Mel and Enid Zuckerman College of Public Health
University of Arizona

BIOS/EPID 451/551 Health Data Management and Visualization

Catalog Description: This course will teach students basic data management principles as well as techniques for data management and visualization. Students will develop hands-on skills of managing research data and using visualization techniques in population health studies and clinical investigations. (3 units)

Course Topics:
- REDCap
- Defining Data and Information
- Data Management Planning
- Data Management in R
- Data Security
- Presenting Data

Course Objectives: During this course, students will:

- Learn basic principles of data management in population health and clinical studies.
- Be introduced to basic steps in data management including data import, data merging, quality control data security and data description.
- Learn to use visualization as a tool in data management.
- Be introduced to REDCap, R and dashboard for:
  a. creating variables and entering data
  b. modifying data and merging files, and
  c. describing data.
- Write documentation on data management.
- Present the data and write technical reports

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

1. Articulate the importance of data management.
2. Describe the basic steps and components of data management.
3. Use REDCap and R for basic data management procedures.
4. Use visualization techniques in data management and communication.
5. Develop data management protocol for population health study and clinical research.
6. Write technical reports with interpretation of the results.
7. Use dashboard in data management and communication.
8. Connect dashboard to REDCap database to communicate public health information.