Mel and Enid Zuckerman College of Public Health
University of Arizona

BIOS 576B Biostatistics for Research

Catalog Description: Descriptive statistics and statistical inference relevant to biomedical research, including data analysis, regression and correlation analysis, analysis of variance, survival analysis, biological assay, statistical methods for epidemiology and statistical evaluation of clinical literature. (3 units)

Course Topics:
- Linear Regression Analysis
- Categorical Data Analysis
- Logistic Regression
- Survival Analysis

Course Objectives: During this course, students will:

- Apply statistical principles of sample size and power estimation to aid in the design of studies.
- Use statistical modeling techniques, such as linear regression, logistic regression, log-binomial regression, time-to-event analysis, and Poisson regression, as appropriate, to meet the scientific objectives in research studies.
- Analyze data by deciding the appropriate statistical techniques, ensuring that the assumptions are met, and effectively communicating analytic results.
- Critically evaluate the use of statistics in published journal articles.

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

1. Apply epidemiological methods to the breadth of settings and situations in public health practice
2. Select quantitative and qualitative data collection methods appropriate for a given public health context
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
4. Interpret results of data analysis for public health research, policy or practice
5. Communicate audience-appropriate public health content, both in writing and through oral presentation
6. Describe and summarize findings from multiple studies to make recommendations for public health practice
7. Use public health data sources and collected data to answer applied epidemiological research questions
8. Interpret analyses in the context of published literature and communicate key findings to stakeholders