

Course Syllabus:**Selective Adv. Topics Biol. Science: Epidemiology (CRN#: 22394; BIOL5301-007)**

Classroom: Education Building #311

Instructor: Jianying Zhang, MD, M.P.H., Ph.D.

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Class Hours: MW 4:30-5:50 pm

Office Hours: MW 3:00-4:20 pm

Required Materials

Gordis, L., Epidemiology (ISBN: 9781455737338), Elsevier Saunders Co., Philadelphia, 5th Ed., 2013.

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

Two quizzes and 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. 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%.

Exams: 120 points

Projects: 200 points

Presentations: 40 points

Final Exam: 100points

Class Participation & Attendance: 40 points

Course Total: 500 points

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

1st week: Introduction

The Dynamics of Disease Transmission

2nd week: Investigating an Outbreak

Measuring the Occurrence of Disease

3rd week: Measuring the Occurrence of Disease

Natural History of Disease

4th week: Diagnostic and Screening Test

Guest Lecture: Cancer Epidemiology

5th week: Review and Project

Quiz 1

6th week: Randomized Trials

7th week: Cohort Studies

8th week: Case-Control Studies

9th week: Spring Break (no class)

10th week. Cross-Sectional Studies

Estimating Risk & More on Risk

11th week: Molecular Epidemiology

Comparing Cohort and Case-Control Studies

12th week: From Association to Causation & More on Causal Inferences

Quiz 2

13th week: Project Presentation

14th week: Project Presentation

15th week: Project Presentation

16th week: **Final Examination**