

HS 395 (Sec 1) – Spring 2017 Fundamentals of Epidemiology

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A. Course description

Fundamentals of Epidemiology (HS 395 – 3 credits)

Epidemiology is often referred to as “the basic science of public health”. This class provides an introduction to the principles and methods of epidemiology as it applies to health promotion and healthcare delivery. The course will cover a historical perspective of epidemiology, measures of disease occurrence and association, clinical epidemiology, major epidemiological study designs, disease screening, causal inference and common methods for identifying and controlling infectious disease outbreaks.

Prerequisite: Math 355.

B. Format

Three hours lecture per week for sixteen weeks. *Hybrid format with out-of-class narrated lectures and in-class discussions.*

C. Textbook

Epidemiology (4th Edition) by Leon Gordis

D. General goals and objectives

At the conclusion of this course, students will be able to:

1. Articulate the basic epidemiologic study designs and statistics used for measuring risk factor/disease associations.
2. Apply knowledge of epidemiology to identify the strengths and weaknesses of published studies.
3. Demonstrate the importance of using epidemiologic data to design disease prevention programs.
4. Appreciate the scope of epidemiology and its potential application for health promotion and improving healthcare delivery.

E. Grading system

93 – 100	A	77 – 79	C+
90 – 92	A-	73 – 76	C
87 – 89	B+	70 – 72	C-
83 – 86	B	67 – 69	D+
80 – 82	B-	60 – 66	D
		Below 60	F

“A” reflects exceptional work (going beyond the basics, integrating material well, displaying professionalism in individual and group work, application and demonstration of knowledge and skills, showing initiative, using creativity, writing is reflective of multiple drafts).

“B” reflects good work (valuable teamwork skills, active in class, ability to grasp basic concepts and apply to new situations, some participation in class, completes all assignments with a degree of proficiency but may not demonstrate initiative, creativity or reflection consistently, writing contains errors or lacks conciseness and completeness).

“C” reflects average work (assignments are completed at the minimum, basic concepts are grasped but cannot be applied, some difficulty in group work, spelling and grammar mistakes are common, writing is conversational in tone with little attention paid to detail, word choices, organization (rough draft quality), little participation in class).

Student responsibilities for successful coursework:

Attendance: Students should plan to attend all classes and are responsible for all information presented in class. Notify the instructor in person, by telephone or email if an absence is anticipated. Class begins promptly at the scheduled times.

Reading Assignments: Additional readings will be posted in D2L. Students will be more successful in the class if the text and other handouts are read before the class period during which a given topic will be covered. The course is focused on discussion and analysis of topics. Readings will prepare you for participation in class.

Written work must be computer-printed (12 point font, double-spaced, 1 inch margins) and written in complete sentences with proper punctuation, spelling and grammar. Student names should be printed in the upper right hand corner of the paper. All assignments are due at class time on the day specified. Students must submit one copy of their homework in the drop box of D2L before class and also bring a copy for review in class. Late assignments may be accepted but these will receive a lower grade. *If you have any concern about meeting the requirements of this course, please see me.*

G. Derivation of course grade

Three 1-hour exams (15% each - multiple choice and short answer)	45%
Class participation	5%
Quizzes	15%
Final exam (comprehensive)	35%

H. Other class information

Cell phone policy - please don't use your cell phone during class!

No text messaging.

Email – please note that you are responsible for anything I send you via email.

Remember, class attendance is very important!

I. Communicating with your instructor via email

I check my email frequently during the day. However, I receive a lot of email and I sometimes delete emails which do not have the subject specified. If you have not received a response to your email within 24 hours, please resend your email. I do check email routinely at home and on weekends. Please remember that these are professional communications so please use full sentences and complete words.

J. Students with special needs

Students with special needs should contact the instructor as early in the semester as possible to make any necessary class/test accommodations.

The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material. The instructor will make every effort to inform the students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course. Any in-class announcement, verbal or written, is considered official addendum to this syllabus.

Tentative Course Calendar

Date	Topics
Tues, Jan 24 (In class)	Lesson 1 - Course Overview / What is Epidemiology?
Thurs, Jan 26	Lesson 2 - The Role of Chance: Probability, Fallacies and Monty Hall
Tues, Jan 31 (In class)	Discussion - Overview of Epidemiology (Lesson 1 continued)
Thurs, Feb 2	Lesson 3 - History of Epidemiology
Tues, Feb 7 (In class)	Discuss Levels of Prevention and study designs
Thurs, Feb 9	Lesson 4 - Descriptive Studies / case reports, case series and cross-sectional surveys: incidence and prevalence
Tues, Feb 14 (In class)	Lesson 5 – Rates and Demography
Thurs, Feb 16	Lesson 6 - Ecological studies / Causality
Tues, Feb 21 (In class)	Lesson 7 – Case Control Studies. Discuss Ecological Studies and Case Control Studies
Thurs, Feb 23	Lesson 8 – Sampling Lesson 9 - Cohort Studies
Tues, Feb 28 (In class)	Discuss Cohort Studies /Measures of Association
Thurs, March 2	Lesson 10 – Odds Ratios and Relative Risks
Tues, March 7 (In class)	Exam 1
Thurs, March 9	Lesson 11 - Randomized Controlled Trials (RCTs)
Tues, March 14 (In class)	Review Exam 1 and Discuss Randomized Controlled Trials Methods
Thurs, March 16	Lesson 12 - Community Intervention Studies Lesson 13 - Meta Analysis and Evidenced Based Medicine
Tues, March 21	<i>Spring Break (no class)</i>
Thurs, March 23	<i>Spring Break (no class)</i>
Tues, March 28 (In class)	Discuss Meta Analysis and evidenced-based medicine
Thurs, March 30	Lesson 14 - P-Values and 95% Confidence Intervals Lesson 15 - Screening: sensitivity and specificity
Tues, April 4 (In class)	Discuss: RCT paper and screening
Thurs, April 6	Review for Exam 2
Tues, April 11 (In class)	Exam 2
Thurs, April 13	Lesson 16 - Overview of Infectious Disease Epidemiology
Tues, April 18 (In class)	Discuss Outbreak Investigation Methods and Review Exam 2
Thurs, April 20	Lesson 17 - Infectious Disease Field Epidemiology
Tues, April 25 (In class)	Lesson 18 - Discuss Outbreak Investigation Methods
Thurs, April 27	The great Milwaukee Crypto outbreak / Review for exam 3
Tues, May 2 (In Class)	Exam 3
Thurs, May 4	Lesson 19 - Diabetes Pandemic talk

Tues, May 9 (In Class)	Review Exam 3 and Review for Final
Thurs, May 11	Review for Final
Tuesday May 16	Final Exam (17:00-19:00)