

**UNIVERSITY OF SOUTH FLORIDA
COLLEGE OF PUBLIC HEALTH
DEPARTMENT OF EPIDEMIOLOGY AND BIostatISTICS**

EPIDEMIOLOGY

PHC. 6000; 3 credit hours

LECTURE SCHEDULE

Lecture Schedule

- Unit 1 Course Introduction:
Introduction to Epidemiology.
Overview of history of epidemiology
Ethical issues in epidemiologic research
Reading assignment: Oleckno, Chapters 1-2
Supplemental Readings:
-Belmont report ([Access and print it through the Shimberg Health Sciences Library](#))
- Unit 2 Introduction to Epidemiologic Methods:
Person, place & time
Race and ethnicity
Descriptive studies
Ecologic fallacy
Introduction to analytic study design
Reading assignment: Oleckno, Chapter 4 (pp. 37-46 only)
Supplemental Readings:
-Mays VM, Ponce NA, Washington DL, Cochran SD. Classification of race and ethnicity: implications for public health. Annu. Rev. Public Health 2003;24:83-110. ([Access and print it through the Shimberg Health Sciences Library](#))
- Unit 3 Descriptive Epidemiology:
Rates, ratios and proportions
Measures of morbidity and mortality
Cumulative incidence/incidence density
Direct standardization
Reading assignments: Oleckno, Chapter 5 (pp. 61-80), Ch. 6 (pp. 91-100)
- Unit 4 Case-control studies
Design features
Measures of association for case-control studies
Strengths and weaknesses of case-control designs
Reading assignment: Oleckno, Chapter 4 (pp. 49-50). Chapter 11.
Supplemental Reading:
--Rauscher GH, Shore D, Sandler DP. Hair dye use and risk of adult acute leukemia. American Journal of Epidemiology 2004;160:19-25. ([Access and print it through the Shimberg Health Sciences Library](#))

Exam I (Units 1-4)

Unit 5 Cohort studies:

Prospective study design
Design features: exposure, outcome measurement
Measures of association for cohort studies (risk and rate ratios)
Retrospective study designs
Healthy worker effect
Standardized and proportionate mortality ratios
Strengths and weaknesses of cohort designs

Reading assignment: Oleckno, Chapter 4 (pp. 47-49), Chapter 6 (p.106 to bottom of p. 110), Chapter 12

Supplemental Readings:

-Curb JD, Abbott RD, Rodriguez BL, et al. High Density Lipoprotein cholesterol and the risk of stroke in elderly men: The Honolulu Heart Program. American Journal of Epidemiology 2004;160:150-7. (Access and print it through the Shimberg Health Sciences Library)

Unit 6 Introduction to evaluating the validity of associations:

Internal validity: chance

Chance:

Statistical power
 p -values and confidence intervals
Statistical vs. biologic significance

Reading assignment: Oleckno, Chapter 8 (pp. 137-139, 151-154), Chapter 11 (pp. 212-213, statistical/biologic significance)

Unit 7 Bias:

Definitions
Selection, and observation
Cohort studies: major sources of bias
Case-control studies: major sources of bias
Misclassification: differential vs. non-differential
Internal vs. external validity

Reading assignment: Oleckno, Chapter 8 (pp. 140-147); Chapter 11 (pp. 208-212), Chapter 12 (p. 232, paragraphs 2 and 3).

Unit 8 Confounding and Effect Modification:

Definitions
Basic concepts and control: restriction, matching, stratification, multivariate analysis, randomization
Direct and indirect standardization
Stratified analysis and the Mantel-Haenszel adjusted odds ratio
McNemar's test
Effect-modification: definition using stratified analysis

Reading assignment: Oleckno, Chapter 6 (review pp. 91-100; read pp. 101-105); Chapter 8 (pp. 148-158); Chapter 11 (pp. 213-228); Chapter 13 (pp. 257-259)

Exam II (Units 5-8)

Unit 9 Experimental Studies /Intervention Studies

Clinical Trials

Community Trials

Reading assignment: Oleckno, Chapter 13

Supplemental Reading:

-Barringer TA, Kirk JK, Santaniello AC, Foley KL, Michielutte R. Effect of a multivitamin and mineral supplement on infection and quality of life. A randomized, double-blind, placebo-controlled trial. *Ann Intern Med.* 2003; 138(5):365-71. (Access and print it through the Shimberg Health Sciences Library)

Unit 10 Causation

Necessary vs. sufficient causes

Hill's criteria

Measures of public health impact: Risk Difference (Attributable risk)

Reading assignment: Oleckno, Chapters 7; Chapter 6 (pp. 110-116).

Special session Critical review of epidemiologic studies (Steps & Exercise).

Critical review of epidemiologic studies.

Reading assignments:

The three articles read along the semester: cohort, case control and clinical trial. (Access and print through the Shimberg Health Sciences Library).

-Rauscher GH, Shore D, Sandler DP. Hair dye use and risk of adult acute leukemia. *American Journal of Epidemiology* 2004;160:19-25.

-Curb JD, Abbott RD, Rodriguez BL, et al. High Density Lipoprotein cholesterol and the risk of stroke in elderly men: The Honolulu Heart Program. *American Journal of Epidemiology* 2004;160:150-7.

-Barringer TA, Kirk JK, Santaniello AC, Foley KL, Michielutte R. Effect of a multivitamin and mineral supplement on infection and quality of life. A randomized, double-blind, placebo-controlled trial. *Ann Intern Med.* 2003; 138(5):365-71.

Unit 11 Introduction to the epidemiology of infectious diseases

Disease outbreak investigation.

Public health surveillance and sources of data.

Natural history of disease.

Levels of disease prevention.

Reading assignment: Oleckno, Chapters 3 and 14.

Supplemental Readings:

Becker, KM, CL Moe, KL Southwick, et al. Transmission of Norwalk virus during a football game. *N Eng J Med* 2000: 1223-1227. (Access and print it through the Shimberg Health Sciences Library.)

HOMEWORK.CDC outbreak investigations (epi case studies).

<http://www.cdc.gov/epicasestudies>

Unit 12 Screening in Epidemiology

Screening and evaluation of diagnostic tools

Reading assignment: Oleckno Chapter 9.

Cumulative Final Exam