Course Syllabus: Graduate Epidemiology (BIOL 5301--009)

Classroom: Liberal Arts Building #206  
Instructor: Jianying Zhang, MD, M.P.H., Ph.D.  
Office: B3.124; Lab: B3.200  
Email: jzhang@utep.edu  
Phone: 915-747-6995 (O); 915-747-5343 (L)  
Class Hours: MW 1:30-2:50 pm  
Office Hours: MW 3:30-5:00 pm

Required Materials  

Course Description  
Epidemiology is the study of the distribution and determinants of health-related states or events in specified populations and the application of this study to the control of health problems. The course will follow closely the book, Epidemiology, by Leon Gordis and will feature in-person lectures that rely exclusively on Microsoft PowerPoint animated text and graphics, presented in class with a computer projector. This course will guide you in learning the basic concepts, principles, and methods of population-based epidemiologic research. Special emphasis will be given to measuring the occurrence of disease, study design, data quality, and causal inference. Discussion sessions will focus on health problems that are making news, and ways that epidemiology is being used to address these problems.

Course Objectives  
1. To understand the basic concepts, principles, and methods of epidemiologic research.  
2. To develop a unified methodologic framework for understanding, planning, and evaluating epidemiologic studies and for assimilating new research methods.  
3. To recognize the difference between epidemiologic research, basic or clinical research.  
4. To be able to read and evaluate the epidemiologic literature critically in any specific substantive area of interest.

Attendance  
Attendance in this course is critical to your success. Not only attending lecture aid in your understanding of course material, attendance is mandatory.

Evaluation  
One final examination will be given for this course. The final examination will be comprehensive, covering all reading and lectures, and will be given during the last week of this semester.

The exercises (Review Questions) that accompany each chapter will be given. The exercises encourage students to immediately use their newly acquired knowledge and, thus, by practice, improve retention.
Using journal articles from the medical literatures, several projects will require you to ascertain the study objectives, target population, and especially the study design. One of the projects is to use epidemiological approaches to write a research proposal, and further to understand the epidemiological principles and methods. You can choose any research topic which you have interest in (for example, human cancer, diabetes, cardiovascular diseases, obesity, and so on) as the focus of your proposal. Your papers must be typed and double-spaced. No hand written papers will be accepted. Later papers will receive a 10% deduction in points for each day (including non-class days) they are late. If you absolutely cannot make it to class on the day your paper is due, you may email your assignment to me with an attachment.

**Grading**

Your grade in this course is based on a combination of exam, projects, presentation and participation in class. Grades are based on a straight percentage scale; there is no curve and no +/- grades are awarded. So, an A=100-90%, a B=89.9-80%, a C=79.9-70%, a D=69.9-60%, and F=<60%.

Projects: 200 points  
Exams: 120 points  
Presentation: 40 points  
Class Participation & Attendance: 40 points  
Course Total: 400 points

The following schedule is tentative, and the dates of lectures and/ or class discussions may be changed.

1\(^{st}\) week:  Introduction  
2\(^{nd}\) week:  The Dynamics of Disease Transmission  
3\(^{rd}\) week:  Measuring the Occurrence of Disease  
4\(^{th}\) week:  Diagnostic and Screening Test  
5\(^{th}\) week:  Natural History of Disease  
6\(^{th}\) week:  Randomized Trials  
7\(^{th}\) week:  Cohort Studies  
8\(^{th}\) week:  Spring Break (No Classes)  
9\(^{th}\) week:  Case-Control Studies  
10\(^{th}\) week:  Cross-Sectional Studies  
11\(^{th}\) week:  Estimating Risk; More on Risk  
12\(^{th}\) week:  Comparing Cohort and Case-Control Studies;  From Association to Causation; More on Causal Inferences  
13\(^{th}\) week:  Molecular Epidemiology & Cancer Epidemiology  
14\(^{th}\) week:  Precision Medicine  
15\(^{th}\) week:  presentation  
16\(^{th}\) week:  presentation  
17\(^{th}\) week:  Final Exam