

SOUTHEAST MISSOURI STATE UNIVERSITY

Department of Biology
Environmental Science Program

BI 443/643
EV 443/643

Epidemiology

New Fall 2001

- I. Catalog Description and Credit Hours: Concepts, methods and applications of infectious disease, chronic disease and environmental epidemiology focused on epidemiological reasoning processes. Three hours of lectures per week. Odd Springs (3)
- II. Prerequisite(s): BI200, MA134
- III. Purposes or Objectives of the Course:
 - a. To acquaint students with basic Epidemiology terms, concepts and measures of disease frequency
 - b. To acquaint students with the design, implementation and evaluation of epidemiological studies and their limitations
 - c. To acquaint students with ethical concerns in epidemiological studies
 - d. To assist students to develop the capability to interpret and analyze epidemiological data using common sense and statistics
 - e. To assist students to develop the capability to make informed critiques of epidemiological studies and literature
 - f. To assist students to develop the capability to understand the principles and methods appropriate to the investigation of epidemics, screening and disease surveillance
 - g. To assist students to develop the capability to be an informed user of epidemiological sources of information
 - h. To assist students to develop the capability to recognize the relevance of epidemiological principles to various fields of study and as a foundation for public health
- IV. Expectations of Students:
 - a. Read assigned print material
 - b. Read assigned material from the Internet
 - c. Complete Topic Quizzes using U-Test
 - d. Attend and actively participate in class
 - e. Contribute to in and out of class group activities and assignments
 - f. Complete in and out of class individual assignments
 - g. Write a Major Case Study/Research Paper
 - h. Complete a mid term and final written examination
 - i. Graduate students will develop a study/investigation proposal

V. Course Content or Outline (include number of periods on each topic)

Topic	Periods
Introduction: Scope of Epidemiology Current Issues Recent Challenges Practical Applications	2
History and Evolution of Epidemiology	1
Concepts of Health and Disease Natural History and Spectrum of Disease	1
Review of Statistics Measures of Central Location and Dispersion	2
Organizing Data	1
Association Correlation Stepwise Regression	2
Frequency Measures Incidence Prevalence	1
Attack rates Risk Ratio	1
Odds ratio Attributable Risk	1
Epidemiological Triad Component Causes and Causal Pies	1
The Epidemiological Approaches	1
Descriptive Epidemiology Case Definition	1
Analytical Epidemiology Retrospective Studies Prospective Studies Historic Studies	2

Cross Sectional Studies	1
Case Control Studies	
Longitudinal Studies	
Ecologic Studies	
Sources of Data	1
Sources of Error	1
Sampling	2
Surveillance	2
Infectious Disease Transmission	1
Vector Borne Disease	1
Food borne disease	1
STD's	1
Current Issues in Chronic Diseases	3
Field Work/investigating an Epidemic	3
Exposure Assessment	1
Time, Trend and Spatial Pattern Data	1
Risk Assessment	1
Screening	3
Emerging Diseases	3
Mid Term Examination	2
	45

VI. Textbook and/or Supplemental Materials:

- a. Gordis, Leon. Epidemiology. W.B. Saunders Company, 2000
- b. Coggon, D., Geoffrey Rose and D.J.P. Barker. Epidemiology for the Uninitiated. Available on-line

VII. Basis of Student Evaluation:

- a. BI/EV 443

Topic Quizzes	20%
Mid Term	20%
Final	20%
Case Studies	10%
Research Paper	10%
Homework/Group Exercises	20%

b. BI/EV 643	
Topic Quizzes	20%
Mid Term	15%
Final	15%
Case Studies	10%
Research Paper	10%
Homework/Group Exercises	20%
Study/Investigation Proposal	10%