Syllabus for Math 776 Spring 2016: Advanced Statistics: Survival Analysis

Instructor: Dr. Martial Longla. Office: Hume Hall 308
Office hours: Tu, Th: 10:00 - 12:00, or by appointment
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Course Information

Recommended readings:
   2) “Survival analysis using SAS. A practical guide, 2nd edition by Paul Allison”.

Follow the instructions to install this software on your laptop. We will use it in class. Please, bring your laptop to class.

Course description:
This course in designed to introduce the student to modeling survival type data. It contains but is not limited to the following topics: Definitions of general terms of Survival analysis, non-parametric estimation of the survival function (Kaplan-Mayer), parametric Survival analysis models (Cox PH model), Techniques for Truncated data, Techniques for Censoring, Life tables, Testing and confidence intervals, Odds, Odds ration, Risk, Relative risk, the Bayesian framework.

LEARNING OBJECTIVES:
At the end of this course, a student should be able to:
1). Identify the appropriate model for a survival analysis data set.
2). Analyze the data set and provide the best model.
3). Perform statistical testing and estimation of the parameters of the model.
4). Provide a SAS-code and write a ready to use report on the findings of the analysis.
5). Define the notions of this theory.
6). Perform theoretical maximum likelihood estimation for some Cox PH models.

TESTING INFORMATION:
1. Class attendance – Attendance is mandatory.
2. Homework – There are homework assignments worth 100pts of your final grade. One homework per week assigned on Thursday and due in class the following Thursday.
3. Tests – There are 2 Tests each counting for 100pts, a final project worth 100pts and a final exam counting for 150pts.

Grade letters and scores
A: 480-550 (includes A and A-), B: 420-479 (Includes B-, B and B+), C: 360-419 (includes C-, C and C+), D: 300-359, F: 000-299. I reserve the right to make the grading scale easier.
**Calculator Policy:**
An inexpensive scientific calculator is sufficient in Math 776 but is not necessary. Calculators will be allowed during exams. Access to laptop is necessary for the course.

**Additional Policies**
1. The use of cell phones, ipods, and other electronic equipment are prohibited during class or exams.
2. Any person who must miss a scheduled mid-term exam or quiz because of an official university function must reschedule with the instructor to take the test at a time before the test is scheduled to be given.
3. No other rescheduling will be allowed. If asked for by the instructor, official documentation must be provided.
4. A student who wishes to discuss the grading policy and/or testing policy, or wishes to have a conversation out of class topics must arrange to meet in my his office. We have barely enough time for the class.
5. An _I_ grade will not be given without the permission of the Department of Mathematics.
6. Any student having three or more final exams scheduled for the same day may arrange with the instructor to take the exam at another time. This is the only reason that a final exam may be rescheduled.
7. Every student must take each exam at the time scheduled. The only exceptions are those students affected by (2) or (5) above.

**Course Withdrawal**
The withdrawal deadline is March 4rd 2016. After the Course Withdrawal Deadline, courses dropped will be recorded on University records and the W grade will be recorded if the student is not failing the course at the time of withdrawal; otherwise the grade recorded will be F. After the course withdrawal deadline, a student may drop a course only in cases of extreme and unavoidable emergency as determined by the academic dean; dropping a course after the deadline will not be permitted because of dissatisfaction over an expected grade or because the student is changing his/her major.

**Academic Needs**
It is the responsibility of any student with a disability who requests a reasonable accommodation to contact the Office of Student Disability Services (915-7128). That office through the student will then make contact with the instructor of this class. The instructor will then work with the student so that a reasonable accommodation of any disability can be made.

**Academic Honesty:**
**Cheating:** The following statement is the policy of the Department of Mathematics regarding cheating:
**Offenses:** Cheating on any exam or quiz, theft or attempted theft of exam questions, possession of exam questions prior to the time for examination, or the use of an illegal calculator on tests or quizzes shall all be offenses subject to appropriate penalties.
**Penalties:** The penalty for commission of any offense set out above is failure in the course and, subject to the approval of the Chancellor, dismissal or suspension from the University.