

**Department of Epidemiology and Biostatistics
College of Public Health
University of Georgia**

**EPID 4070
Fundamentals of Epidemiology
Fall 2009**

Course Information

Instructor: John Vena, Ph.D.
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Office Hours: 1:30 pm – 2:30 pm Tuesday, Thursday, and by appointment

Teaching Assistant: Emily Smith
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Course Meeting Time and Location

Room: Aderhold G5
Day: Tuesday/Thursday
Time: 3:30 – 4:45 pm

Textbooks and Other Required Course Material

Robert H. Friis and Thomas A. Sellers. *Epidemiology for Public Health Practice*. 4th ed. Sudbury, MA: Jones and Bartlett; 2009.

This book has a companion website (<http://publichealth.ibpub.com/friis/4e/>) which has additional resources you may find helpful.

Other course materials will be available through WebCT.

Course Description

PRINCIPLES OF EPIDEMIOLOGY

Course description:

The present course covers principles of epidemiology and application of epidemiologic procedures to the understanding of the occurrence and control of conditions such as infections and chronic diseases, mental disorders, community and environmental health hazards, accidents, and geriatric problems.

Course Learning Objectives

Expected Outcomes:

Upon completion of this course, each student should understand the following subject matter:

1. Epidemiology as a tool for assessing potential causal associations, health needs of a population, delivery of services, program planning, and social policy.
2. The uses of epidemiology and the role of epidemiology in public health.
3. Assessment of the validity and reliability of such data collection mechanisms as death certificates, patient charts, agency records, and personal surveys.

4. Measurements of mortality and morbidity (rates, ratios, and adjusted rates) and the major sources of error in measurement of disease.
5. Descriptive epidemiology: the amount and distribution of disease within a population by person, place, and time.
6. Research designs such as retrospective (case-control), prospective (cohort), historical prospective, cross-sectional, and experimental (clinical and community trials).
7. Evaluation of screening programs in the detection of disease; terminology of screening including determinants of sensitivity and specificity.
8. Population dynamics and health with respect to the stages in demographic transition and trends in the U.S. and world populations.
9. Epidemiologic aspects of infectious disease (variations in severity of illness, components of the infectious disease process, mechanism of disease transmission, and common source versus propagated).
10. Epidemiologic aspects of chronic disease such as cancer, cardiovascular disease, etc (multi-factorial nature of etiology, long latency period, indefinite onset, and differential effect of factors on incidence and course of disease).
11. Special topics in epidemiology such as environmental epidemiology, occupational epidemiology, molecular epidemiology, social epidemiology, injury epidemiology, etc.
12. Epidemiology as a profession and the ethical conduct of research.

Course Requirements for Grading Purposes

Homework:

There will be ~8 assignments due at scheduled intervals throughout the semester (roughly one every few weeks). Homework assignments will be based on readings and lectures. Students should read the assigned chapters and attend classes to do well on the homework. These will be structured to provide practical experience and serve as a preparation for the exams and will be graded. Homework will be due by the end of class on the scheduled due date. Late homework will receive a maximum of half the marks. Homework assignments will be posted on eLearning Commons and homework solutions will be reviewed in class. Please use the following guidelines for your homework documents:

1. Submit on time (by the end of class of the due date).
2. Document instructions:
 - a. Homework answers must be typed.
 - b. Put name on actual document [on header or footer, so it is on each page].
 - c. Insert page numbers.

Examinations:

There will be three exams in the course of the semester. Exams will draw on information covered in homework assignments, lectures and from the text. The exam format will typically include true/false, multiple choice, short answer and/or essay questions. Exams will not be comprehensive but students should understand the basic concepts and build upon them and be able to apply them throughout the semester.

Group Project:

In lieu of a final exam, students will work in groups of five to explore in detail a health problem by using a descriptive epidemiologic approach. Examples of health problems or disease that might be studied can be found in Exhibit 5-1 and 5-4 although students may choose to study other public health concerns. The objectives of this project are:

- To gain experience in describing and analyzing the distribution of a health disorder in a population or the relation of a specific exposure to a health outcome
- To become familiar with various sources of data for the epidemiologic description of a health disorder

- To enhance the ability to make sound epidemiologic judgments related to public health problems

Students will present their findings in a 10 page written report in addition to 10-15 minutes oral presentation. All members of the groups must contribute to both the report and presentation. Guidelines and further detail on this project will be given.

The grade for this project will be determined both by the instructor (75%) and by peer evaluation (25%).

Extra Credit:

Extra credit may be earned by briefly summarizing a recent epidemiologic investigation or news event involving epidemiology. Bring a newspaper clipping, scientific journal article or related material and describe the study or event. Explain the study to the class: What was the purpose? How was the study conducted? Describe the population studied. How were the data collected? What were the results? Why was it important? You may be awarded 1-10 points depending on the level of detail and amount of information you provide. Please let the instructor know in advance if you have something you want to report for extra credit so that time can be allotted accordingly.

