



**University of Florida College of Public Health and Health Professions  
PHC 6000: Epidemiology Methods I  
Spring 2015**

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Office hours: Wednesday 10:00am to 12:00PM or by appointment.

**Teaching Assistant:**  
E-mail:  
Hours:

**Class Schedule:** Thursday 9:35AM-12:35PM, Room G201, HPNP

**Course Description and Goals**

This course extends the concepts and methods of epidemiology from PHC 6001 (Principles of Epidemiology). Research design and analytic reasoning are emphasized throughout the class. Because epidemiology methods and causal inference are the most complex in observational studies, the course uses examples and methods primarily from this kind of research. Randomized trials and community experiments are included as aspects of methods issues, however. The course provides an understanding of the methods of epidemiological study designs and their analyses including issues of bias, confounding, and effect-modification. The goal of this class is to provide a strong background in analytic reasoning and research design, study execution, analysis, and result interpretation. Upon successful completion of the course, students should be able to...

1. Demonstrate and apply the principles of descriptive and analytic epidemiology.
2. Identify and select among research designs for specific scientific questions.
3. Identify and integrate the principles of causal inference to planning and reviewing research studies.
4. Critically appraise published research studies for their strengths and weaknesses.
5. Interpret, apply, and analyze methods regarding measures and measurements, error, confounding and effect modification, sampling, and research generalizability.
6. Communicate epidemiology methods in writing and orally.

**Prerequisites**

PHC 6001 and PHC 6052 or the equivalent. This class assumes a basic competency with epidemiology principles and vocabulary. You are expected to be able to use the material from an introductory epidemiology course (PHC 6001 or equivalent). TA and I are available to review and elaborate these concepts during the office hours or by appointment.

## Course Materials

### Required Textbook:

Szklo, Moyses and Nieto, F. Javier. *Epidemiology: Beyond the Basics, Third Edition*, Jones and Bartlett, Boston, MA, 2007.

### Supplemental Textbooks (Optional):

Gordis, Leon. *Epidemiology*, Third Edition. Elsevier Saunders, Philadelphia, PA, 2004.

### Sakai

Sakai is accessible at [lss.at.ufl.edu](http://lss.at.ufl.edu) or through [my.ufl.edu](http://my.ufl.edu). You must have a valid Gatorlink ID and password. For assistance, call the UF Help Desk at 392-HELP.

*Required:* Students will need to log in Sakai and print all electronic files before each class. If materials are not posted in Sakai, we will provide hardcopies in class. Students are responsible for all course material, including required readings prior to each class. Readings will be assigned from textbook chapters, historical or current scientific research literature.

## Course Requirements

1. Read assigned textbook sections and additional reading before lectures;
2. Completed 5 assignments throughout the semester;
3. Take "In-Class Exam 1" in Week 8 and "In-Class Exam 2" at the end of the semester.

## Course Format

We will combine different learning techniques in this class. Each week we will have a new topic, with a lecture, accompanied by a comprehensive set of lecture notes and tables, examples, and figures. These will provide the foundation for what you are expected to know for the graded exams. We also provide a take-home problem sets when scheduled. You are required to complete the problem set prior to the due day (the next class start time).

## Grading

### Grading scale:

93% - 100% = A  
90% - 92% = A-  
87% - 89% = B+  
83% - 86% = B  
80% - 82% = B-  
77% - 79% = C+  
73% - 76% = C  
70% - 72% = C-  
67% - 69% = D+  
63% - 66% = D  
60% - 62% = D-  
Below 60% = E

### Grading Methods:

Class participation = 5%  
Homework assignments=50% (n=5, 10% each)  
In class exam 1= 20%  
In-class exam 2= 25%

**Class participation** assessment will include attendance and participation in discussions. Having the correct answer is not graded (you will be presented with challenges that are not fair to grade, since they extend material from class). But lack of preparation and non-attendance will result in a one-point reduction in your 5% class participation grade for each occasion it occurs. This practice is not intended to intimidate, or to penalize students who are prepared for class. If you are concerned about being required to answer questions orally in class, please discuss this with me privately and I will make reasonable accommodations.

**The In-class exams** will require written answers with some calculations needed. The style of these calculation problems will be very similar to the problem sets and in-class practices.

**Homework problem sets** are graded as ten points each. TA will provide feedback on problem sets. They are due by the next class start time. Late submission will receive an automatic score of 0 unless I have given prior approval. Failing to try each problem and/or failing to contact the TA or me if you are having trouble with the problem set can result in a grade of "0". **All completed assignments need to be uploaded as Word files via Sakai.**

Problem sets and exams are not graded for perfect grammar or spelling, but making your answer clear is important. Inexact, unclear language or multiple answers (among which one might be right) will receive reduced credit on the exam. Students are welcome to use a word processor for all submitted written work. You are also welcome to print any calculations and notations, but make sure they are legible. TA and I will not grade a problem set or quiz or exam that we cannot read. Problem sets and exams need to be legible to assure you are awarded full credit for your answers. When we are in doubt, TA and I will each take a turn at deciphering your answers, but if neither of us can read an answer, we cannot award full credit. The practice of epidemiology is enhanced by clear communication and because this is a graduate school course, competent writing *is important*.

