SYLLABUS

PH827 ANALYSIS OF COHORT STUDIES
Spring, 2013
Time: Wednesday, 4:00pm – 6:40pm  Location: HT220
Section Number: 1  Schedule Number: 22242 Units: 3

Instructor:
Ming Ji, PhD. HT230
Email: mji@mail.sdsu.edu; Tel: 619.594.3454
Office Hours: Wednesday 2:00pm – 4:00pm or by appointment.

Pre-requisites:
PH602, PH627, PH628; SAS programming experience or permission of instructor.

Course Overview:
The goal of this course is to teach you how to analyze cohort study data by using statistical regression models and their implementations in SAS.

You will learn regression models for non-normal, censored and correlated data. You will learn in-depth knowledge about the following:

- Logistic regression
- Poisson regression
- Generalized linear models (GLMs)
- Generalized Estimating Equations (GEE)
- Random Effects Models.
- Kaplan-Meier curve
- Parametric survival regression models
- Cox Proportional Hazard Model

You will also learn the implementation of these models in the following SAS procedures:

- PROC REG
- PROC GLM
- PROC LOGISTIC
- PROC GENMOD
- PROC MIXED
- PROC LIFETEST
- PROC LIFEREG
- PROC PHREG
Other topics such as missing data, causal inference, multilevel modeling, structural equation models (SEM), nonlinear regression and nonparametric regression may be discussed depending on time and student interest.

**Learning Objectives:**
At the end of this course, students should be able to:
- Identify study designs that are cohort studies
- Identify appropriate statistical regression models for the research question
- Implement the regression models using SAS
- Go through the iterative model building process and examine different aspects of statistical modeling
- Interpret the regression modeling results
- Articulate about other issues related to data analysis and modeling such as missing data, measurement error and skewed distributions

**Format:**
The format of learning includes:
- Lectures
- Discussions
- Computer Labs
- A Midterm Exam
- A Final Exam

**Requirements:**
- Attendance is required to be as much as possible because students need to go through computer labs to practice SAS. If a student will miss a class for legitimate reason, he or she should notify the instructor before the class meeting. Attendance will be recorded and calculated in the final grade.

- There is a Midterm and a Final Exam. The exam problems and data sets will be posted to the Blackboard site.

**Text:**
Lecture Notes by the Instructor.
Additional readings will be posted on the Blackboard for downloading.
Grading:
Attendance: 20*15=300
Midterm Exam: 350
Final Exam: 350
Total: 1000

Final Grade:
Range of the Numerical Grade X Letter Grade
950< X <=1000 A
900< X <= 950 A_
850< X <=900 B
800< X <=850 B_
750< X <=800 C
700< X <=750 C_
650< X <=700 D
600 < X <= 650 D_
X <= 600 F

Rubrics for grading quizzes and the Final Project will be posted on the Blackboard.

References:
- Paul David Allison (1995) Survival Analysis using the SAS System

Software:
We will use SAS as the primary statistical software for this class. We will review and study SAS through quizzes and the group project.
**Computer and Internet Access**
The students are required to have access to computers and Internet access for online discussions and submitting homework assignments. The SDSU Blackboard for this course will be available for enrolled students. Two online journals, Controlled Clinical Trials and Statistics in Medicine, are accessible online through SDSU library website. Links are provided on the Blackboard.

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