

Fall 2014 Syllabus

EPID 410 (Sections 001-004) – Principles of Epidemiology

Meeting times and Location:

Class : PHRC 114 on Monday and Wednesday from 9:40-10:30 AM
Lab for Section 1: Friday, Swearingen Engr Ctr 2A18 from 9:40-10:30 am
Lab for Section 2: Friday, Swearingen Engr Ctr 2A18 from 10:50am-11:40am
Lab for Section 3: Friday, Carolina Coliseum 2008 from 12:00pm-12:50pm
Lab for Section 4: Friday, Carolina Coliseum 2006 from 1:10pm-2:00pm

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Teaching Assistants:

Section 001: Sazid Khan

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Office Hours: Tuesday 11:30-12:30 or by appointment

Section 002: Sazid Khan

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Section 003: Dana Alhasan

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Section 004: Dana Alhasan

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We will make every effort to respond to student inquiries in a timely manner. In general, email inquiries are likely to receive the most prompt attention. When e-mailing, please try to write in full sentences and punctuate, we usually do the same. Any e-mail communication should include the words "EPID 410 ..." in the subject line!

Textbook (recommended): Epidemiology for Public Health Practice, By Robert H. Friis and Thomas A. Sellers, ISBN-10: 0763751618 (~\$30)

Course Objectives: The overarching objective of this course is to develop an understanding of fundamental concepts and methods of the epidemiologic approach. Upon completion of this course, the student should be able to:

1. Discuss the history, philosophy, uses, and ethical considerations of epidemiology.
2. List sources of epidemiologic data and define related measures of morbidity and mortality.
3. Define the term *descriptive epidemiology* and describe the applications of descriptive epidemiology to the health of populations.
4. State what is meant by the terms *association* and *causation*.
5. Define the term *analytic epidemiology* and differentiate among the types of analytic study designs.
6. Discuss the applications of epidemiology to policy development.
7. Describe how outbreak investigations are conducted.
8. Define and calculate the following epidemiologic measures: odds ratio, relative risk, sensitivity, specificity, positive predictive value, and negative predictive value.
9. Describe how epidemiologic data are presented differently to the public and scientific community.

Prerequisites: The prerequisites for this class are college-level introductory statistics course (STAT 205 or equivalent) and PUBH 102. **Students are assumed to have mastered this material prior to enrolling in this course.**

Reading Assignments: The textbook for this class is recommended, but not required. You will find the recommended reading assignments listed on the course schedule. The textbook is on reserve in the Thomas Cooper Library as well.

Class Web Site: Announcements or assignments to the class will be occasionally made via e-mail using the Blackboard system. It is the student's responsibility to keep his/her current e-mail address in Blackboard. Course materials and related information will be posted on the course website. The URL is : <https://blackboard.sc.edu>. Please make use of the web materials and report problems to the instructor. If posted examination or assignment scores are incorrect, you have 14 days from the date of posting to notify the instructor or the score stands.

Carolina Code of Conduct: It is the responsibility of every student at the University of South Carolina Columbia to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this Honor Code or who knowingly assists another to violate this Honor Code shall be subject to discipline.

The University of South Carolina has clearly articulated its values, expectations, and policies governing academic integrity. All students and faculty are expected to maintain the highest possible standards of academic integrity. Any student found responsible for having engaged in academic dishonesty will be subject to academic penalty and university disciplinary action. Violations include, but are not limited to, improper citation of sources, improper use of another person's work, cheating, and any other form of academic misrepresentation. If you have a question about issues such as how to cite a specific source, please contact the TA or the instructor BEFORE you turn in your work.

All assignments should be done individually. Homework that is turned in that looks exactly or nearly identical to another classmate may be given a 0 and/or referred to the Office of Academic Integrity.

Students are responsible for attending all scheduled class sessions and participating in class discussion. Information may be presented in class that is not in reading assignments. Please do NOT disrupt class by arriving late or leaving early, using your cell phone, or consuming food during class. **If you use your cell phone during class for any reason, you may be asked to leave the classroom.** If you cannot attend class, you are still responsible for the material covered. Please get notes and distributed materials from a fellow student or from the class website.

Accommodations: Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, contact the Office of Student Disability Services: 777-6142, TDD 777-6744, email sasds@mailbox.sc.edu, or stop by LeConte College Room 112A. All accommodations must be approved through the Office of Student Disability Services.

