



THE UNIVERSITY OF ARIZONA

Mel & Enid Zuckerman
College of Public Health

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

EPID 670 Chronic Disease Epidemiology

Catalog Description: Nutritional epidemiology, pharmacoepidemiology, occupational epidemiology and environmental epidemiology. (3 units)

Course Topics:

- Causation and Causality Criteria
- Study Designs in Epidemiology
- Bias and Confounding
- Development Origins of Health and Disease
- Chronic Disease Surveillance
- Intersection of Chronic and Infectious Disease
- Meta-Analyses and Systematic Reviews
- Measuring Exposures in Chronic Disease
- Quality of Life with a Chronic Disease

Course Objectives: During this course, students will:

- Describe trends in the epidemiology of selected chronic diseases.
- Describe patterns of major etiologic (risk) factors and their relationship to these selected chronic diseases.
- Locate data from chronic disease registries and databases on a state and national level and identify key methodological considerations for chronic disease surveillance.
- Review the scientific merit of articles within the chronic disease epidemiologic evidence-base, and synthesize information from a variety of epidemiologic and related studies.
- Select appropriate clinical outcomes for evaluating chronic disease research questions.
- Select appropriate research instruments for assessing exposures in chronic disease research.
- Design effective chronic disease studies by applying epidemiological methods across the spectrum of chronic disease problems.
- Design a methodologically sound and well-organized epidemiologic research proposal.

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

1. Search, describe and summarize findings from the scientific literature to describe the epidemiology of a public health problem, identify health disparities and identify risk factors
2. Compare the relative strengths and weaknesses of epidemiological study designs, and choose the most appropriate design for specific research questions
3. Assess and identify strategies to minimize bias in analytic studies, along with assessing effect modification and confounding, then stratifying or adjusting as appropriate in analyses
4. Interpret these epidemiological analyses in the context of published literature and communicate key findings to various audiences
5. Select appropriate study design for assessing the association between a given exposure and an outcome, and then understanding advantages and limitations of these approaches
6. Critique and synthesize appropriate literature and research findings to address a research question
7. Identify potential sources of bias for various study designs and their impact on study quality

8. Conduct descriptive and analytic analyses, including strategies to assess confounding and effect modification methods, to make statistical inferences
9. Describe public health surveillance systems and their underlying data sources
10. Demonstrate ability to manage and analyze epidemiological data from a variety of sources
11. Organize and deliver clear presentations of research findings in varying professional formats to diverse audiences
12. Prepare scientific research or program proposals that articulate specific aims, summarize appropriate background literature, describe study methodology and identify significance and limitations of the approach
13. Develop research questions to address health problems by appraising and identifying gaps in the current scientific literature
14. Design appropriate studies using causal inference principles for testing hypotheses in specific populations, after evaluating specific design advantages and limitations
15. Organize and deliver clear presentations of research findings in varying professional formats to diverse audiences