

Survival Analysis and Clinical Trials

STA 6446-001, Term 1 2008

Class meets: FL 101 MWF 1:00-2:05PM

- Instructor:** Dr. Lianfen Qian, email: lqian@fau.edu
- Prerequisites** STA 4234 or STA 6236 or higher
- Topics covered:** This course first introduces basic concepts of clinical trials, then introduces the principles and methods of statistical inference that are commonly used for epidemiologic analysis of survival data. The major topics covered are: Kaplan-Meier and log-rank method and Cox regression.
- Course Objectives:** Upon completing this course students can expect to be able to:
- design basic clinical trials.
 - compute and interpret the product limit estimate (Kaplan-Meier) estimate of survival and associated confidence intervals.
 - perform and interpret the log-rank test for differences between survival curves with right censored survival data.
 - perform Cox regression to estimate proportional hazards model coefficient, interpret coefficient estimates and confidence intervals, and test hypotheses that one or more coefficients in the regression model are zero.
 - interpret and critique the results of application of these statistical techniques as found in the health science literature.
- Textbook:** *Survival Analysis*, 2nd ed. by D.G. Kleinbaum and Mitchel Klein, Springer.
Fundamentals of Clinical Trials, 3rd Ed. by L.M. Friedman, C.D. Furberg and D. L. Demets. Springer.
- Reference text:** *Statistical Aspects of the Design and Analysis of Clinical Trials*, Rev. Ed. By Everett. Brian, Pickles and Andrew. Available through NetLibrary at <http://www.netlibrary.com/Details.aspx>
Survival Analysis: Techniques for censored and truncated data, by John R. Klein and Melvin L. Moeschberger, Springer.
- Grading system:**
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| One Midterm Exam | TBA | 30% |
| Homework Assignments | Every Lecture | 40% |
| Final Exam | TBA or project | 30% |
- Course Materials:** Lecture notes, assignments and other related resources will be updated through blackboard at <http://blackboard.fau.edu/>
- Lab and Software:** Labs will be scheduled in S&E 271 as needed. Software will be R Language which can be downloaded freely from <http://www.r-project.org/>, Students are strongly encouraged to download and install the free ware R Language before the first class meeting.
- Attendance:** The instructor reserves the right to make any changes she considers academically advisable. Note that it is your responsibility to attend the class and keep track of the proceedings.