Format of Lecture and Lab

Lectures will consist of a combination of conceptual, methodologic, and disease-focused epidemiology topics. Conceptual and methodology-focused lectures will provide you with the background on epidemiology needed to define the discipline and its principles, and understand the basic statistics needed to conduct epidemiologic studies. Disease-focused lectures give examples of how epidemiologic principles are applied to a specific disease or set of risk factors.

Labs are a chance for students to reinforce what they learn in class. You will have the opportunity to review concepts, do practice problems, and ask questions. There will be some opportunities in the lab to work in small groups. Attendance at both lecture and lab is mandatory.

Tests, Assignments, and Grades

It is recommended that students do the assigned readings, and prepare for each class by checking Blackboard for materials. Please come to class prepared. Your participation in class discussions on various topics is expected. We encourage you to share relevant information and opinions. The biological or science knowledge base varies among enrolled students. Please be aware of this and considerate of others with different educational backgrounds. There is no such thing as a dumb question!

Homework: There will be 4 assignments due at scheduled intervals throughout the semester. Homework will be based on readings and lectures. Students must read the assigned chapters and attend classes to do well on homework. Homework assignments are to be turned in via Blackboard by 9:30 AM on the due date. E-mail may be used as an alternative if there are extenuating circumstances, but it is the responsibility of the student to confirm receipt of all completed assignments by the deadline. **Late assignments will be marked down by 10% of the total points for that assignment for each day that they are late.** Homework will be checked for plagiarism. Please cite all borrowed material, concepts or assertions from books or journals appropriately. Do not use Internet references unless it is part of a class assignment.

HW #1: Understanding the principles of epidemiology and identifying peer-reviewed epidemiologic literature (INDIVIDUAL)

HW #2: Literature review for Infographic project (INDIVIDUAL)

HW #3: Study designs and epidemiologic calculations (INDIVIDUAL)

HW #4: Evaluating screening tests (INDIVIDUAL)

Class Project: There will be a project assigned for this class. Some of the assignments and laboratory exercises are related to the project, and will give you the opportunity to work towards completion of

your project throughout the semester. The class project **can be done individually or in groups up to 3 people. Once you have decided on a group (if applicable), you will have the same group the entire semester (no swapping).**

Project Topic: We ask that you create an Infographic on a health topic of your choice (must be pre-approved by TA). The topic could be disease-specific (e.g., diabetes, HIV, cancer) or related to a risk factor for disease such as indoor tanning, low fruit/vegetable intake, or smoking. The Infographic must ask a specific research question, such as:

- How does the incidence of breast cancer vary by age, racial/ethnicity, and geographically?
- To what extent does living in a rural area increase one's risk of diabetes and diabetes-related complications? What factors predict re-entry into the hospital after a major surgery?
- How does childhood obesity contribute to disease incidence in adulthood?

Your TA must approve your research question by September 12th during lab. The final assignment is due via Blackboard on November 19th by 9:30 AM. E-mail may be used as an alternative if there are extenuating circumstances, but it is the responsibility of the student to confirm receipt of all completed assignments by the deadline. Late assignments will be marked down by 10% of the total points for that assignment for each day that they are late.

You may use whichever software you prefer for creating your Infographic; **however, support/guidance will only be provided for the program Piktochart.**

Exams: Exams will draw on information covered in homework assignments, the text, labs, and lectures. The examination format will typically include short answer, multiple choice, and problems requiring calculations. **Make sure you bring a working calculator to each exam.** If you forget your calculator, you will not be allowed to use your fellow students or instructors. Calculators installed on your phone are not permitted for use. There will be 3 exams for this class. The final exam will cover material from the entire semester (i.e., comprehensive). Check the schedule below for the date, time, and location of the exam.

Extra Credit Option: Extra credit may be earned by writing a single-spaced, 12 point font 1 page paper that succinctly summarizes and analyzes a recent (i.e., within the past 12 months) epidemiologic investigation or the issues surrounding a news event involving epidemiology. Instructions for such assignments will be available via Blackboard. You will be awarded 1-10 points depending upon the level of detail and amount of information you provide. To be considered for extra credit, papers must be submitted on or before the last day of class (12/5/2013) by 9:30 AM.

Evaluation: Students will be evaluated through: class participation, attendance, homework assignments, projects, a midterm and final exam.

Calculation of Grade: Course grades will be computed as a percentage of 500 points. Plus grading (B+, C+, D+) may be applied.

