SYLLABUS

Principles of Epidemiology for Public Health: EPID 600

Course Description

In this introductory course, students will learn and apply basic concepts of epidemiology to multiple domains of public health. We will illustrate and practice using epidemiology to better understand, characterize, and promote health at a population level. The class will engage the students in active and collaborative learning through team activities, individual projects, case studies, group discussion, and individual projects.

Course Instructors:

Lead Instructor
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Teaching Assistants:

Course Objectives

The overall course objectives* are:

The overall course objectives 1-10* and 11-12** are as follows:

1. Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
2. Describe a public health problem in terms of person, place, and time.
3. Apply the basic terminology and definitions of epidemiology.
4. Calculate basic epidemiology measures.
5. Identify key sources of data for epidemiologic purposes.
6. Evaluate the strengths and limitations of epidemiologic reports.
7. Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
8. Draw appropriate inferences from epidemiologic data.
9. Identify the principles and limitations of public health screening programs.
10. Communicate epidemiologic information to lay and professional audiences.
11. Apply concepts, methods, and tools of public health data collection, analysis and interpretation, and the evidence-based reasoning and informatics approaches that are essential to public health practice. (2)

12. [Engage in] public health-specific communication & social marketing, including technical and professional writing and the use of mass media and electronic technology (9)

*From the Association of Schools of Public Health (ASPH) discipline-specific competencies in epidemiology from the MPH Core Competency Model version 2.3 2006,

** From the Association of Schools of Public Health (ASPH)Framing the Future: The Second 100 Years of Education for Public Health, A Master's Degree in Public Health for the 21st Century.*

Course Teaching Methods

In a course such as this, the lecture method of teacher-centered expository discourse relegates students to the role of listeners who are not actively engaged in the learning process. Higher-level learning requires the student to become actively involved in applying concepts and methods to problems and to exercise critical judgment by attempting to reach a solution or draw conclusions when faced with a complex set of findings. These higher-level thinking skills will be continuously called upon in the cooperative learning classroom method, used throughout this course.

Cooperative learning is an instructional technique that brings students together in small, fixed teams to work on structured learning tasks. It enables all students to become more involved with the course material and to articulate their understanding of this material through problem-solving exercises with other members of their team. Students "who become involved in active discussion of their ideas with other students are more likely to have less irrelevant or distracting thoughts and spend more time synthesizing and integrating concepts than students who listen to lectures" (Bligh DA. What's the Use of Lectures. Jossey-Bass Publishers, 2000.) Based on these pedagogical principles, this course has been organized such that, students will be assigned to small learning teams, typically 6 to 8 students per team.

REMEMBER: In most real-life problems, there is no one "right" answer but several different ways to address problems; some of these ways are more efficient, more constructive, and more long-lasting than others. An important lesson to learn from the experience of cooperative learning is that most solutions to community problems are more effective when the solution is reached by a team effort that actively engages all members of the team in addressing the problem and encourages creative thinking of the team in proposing a solution. This process converts learning from an individual to a social activity and draws on the collective wisdom of those attempting to reach a solution.

Because of the independent nature of this class, teams must learn to function largely independently using the lecture materials and the experience and knowledge of team members as their major resource to engage in each exercise. The best professional teams know how to use the resources of consultants, the literature, and the wisdom of the team to arrive at their own solutions. The point is, the faculty and TAs are not going to give you answers, but they are there to steer you, as a consultant would, on a path toward reaching your own team answers.

Course Resources

Required textbook:

Aschengrau A & Seage GR. Essentials of Epidemiology in Public Health. Sudbury, Massachusetts: Jones and Bartlett Publishers, 2013.

Resources located on the course Sakai website:

ERIC Notebooks (epidemiology methods periodical)
Additional handouts and readings
Links to journal articles or other readings on the Internet.
Instructions for case studies, individual assignments, and team project

Optional Course Resources

Rothman KJ. Epidemiology: An Introduction. New York, NY.

