

Course Announcement
MAT 356 Statistical Computing
Spring 2004

Course homepage: <http://www.math.ilstu.edu/dhkim/356.html>

Class time: 1:00-1:50 PM MWRF at 310/440 Stevenson Hall.

Instructor: Dong-Yun Kim, Ph.D. Assistant Professor of Mathematics.

First meeting: January 12th (Monday) at 440 Stevenson Hall.

Description: Simple and multiple linear regression. Logistic regression. One way and two way ANOVA. Randomized block design and Latin square design. 2^k factorial design. Introduction to Monte Carlo simulation. Generating random samples from a given distribution. Numerical integration. Variance reduction technique. Bootstrap resampling methods. Nonparametric smoothing. Choice of topics subject to change. 4 hour credit course. Intended for upper undergraduate and graduate students, this course emphasizes hands-on data analysis and understanding of key statistical methodology used in practice.

Text: *Simulation* by Ross (3rd edition). Lecture notes will be available on the course homepage.

References:

- (1) *Practical Regression and Anova in R* by Julian Faraway (PDF file is freely downloadable at <http://www.stat.lsa.umich.edu/~faraway/book/practical.pdf>)
- (2) *Applied Linear Statistical Models* by Neter, Wasserman, and Kutner.
- (3) *Experiments: Planning, Analysis, and Parameter Design Optimization* by Wu and Hamada.

Software: SPSS, SAS and R statistical packages are used. “Right tool for the right job.” is our motto. You may program and analyze data using any of the three packages (mix and match allowed and welcome). Familiarity with the statistical programs and/or programming skill is a plus but not essential because basics will be covered in detail in labs.

Prerequisites: Two probability/statistics courses or permission by instructor. Strongly motivated students are welcome.

Grading: Homework assignments 25%; Midterm exam (take-home) 20%; Final (take-home) 30%; Project 15%; Lab assignment 10%.

For more information: call Dong-Yun Kim (438-7788) or send email to: dhkim@ilstu.edu