Grading Policy

Course grades are distributed as follows:

Exam 1	17%	67 points
Exam 2	17%	67 points
Exam 3	17%	67 points
Group Project	25%	
Paper	20%	80 points
Presentation	5%	20 points
Homework	15%	60 points
Participation & Attendance	10%	<u>40 points</u>
Total		400 points

The following grading scale will be used:

90 - 100 = A	360 - 400 points
86 - 89 = B+	344 - 359 points
80 - 85 = B	320 - 343 points
76 - 79 = C+	304 - 319 points
70 - 75 = C	280 - 303 points
66 - 69 = D+	264 - 279 points
60 - 65 = D	240 - 263 points
< 60 = F	< 239 points

Course Policies

Epidemiology is professional career. A hallmark of professionalism is integrity. Students should exhibit professionalism and integrity in all endeavors related to this class including classroom lectures, homework assignments and all examinations. Students are responsible for attending all scheduled class sessions and participating in class discussions. If you cannot attend class, please get notes and distributed materials from a fellow student or from the class website. Please do not disrupt the class if arriving late or leaving early. Class discussions will cover various topics and students are expected to participate and share their ideas. The biological and science knowledge base varies among students.

Please be aware of this and considerate of others with different educational backgrounds. Note: There is no such thing as a stupid question.

Attendance Policy

Attendance and participation in classes with evidence of adequate preparation to contribute to discussions are essential. Students are expected to come to class prepared to ask and answer questions and contribute to any discussion of that day's topic. Students unable to take an exam or submit homework assignment due to illness or family/personal emergency must contact the instructor before the scheduled exam or assignment due date.

University Honor Code and Academic Honesty Policy

All academic work must meet the standards contained in "A Culture of Honesty." All students are responsible to inform themselves about those standards before performing any academic work. More detailed information about academic honesty can be found at <http://www.uga.edu/ovpi/honesty/acadhon.htm>

It is the responsibility of every student at the University of Georgia to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this rule or who knowingly assists another to violate this rule shall be subject to discipline. **Evidence of cheating will result in a failing grade.**

Students with Disabilities

Students with disabilities who require reasonable accommodations in order to participate in course activities or meet course requirements should contact the instructor or designate during regular office hours or by appointment.

General Disclaimers

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Topical Outline

Date	Topic	Assignments
Tuesday Aug 18	Course Overview, Intro to Public Health	
Thurs, Aug 20	Epidemiology and Biostatistics, History of Epidemiology, John Snow	Ch. 1
Tues, Aug 25	Recent Applications, Applications of Epidemiology	Ch 1,2
Thurs, Aug 27	Applications of Epidemiology	Ch 2
Tues, Sept 1	Overview of Group Project, Group organization	
Thurs, Sept 3	Measures of Association	Ch 3
Tues, Sept 8	Measures of Association	Ch 3
Thurs, Sept 10	Descriptive Epidemiology – Person, place, time	Ch 4
Tues, Sept 15	Descriptive Epidemiology – Person, place, time	Ch 4
Thurs, Sept 17	Exam 1	
Tues, Sept 22	Sources of Data	Ch 5
Thurs, Sept 24	Sources of Data	Ch 5
Tues, Sept 29	Study Design	Ch 6-8
Thurs, Oct 1	Study Design	Ch 6-8
Tues, Oct 6	Study Design	Ch 6-8
Thurs, Oct 8	Exam 2	
Tues, Oct 13	Oasis Overview and group work	
Thurs, Oct 15	Group Project Reports	
Tues, Oct 20	Measures of Effect	Ch 9
Thurs, Oct 22	Measures of Effect	Ch 9
Tues, Oct 27	Validity and Confounding	Ch 10
Thurs, Oct 29	Validity and Confounding	Ch 10
Friday Oct 30	Fall Break	
Tues, Nov 3	Screening and Sensitivity/Specificity	Ch 11
Thurs, Nov 5	Environmental and Occupational Epidemiology	
Tues, Nov 10	Infectious Disease Epidemiology	Ch 12
Thurs, Nov 12	Epidemiology as a Profession	Ch 16
Tues, Nov 17	Ethical Conduct in Epidemiology	Ch 16
Thurs, Nov 19	Exam 3	
Nov 23-27	Thanksgiving BREAK	
Tues, Dec 1	Group Project Presentations	
Thurs, Dec 3	Group Project Presentations	
Tues Dec 8	Friday class Schedule	
Thurs, Dec 10	Group Project Presentations 3:30 pm – 6:30 pm	