Statistics 5172/4930
Fundamentals of Biostatistics

Instructor: Dr. Dan McGee
TA: Gretchen Rivera
Contact Information: See the Instructor Info tab of the course Blackboard Page.

Course webpage: All Course materials are available through the course Blackboard site.

Recorded Lectures: Lectures are being recorded in-class. They will usually be available within 15 minutes of the end of the lecture. They are available through the Tegrity Classes tab on the course Blackboard page.

Software: We will use the statistical software JMP 10 in the course. The Statistics Department has a university-wide site license for this software. It is also available via FSU’s Virtual Lab. You are expected to have either installed the software on your computer or familiarized yourself with the virtual lab by the end of the Friday, the first week of classes.

Homework: All homework assignments will be posted on Blackboard. Homework will usually require the uploading of a single file to Blackboard.

All questions about homework grades should be addressed to the course TA.

Prerequisites: A previous statistics course or permission of the instructor.

Text: There is no required text. The following texts are suggested for those wanting additional reading:

Course Description: This course will offer a focused introduction to statistical methods used in the design and analysis of epidemiological studies.

Course Objectives:
At the end of the course, the student will:
- Conduct descriptive analysis of data on disease occurrence.
- Determine measures of disease association in different study designs.
- Conduct linear and logistic regression models and interpret the results.
- Read and interpret reports on U.S. Vital Statistics.
• Conduct survival analysis using the proportional hazards model, and interpret the results.

**Topics to be covered:**
The following topics will be covered, as time allows.

• Review of basic statistics using JMP.
• Review of probability with emphasis on the use of probability in medical diagnoses.
• Introduction to the design of studies of human disease.
  o U.S. Vital statistics.
  o Cross-sectional studies.
  o Cohort studies.
  o Longitudinal studies.
  o Clinical trials.
• Measures of disease occurrence and measures of association of disease with exposure.
  o Incidence.
  o Prevalence.
  o Relative Risk.
  o Odds ratio.
  o Attributable risk.
• Biostatistical modeling.
  o Linear models.
  o Logistic regression.
  o Survival models -- the proportional hazards model.
• Meta analysis.

• **Grading:** The final course grade will be based on:
  • Homework (35%)
  • Quizzes (20%)
  • Four Projects (40%, 10% each)
  • Class Participation (5%)

**Class Participation** will be defined as participation in the course discussion forum (Course Content tab on Blackboard).

**Homework:** Late homework and homework that contains incorrect answers will be penalized. **Most assignments will require the use of JMP.**

**Course Projects:** There will be four projects required. These projects will involve producing a “case-study.” Numerous examples will be available. Due dates will be announced at least two weeks in advance.
**SAS Certification:** The course will require the use of JMP. However, optional homework assignments using SAS to do comparative analyses will be provided for those wishing to count this course toward meeting the requirements for the SAS certificate.

**University Attendance Policy:**
Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

**Academic Honor Policy:**
The Florida State University Academic Honor Policy outlines the University’s expectations for the integrity of students’ academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to “. . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University.” (Florida State University Academic Honor Policy, found at http://dof.fsu.edu/honorpolicy.htm.)

**Americans With Disabilities Act:**
Students with disabilities needing academic accommodation should:
(1) register with and provide documentation to the Student Disability Resource Center; and
(2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center  
874 Traditions Way  
108 Student Services Building  
Florida State University  
Tallahassee, FL 32306-4167  
(850) 644-9566 (voice)  
(850) 644-8504 (TDD)  
sdrc@admin.fsu.edu  
http://www.disabilitycenter.fsu.edu/
Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.