

## HS 395 (Sec 1) – Fall 2016 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 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 (4<sup>th</sup> 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, Sept 6 (In class)	Course Overview / What is Epidemiology?
Thurs, Sept 8	The Role of Chance: Probability, Fallacies and Monty Hall
Tues, Sept 13 (In class)	Discussion - Overview of Epidemiology (continued)
Thurs, Sept 15	History of Epidemiology – from limes to pump handles
Tues, Sept 20 (In class)	Discuss Levels of Prevention and study designs
Thurs, Sept 22	Descriptive Studies / case reports, case series and cross-sectional surveys: incidence and prevalence
Tues, Sept 27 (In class)	Discuss Descriptive students and age-adjustment
Thurs, Sept 29	Ecological studies / Causality
Tues, Oct 4 (In class)	Discuss Ecological Studies and Case Control Studies
Thurs, Oct 6	Cohort Studies
Tues, Oct 11 (In class)	Discuss Cohort Studies /Measures of Association
Thurs, Oct 13	Sampling
Tues, Oct 18 (In class)	<b>Exam 1</b>
Thurs, Oct 20	Randomized Controlled Trials (RCTs)
Tues, Oct 25 (In class)	Review Exam 1 and Discuss Randomized Controlled Trials Methods
Thurs, Oct 27	Community Intervention Studies and Meta Analysis and Evidenced Based Medicine
Tues, Nov 1 (In class)	Discuss Meta Analysis and evidenced-based medicine
Thurs, Nov 3	Screening: sensitivity and specificity
Tues, Nov 8 (In class)	Discuss: RCT paper
Thurs, Nov 10	Review for Exam 2
Tues, Nov 15 (In class)	<b>Exam 2</b>
Thurs, Nov 17	Overview of infectious disease epidemiology
Tues, Nov 22 (In class)	Review Exam 2 and Discuss Outbreak Investigation Methods
Thurs, Nov 24	<i>Thanksgiving break (no class)</i>
Tues, Nov 29 (In class)	Outbreak Investigation
Thurs, Dec 1	The great Milwaukee Crypto outbreak / Review for exam 3
Tues, Dec 6 (In Class)	<b>Exam 3</b>
Thurs, Dec 8	Diabetes Pandemic talk
Tues, Dec 13 (In Class)	Review Exam 3 and Review for Final
Thurs, Dec 15	Review for Final
Monday Dec 19 <sup>th</sup>	<b>Final Exam (17:00-19:00)</b>