Exam #1	75
Exam #2	75
Final Exam	150
Project	100
Online quiz	10
Discussion Forums	10

4 homework assignments 80 (20 points each)
 Total possible points = 500

- A = 90-100% (450 points or above)
- B+ = 87-89% (435-449 points)
- B = 80-86% (400 – 434 points)
- C+ = 77-79% (385-399 points)
- C = 70-76% (350- 384 points)
- D+ 67-69% (335-349 points)
- D = 60-66% (300 - 334 points)
- F <= 59% (299 points or below)

Attendance Policy: Students are obligated to attend class and lab regularly. Students missing more than 4 scheduled class lectures and/or labs, whether excused or unexcused, **will result in a grade penalty.** Starting with the 5th absence, the student will lose 10 points for each absence from either the lecture or lab. Students unable to take an exam or submit homework assignment due to illness or family/personal emergency must contact the instructor **prior to** the scheduled exam or assignment due date. No makeup exams will be given without valid and documented excuse (e.g., a note from your physician) and prearranged with the instructor.

Fall 2014 Class Schedule

<u>Day</u>	<u>Topic</u>	<u>Assignment</u>	<u>Recommended Reading</u>
8/22 (FRI)	Lab 1 - Getting familiar with Blackboard and class resources, Class introduction		
8/25	Syllabus, Course Objectives/Content	1 st Discussion Forum Topic Assigned	
8/27	Introduction to Epidemiology and Descriptive Data (Person, Place & Time)		Chapters 1-4
8/29	Lab 2 – Determinants vs. Outcomes in Epidemiology, Epidemiologic Literature	HW #1 Assigned	Chapters 1-4
9/1	No Class – Labor Day		Chapters 1-4
9/3	Descriptive Data Continued	Discussion Forum Post Due	Chapters 1-4
9/5	Lab 3 – Descriptive Data (Person, Place & Time)	HW #1 Due	Chapters 1-4
9/8	Video to watch at home: HIV/AIDS (Dr. David Rose, New York Hospital Queens) and quiz	Online Quiz due by noon on 9/9	Chapters 1-4
9/10	Infographic Introduction & Tutorial	HW #2 Assigned	Chapters 1-4
9/12	Lab 4 - Group Work on Infographic Project (Defining topic, practice in Piktochart)		Chapters 1-4

9/15	Sources of Data	2 nd Discussion Forum Topic Assigned	Chapter 5
9/17	Outbreak Investigations		Chapter 12
9/19	Lab 5 - Outbreak Investigation		Chapter 12
9/22	Surveillance	HW #2 Due	Chapter 12
9/24	Infectious Disease Epidemiology (TA: Sazid Khan)	2 nd Discussion Forum Post Due	Chapter 12
9/26	Lab 6 – Exam #1 Review		
9/29	Exam #1		
10/1	Ecological and Cross-sectional Studies		Chapter 6
10/3	Lab 7 – Ecological Studies		Chapter 6
10/6	Case-control Studies	Return Exam #1	Chapter 6
10/8	Cohort Studies & RCTs	HW #3 Assigned	Chapter 7-8
10/10	Lab 8 – Cohort and Case-Control Papers (NOTE: last day to drop without WF)		
10/13	Rates/Ratios		Chapter 9-10
10/15	Rates/Ratios		Chapter 9-10
10/17	Lab 9 – Exam #2 Review	HW #3 Due	Chapter 9-10
10/20	Exam #2		
10/22	Chronic Disease Epidemiology (TA: Dana Al Hasan)		
10/24	No Class- Fall Break		
10/27	Guest Lecture: Disability Epidemiology (Suzanne McDermott)	Return Exam #2	
10/29	Data Analysis Methods		Chapter 9-10
10/31	Lab 10 – Analysis		Chapter 9-10
11/3	Screening Tests	HW #4 Assigned	Chapter 11

11/5	Guest Lecture: Ethics in Epidemiology (Linda Hazlett)		Chapter 11
11/7	Lab 11 – Screening Tests		Chapter 11
11/10	Causality		
11/12	Public Health Policy	HW #4 Due	
11/14	Lab 12 – Policy statements/toolkits for translating epidemiology findings		
11/17	Spatial Epidemiology		
11/19	Social Epidemiology	Infographic Due	
11/21	Lab 13 – Spatial & Social Epidemiology		
11/24	Guest Lecture: Neighborhoods and Health (Kellee White)		
11/26-11/28	No classes –Thanksgiving Break		
12/1	Guest Lecture: Nutritional Epidemiology (Susan Steck)	Return Infographic	
12/3	Final Exam Review		
12/5	Lab 14 - Review for Final (Last Class Day)		
12/12	Final Exam at 9 AM		