Gordis L. Epidemology, 3rd Ed. Philadelphia, PA. Elsevier Saunders: 2004

Assignments

Assignment	Percentage of Grade
Epidemiologic Description of a Disease (Individual)	10
"Epidemiology in the News" with a Pecha-Kucha Presentation (Individual)	10
Team Project	15
Team project peer assessment	5
Individual Project - Data Analysis, Part 1	10
Individual Project- Data Analysis, Part 2	10
Individual Project II- Data Analysis, Part 3	10
Lab assignments (10) (Team)	30
Total	100%

Assignment Descriptions

Epidemiologic Description of a Disease. Each student will pick a disease and use measures of disease frequency (prevalence, incidence) to describe its occurrence in the population. Also describe 3 known or potential risk factors for the disease. Provide a related measures of association and 95%CI for each risk factor and the interpretation of the measure of association.

 "Epidemiology in the News" with a "Pecha-Kucha" Presentation Activity. Presentation to team and TA.

Team Project. With your teammates you will conduct a small cross-sectional epidemiologic

study and present the results to the class at the end of the semester.

Individual Project. Data Analysis, Parts 1,2,3. The intent of this project is for you to integrate concepts from lectures with practical applications. You will be provided a data set in Excel and asked to complete three analyses on 1) measures of occurrence, 2) measures of association, and 3) confounding. We will ask you to calculate measures of frequency and association. We will provide you with basic on-line training modules on EpiInfo, which you will use for the calculations. You will write a short summary of interpretation to accompany your results.

Lab Assignments. You will have ~10 labs/case studies. Each team lab assignment will be worth 3 points, and graded in a scale of 0-3. One of your team members will be the designated scribe and write up your answers. The scribe will then upload the answers in Sakai on average 20 minutes before the end of the lab session, and you will spend the last 15 minutes of class reviewing key points and answers with the TA.

Grading scale for labs:
3-Optimal, excellent discussion and effort, answered all questions very well.
2-Generally gets key concepts, did not go above and beyond, perfectly adequate.
1-Missed key concepts, poor effort, didn't provide sufficient information to show how your team got the answer.
0-Nothing turned in.

Late policies for labs: Lab attendance is required. If you don't show up without notifying your TA and Teammates, 24 hours before the Lab, you will receive a zero for the Lab. If you are late for lab, you will have 1.5 points deducted from your team's Lab grade.

Teams

You will be assigned to your teams by the end of the first week of class. Team members will be listed on the Sakai course website. Teams will each have approximately seven members, with a mixture of students from different disciplines in the Gillings School of Global Public Health. Each TA will have 6-7 teams.

Grading

Grades:

Letter grades will be assigned according to the following scale:

Undergraduate students: A (93-100%); A- (90-92%); B+ (87-89%); B 83-86%); B (80-82%); C+ (77-80%); C (73-76%); C (70-72%); D+ (67-70%); D (63-66%); D- (50-52%); and F (<50%)

Graduate students: H (90 and 100%); P (65-89); L (50-64) and F (<50%)

Class Participation (in team case studies) is including in assignment grades. As indicated in table above, students will work individually on assignments unless indicated assignment is team-based.

Due Dates:

The due dates for all assignments will be listed in the course schedule and will be due at **midnight** Eastern Standard Time (EST) on the date listed.

Late Penalties:

Assignments will have 10 points deducted for every day they are late, unless otherwise indicated.

Team Projects. No late team projects will be accepted without a previously agreed-on extension from the faculty. Out of consideration for classmates and their grades, all team members should contribute their best effort to assuring that the project is completed on time. Your team will have adequate time to work team projects and should be able to complete them in a way that fits your schedule. Late projects will have 10 points deducted for every day that they are late. In the event of an emergency, exceptions to this policy will be made. Considering the length of time you have to work on the projects, computer problems are not considered emergencies. If your team is working on a project, be sure to save it to a back-up CD, flash drive, or something equivalent so that you can submit it using another computer.

Course Formatting Requirements

For all individual assignments and team projects you must follow these formatting guidelines, unless otherwise indicated in the instructions.

1. Include your full name or your team's name in an obvious place in the document (e.g., on the first page).
2. Use one-inch margins.
3. Double-space the text.
4. For the body, use 12-point or larger font (Times New Roman). (Note that 10-point text may be used for footnotes, figure legends, etc.)
5. When length requirements are included in the instructions for the assignments or projects, adhere to them strictly!

