

**PHC 6001 (Sections 3468 and 3467) PRINCIPLES OF EPIDEMIOLOGY
SPRING SEMESTER 2008**

Dates: 1/07/08 – 5/02/08 **Place: Online via E-Learning, <http://lss.at.ufl.edu>**

**Instructor and Lecturer: Nabih R. Asal, Ph.D., F.A.C.E.; Professor of Epidemiology,
Division of Epidemiology, Department of Epidemiology and Biostatistics**

Telephone: (352) 273-5363; asal@phhp.ufl.edu

Office Hours: Room 3110 PHHP

Teaching Assistant: Pinal M Viraparia e-mail: pinal@ufl.edu

DATE	LECTURE	TOPICS TO BE PRESENTED/DISCUSSED
1/10/08	1	<ul style="list-style-type: none"> • Introduction to Course • Epidemiology/Science of Public Health • Basic Terminology/ Epidemiologic Method
Assignments for Lecture 1: <ul style="list-style-type: none"> • Reading : Gordis: Chapter I pp 3-14 • Lecture: view Lecture 1, part 1 & 2 • Exercise 1 - Categorizing Study Designs Set 1 – Due Date 1/16/08 • Discussion Board: Getting Acquainted discussion posting • Discussion Board: Module 1 Discussion Board – conversation about the study designs/ Which one was difficult and why? – Closes 1/17/08 		
1/17/08	2	<ul style="list-style-type: none"> • Descriptive Epidemiology Person, place, and time
Assignments for Lecture 2: <ul style="list-style-type: none"> • Reading: Gordis: Chapters II & III p p 15-47 • Lecture: view Lecture 2, part 1 & 2 • Exercise 2: Categorizing Study Designs Set 2 – Due Date 1/23/08 • Discussion Board: Module 2 – Conversation about the study designs/ Which one was difficult and why? – Closes 1/24/08 		
1/24/08	3	<ul style="list-style-type: none"> • Vital Statistics • Sources of Data for Epidemiology
	4	<ul style="list-style-type: none"> • Classification of Disease • Certification of Cause of Death
Assignments for Lecture 3 & 4: <ul style="list-style-type: none"> • Reading: Gordis: Chapter IV, pp 58-60 • Lecture: view Lecture 3 and Lecture 4 • Exercise 3: Demographic characteristics – Due Date 1/30/08 • Discussion Board: Module 3, on demographic exercise – What was significant? • Exercise 4: Cause of death and proper completion of death certificate – Due Date 1/30/08 • Discussion Board: Module 4, General Q & A on death certificate – Closes 1/31/08 		

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1/31/08	5	<ul style="list-style-type: none"> • Measures of Disease Frequency rates, ratios, proportions
Assignments for Lectures 5: <ul style="list-style-type: none"> • Reading: Gordis: Chapters III & IV, pp 32-70 • Lecture: view Lecture 5, parts 1 & 2 • Exercise 5: Measures of Disease Frequency: Rates, Ratios and Proportions – Due Date 2/06/08 • Discussion: Module 5 – not a graded discussion, use to discuss this topic 		
2/07/08	6	<ul style="list-style-type: none"> • Rate Adjustment: Direct & Indirect Methods
Assignments for Lectures 6: <ul style="list-style-type: none"> • Reading: Gordis: Chapters III & IV, pp 60-68 • Lecture: view Lecture 6, parts 1 & 2 • Exercise 6: Age-Adjustment Exercise - - Due Date 2/13/08 • Discussion: Module 6 - Interpreting Rate Adjustment Method – Closes 2/14/08 		
2/14/08	7	<ul style="list-style-type: none"> • Investigation of Infectious Disease Outbreaks
Assignments for Lectures 7: <ul style="list-style-type: none"> • Reading: Gordis: Chapter II pp 15-31 • Lecture: view Lecture 7, parts 1 & 2 • Exercise 7: Oswego – An Outbreak - Due Date for Ex. 7, 2/20/08 (Note: the earlier you submit this exercise, the earlier you will have access to Lecture 8, which will be included in Exam 1) • Discussion: Module 7 – Outbreak investigations - Closes 2/21/08 • YOU MAY COMPLETE EXERCISE 7 OR EXERCISE 8. Students may choose which of these two exercises to do, with a slight recommendation to do Oswego, #7. (Note: You will be given a grade for only one exercise, and the other will read “late”, then “missed” on the site, but you can ignore this.) 		
2/21/08	8	<ul style="list-style-type: none"> • Outbreak Epidemiology
Assignments for Lectures 8: <ul style="list-style-type: none"> • Reading: Gordis: Chapter II pp 15-31 • Lecture: view Lecture 8, parts 1 & 2 • Exercise 8: Outbreak 2 Botulism in Argentina - Due Date for Ex. 8, 2/27/08 • Discussion: Module 8 - Discussion Outbreak Investigation Topics – Closes 2/28/08 • YOU MAY COMPLETE EXERCISE 7 OR EXERCISE 8. Students may choose which of these two exercises to do, with a slight recommendation to do Oswego, #7. (Note: You will be given a grade for only one exercise, and the other will read “late”, then “missed” on the site, but you can ignore this.) 		
2/21/08-2/27/08		<ul style="list-style-type: none"> • Examination I (Includes Lectures 1-8)

