Rutgers
School of Public Health

SYLLABUS FALL 2014

Course Title: Principles and Methods of Epidemiology
Course Number: PHCO 502 (Core Course in Epidemiology)
Course Location: On-Line, with optional Piscataway meetings
Course Dates: Weekly beginning Wednesdays
Course Instructor: Elizabeth G. Marshall, Ph.D.,
Department of Epidemiology
Room 210 School of Public Health
683 Hoes Lane, Piscataway
marshaeli@sph.rutgers.edu, 732-235-4666

Course Assistant: Elizabeth Szamreta, MPH
Elizabeth.szamreta@rutgers.edu

Required Course Text: Epidemiology, Leon Gordis, 4th or 5th Ed

Course Description: This course is an introduction to the principles of epidemiology as generally used in human health research and public health disease prevention and health promotion. This 3-credit course is delivered via the Internet and 1-2 optional meetings on the SPH campus in Piscataway. Students are expected to learn through listening to and reading lecture notes, following practical exercises, and evaluating concepts and applications with their peers during structured discussion. The instruction follows a specific weekly schedule with homework and discussion assignments due each week. Students will work from an outline that describes the learning objectives and assignments for each week's module.

Selected Department Competencies Addressed: Each Department identifies competencies for each degree offered. This course addresses principles and skills that would be developed for an MPH in Epidemiology, but at an introductory level suitable for those pursuing an MPH with a concentration in Epidemiology or other major. The following Epidemiology competencies are addressed in part by this course:
- Critique epidemiologic literature, assess its strengths and weaknesses and determine if conclusion(s) are supported;
- Use epidemiologic techniques to quantitatively assess patterns and changes in disease occurrence;
- Formulate a specific hypothesis and determine an appropriate study design and analysis plan;
- Design, implement and assess ordinary data collection systems for public health research;
- Design and implement basic quality control methods during data entry and analysis;
Appropriately analyze and interpret epidemiologic data, including large national and state level datasets;

**Course Objectives:** By the completion of this course, students will be able to:

- Explain the basic concepts of descriptive and analytical epidemiology. These encompass methods to describe the distribution and determinants of diseases in populations.
- Use the concepts learned to evaluate existing research and practical examples in public health, prevention, and clinical epidemiology.
- Employ the knowledge gained in this course as a stepping stone for more advanced courses and applied work in epidemiology.

**Course Requirements:**

Class members are encouraged to get to know each other and contribute their particular strengths, expertise, and experience to enrich the class. There will be course meetings at the beginning of the semester and as needed in preparation for the midterm and final.

Each student will be asked to introduce themselves at the beginning of the class. Working with your colleagues in this class, explaining concepts to each other, and interacting with your instructors are the most effective ways to understand the principles of epidemiology and succeed in this course. Students are required to participate in discussion and review of concepts.

**General Internet Access:**

Students are expected to use publicly available internet sources to access general medical information, health statistics, or optional readings and presentations. These sources will be used for input into the discussion assignments and review of concepts. Please note that some mobile devices (e.g. phones) and programs (e.g. Safari) may not be able to access all functions in the course web-site -PLEASE CHECK THE MOODLE WEB-SITE TO MAKE SURE YOU CAN ACCESS AND PARTICIPATE IN ALL ASPECTS OF THE COURSE GIVEN YOUR PARTICULAR DEVICE AND BROWSER PROGRAM.

**Weekly Module Outline:**

Students will work from an outline that describes the learning objectives and requirements for Modules 1-14. Each module includes an outline, reading assignment, lecture presentation, self-test questions, discussion and a homework assignment. There are 7 Group Discussion Assignments and 5 Graded Homework assignments.

Each week officially begins on **Wednesday** afternoon with reading and review of the lecture. The self-test is designed to assess your understanding of those concepts. You are expected to participate in discussion on an on-going basis. For the graded assignments that require group participation, it is important that discussion should begin by the **Friday** before the assignment is due, and
continue until the summary is submitted by **Tuesday** at noon. Homework can be completed anytime during the week and is due by the next **Wednesday** at noon.

**Readings and Review:**

Each week will feature at least one chapter from the textbook. Although the course generally follows the order of the book *Epidemiology*, (see below), the course covers some concepts in a different order.

The Lecture Notes (ppt. files and handouts) represent the highlights of the week’s module and provide an outline of required concepts. Each Module also includes links to other internet resources (such as audio lectures, other written materials) that complement the lecture notes provided. Please note that many lectures include audio commentary, especially for important or challenging concepts. The audio is indicated by an image of a “speaker” on the particular slide.

Issues that are presented in the book but not reviewed in the lecture notes are considered general background or optional concepts. It is **important** to have a reasonable understanding of the concepts in each module before going on to the next because the concepts in most modules build on what you have previously learned.

**Discussion Assignments:**

There are two types of discussion. For the graded discussion assignments, students will be assigned to a small group that will discuss and complete the questions listed on each week’s discussion assignment. The threaded discussion is called a “Forum” in Moodle.

Only 1 final response, no more than 2-3 pages long, must be submitted by each group. It is recommended that the first response to each discussion assignment should be posted by (at the latest) the Friday before it is due on Tuesday. The instructors will monitor the discussion and provide advice and clarification as needed. Each group member is expected to post at least 2 substantive initial or reactive comments to the discussion when the assignment is open.

