



THE UNIVERSITY OF ARIZONA

Mel & Enid Zuckerman
College of Public Health

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

BIOS/EPID 450/550 Health Data Acquisition and Assessment

Catalog Description: Students learn how to identify and acquire medical and health data, assess quality, and integrate data from multiple sources. Students gain knowledge of how data collection procedures influence data quality and techniques for combining health datasets. Students gain skills by completing applied projects to collect, access and work with existing health data. (3 units)

Course Topics:

- Health Data Study Design
- Data Types
- Data Objects and Managing Data in R
- “Big Data”, ethical and legal issues

Course Objectives: During this course, students will:

- Identify and obtain appropriate private and public health data
- List how data collection methods influence capacity to use and merge data across sources
- Map cohesiveness and coherence of data across data sources
- Identify key aspects of a dataset that determine quality
- Integrate disparate health datasets
- Implement best practices in data acquisition, assessment, and integration
- Use R to import and manage data, and perform descriptive and explanatory statistical analyses
- Apply appropriate statistical methods to further analyze the data and answer public health questions of interest
- Assess limitations of data including representativeness, bias, and generalizability

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

1. Communicate public health information, in both oral and written forms, through a variety of media and to diverse audiences.
2. Locate, use, evaluate and synthesize public health information.
3. Explain the role of data science in public health.
4. Identify key sources of health data (e.g., surveillance data, medical records, state/national/ international surveys, hospital discharge).
5. Execute dataset integration and conduct basic statistical analyses on existing datasets.
6. Assess limitations in data collection, management, and analysis as it impacts quality; interpret findings accordingly.