MATH 371: Probability
http://www.dms.uaf.edu/∼eallman/classes/371-fall_08/371.html
MWF 11:45 – 12:45
Gruening 310

Instructor: Elizabeth S. Allman, Chapman 303B, e.allman@uaf.edu and 474-2479.

Office Hours: M TBA, W 1:00-2:00, F 10:30 – 11:30, and by appointment. These office hours may change at a later date, depending on student demand and scheduling concerns. Please note that the best way to reach me is by e-mail.

Textbook: Wackerly, Mendenhall, Scheaffer *Mathematical Statistics with Applications*, seventh edition. A students solutions manual is also available in the bookstore.

Grading: There will be one midterm exam and a cumulative final exam in Probability. In addition, there will be weekly homework assignments, regular quizzes (announced and unannounced), and labs. Grades will be assigned using the following weights:

Homework	10 %
Quizzes and labs	25 %
Midterm	30 %
Final Exam	35 %

The midterm exam may be longer than one hour in length, and we will schedule a time for this as a group. Tentatively, it will take place the week of October 13-17. The final exam will take place as published in the schedule of courses, on Monday, December 15 from 10:15 – 12:15. Makeup exams will not be given.

Content: 'Probability theory began in seventeenth century France when the two great French mathematicians, Blaise Pascal and Pierre de Fermat, corresponded over two problems from games of chance.' Probability is still associated with games of chance, though now it is more broadly associated with trying to quantify one's belief in the occurrence of a future event. If you make five baskets in a row from the free-throw line, how likely do you think it is that you will make the next shot? If you toss a coin and get five heads in a row, would you be willing to bet that you'll get a head on the next toss?

In this course we'll study the basics of probability theory. In particular, we'll study descriptive statistics, counting principles, laws of probability, discrete and continuous random variables, probability distributions, sampling distributions, and the Central Limit Theorem. This corresponds to chapters 1 - 7 in the textbook.

It is wise to think of this course as the first course of a year long sequence, MATH 371 followed by MATH 408 Statistics. This semester you learn how things might work in an ideal world (random variables, density functions, distributions). Later you learn how to estimate quantities of interest using the probabilistic models we developed.

Using statistical software packages is an important skill that every student learning about probability and statistics should acquire. You should expect some assignments that require access to a computer.

Course Outline: Probability is a three hour course, and class meetings will primarily be in lecture format. I encourage you to ask questions and participate actively in class.

Homework will be assigned weekly in class and collected about once a week, usually at the beginning of class on Friday. An up-to-date, cumulative list of homework problems

is available on the class webpage and you should get into the habit of checking this page regularly. Class announcements and other useful information will be posted there too.

I recommend that you purchase the student solutions manual that accompanies the textbook, and use this as a gauge of your understanding. Feel free to work with other students on your homework, but your homework should reflect your understanding of the material. Individual problems on collected homework assignments will not be graded; instead each student will earn a score on a 0-1-2 scale reflecting my impression of the completeness of the assignment. Late homeworks will not be accepted.

To encourage students to keep up with their homework, there will be several short quizzes in Probability. (You should expect these short quizzes to be administered randomly throughout the semester.) 'Short' means about ten or fifteen minutes.

The Math Lab, located in Chapman 305, is an excellent place for study groups to gather. Tutors are available there, and help is close by. Hours for the semester are usually posted by the end of the first full week of classes.

The midterm in MATH 371 will most likely take place during the third week in October. Mark your datebooks now with the time for our final exam: Monday, December 15, 10:15 – 12:15.

Finally, please remember to bring your textbook and a calculator to class with you.

Other Policies:

Course accommodations: If you need course adaptations or accommodations because of a disability, please inform your instructor during the first week of the semester, after consulting with the Office of Disability Services, 203 Whitaker (474-7403).

University and Department Policies: Your work in this course is governed by the UAF Honor Code. The Department of Mathematics and Statistics has specific policies on incompletes, late withdrawals, and early final exams, some of which are listed below. A complete listing can be found at

`http://www.dms.uaf.edu/dms/Policies.html`.

Prerequisites: The prerequisite for MATH 371 is MATH 202 with a grade of C or better. Students not meeting this prerequisite are not eligible to take this course and will be dropped.

Late Withdrawal: This semester the last day for withdrawing with a 'W' appearing on your transcript is October 31. If, in my opinion, a student is not participating adequately in the class, I may elect to drop this student.

Graded Coursework: Please keep all graded work for MATH 371 until final grades have been assigned.

Academic Honesty: Academic dishonesty, including cheating and plagiarism, will not be tolerated. It is a violation of the Student Code of Conduct and will be punished according to UAF procedures.

Grade Bands: A, A- (90 - 100%), B+,B, B- (80 - 89%), C+, C, C- (70 - 79%), D+, D, D- (60 - 69%), F (0 - 59%). On rare occasion, I may lower the thresholds. Also, in an effort to reward the student who makes significant improvement over the course of the term, a stellar grade on the final may overcome a deficiency on the midterm and improve a student's final grade.

Courtesies: As a courtesy to your instructor and fellow students, please arrive to class on time, turn your cell phones and iPods off during class, and pay attention in class.

Homework Assignment # 1
due Wednesday, September 13

Part I.

Chapter 1

1

2, 3, 4, 5

7, 8, 9, 10, 11, 15, 16, 17 18, 19

21, 25, 27 29

Part II.

Coming next week....