Stat 400 Syllabus, Sections 0111, 0112, 0121, 0131.

Fall 2010

Time and place: TuTh.......11:00am-12:15pm (ARM 0131)

Time and place of discussion sessions:
0111 - M........8:00am-9:15am (MTH 0105)
0112 - M........8:00am-9:15am (MTH 1411)
0121 - M........9:30am-10:45am (MTH 0105)
0131 - M........11:00pm-12:15pm (MTH 0104)


Instructor: Prof. S. Cerrai

Office: MTH 2304.

E-mail address: cerrai@math.umd.edu

Office hours: Tuesday 12:30pm-1:30pm and Thursday 3:30pm-4:30pm.

Teaching assistants:

- Carolina Franco, e-mail address: cfranco@math.umd.edu, office: MTH 4314, office hours: Monday 1pm-3pm.
- Ran Cui, e-mail address: cuiran@math.umd.edu, office: MTH 2118, office hours: Tuesday 4pm-5pm.

Homework policy: The week’s homework will be assigned on my web page after the Tuesday lecture. At your TA section by the following Monday your TA will pick one of the HW problems, you will put away your notes, do the problem and hand it in. In other
words every week you will have a HW quiz. On occasion you may be asked to hand in an entire assignment or a part of one. There will be approximately ten homework quizzes assigned during the semester of which the best eight will count.

**Lab assignments:** You will receive 6 lab assignments, which are designed to support learning and to help you be successful in the course. Each lab is worth 5 points and is part of the required work for all students in the course. Hard copies of your answers to lab assignment questions should be turned into your discussion section TA on the assignment due date. You will need to go to Blackboard to access and download lab assignment material. The lab material and instructions for completing the labs can be found on Blackboard space titled STAT400 Material. Some lab assignments will require students to go to a campus computer lab to use specific software in order to complete the assignments. For assistance with Blackboard or software related to the lab assignments, please contact Darcy Conant dconant@math.umd.edu.

**Grading policy:** Homework quizzes will contribute 270 points to the final grade, lab assignments will contribute 30 points, the two midterms will contribute 200 points each and the final exam will contribute 300 points, for a total of 1000 points.

**Attendance policy:** The students are responsible for all the material covered in the class. If a student misses an exam or quiz due to circumstances beyond the students’ control, the student must supply appropriate documentation in which case special arrangements will be made.

**Other:** You should be familiar with the University’s policies on Academic Integrity, including the Honor Pledge. In particular, you should work on the problems on your own. If your religion dictates that you cannot take an exam or hand in assigned work on a particular date, then contact me at the beginning of the semester to discuss alternatives. You are responsible for making these arrangements at the beginning of the semester. If you have some disability related to testing under the usual timed, in-class conditions, you may contact the office of Disabled Students Services (DSS). If they assess you as meriting private conditions and/or extra time, then you may arrange to take your tests at DSS, with extra time as they indicate. You must arrange this well in advance of a test.

**Topics to be covered:**

1. The $\sigma$-algebra of events, probability, conditional probability, Bayes theorem, independence.

2. Discrete random variables, basic discrete distributions (binomial, hypergeometric, Poisson, negative binomial).
3. Continuous random variables, probability density function, basic continuous distributions (normal, exponential, Gamma), the central limit theorem.

4. Random vectors, joint, marginal and conditional distributions, the correlation coefficient.

5. Data and what they tell us about a model, point and interval estimation, margin of errors.

6. Testing statistical hypothesis, the P-value, review of the material.

Dates:
1. First Midterm: October 5,
2. Second Midterm: November 16,
3. Final: December 13, 8:00am - 10:00am, Armory 0131.

Homework assignment
1. Homework 1: Chapter 2, Exercises 2, 6, 8, 16, 18, 22, 26 (due on 09/13/10).
2. Homework 2: Chapter 2, Exercises 30, 34, 40, 44, 46, 50 (due on 09/20/10).
3. Homework 3: Chapter 2, Exercises 60, 68, 76, 80, 88, 94, 110 (due on 09/27/10).
5. Homework 5: Chapter 3, Problems 49, 52, 56, 62, 68 p. 115, 70, 76 (due on 10/18/10).
6. Homework 6: Chapter 3, Problems 86, 92, 112, Chapter 4, Problems 4, 6, 12, 18 (due on 10/25/10).
7. Homework 7: Chapter 4, Problems 24, 32, 36, 42, 54, 68, 70 (due on 11/01/10).
8. Homework 8: Chapter 5, Problems 2, 4, 6, 8, 24, 30, 36 (due on 11/8/10).
10. Homework 10: Chapter 6, Problems 2, 4, 8, 10, 12, 14, 16 (due on 12/06/10).