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2/28/08	9	<ul style="list-style-type: none"> • Study Design in Epidemiology • Overview-ecologic, cross-sectional studies
<p>Assignments for Lectures 9:</p> <ul style="list-style-type: none"> • Reading: Gordis: Chapter X, pp 159-173; 173-176, • Lecture: view Lecture 9, parts 1 & 2 • No Exercise 9 • Discussion: Module 9 - Cross-Sectional design – Closes 3/06/08 		
3/6/08	10	<p>Study Design in Epidemiology I Case-Control Studies</p>
<p>Assignments for Lectures 10:</p> <ul style="list-style-type: none"> • Reading: Chapter X and XIII, pp 159-173; 199-202 • Lecture: view Lecture 10, parts 1 & 2 • Exercise 10: Case-Control Study ESRD (15 questions) - Due Date 3/19/08 • Discussion: Module 10 - Study Designs in Epidemiology- Case-Control – Closes 3/20/08 		
3/8/08-3/16/08		<ul style="list-style-type: none"> • SPRING BREAK
3/20/08	11	<ul style="list-style-type: none"> • Study Design in Epidemiology II Cohort studies
<p>Assignments for Lecture 11:</p> <ul style="list-style-type: none"> • Reading: Gordis: pp 166-176; Gordis: Chapter IX & XIII, pp 149-158; 199-202 • Lecture: view Lecture 11, parts 1 & 2 • Exercise 11: Cohort Study Larynx Cancer - Due Date 3/26/08 • Discussion: Module 11 - Cohort Study design Larynx cancer – Closes 3/27/08 		
3/27/08	12	<ul style="list-style-type: none"> • Study Design in Epidemiology III • Experimental Studies/Randomized Trials
<p>Assignment for Lecture 12:</p> <ul style="list-style-type: none"> • Reading: Gordis: Chapter VII & VIII pp 115-129; 130-146 • Lecture: view Lecture 12, part 1 & 2 • Exercise 12: Experimental Study Design Randomized Controlled Trials (diet drug) - Due Date 4/02/08 • Discussion: Module 12 - Experimental RCT – Closes 4/03/08 		

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4/03/08	13	<ul style="list-style-type: none"> • Measures of Association <ul style="list-style-type: none"> ○ Relative Risk, Risk Ratio ○ Relative Odds, Odds Ratio ○ Attributable Risk • Population Attributable Risk
<p>Assignments for Lecture 13:</p> <ul style="list-style-type: none"> • Reading: Gordis: Chapters XI & XIV pp 177-190; 203-223 • Lecture: view Lecture 13, parts 1 & 2 • Exercise 13: Measures of association; Smoking Ex - Due Date 4/09/08 • Discussion: Module 13— Measures of Association – Closes 4/10/08 		
4/10/08	14	<ul style="list-style-type: none"> • Bias and Confounding in Epidemiologic Research
<p>Assignments for Lecture 14:</p> <ul style="list-style-type: none"> • Reading: Gordis Chapter XV pp 224-239 • Lecture: view Lecture 14, parts 1 & 2 • Exercise 14: Bias and confounding - Ovarian cancer – Due date 4/16/08 • Discussion: Module 14 - Bias and Confounding in Epidemiology – Closes 4/17/08 		
4/17/08	15	<ul style="list-style-type: none"> • Screening in Disease Detection <ul style="list-style-type: none"> ○ Sensitivity, Specificity ○ Predictive Value ○ Positive/Negative ○ False Positive/False Negative
<p>Assignments for Lecture 15:</p> <ul style="list-style-type: none"> • Reading: Gordis: Chapters V & XVIII pp 71-94;281-300 • Lecture: view Lecture 15, parts 1 & 2 • Exercise 15: Screening in the Detection of Disease – Due Date 4/23/08 • Discussion: Module 15 - Screening in Disease and General Review Questions – Closes 4/24/08 		
4/24/08 - 4/30/08		<ul style="list-style-type: none"> • Examination II (Includes Lectures 9 – 15) • Course Evaluation by Students

Read also Chapters:

XII More on Risk: Estimating The Potential for Prevention, pp 191-198

**XVI Identifying the Roles of Genetic and Environmental Factors
In Disease Causation pp 240-262**

XVII Using Epidemiology to Evaluate Health Services pp 265-280

XIX Epidemiology and Public Policy pp 301-313

XX Ethical and Professional Issues in Epidemiology pp 314-324

Course Description: An introduction to epidemiology for students majoring in any aspect of the health sciences. The principles and methods of epidemiology investigation, both of infectious and non-infectious diseases are included.

