

Bios 323: Applied Survival Analysis

Summary: This is an introductory course in the analysis of time to event data where censoring and truncation may be present. Upon completion of this course, you will be able to:

- Distinguish different types of survival data (e.g., completed, right/left censored, right/left truncated);
- Identify basic quantities and survival models;
- Conduct basic nonparametric and parametric inferences and hypothesis testing;
- Apply semiparametric Cox proportional hazards model and check its assumption;
- Extension of Cox proportional hazards model;
- Sample size calculation for time-to-event data;
- Basic knowledge of other survival analysis, including recurrent/multivariate events data and competing risk;
- Use R software to analyze various datasets.

Instructor:

- Qingxia (Cindy) Chen, Department of Biostatistics, 2525 West End, Room 11126,
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<http://biostat.mc.vanderbilt.edu/wiki/Main/QingxiaChen>

TA:

- Mark Joseph Giganti, Department of Biotatistics, email: mark.giganti@Vanderbilt.Edu

Lecture Time and Place – Cindy: T/TH 1:30-2:50pm, 2525 West End, Room 11139.

Office Hour – Cindy: M 3:00-4:00pm, Room 11126.

Lab – TA: F 10:00-10:50am, Room 11139.

Textbooks:

- Klein & Moeschberger (K&M): Survival Analysis: Techniques for censored and truncated data (2003, 2nd edition)

Reference Books:

- Modeling Survival Data: Extending the Cox Model by Terry M. Therneau and Patricia M. Grambsch (2000)

Course Components: There will be six homework assignments, worth a total of 30 points; two exams (Midterm and Final), worth 30 and 35 points, respectively; and class and lab attendance, worth 5 points, unless with pre-approval from instructor. You must do all homework problems on your own, although you may discuss the problems with other students. Assignments must be turned in on time for credit. Grades will be based on the total points achieved.