Math 162 Statistics Spring 2009

Course Information

Block: J+, Tue, Thu, 3:00 – 4:15 PM
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Office: Bromfield-Pearson 106
Office hours: (Fall 2008) Tue 10:00 - 11:00 am, Thu 10:00 - 11:00 am
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Prerequisites: Math 161 or consent.

Text: Larson & Marx, *An Introduction to Mathematical Statistics*, Fourth Edition, Prentice Hall (2001).

Course description:

What laws are there behind random processes in stock markets, annual rainfalls, earthquakes in a local region? Does smoking cause cancer? What is the phenomenon of "regression to mediocrity"? How many people must be interviewed for a poll to be statistically significant? How do anti-spam e-mail filters work? How can be statistical methods applied to anthropological problems, evolution processes happened thousands years ago?

In almost all walks of life, from engineering to business, education, medicine, and law, one finds statistics being applied or misapplied, as the case may be. Indeed, it may be fair to say that one cannot be an informed person today without at least a rudimentary knowledge of statistics. Using probability theory as a tool, this course seeks to acquaint the students with the principles underlying basic statistical methods, including estimation, hypothesis testing, and the analysis of data. Students will not only learn how to apply statistical tests; they will also learn to understand why those tests work.

Although mathematical in treatment, this course is less abstract then Math 161, and all of the concepts are illustrated with case studies drawn from the actual practice of statistics in daily life. It should serve as adequate preparation for the statistics part of the actuarial examinations, for those who wish to take them.