Course: Probability and Stochastic Processes
Class Time: MWF 11:45am -12:50pm in Science 3610
Prerequisite: Math. 1202 or 1302
Instructor: Jong-Min Kim, Statistics
Office: 2380 Science (Tel:589-6341)
Office Hours: 2:00-3:00 MWF, or by appointment.
email: jongmink@morris.umn.edu
Webpage: http://cda.mrs.umn.edu/∼jongmink/stat2501/

Required Course Materials:

- Sheldon, M. R., *Introduction to Probability Models* (Eighth edition), Academic Press, 2003.

Course Desription:

The course will concentrate on Probability Theory and Statistical Methods. Probability theory; set theory, axiomatic foundations, conditional probability and independence, Bayes's Rule, random variables. Transformations and expectations; expected values, moments and moment generating functions. Common families of distribution; discrete and continuous distributions. Multiple random variables; joint and marginal distributions, conditional distributions and independence, covariance and correlation, multivariate distributions. Properties of a random sample and central limit theorem. Markov chains, Poison processes.

Homework:

There will be homework problems given in most class periods. No late homeworks will be accepted without a valid excuse.

Examinations:

Two midterm examinations and a final exam will be given. No make-up exams will be given. You may also use a calculator.The tentative time table for the examinations is given below:

Midterm 1 Science 3610 11:45 am -12:50 pm Fri, October 7
Midterm 2 Science 3610 11:45 am -12:50 pm Fri, November 11
Final Exam Science 3610 11:00 am - 1:00 pm Wed, December 21

Grading

Grades for the course will be determined using the following weights for each component of the course:

Midterm 1	100 pts.
Midterm 2	100 pts.
Final Exam	100 pts.
Homework	100 pts.
TOTAL	400 pts.

Trends on the scores, attendance to the lectures, class participation etc. will be considered on the determination of the final grades.

Rules for dropping and adding classes are the same as those for the university. Students are expected to attend all classes. University rules associated with academic dishonesty will be followed.

Disabilities:

Reasonable accomodations will be provided for students with documented physical, sensory, learning, and psychiatric disabilities. Contact Disability Services to work out the details of accomodations. Please feel free to discuss other special needs with me.

Course Topics

- Sample Space, Probabilities and Bayes' Formula – Chapter 1
- Random Variables, Expectation of a Random Variable and Jointly Distributed Random Variables – Chapter 2
- Conditional Probability and Conditional Expectation – Chapter 3
- Markov Chains – Chapter 4
- The Exponential Distribution and the Poisson Process – Chapter 5 (if time permits)