Your group has several options for communication. The discussion board on Moodle is the primary way to demonstrate members’ input and is required. However, some groups choose to augment this mode in various ways. Moodle has a chat function that can be used, and groups have also set up conference calls or Skype sessions. With advance notice, the instructor or TA can join those meetings as you wish, but we do not review chat or phone interaction.

One student from each group will be assigned the role of **discussion leader** and will monitor and summarize the completed discussion. It is the responsibility of the discussion leader to submit the assignment on time. All students are expected to share in the discussion and students should inform other members of their group if they will have trouble contributing during certain times because of
conflicts. The Discussion Assignment, when applicable, is due Tuesday by 12:00 noon—please see the Course Schedule for the due dates.

Self-Tests:

The purpose of the self-test is to evaluate your understanding after you have completed reviewing the text and lecture notes. We suggest that you complete the self-test prior to beginning the homework assignment in Moodle. The self-tests are not counted towards your grade, but the results can be reviewed by your instructors. You are welcome to discuss the self-tests with your group and the rest of the class.

Homework Assignments:

There is a homework assignment for each module. The primary purpose of the homework is to evaluate your understanding of the concepts and alert you to problems you might have in understanding. Some of these (see Course Schedule) will be reviewed and graded. The rest are considered pass/fail assignments. A homework assignment will be considered as passing if a reasonable attempt has been made to answer all the questions. Homework is due each Wednesday at 12:00 noon. It is acceptable to discuss the concepts within the homework assignment in discussion and e-mail but the graded homework assignments are individual work and will be considered as such. There is a discussion forum that is reserved for questions about homework assignments.

Questions and Comments:

Students have several options to ask questions or provide comments about the readings and issues presented.

In Moodle, there are forums set up for questions on concepts and questions on Homework. Forums will also be set up to review for the midterm and final. The instructors will often post comments related to issues that come up in another group discussion or comments related to current events, etc. It is important to monitor all the discussion posts and respond.

Students may also use Rutgers or Moodle e-mail to send questions to the instructors or other students. The instructors will make every effort to respond within 24 hours, either directly to the student or by posting to the discussion section for the entire class. Students who would like to speak to the instructor or TA by phone or in-person should make an appointment via e-mail or leave a message on the instructor’s work phone (732-235-4666).

Text and Other Resources:

This class is tied closely to the presentation of concepts in the book so it is important to have access to this specific text. Any concept that is not directly discussed in the text (such as something in the lecture notes) will be identified as such in the module outline. [NOTE: We recommend either the 4th or 5th Edition—the older editions are OK, but be aware that some terms have been changed and the page numbers and Chapters may not match.]


**Other resources:** Each week’s module outline will provide a list of optional links and publications that provide an alternative or expanded view of the concepts presented that week. Some of these use other modes of communication (e.g. audio/video, interactive case-study) that might help if you are having trouble with the readings and lecture notes. The links or publications will either be stored in the Moodle site for this course or should be accessible via the Internet. Please inform the instructor if you have trouble accessing a listed site.

**Other textbooks:** Listed below are some further supplemental texts.

Rothman KJ Epidemiology, An Introduction. Oxford University Press, 2002 (This is the required text for the second course in epidemiological methods at Rutgers SPH Piscataway).


Victor Shoenbach’s on-line evolving epidemiology text for University of North Carolina: http://www.epidemiolog.net/evolving/TableOfContents.htm

Neil Pearce’s short intro text
https://vula.uct.ac.za/access/content/group/9c29ba04-b1ee-49b9-8c85-9a468b556ce2/DOH/Module%202%2028Bio_Epi%29/Epidemiology/EPIDEMIOLOGY/Pearce.pdf

Dona Schneider’s course (Rutgers Bloustein and SPH) presentation files available on-line: http://www.pitt.edu/~super1/courses/coursepage.htm

**Exams:**

There will be a mid-term and a final exam, both completed and submitted through Moodle. These are timed. The format will be a combination of multiple choice, calculations, and short answer questions. Review for the mid-term and final will take place during the discussion assignment prior to the assigned dates. We will also schedule in-person and telephone review sessions. Students who submit homework (and understand their answers!) and participate in the discussion successfully should be able to do well on the exams. The course instructor and
TA will monitor both the content of homework and discussion assignments, and provide individual feedback to students as needed.

**Grades:**
The final grade will be computed as follows:

25% Homework (15% Graded, 10% pass/fail)
25% Discussion
20% Midterm
30% Final Exam

Homework will be graded or pass/fail (See Course Schedule). The graded homeworks will be graded as a percentage. Homework will be considered a “pass” if some attempt has been made to answer all the questions. Late homework will receive a 50% penalty unless previous arrangements have been made with the professor or TA.

The Discussion Grade will be based on Group Discussion Assignments and the number of posts to the weekly discussion prompts.

The Discussion assignment grades are assigned on a 6 level scale from Moodle roughly corresponding to letter grades. The main determinant of discussion grades is effort and content: Have you participated actively and on time? Is the final submission generally correct?

The midterm and final exam will be submitted through Moodle and will be graded as a percentage. Final letter grades will be based on the total average weighted percentage as shown above. In general, grades will be assigned based on the following percentages: above 90+ A range, 80-90 B range, Less than 80 C range.

**School of Public Health Honor Code:** Students are expected to abide by the School of Public Health’s Honor Code and to conduct themselves with honesty and integrity. The School of Public Health Honor Code is found in the student bulletin (sph.rutgers.edu/academics/catalog/index.html ). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another’s work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the school community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.