### **Course Policies**

**Feedback on Assignments:** Timely feedback on assignments is needed in order to assure that students are aware of their progress. For routine problem sets, the quiz, and the final exam, feedback will be provided within two weeks after the due date. Generally we will provide a homework review in the week when we return your homework. The copy of the exam will be kept as part of your class record (maintained for five years after the class), and the original will be returned to you. You can make an appointment with me to discuss the final exam or any other graded aspect of class. Be prepared to describe your concerns with grading for the entire assignment, not just a component of your interest.

**Classroom etiquette:** Please come to class on time and be prepared to stay until the time scheduled as the end of class. Pagers and cell phones should not be used in class. Please turn them off. Or, if you expect urgent calls, set them to "vibrate." **Cell phones and pagers are not allowed during the in-class exam.** Any student observed using a cell phone, pager, including text messaging during these times will receive a failing grade for that exam. You may leave your pager or cell phone with TA during the exam in case of emergency or if you have an urgent personal or professional reason for expecting to be called/paged.

**Academic Integrity:** Each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

## **Policy on Style for Citation and Plagiarism:**

The two key purposes of citation are to 1) give appropriate credit to the authors of information, research findings, and/or ideas (and avoid plagiarism) and 2) facilitate access by your readers to the sources you use in your research. In this class, you will be preparing a critique on one epidemiology study article, and it does not require referencing. In fact, direct quotation will not be a positive method of writing the literature critique.

Quotations: When directly quoting an outside source, the borrowed text, regardless of the amount, must be surrounded by quotation marks or block quoted. Quoted text over two lines in length should be single-spaced and indented beyond the normal margins. Every quote must include a source—the author, title, volume, page numbers, etc.—whether an internal reference, footnote, or endnote is used in conjunction with a bibliography page.

Paraphrasing or Citing an Idea: When summarizing an outside source in your own words or citing another person's ideas, quotation marks are not necessary, but the source must be included. This includes, but is not confined to, personal communications from other students, faculty members, experts in the field, summarized ideas from published or unpublished resource, and primary methods derived from published or unpublished sources. Use the general concept of “when in doubt – cite.”

Plagiarism is a serious violation of the academic honesty policy of the College. If a student plagiarizes others' material or ideas, he or she may receive an “E” in the course. The faculty member may also recommend further sanctions to the Dean, per College disciplinary action policy. Generally speaking, the three keys of acceptable citation practice are: 1) thoroughness, 2) accuracy, and 3) consistency. In other words, be sure to fully cite all sources used (thoroughness), be accurate in the citation information provided, and be consistent in the citation style you adopt. All references should include the following elements: 1) last names along with first and middle initials; 2) full title of reference; 3) name of journal or book; 4) publication city, publisher, volume, and date; and 5) page numbers referenced. When citing information from the Internet, include the WWW address at the end, with the “access date” (i.e., when you obtained the information), just as you would list the document number and date for all public documents. When citing ideas or words from an individual that are not published, you can write “personal communication” along with the person's name and date of communication. Typical formats for citing references and books can be found in the *American Journal of Public Health*.

### **We urge you to review the University site on plagiarism**

<http://web.uflib.ufl.edu/msl/subjects/Physics/StudentPlagiarism.html> and the site also links to a number of “best” policies at other universities.

**Class Attendance:** Class attendance is mandatory. Excused absences follow the criteria of the UFL Graduate Catalogue (e.g., illness, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible. UFL rules require attendance during the first two course sessions (Katie and I are required to take roll for the College), and students also must attend all course sessions of student presentations for this class. Missing more than two scheduled sessions will result in a failure. Two weekly sessions are the equivalent of about 15% of the course contact hours. Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students should read the

assigned readings prior to the class meetings, and be prepared to discuss the material except for the first class session.

**Policy on Make-Up Work:** Students are allowed to make up work ONLY as the result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing a homework or project deadline, consistent with College policy. Documentation from a health care provider is required. Work missed for any other reason will receive a grade of zero.

