Course Title: Principles and Methods of Epidemiology
Course Number: PHCO 0502
Course Location: NEWARK RM 741 BERGEN BLDG
PISCATAWAY RM 3A & B SPH
Course Date & Time: NEWARK: TUESDAY 6-9 PM
PISCATAWAY: WEDNESDAY 6-9 PM
Course Instructor: WILLIAM HALPERIN MD, MPH, DrPH, PROFESSOR OF EPIDEMIOLOGY WILLIAM.HALPERIN@RUTGERS.EDU NEWARK OFFICE: RM 737 BERGEN BUILDING PHONE 973-972-1862 (EMERGENCY PHONE 513 254 3833; PISCATAWAY CAMPUS RM 134 SPH
Office Hours: NEWARK 2-6 TUESDAY
PISCATAWAY 2-6 WEDNESDAY
Course Assistant: CATHLEEN XING (cathleen.xing@rutgers.edu)
Required Course Text: EPIDEMIOLOGY by LEON GORDIS; FIFTH EDITION; ELSEVIER/SAUNDERS; PAPER VERSION VERY HIGHLY ENCOURAGED!!!
Additional/Supplemental Readings/Resources:

Course Description: This introductory course will provide the basic skills for independently conducting an epidemiologic investigation and a foundation for higher level courses. Learning methods consist of active participation in real world case studies, digestion of the material covered in the required textbook including completion of homework problem sets, lectures and mini-lectures, a 3 page paper and poster, and three cumulative examinations including pre and post-test review. A working knowledge of basic high school algebra is assumed; a prerequisite for enrollment in this course is a passing grade on the Quantitative Skills Assessment examination.

Selected Department Competencies Addressed: Each Department identifies competencies for each degree offered. The competencies addressed in the MPH for the Department of Epidemiology and which are introduced in this course include:

A: Critique epidemiologic literature, assess its strengths and weaknesses, and determine if conclusion(s) are supported;
B: Use epidemiologic techniques to quantitatively assess patterns and changes in disease occurrence;
C: Formulate a specific hypothesis and determine an appropriate study design and analysis plan;  
D: Design, implement, and assess ordinary data collection systems for public health research;  
E: Design and implement basic quality control methods during data entry and analysis;  
F: Appropriately analyze and interpret epidemiologic data, including large national and state level datasets; and  
G: Communicate and present study findings to professional audiences.

Please visit the Department webpages on the School of Public Health’s website at http://sph.rutgers.edu/ for additional competencies addressed by this course for other degrees and departments.

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

- Distinguish among appropriate metrics used in public health such as incidence, prevalence, incidence density, etc.;  
- Choose among various metrics for communication of public health messages;  
- Apply appropriate epidemiologic methods for the investigation of the etiology and determinants of acute and chronic diseases and injuries;  
- Distinguish among primary, secondary and tertiary prevention of preventable diseases and injuries and design public health systems for their control and prevention;  
- Distinguish between direct and indirect adjustment and apply appropriate methods for calculating adjusted rates;  
- Calculate the sensitivity, specificity, and predictive value of diagnostic tests and evaluate their relationship to prevalence of disease;  
- Detect biases in study design that can lead to erroneous conclusions;  
- Weigh various epidemiologic attributes in order to distinguish between association and causality;  
- Design public health and clinical systems to accommodate the dual goals of reduction of disease and injury in those at high risk in addition to reducing the burden of attributable disease in the entire population including those at moderate and minor risk;  
- Describe the interaction and interdependence of epidemiology with other major core public health and medical disciplines.  
- Describe the interaction of disparities in biology, economics, social wellbeing, and other factors that interact to produce injury and disease.  
- Identify diseases and injuries of public health importance.
Course Requirements and Grading: In this section, Instructor should include

- **Homework assignments:** Each chapter in the text, “Gordis” has a set of questions. The answers to the questions may be found in an appendix. Students must submit the answers to the questions **showing their work** at the beginning of class. Submission of these problem sets will count for 15% of the final grade. They must be submitted as paper copies, not by email. Grading is pass/fail.

- **Case studies including class participation:** There will be 2-3 case studies that take 3 to 9 hours of class time to complete in small groups. Participation in case studies will constitute 15% of class grade. Grading is pass/fail.

- **Examinations:** There will be two midterms and a final examination. Examinations are cumulative, so students are responsible for all material up to the class before the exam. For the final examination, students are responsible for all material in the course. Concepts that are not uniformly understood by the class as demonstrated by exam performance will be included in the subsequent examination. To accommodate students who get off to a slow start, or a fast start due to prior study of epidemiology, the first exam will count for 10% of the final grad, the second exam 20% and the final exam 40%. Further, if the results of the second exam are superior to the first, the score for the second exam will replace the score for the first. Similarly, the score for the final exam will replace the second exam if the former is higher than the latter.

- **Course Grade Components:**
  1. Examination #1: 10 pts.
  2. Examination #2: 20 pts.
  3. Final Examination: 30 pts.
  5. Class work: 15 pts.
  6. Paper/Poster: 10 pts.

   **Total:** 100 pts.

- **Final Grades:** The actual total points accumulated by the student and distribution of grades achieved by the class will be used to assign a final grade. The actual grades and distribution will be transformed to insure an appropriate distribution.

- **Office Hours:** Office hours will be held from 2-6 PM before class. Students unable to attend during these hours should contact the TA or Dr Halperin to make special arrangements. Students are encouraged to attend office hours if there is any question about their mastery of the material.

- **Letters of Recommendation:** It is highly unlikely that the professor Solely based on student participation in an introductory course, it is very unlikely that the professor will have adequate information to write a useful letter of recommendation based on student participation in an introductory course. There may be exceptions.
The text is quite good in presenting concepts from the introductory level to the more complex. The Chapter questions focus more on the introductory level as will the course examinations.

The Paper and Poster: Groups of 3 students will write a 3 page (double space 11 pica) paper on a “Rose Paradox”. The concept will be explained in class. No more than two groups may work on the same subject.

Course Schedule: See attached.

School of Public Health Honor Code: 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.

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.