



נושאים בניתוח הישרדות 0360.4080.01

פרופי מלכה גורפיין

Time and Place

Wednesday, 13:00-16:00, Schreiber 309

On Nov 12 the course will take place at Kaplun 324, 14:00-16:00.

Course description

In this course we consider methods for the analysis of data when the response of interest is the time until some event occurs. In the classical survival analysis a collection of individuals are observed from some entry time until a particular event (generally referred as failure) happens. Often it is impossible to wait for the event to happen for all individuals, so for some it is only known that the event had not yet happened at some specified time. The problem of analyzing time to event data arises in a number of applied fields such as: biology, public health, epidemiology, engineering, economics and demography. A principle problem examined is that of developing methods for assessing the dependence of failure time on explanatory variables.

The course covers various advanced statistical models and methods for analyzing various types of dependent survival data with censoring. The course will combine the scientific motivation, the theory of the methodologies, and real data examples.

Course outline

1. Introduction: review of parametric survival analysis and Cox proportional hazards model.
2. Competing risks models.
3. Multivariate survival data: marginal Cox models; copula models; shared frailty models;
4. Competing risks models for multivariate survival data.
5. Case-control clustered survival data: copula models; shared frailty models.



Course prerequisite

Participants are expected to have familiarity with modeling survival data as of introductory level.

Final grade

20% homework exercises
80% final exam

Textbooks

- “The Statistical Analysis of Failure Time Data” 2nd Ed. by Kalbfleisch JD and Prentice RL.
- “Counting Process and Survival Analysis” by Fleming TR and Harrington DP.
- “Analysis of Multivariate Survival Data” by Hougaard P.
- Journal papers.