Writing Resources for Course Assignments and Projects

Writing assistance:

- The UNC Writing Center provides resources sheets and one-on-one writing assistance (http://www.unc.edu/depts/wcweb/).
- If you are unfamiliar with scientific writing, please review the following web resource to better understand the structure and appropriate content. http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWsections.html (from Bates College). For this class we will use the term "References", rather than "Literature Cited" for references cited in your class assignments.

Citations formatting: You must properly cite any work that is not completely your own. It is understood that you will build on the ideas of others through research, reading, and collaboration, but failure to acknowledge the scholarship of others is plagiarism and an honor code violation. In this course, we would like you to use the American Medical Association's [AMA Manual of Style (10th edition) : A Guide for Authors and Editors](#) Section 1 Part 3 for formatting references.

Note on Using Wikipedia as a primary reference:

We've noticed students sometimes using Wikipedia as a primary reference for team projects, individual projects, or case studies.

The following quotation is taken from the Wikipedia Web site, "Wikipedia, started in 2001, is a collaboratively edited encyclopedia. With articles submitted from volunteers from all around the world. With rare exceptions, its articles can be edited by anyone with access to the Internet. Because Wikipedia is an ongoing work to which in principle anybody can contribute, it differs from a paper-based reference source in some very important ways. In particular, older articles tend to be more comprehensive and balanced, while newer articles may still contain significant misinformation, unencyclopedic content, or vandalism. Users need to be aware of this in order to obtain valid information and avoid misinformation which has been recently added and not yet removed."

You can use Wikipedia as a starting point for your research. However, we request you not use Wikipeida as a primary reference. Please use the online health science resources (such as Pubmed) that you have available to you as part of taking this course.

Honor System
As part of the UNC Honor Code, students pledge to maintain ideals of academic honesty, personal integrity, and responsible citizenship. These ideals are embodied in the Honor Code set forth in the Instrument of Student Judicial government, with the support of students, faculty, and staff. When a student applies to Carolina, he/she undertakes a commitment to the principles embodied in the Honor Code. The University endeavors to instill in each student a love of learning, a commitment to fair and honorable conduct, and respect for the safety and welfare of others. It also strives to protect the community from those who, for whatever reason, do not embody these values in their conduct, and to protect the integrity of the University and its property for the benefit of all. Please go to http://studentconduct.unc.edu/honor-system and make sure you understand and apply these policies to this course.

Plagiarism

Plagiarism is the act of copying or using someone else's work or writing and presenting it as your own work. The UNC Honor code states: "plagiarism in the form of deliberate or reckless representation of another's words, thoughts, or ideas as one's own without attribution in connection with submission of

academic work, whether graded or otherwise." "Work," means work on any case study, contribution to team project, presentation (including graphics), or other material submitted for a grade.

What is the correct way to use an information source?

In class, we expect that you will use and present information from literature, websites, and various references in your work. When using information from one of these sources, it is appropriate to paraphrase the information in your own words, and cite the source of that information.

For example:

> Source: (The Red Book on Chlamydia) Lymphogranuloma venereum biovars are worldwide in distribution but particularly are prevalent in tropical and subtropical areas. Although disease occurs rarely in the United States, outbreaks of LGV have been reported in Europe, and cases have been reported in the United States in men who have sex with men. Infection often is asymptomatic in women. Perinatal transmission is rare. Lymphogranuloma venereum is infectious during active disease.

> My Paper: Chlamydia biovars causing lymphogranuloma venereum (LGV) are most prevalent in tropical and subtropical areas, although they can be found worldwide. In the United States, transmission has been documented among men who have sex with men, but it is more difficult to discern in women because it is often asymptomatic. (1)

> 1. American Academy of Pediatrics. Chlamydial Infections. In: Pickering LK, Baker CJ, Long SS, McMillan JA, eds. Red Book: 2006 Report of the Committee on Infectious Diseases. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006.

"General knowledge" in the lectures or texts does not need to be cited, but if you are referring to something that is not likely to be in many sources, then citing is desirable.

What are examples of plagiarism?

