

STA5715/4712 Survival Analysis

Fall 2007

Instructor	Teaching assistant
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Course Webpage

<http://www.phhp.ufl.edu/~yjoo/STA5715/STA5715.htm>

All students should read this webpage every Tuesday.

Course Description

This is an introductory course in survival analysis for graduate students in the biological and physical sciences. It assumes the student has introductory level of statistical knowledge (STA6166) and has some knowledge of college algebra. This course will cover survival analysis data methods including Kaplan-Meier and Nelson estimators of the survival, accelerated failure time and proportional hazards model. Also, note that all students will be asked to learn SAS skills. There will not be any exception on this policy.

Course Objectives

1. Use SAS for performing survival analyses,
2. Summarize, display graphically and make inference on survival data for one or two groups,
3. Estimate, test, and interpret regression coefficients in models for survival data,
4. Quantify the relationship between the time to event and prognostic factors such as mode of therapy, age of patient, and severity of disease,
5. Discuss “time to event” data, where the event can be response to treatment, relapse of disease, or death.

Prerequisite

STA6166 and regression analysis class (such as STA4210).

Class hours and Classroom

MWF 1:55pm-2:45pm. Classroom locations are changed as follows:

- Mon: G111 @HPNP Building
- Wed: G201 @HPNP Building
- Fri: G108 @HPNP Building.

Office hours

Yongsung Joo: TBA

TA: TBA

Required Textbook

Applied survival analysis by Hosmer and Lemeshow [ISBN 0-471-15410-5].

Easy SAS books (possibly not in campus store)

- Applied Statistics and the SAS Programming Language (5th Edition) by Ron P. Cody and Jeffrey K. Smith (Paperback – Mar 30, 2005)
- The Little SAS Book: A Primer, Third Edition by Lora D. Delwiche and Susan J. Slaughter (Paperback – Nov 2003)
- If you do a search in internet bookshops, you will find many different SAS books that might be worth ordering.

Statistical Software (required)

All students should have SAS in his/her laptop. You will have exams and quizzes using your laptop. Mac is NOT recommended. SAS stopped updating Mac version SAS about 15 years ago. Instructor will use SAS 8.0 or higher primarily. See <http://software.ufl.edu/sas/> for SAS program purchase and online documents. If you are registered as a student in an approved program at the University of Florida, you can get a CD of the SAS system and a one-year user's license from the bookstore (392-0194) of the Florida Bookstore for around \$35. You may have to collect this in person.

Grading

The course grade will be based on homeworks + quizzes (25%), two midterm exams (20%+20%) and a term project (35%). Quizzes will be given whenever necessary. To obtain the full points in exams, homework, quizzes and project, students are required to show how he/she gets the final answer. *Points will be given only for good reasoning.* You will get A with 90-100 out of 100, B+ with 85-89.99, B with 80-84.99, C with 75-79.99, etc.

Tentative schedule for exams, project and quizzes

- Midterm 1: in-class or evening exam on 10/17
- Midterm 2: evening exam on 12/3
- Project proposal: 11/5
- Poster session and project manuscript: 12/5
- Quiz: dates will be announced at least 2 days earlier.

Homework and quizzes

New homework will be announced in class and posted on the class web page. No late homework will be accepted. Everyone is expected to do every problem. Each homework and quiz will have the same weight in calculating your total grade. If your answer in homework is almost or exactly same as other student's, you can be asked to redo homework anytime after homework is turned in. When data analyses using SAS is due, please submit a complete write-up of the assignment and documented programming code used to analyze the dataset.

Project

This is a two-people team project. Students should collect their own data or use student's research project data. The proposal (outline description) for this project will be due about a month before the last day of class. The term project is to be a complete analysis of a dataset. Students are required to turn in a final report, which will be shared with the class on the last day as poster presentations. The material to be handed in for the final report includes 1) a full manuscript, 2) a small-font version of your poster, and 3) documented computer code. The grade for the project will depend on "manuscript", presentation, and the correctness and adequacy of the analysis. Students are encouraged to apply various statistical techniques to their own data set. In addition, students will be asked to write brief critics on others' project during poster session.

Class announcement

Important class announcements will be announced in class. Some of them will be posted on the web also. All students should read this webpage every Tuesday.

Class attendance

All students are required to attend all classes.

Course Outline

- Review of introductory statistics
- Definition of censored data, truncated data and hazard function.
- Descriptive methods for survival data (Kaplan-Meier estimator)

Midterm exam 1

- Regression models for survival data (Proportional hazard regression model)
- Interpretation of a fitted proportional hazards regression model.
- Model development
- Assessment of model adequacy

Midterm exam 2

Statement of University Honesty Policy (cheating and use of copyrighted materials)

Academic Integrity: Students are expected to act in accordance with the University of Florida policy on academic integrity (see Graduate Student Handbook for details). Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

*We, the members of the University of Florida community,
pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*

Policy Related to Class Attendance

Students are required to attend all classes.

Policy Related to Make-up Homework and Exams

Neither make-up homework nor make-up exam is allowed, unless there is a very reasonable justification, such as student's illness.