourses for info): last 30 min</i>	M. Mujahid	<i>Video</i> /Chapter 2
	Discussion: Introduction and student photos with name cards. Homework Assignment #1 due: Epidemiology of the HIV Epidemic in 10 Minutes: Gapminder	GSIs	
Week 2			
Mon - Jan 26, 2015	Lect 3: Measures of Disease Occurrence I <i>Disease of the Day: Obesity</i> http://www.who.int/mediacentre/factsheets/fs311/en/ http://win.niddk.nih.gov/statistics/	M. Mujahid	<i>Video</i> /Chapter 3
Wed - Jan 28, 2015	Lect 4: Measures of Disease Occurrence II <i>Disease of the Day: Depression</i> http://www.nimh.nih.gov/health/publications/depression-in-children-and-adolescents/index.shtml http://www.who.int/mediacentre/factsheets/fs369/en/	M. Mujahid	Chapters 3, 4
	Discussion: Homework Assignment #2 due: Measures of Disease Occurrence	GSIs	
Week 3			
Mon – Feb 2, 2015	Lect 5: Screening and Diagnostic Tests <i>Disease of the Day: Breast Cancer</i> http://www.who.int/cancer/detection/breastcancer/en/ http://www.cancer.gov/cancertopics/factsheet/detection/probability-breast-cancer	L. Barcellos	<i>Video</i> /Chapters 5, 18
Wed – Feb 4, 2015	Lect 6: Data Collection, Sampling, Review of Statistics <i>Disease of the Day: Cervical Cancer</i> http://report.nih.gov/nihfactsheets/viewfactsheet.aspx?csid=76	L. Barcellos	See bCourses for Merrill Chapters
	Discussion: Homework Assignment #3 due: Screening, Statistics Review	GSIs	

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Date of Instruction	Topic	Instructor	Reading*
Week 4			
Mon - Feb 9, 2015	Lect 7: Study Designs in Epidemiology I: Overview of Study Designs; Randomized Controlled Trials and Cohort studies <i>Disease of the Day: Neural Tube Defects</i> http://www.nichd.nih.gov/health/topics/ntds/conditioninfo/Pages/default.aspx (see all topics under condition info)	L. Barcellos	Chapters 7-9
Wed - Feb 11, 2015	Lect 8: Study Designs in Epidemiology II: Review; Case-Control, Ecological and Cross-Sectional Studies <i>Disease of the Day: Multiple Sclerosis</i> http://www.empr.com/multiple-sclerosis-patient-information-fact-sheet/article/222678/ http://www.healthline.com/health/multiple-sclerosis/facts-statistics-infographic	L. Barcellos	<i>Video</i> /Chapters 9, 10
	Discussion: Homework Assignment #4 due: Study Designs I	GSIs	
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Week 5			
Mon - Feb 16, 2015	Holiday		
Wed - Feb 18, 2015	Lect 9: Ethical Principles in Epidemiologic Research Examples: Studies of Syphilis <i>Disease of the Day: Syphilis</i> http://www.cdc.gov/std/syphilis/stdfact-syphilis.htm	L. Barcellos	<i>Video</i> /Chapter 20 See bCourses for other materials
	Discussion: Homework Assignment #5 due: Study Designs II and Practice Problems & Ethical Principles in Research	GSIs GSIs	
	Schedule Midterm Quiz #1 Review Session		
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Week 6			
Mon - Feb 23, 2015	***MIDTERM QUIZ #1***		
Wed - Feb 25, 2015	Lect 10: Measures of Risk and Association I <i>Disease of the Day: Herpes</i> http://www.cdc.gov/std/herpes/stdfact-herpes-detailed.htm	M. Mujahid	<i>Video</i> /Chapter 11
	Discussion: In class Ethics Case Study NIH Protecting Human Research Participants Certification Required due	GSIs	

