



THE UNIVERSITY OF ARIZONA

Mel & Enid Zuckerman
College of Public Health

**Mel and Enid Zuckerman College of Public Health
University of Arizona**

EPID 573A Basic Principles of Epidemiology

Catalog Description: This course will introduce students to the basic principles of epidemiology and how these concepts are applicable for their own interests and careers in epi related fields. (3 units)

Course Topics:

- Causation
- Frequency Measures
- Classification
- Study Design
- Interpretation
- Standardization
- Genetic Epidemiology

Course Objectives: During this course, students will:

- compute basic measures such as incidence and prevalence and determine when each is appropriate.
- synthesize information given in text format to calculate measures of frequency and association and then express the result in text.
- define standardization of disease or mortality frequencies, explain the context for when standardization is desirable and perform standardization calculations.
- assess the validity of the methods used in studies reported in the literature.
- recognize, describe, and control for bias and determine in which direction it will shift results.
- describe the role of chance in study results.
- differentiate between screening and diagnostic tests and how to calculate the sensitivity, specificity, positive and negative predictive value of a screening test.
- justify the importance of and identify basic methods of conducting public health surveillance.
- identify and describe basic epidemiologic techniques for evaluating the role of genetics in disease etiology.
- explain the history of epidemiology as a means to study infectious diseases.
- evaluate methods of investigating outbreaks of infectious diseases.

Learning Outcomes (Competencies Obtained): Upon completion of this course students will be able to:

1. Describe and summarize findings from multiple studies to make recommendations for public health practice.
2. Understand components of public health surveillance and apply relevant data to address public health problems.
3. Compare and contrast bias within study designs and calculate appropriate measures of disease frequency and excess risk.

4. Use public health data sources and collected data to answer applied epidemiological research questions.
5. Interpret analyses in the context of published literature and communicate key findings to stakeholders.