MATH 5710 INTRODUCTION to PROBABILITY Summer 2008
TR 4:15 – 7:15 pm (ENGR 401)
Class Starts Tuesday, June 24; Last Class Thursday, August 7

Course Objective:

This course is an introduction to probability theory for students with a calculus background. The course focuses on developing a student's ***intuitive and mathematical grasp of probability theory and methods***. Overall, understanding of the fundamental concepts is stressed over formal mathematical manipulations, although ***mathematical rigor is expected***. A variety of examples and applications are presented in class or developed through homework exercises. Topics include probability rules, discrete and continuous random variables (r.v.'s), normal approximation, expectation, conditional probability, joint and marginal distributions, the central limit theorem, moment generating functions, and applications.

Office Hours:

TR 3:30 – 4:00, phone 435-797-2815, e-mail Dan.Coster@usu.edu or in Lund 310 if you are on the USU campus. I will typically be available after class in Lund 310 until about 8 pm. We will also have two excellent and experienced TAs helping you on the course material.

Texts:

Mathematical Statistics and Data Analysis, 3rd Ed., by John A. Rice, Duxbury Press, (2007, ISBN 0-534-39942-8).

This course covers the material of Chapters 1-5, with occasional examples and illustrations taken from the later chapters. Some of the more esoteric topics of Chapters 3 and 4 will be omitted,

Prerequisites:

It is a plus if you have had Math 2210 (Multivariable Calculus) but you should be OK with Math 1210 (Calculus I) and parts of Math 1220 (Calculus II). We will go over specific calculus tools from Math 1220 and 2210 as and when we need them. The most essential calculus tool you will need is integration by parts, so learn or refresh on that topic as soon as you can.

Homework:

Homework assignments will be given every class meeting (including the last class meeting on August 7). Questions are from the textbook. You must show work for full credit. Pictures that help to explain your reasoning are strongly encouraged. You may work together in study groups to solve homework problems, but your write-up must be clearly your own, independent effort. Late assignments will incur a penalty. Assignments shown below for a Tuesday class are due by the following Friday;

assignments for a Thursday meeting are due the next Monday (unless the due day is a public holiday, in which case the completed assignment is due the next work day).

Exams:

There will be one midterm, and a final, each a 24-hour take-home. Exams are open book and open notes. Unlike the homework assignments, you must work by yourself on the tests. Midterm: Tuesday, July 15; Final: Thursday, August 7. The midterm will be based on material covered through the July 10 meeting and its assignment; the final will cover material from July 15-August 7.

Assessment:

Your final grade will be based on the following breakdown:

Homework:	60%
Midterm:	20%
Final:	20%

Disabilities:

If a student has a disability that will require some accommodation by the instructor, the student must contact the instructor and document the disability with the Disability Resource Center (DRC) as soon as possible. Any requests for special accommodations relating to attendance, pedagogy, taking exams, etc., must be discussed with and approved by the instructor. In cooperation with the DRC, course materials can be provided in alternative formats – large print, audio, diskette, or Braille.

Homework Exercises:

Here are the questions for homework for each class meeting. Do note that the last assignment is due at the same time as the final exam, by 7 pm on August 8.

1. Tuesday, June 24. Ch 1: 3, 6, 12, 16, 20. Due Fri, June 27.
2. Thursday, June 26. Ch 1: 32, 41, 48, 50, 54. Due Mon, June 30
3. Tuesday, July 1. Ch 1: 74, 76; Ch 2: 2(b)-(c), 4, 9. Due Mon, July 7
4. Thursday, July 3. Ch 2: 12, 14, 15, 17, 20. Due Mon, July 7
5. Tuesday, July 8. Ch 2: 22, 26, 32, 34, 40. Due Fri, July 11
6. Thursday, July 10. Ch 2: 44, 52, 54, 56, 60, 64. Due Mon, July 14
7. Tuesday, July 15. Ch 3: 1, 7, 8, 9, 12, 14. Due Fri, July 18
8. Thursday, July 17. Ch 3: 17, 18, 19, 24, 27, 42(a). Due Mon, July 21
9. Tuesday, July 22. Ch 4: 1, 2, 4, 5, 13, 14, 18. Due Fri, July 5.
10. Thursday, July 24. No Class, Pioneers Day, yes, yes, yes!
11. Tuesday, July 29. Ch 4: 25, 30, 31, 34, 43, 50, 55. Due Fri, August 1
12. Thursday, July 31. Ch 4: 66, 75, 80, 81, 82, 91. Due Mon, August 4
13. Tuesday, August 5. Ch 5: 3, 5, 10, 11, 13. Due Fri, August 8
14. Thursday, August 7. Ch 5: 16, 17, 18, 26. Due Fri, August 8.

Remember, the last two assignments and the take-home final are all due by 12:00 noon, Saturday, August 9.