BSTA 632: Biostatistics Methods II , Spring 2020

1. Background and Objectives

This is the second half of the methods sequence, where the focus shifts to methods for categorical and survival data.

Topics in Categorical include contingency tables and associated tests (excluding those covered in Methods I), generalized linear models for contingency tables, logistic regression, Poisson regression, nominal and ordinal response models, conditional logistic regression.

Topics in Survival analysis include survival distributions, hazard distributions, censoring mechanisms, and truncation mechanisms. Topics also include parametric and nonparametric methods for estimation and inference, including the Kaplan-Meier estimator, exponential and Weibull models, logrank tests, the generalized Wilcoxon test, the Cox proportional hazards regression and extensions to time-dependent covariates.

2. General Information

Course Director: Warren B. Bilker, PhD   601 Blockley Hall
                     Phone: 215-898-1619   email: warren@pennmedicine.upenn.edu

Teaching Assistant: Hanna Lindner

Format: Lecture: Monday and Wednesday from 10:30 am - 12:00 pm

Class Location: Lecture: 418 Blockley

Office Hour):   TBD

Credits: 1 course unit

Prerequisites: Linear algebra, multivariable calculus, BSTA 630 (Biostatistics Methods I), BSTA 620 (Probability), BSTA 621 (Statistical Inference), BSTA 651 (Introduction to Linear Models and Generalized Linear Models)
                      (these courses may be taken concurrently).

Textbooks: An Introduction to Categorical Data Analysis – 3rd Edition, by Alan Agresti

                      Survival Analysis – Techniques for Censored and Truncated Data – 2nd Edition, by John P. Klein & Melvin L. Moeschberger

                      Not required, but helpful:
                          Categorical Data Analysis – 3rd Edition, by Alan Agresti
                          Applied Logistic Regression – 3rd Edtion, by Hosmer, Lemeshow, Sturdivant.

Evaluation:

Homework assignments	30%
Midterm exam	35%
Final exam	35%