STAT 668, Methods in Biostatistics --- Spring 2016

Class Meetings: MW 2:00pm - 3:15pm, Reavis Hall 210

Instructor: Haiming Zhou, Division of Statistics
Office: DuSable Hall 359E
Phone: 331-256-7793
Email: zhouh@niu.edu
Office hours: MWF 12:30pm - 1:30pm; or by appointment

TA: Suvo Chatterjee, Division of Statistics
Office: DuSable Hall 374
Email: schatterjee3@niu.edu
Office hours: F 11:00am - 12:00pm

Required Textbook:

Other Useful References:


Course Description:
This course deals with methods for the analysis of survival data, i.e. data where the outcome of interest is the time until the occurrence of an event such as disease, death, failure of a machine or similar situation with an event occurring over time. Emphasis in this course will be on the application and interpretation of standard parametric and nonparametric methods. In this course, we will
- Describe survival data.
- Compare survival of several groups.
- Explain survival with covariates.
- Design studies with survival endpoints.

Course Objectives:
A major overall goal is to be able to recognize when a situation requires the use of survival methods and to be able to do most basic and intermediate level analysis of survival data using existing computer programs. A student who successfully completes this course will
- To be able to read, understand and evaluate the literature applying survival analysis methods.
- To be able to determine if survival analysis methods are appropriate for a given problem and to apply them using the computer or by hand if appropriate.
- To be able to interpret and present results of survival analysis in clear, logical and understandable manner, even to those not sophisticated in statistical analysis.
- To have a notebook with examples and explanations of the use of most survival analysis techniques. This is especially important in terms of documenting your computer runs.

Evaluation:
There will be regular homework assignments and fairly extensive use of SAS to analyze modified real data set. You will also do a project in which you will analyze a set of survival data using techniques
learned in the course, and write a short report explaining and interpreting the analysis. Depending on time issues we will have class presentations and discussions of the projects. All the course material will be posted on Blackboard. Note: Word processor will be required to prepare the assignments as long as it involves the application of SAS. I highly recommend you to type up all your homework solutions in Word or other word processor. Same requirements are for the exam and the project.

Homework (40%): There will be 4 homework assignments during the semester; each worth 10%. They will be posted on Blackboard, and you are required to submit your homework as a word or pdf attachment on Blackboard. You must present your solutions in the order that the problems are assigned. You are allowed to work together on homework assignments, as long as your homework does not become a copy of another. A 20% penalty will be imposed on all late assignments and these will only be accepted up to 3 days after the due date. Besides the 4 required homework assignments, I will also give you some additional practice problem sets that could benefit your learning.

Exams (35%): There will be one midterm exam. The date for the exam will be announced during classes.

Project (25%): Projects can be worked in group (1-2 students). The real data set will be given. The project will be designed based on the purpose of the study. The report should include the introduction, data analysis and conclusions. The page limit of the report is 10. Note, only include the relevant part of your SAS code and output in your report and do not print the complete data set. Please submit your project report in typeset in Word processors.

Grades: A scale of 90%, 87%, 83%, 80%, 77%, 73%, 70%, 65%, 60%, will be used as cutpoints for the grades A, A-, B+, B-, C+, C, C-, D, respectively; an F grade will result if you score less than 60%.

Accessibility:
Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1301 (V) or drc@niu.edu.

Academic Integrity Statement:
The Statement of Academic Integrity in the Undergraduate catalog will be strictly enforced with regard to homework assignments, quizzes, and exams. NIU’s updated policies on academic integrity, attendance and accommodations for students with disabilities can be found at:
http://www.niu.edu/stat/courses/pdfs/Accessibility_statement.pdf

Note: The syllabus may be changed in ways that may facilitate student learning. Changes will be announced in lecture.