### **Online Faculty Course Evaluation Process**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:  
Alachua County Crisis Center:  
(352) 264-6789  
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

## Course Outline

Class	Topic	Readings	Problem set assigned	Problem set due
<b>Week 1.</b> Thursday, January 8 <sup>th</sup>	Course overview, review & extension to measures of disease occurrence	Szklo chap 2; Gordis chap 3-4, 6  Becker N, Altenburg HP, Stegmaier C, Ziegler H. Report on trends of incidence (1970-2002) of and mortality (1952-2002) from cancer in Germany. J Cancer Res Clin Oncol. 2007;133(1):23-35.		
<b>Week 2.</b> Thursday, January 15 <sup>th</sup>	Extension to measures of disease occurrence; descriptive epidemiology	Szklo chap 1.1-1.3  Wheeler BW, Allen J, Depledge MH, Curnow A. Radon and skin cancer in southwest England: an ecologic study. Epidemiology. 2012;23(1):44-52	Problem set #1	
<b>Week 3.</b> Thursday, January 22 <sup>th</sup>	Analytical Epidemiology: Cohort studies & Case-control studies: methods and issues. Other designs	Szklo chap 1.4; Gordis 9-10  Colditz GA, Manson JE, Hankinson SE. The Nurses' Health Study: 20-year contribution to the understanding of health among women. J Womens Health. 1997;6(1):49-62.  Breslow N. Design and analysis of case-control studies. Annu Rev Public Health. 1982;3:29-54.		Problem set #1
<b>Week 4.</b> Thursday, January 29 <sup>rd</sup>	Measures of associations: Relative Risk, Odds Ratios, Attributable Risk, and PAR	Szlc0 chap 3; Gordis chap 11		
<b>Week 5.</b> Thursday, February 5 <sup>th</sup>	Causal inference	Gordis chap 14  Glass TA, Goodman SN, Hernan MA, Samet JM. Causal inference in public health. Annu Rev Public Health. 2013;34:61-75  Rothman KJ, Greenland S. Causation and causal inference in epidemiology. Am J Public	Problem set #2	

<b>Class</b>	<b>Topic</b>	<b>Readings</b>	<b>Problem set assigned</b>	<b>Problem set due</b>
		Health. 2005;95 Suppl 1:S144-50.		
<b>Week 6.</b> Thursday, February 12 <sup>th</sup>	Bias: Introduction, definition & issues in bias	Szklo chap 4.1-4.3; Gordis chap 15  Slattery ML, Edwards SL, Palmer L, Curtin K, Morse J, Anderson K, et al. Use of archival tissue in epidemiologic studies: collection procedures and assessment of potential sources of bias. Mutat Res. 2000;432(1-2):7-14		Problem set #2
<b>Week 7.</b> Thursday, February 19 <sup>th</sup>	Confounding: concepts and evaluation Controlling confounding with adjustment, stratification and quantitative modeling; review of homework #3 directions	Szklo chap 5, 7.1-7.4; Gordis chap 15	Problem set #3 (article critique)	
<b>Week 8.</b> Thursday, February 26 <sup>th</sup>	In class exam 1	Midterm 3 hours, in-class. Bring a calculator		
<b>SPRING BREAK February 28<sup>th</sup>-March 7<sup>th</sup></b>				
<b>Week 9.</b> Thursday, March 12 <sup>th</sup>	Interaction: definition and strategies of evaluation	Szklo chap 6 Gordis chap 15  Kamangar F. Effect modification in epidemiology and medicine. Archives of Iranian medicine. 2012;15(9):575-82		Problem set #3
<b>Week 10.</b> Thursday, March 19 <sup>th</sup>	Identifying the roles of genetic and environmental factors	Gordis chap 16  Nurminen M, Nurminen T, Corvalan CF. Methodological issues in epidemiologic risk assessment. Epidemiology. 1999;10(5):585-93	Problem set #4	
<b>Week 11.</b> Thursday, March 26 <sup>th</sup>	Screening evaluation in epidemiology	Szklo chap 4.4, Gordis chap 18	Problem set #5	Problem set #4
<b>Week 12.</b> Thursday, April 2 <sup>nd</sup>	Communicating results of epidemiologic studies. Reading & writing the	Szklo chap 9, Gordis chap 20  Goldberg RJ. Enhancing peer review of		Problem set #5

Class	Topic	Readings	Problem set assigned	Problem set due
	scientific literature; Meta-analysis	<p>scientific manuscripts. Arch Intern Med 1997;157:380-382.</p> <p>Samet JM. Dear author – advice from a retiring editor. Am J Epidemiol 1999;150:433-436.</p> <p>Dixon N. Writing for publication – a guide for new authors. Intl J Qual Health Care 2001;13(5):417-421.</p> <p>Denison HJ, Dodds RM, Ntani G, Cooper R, Cooper C, Sayer AA, et al. How to get started with a systematic review in epidemiology: an introductory guide for early career researchers. Archives of public health 2013;71(1):21</p>		
<b>Week 13.</b> Thursday, April 9 <sup>th</sup>	Review for the final exam			
<b>Week 14.</b> Thursday, April 16 <sup>th</sup>	Exam 2	Final exam 3 hours, in-class. Bring a calculator		