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Week 7			
Mon – Mar 2, 2015	Lect 11: <i>Guest Lecture #1: “Outbreak Investigation”</i>	Art Reingold	See bCourses
Wed – Mar 4, 2015	Lect 12: <i>Guest Lecture #2: “Epidemiology of Slum Health and Infection”</i>	Lee Riley	See bCourses
	Discussion: Homework Assignment #6 due: Measures of Risk & Association Part I	GSI	
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Week 8			
Mon - Mar 9, 2015	Lect 13: Measures of Risk and Association II <i>Disease of the Day: Cardiovascular Disease</i> http://www.who.int/mediacentre/factsheets/fs317/en/	M. Mujahid	<i>Video/</i> Chapters 11, 12, 13
Wed - Mar 11, 2015	Lect 14: <i>Guest Lecture #3: “Epidemiologic Investigation of Kerosene Use and Health”</i>	Michael Bates	See bCourses
	Discussion: Homework Assignment #7 due: Measures of Risk and Assoc. Part II	GSI	
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Week 9			
Mon - Mar 16, 2015	Lect 15: Causal Inference in Epidemiology <i>Disease of the Day: Meningitis</i> http://www.who.int/mediacentre/factsheets/fs141/en/	M. Mujahid	Chapter 14
Wed - Mar 18, 2015	Lect 16: <i>Guest Lecture #4: “Epidemiology of Flame Retardants and Children’s Health”</i>	Kim Harley	See bCourses
	Discussion: Homework Assignment #8 due: Causal Inference (British Smokers Study)	GSI	
Fri - Mar 20, 2015	POSTER PROJECT PROPOSALS DUE!	GSI	
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Week 10 Mar 23-27, 2015	SPRING BREAK! ENJOY!		

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Date of Instruction	Topic	Instructor	Reading*
Week 11			
Mon – Mar 30, 2015	Lect 17: Sources of Error in Epidemiology: Bias and Random Error <i>Disease of the Day: Chronic Kidney Disease</i> http://report.nih.gov/nihfactsheets/ViewFactSheet.aspx?csid=34	L. Barcellos	<i>Video/Chapter 15</i> (pg. 262-266)
Wed – Apr 1, 2015	Lect 18: <i>Guest Lecture #5: “Epidemiology of Autism”</i> Discussion: Homework Assignment #9 due: Bias and Random Error **Schedule Midterm Quiz #2 Review Session**	Lisa Croen GSIs	See bCourses
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Week 12			
Mon – Apr 6, 2015	Lect 19: Social Factors in Epidemiologic Studies <i>Disease of the Day: Diabetes</i> http://www.who.int/mediacentre/factsheets/fs312/en/	M. Mujahid	<i>Video/See bCourses</i>
Wed – Apr 8, 2015	***MIDTERM QUIZ #2*** Discussion: Poster Project Working Session	 GSIs	
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Week 13			
Mon – Apr 13, 2015	Lect 20: Confounding <i>Disease of the Day: Pancreatic Cancer</i> http://www.pancan.org/Volunteer/Kintera/Fact%20Sheet%202012%2001%2024.pdf	M. Mujahid	<i>Video/Chapter 15</i> (pp. 266-270)
Wed – Apr 15, 2015	Lect 21: Effect Modification/Interaction <i>Disease of the Day: Dementia</i> http://www.who.int/mediacentre/factsheets/fs362/en/index.html	M. Mujahid	<i>Video/Chapter 15</i> (pp. 270-276)
	Discussion: Homework Assignment #10 due: Confounding and Effect Modification	GSIs	
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Date of Instruction	Topic	Instructor	Reading*
Week 14			
Mon – Apr 20, 2015	Lect 22: Genomic Factors in Epidemiologic Studies <i>Disease of the Day: Bipolar/Schizophrenia</i> http://www.cdc.gov/mentalhealth/basics/burden.htm [Bipolar and schizophrenia paragraphs only]	L. Barcellos	<i>Video</i> /Chapter 16 bCourses
Wed – Apr 22, 2015	Lect 23: <i>Guest Lecture #6: “Leveraging real and simulated data for a more rigorous epidemiology”</i>	Jennifer Ahern	bCourses
	Discussion: Homework Assignment #11 due: Genetic Epidemiology	GSIs	
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Week 15			
Mon - Apr 27, 2015	Lect 24: <i>Guest Lecture #7: "Improving Medication Adherence in Patients with Chronic Conditions: Health System-Level Approaches to Addressing Gaps in Care"</i>	Julie Schmittiel	See bCourses
Wed – Apr 29, 2015	Lect 25: Evaluation and Policy <i>Disease of the Day: Lead Poisoning</i> http://www.who.int/mediacentre/factsheets/fs379/en/	L. Barcellos	<i>Video</i> /Chapters 17-19 and bCourses
	Discussion Session: Homework Assignment #12 due: Review of Epidemiologic paper	GSIs	
Friday May 1st, POSTER PROJECT FINAL OUTLINES DUE			
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Week 16 (RRR Week)			
Mon – May 4, 2015	POSTER PARTY ! Set up posters at Noon . Presentations 2-4 p.m. Li Ka Shing Lobby, 2 nd floor <i>Course Evaluations</i>	PH150A Team Guest Judges	
Wed - May 6, 2015	Final Exam Review Session	GSIs	
	No Discussion – GSI office hours	GSIs	
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Week 17	Final Exam: May 12, 2015 11:30 am – 2:30 pm Location TBD		

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