Course Information

Course: Advanced Statistical Methods, PSTAT 220B, Winter 1998.

Instructor: Yuedong Wang, South Hall, Room 5509. Phone: 893-4870. E-mail: yuedong@pstat.ucsb.edu. Web: http://www.pstat.ucsb.edu/~yuedong.

Time: MWF 10:00 - 10:50

Place: Girvetz Hall 2135

Office hour: MW 13:00 - 14:00, or by prior appointment

Purpose of this class: This is the second quarter of the one year graduate course 220ABC on *applied* statistical methods. The aim is to develop analytical skill for the statistical analysis of data, with emphasis on the basis for the methods, the implementation of the methods, and report writing. We will be using S-Plus throughout the year to demonstrate how these methods work, but there will also be some exposure to SAS in the middle of the course.

Topics: Generalized linear models; nonlinear regression model; modern regression methods including kernel, spline, loess, tree and the generalized additive models; linear mixed-effects models; robust regression.

Prerequisites: Pstat 120ABC and Pstat 220A, or consent of instructor.

Text: available at Ucen Book store.

1. Venables, W. N. and Ripley, B. D. (1994), *Modern Applied Statistics with S-Plus*, Springer.

2. McCullagh, P. and Nelder, J. A. (1989), *Generalized Linear Models*, Chapman and Hall. Reserved in the library.

Additional Reference: available at Ucen Book store and reserved in the library.

1. Bates, D. M. and Watts, D. G. (1988), *Nonlinear Regression Analysis and its Applications.* Wiley.

2. Hastie, T. and Tibshirani, R. (1990), *Generalized Additive Models*, Chapman and Hall.

3. Breiman, L. and Friedman, J. H., Olshen, R. A. and Stone, C. J. (1984), *Classification and Regression Trees.* Wadsworth.

4. Davidian, M. (1995), *Nonlinear models for repeated measurement data.* Chapman and Hall.

Course Grading: Homework, projects, mid-quarter test, final exam.