Course Objectives:

1. General Objectives: The purpose of this course is to explain the place of epidemiology in the general health thinking and to communicate some understanding of the basic principles of epidemiology. Examples of the use of the principles of epidemiology will be presented so that the student will have sufficient understanding to apply such principles in future health work. It is hoped that the course will allow the student to critically read and evaluate his/her public health work using epidemiological principles. This course is not intended to present the epidemiological aspects of the major diseases.

2. Specific Objectives:

1. Identify key sources of data for epidemiologic purposes
2. Identify the principles and limitations of public health screening programs
3. Describe a public health problem in terms of magnitude, person, time and place
4. Explain the importance of epidemiology for informing scientific, ethical, economic, and political discussions of health issues
5. Identify basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiologic data
6. Apply the basic terminology and definitions of epidemiology
7. Calculate basic epidemiology measures
8. Communicate epidemiologic information to lay and professional audiences
9. Draw appropriate inferences from epidemiologic data
10. Evaluate the strengths and limitations of epidemiologic reports
11. Apply basic infectious disease methods and data
12. Apply basic chronic disease method and data

Conduct of Course:

1. **Lecture-** for general orientation.

2. **Reading-** Teaching will generally follow the recommended textbook- Gordis, "Epidemiology," 2004, Updated Third Edition; however, additional textbooks of epidemiology are recommended to supplement the lectures.

3. **Examinations:** Students are expected to take the examinations on the scheduled date and time. Make up examinations are not allowed except under very unusual and convincing circumstances. Students who fail to take the examinations on the scheduled date and time period without a written permission of the instructor will receive a grade of F on the examination. This policy will be strictly enforced.

There will be two (two hour) examinations. Each examination will count 40% of the grade for a total of 80% of the Final course grade. Exams will be administered on E-Learning within a Lock-Down Browser.

4. **Assignments:** Assignments should be submitted on time via E-Learning. Correct assignments will be part of 13% (1% per assignment) of the Final course grade. Assignments for each lecture must be submitted prior to the next lecture being available to access. For example, you will not be able to access Lecture 3 until the assignment for Lecture 2 has been submitted. All assignments may be completed in teams of 2 students working together. Both students must submit the entire assignment via E-Learning and the partners must be identified in the assignment. Please include your name(s), and the assignment name within your Word document submission. Please submit all assignments as a Word 97-2008 (.doc) file. If you use Word 2007, please convert to this format when saving your file before submission.

5. **Discussion Boards:** Discussion boards are designed for discussion on specific topics. Each lecture will have a dedicated discussion board to discuss the material and assignments for that lecture. Participation will comprise 7% of your course grade. There are also a general discussion board, introductory discussion board and boards to discuss the exams.

6. **Grades:** The Grading scale for this course consists of the standard scale below:
A = 90% -100%, B+ = 84.9%- 89.9%, B = 80%- 84.9%, C+ = 75%-79.9%, C = 70-74.9,
D+ = 65% -69.9%, D = 60%-64.9%, E = Below 60.9%

Grades are comprised of:

- Assignments = 13%
- Discussion Board participation = 7%
- Exam I = 40%
- Exam II = 40%

Counseling Resources: Counseling Center, UF, 301 Peabody Hall, 392-1575
www.counsel.ufl.edu . Student Mental Health Services, UF, 392-1171
www.health.ufl.edu/schcc/smhs.htm (24-hour phone consultation)

7. Recommended Text:

Leon Gordis, "Epidemiology", 2004, Updated Third Edition;

W. B. Saunders Company, Philadelphia. \$49.95 New; 37.50 Used; (www.ufl-health.bkstr.com)

Purchase of textbook is required. It is strongly recommended that you read all of the assigned required readings. Use the index to read up on topics covered in class, preferably before each class lecture.

Additional readings can be found from the list of other books and special readings assigned by the instructor(s).

8. Requirements: Students are responsible for all course material, including reading all required materials prior to each lecture. The course is conducted in WebCT and all assignments, course lectures, discussion, emails and exams will delivered in this medium. Students will be required to download a Lock-Down Browser prior to taking the exams for this course and exams will be administered in this browser only.

