

## SYLLABUS - Fall, 2009

### STAT 3611 - Introduction to Probability and Statistics, Section 2

**INSTRUCTOR:** Kang James **E-MAIL:** kjames (kjames@d.umn.edu)

**OFFICE:** Campus Center 158 **PHONE:** 726-6241

**LECTURES:** MWThF 11:00-11:50, EduE 16

**OFFICE HOURS:** MWF 3:00-4:00  
Th 1:00-3:00; or by appointment.

**TEXTBOOK:** Probability and Statistics for Engineers and Scientists, 8th Edition (2007),  
by Walpole, Myers, Myers and Ye

**PREREQUISITE:** Differential and Integral Calculus through integration by parts. Math 1296 is the prerequisite.

<b>GRADING:</b>	Midterm exams	40% (20% each)	(100 points each)
	Minitest	10%	(50 points)
	Final exam	25%	(125 points)
	Homework	17%	(85 points)
	Recitations	8%	(40 points)

**EXAMS:** There will be two midterm exams, the first on Friday, October 16, and the second on Friday, November 20 and a minitest (25 minutes) on Friday, December 11. The final exam will be a common final with Section 3; its time and place will be announced in class and by e-mail as soon as possible. If you must miss a midterm exam or the final exam, be sure to make arrangements before (!!!) the exam; students who do not show up for an exam will be assigned a grade of zero (F) on that exam, and changes in this grade (i.e. a makeup exam) will be considered only with a documented excuse.

**EXERCISES:** There will be written homework assignments which will be graded. Problems will be assigned weekly and will usually be due on Mondays. Some, but not necessarily all, of problems will be graded. Make every effort to hand in homework on time; late homework assignments will only be accepted under exceptional circumstances. You are encouraged to discuss the problems among yourselves (discussing them with your recitation group – see below- is an obvious option), but you should write the problem solutions **in your own words**; identical homework solutions will receive no credit.

**RECITATION:** Part of certain Fridays, except for exam days and holidays, will be set aside for recitation sections, where problem solutions will be presented by students. The class will be divided into 9 groups of 3 or 4 students each, and each recitation day a different group will present solutions to selected homework problems. Half of the recitation grade (20 points) will be based on this presentation; you must be present the day of your group's presentation to receive any of the 20 points. The other 20 points will be based on attendance (2.5 points for each of the 8 days on which others make presentations).

**COURSE TOPICS:** Chapters 1-10 of the textbook. Here are the main topics, listed by chapter:

- (2) Basic probability: sample space, event, permutations and combinations, rules of probability, conditional probability, Bayes' Rule.
- (3) Random variables and their distributions: discrete and continuous random variables, joint and marginal probability distributions.
- (4) Mathematical expectation: mean, variance, covariance, means and variances of sums,
- (5) Discrete distributions: uniform, binomial, multinomial, geometric, hypergeometric, Poisson.
- (6) Continuous distributions: normal, gamma, exponential; applications of the normal distribution, normal approximation to the binomial.

- (7) Transformations of variables, moment-generating functions.
- (8) Basic statistics: random samples, data displays, descriptive statistics, sampling distributions, central limit theorem, chi-squared and  $t$  distributions.
- (9) Estimation: point estimates, unbiased estimator, standard error; confidence intervals for means, proportions, and variances and maximum likelihood estimation (if time permits).
- (10) Hypothesis testing: type I and type II errors, p-value; one- and two-sample tests concerning means, variances and proportions; goodness-of-fit tests.

**SPECIAL NEEDS:**

Individuals who have any disability, either permanent or temporary, which might affect their performance in this class are encouraged to inform the instructor at the beginning of the quarter. Adaptation of methods, materials, or testing may be arranged to facilitate your learning. Test accommodations, including extra time, for students with disabilities are arranged through the Access Center

This syllabus is available in alternative formats upon request. Please call Penny Cragun, Access Center, 726-8727.

**RECITATION SESSIONS:**

All 9 recitations will take place on Fridays. Here are the dates:

September 18  
September 25  
October 2  
October 9  
October 23  
October 30  
November 6  
November 13  
December 4

**INCOMPLETES:**

UMD's policy on incompletes is given online in the grading section of Duluth Catalog 2009-2010. In addition, it is my policy that for a grade of incomplete to be considered, you must have been passing the course at the point where the problem occurred.

**CELL PHONES, etc.:**

Ringling and beeping devices disrupt class activities, and every effort should be made to minimize their use. If it is absolutely necessary that you leave your cell phone or pager on during some class, please inform me at the beginning of the class and sit as near to the door as possible. In addition, students are expected to follow the university's Student Conduct Code (given at <http://www.d.umn.edu/conduct/code>).

**ACAD. INTEGRITY:**

Here is the statement suggested by UMD's Educational Policy Committee: "Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. UMD is committed to providing students every possible opportunity to grow in mind and spirit. This pledge can only be redeemed in an environment of trust, honesty, and fairness. As a result, academic dishonesty is regarded as a serious offense by all members of the academic community. In keeping with this ideal, this course will adhere to UMD's Student Academic Integrity Policy, which can be found at <http://www.d.umn.edu/conduct/integrity>. This policy sanctions students engaging in academic dishonesty with penalties up to and including expulsion from the university for repeat offenders."