- Paraphrasing information from a source without referencing the source. If you had to look up the information to include it in your work, you need to cite the source. Statistics, symptoms, epidemiology, research results, and conclusions reached by researchers are all examples of information that should be cited. (Note, however, if you are a physician that treats a disease or condition every day, you would already know the symptoms and would not have to cite a source. In this case YOU are the source.)

- Copying and pasting anything from the internet into your work without citing the source. Just because it's on the internet doesn't mean it's "free!" There is a proper format for citing web pages as well as online articles; this format includes the web address, so that anyone reading your paper will be able to go to that website and see the source article.

- Using someone else's work, "borrowing" work from a previous year's student, or otherwise using work that you did not do and turning it in as if you had done the work yourself. This does not mean you cannot have a study partner for this course. However, any work that you turn in should be processed through your own brain, performed by your own hand, and presented in your own words.

- Not putting quote marks around parts of sources you copy exactly. If you copy and paste information from anywhere and put it in your paper or other project, it should be in quotation marks and accompanied by a citation. If wording from a source is used, you must put quotes around it!

But I need to look this information up. What do you expect to see in my paper?

In this course it is expected that you will need to look up clinical and other information and epidemiology on assigned diseases or topics and synthesize information from multiple sources, determining what the most useful information to present is, how to present it, and then drawing your own conclusions from what you have presented.

For more information [view a tutorial on plagiarism from the UNC Libraries](#)

Time Commitment for this Course

We'd like to take a bit of time to explain the time commitment that will be involved for this course. You will be embarking on case studies, learning a software program, working on a team project, and completing two individual projects. These activities require time and thought, and we do not suggest waiting until the last minute to complete them.

On average, students in this course spent **approximately 9 to 12 hours per week** on coursework. However, some weeks require more time than others, such as weeks coinciding with one of the individual projects.

If you decide to withdraw from the course at any time, you must notify:

Karin Yeatts (Karin_Yeatts@unc.edu) and your TA

Adequate Computer Access and Working Email

Please make sure that you have adequate computer access. You should be checking the course Web site at least every other day or so. Email will also be sent frequently from your TA and the faculty, so please make sure that your inbox is not full.

Computer Problems

Because individual and team projects are many weeks in length, computer problems are ***not*** considered emergencies. If you're working on a project, be sure to save your work to a back-up CD, flash drive, or something equivalent so that you'll be able to submit it using another computer.

Class Etiquette
We expect you to attend each class. If you are going to be absent, please let your Teaching Assistant or Dr. Yeatts know before the class.

Valuing, Recognizing, and Encouraging Diversity
Promoting and valuing diversity in the classroom enriches learning and broadens everyone's perspectives. Inclusion and tolerance can lead to respect for others and their opinions and is critical to maximizing the learning that we expect in this program. This may challenge our own closely held ideas and personal comfort zones. The results, however, create a sense of community and promote excellence in the learning environment.

Diversity includes consideration of (1) the variety of life experiences others have had, and (2) factors related to "diversity of presence," including, *others*, age, economic circumstances, ethnic identification, disability, gender, geographic origin, race, religion, sexual orientation, social position.

This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity.

Evaluations
There will be several types of evaluation for this course. First there will be TA evaluations. Your TA will evaluate your contributions in laboratory sessions. You will also have the opportunity to evaluate your TA mid semester and at the completion of the semester. For the team project, you will have the opportunity evaluate your teammates contributions. Links for the peer and TA evaluations will be provided in the Sakai course website.

Lastly, you will also be asked to evaluate the course. The School uses an on-line evaluation system to assess the quality of instruction and learning of the courses offered. The system is open for a two week period that ends the last day of classes. An email will notify you that the system is open and a link to access the form. This evaluation system is anonymous. The instructors will only see the aggregate data with any comments at the end of the course after grades are turned in. It is your responsibility as a student to complete the evaluations. You will be sent multiple emails until it is completed.

We also value your feedback on *specific* modules and assignments. This is the first time in several years that this course has been offered with a focus on active learning. We will use your feedback to make the course even better next semester. We will conduct two in-class evaluations, one mid-semester and one at the end of the semester and ask for your anonymous feedback about *specific* class sessions and assignments.