9. Academic Integrity: Each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

11. Readings and Discussions: Students should read the assigned readings prior to viewing course lectures and be prepared to discuss the material on course discussion boards.

12. Policy on Make-Up Work: Students are allowed to make up work ONLY as the result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing a homework or project deadline, consistent with College policy. Documentation from a health care provider is required. Work missed for any other reason will receive a grade of zero.

13. Accommodations for Students with Disabilities: Students requiring accommodations must first register with the Dean of Students' Office. The Dean of Students' Office will provide documentation to the student who must then provide this documentation to the faculty member when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework. We all learn differently: however, if you have experienced problems in university classes with writing, exams, understanding or concentrating on course material, please talk to me or access a learning or education testing resource at the University or in another professional setting.

Definitions

Many definitions of Epidemiology in dictionaries, medical dictionaries, public health texts, and epidemiology texts.

Simply -- "The study of the occurrence and distribution of health and disease in groups."

May be looked upon as the "Diagnostic Discipline of Public Health" or the "Basic Science of Public Health".

Derived from 3 Greek Words - EPI - down, on, upon, (EPIdermis, the outer layer of the skin).DEMOS - people (DEMOCracy, government by the people. LOGY - study, knowledge (psychology study of the mind).

Therefore, by its derivation, Epidemiology is not confined to community disease. It is literally "The study of anything which descends upon the people."

What Is Epidemiology?

1. "Epidemiology is the study of the distribution and determinants of disease prevalence in man." MacMahon, B., and Pugh, T.F., Epidemiology Principles and Methods.
2. "Epidemiology may be defined as the study of the determinants of the incidence and prevalence of disease." Alderson, M., An Introduction to Epidemiology.
3. "Epidemiology is the study of disease occurrence in human populations. The primary units of concern are groups of persons, not separate individuals." Friedman, G.D., Primer of Epidemiology.
4. "Epidemiology is the basic science of preventive medicine" because Epidemiology deals with problem solving, "Epidemiologic problems are concerned with explaining the occurrence of disease in human populations and with exploiting explanations discovered for development of methods to protect man against disease." Fox, J.P., Hall, C.E., and Elveback, L.R., Epidemiology Man and Disease.
5. "Epidemiology is defined as the study of the factors determining the frequency and distribution of disease in human population." Lowe, C.R. and Kostrzewski, J., Epidemiology A Guide to Teaching Methods.
6. "Epidemiology may be defined as the study of the distribution and determinants of diseases and injuries in human populations. That is, epidemiology is concerned with the frequencies and types of illnesses and injuries in groups of people and with the factors that influence their distribution." Mausner, J.S. and Kramer, S., Epidemiology An Introductory Text.

7. "Epidemiology is defined as the study of the distribution and dynamics of disease in populations. Several words in this definition require elaboration. Distribution implies the selection of people for attack by a disease in relation to age, sex, race, occupational and social characteristics, place of residence, susceptibility, exposure to specific agents or whatever other characteristic is pertinent. Dynamics refers to the distribution in time and is concerned with trends, cyclic or secular patterns, and intervals between exposure to inciting factors and onset of disease." Sartwell, P.E. and Last, J.M., in John M. Last, Maxcy-Rosenau Public Health and Preventive Medicine.

8. "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 control of health problems. There have been many definitions of epidemiology. In the past 50 years or so, the definition has broadened from concern with communicable disease epidemics to take in all phenomena related to health in populations."

The Oxford English Dictionary gives as a definition: "That branch of medical science which treats of epidemics" and cites Parkin (1873) as a source. However, there was a "London Epidemiological Society" in the 1850s. The identity of the Scholar who first used the word at that time has been lost. Epidemiologia appears in the title of a Spanish history of epidemic, Epidemiologia espanala, Madrid, 1802.

Epidemic is much older. The word appears in Johnson's Dictionary (1775), and OED gives a citation dated 1603. The word was, of course, used by Hippocrates.

Last, J.M., A Dictionary of Epidemiology, Second Edition.

Community disease may be in any of 3 phases- ENDemic, EPIdemic, PANdemic.

Endemic: The habitual presence of a disease within a given geographic area.

Epidemic: Is the occurrence in a community or a region of a group of illnesses of similar nature, clearly in excess of normal expectancy (derived from a common or propagated source).

Pandemic: The world wide spread of epidemic disease.

Epizootic: Occurrence as an epidemic disease among animals.

Enzootic: Occurrence as an endemic disease among animals.

Zoonosis: Disease primarily of animals but transmitted to man.

Epiphytic: Occurrence as an epidemic disease among plants.