Stat 400 Syllabus
Fall 2012

Time and place: TuTh.......11:00am-12:15pm (ARM 0135)

Time and place of discussion sessions:
0211 - M  8:00am-9:15am (MTH 0105)  Z. Zhang
0212 - M  8:00am-9:15am (EGR 0135)  J. Resman
0213 - M  8:00am-9:15am (MTH 0305)  Z. Ding
0221 - M  9:30am-10:45am (MTH 0105)  Z. Zhang
0222 - M  9:30am-10:45am (EGR 0135)  J. Resman
0223 - M  9:30am-10:45am (MTH 0305)  Z. Ding
0231 - M  11:00am-12:15pm (MTH 0103)  Z. Zhang
0232 - M  11:00am-12:15pm (EGR 0135)  J. Resman
0233 - M  11:00am-12:15pm (MTH 0305)  Z. Ding


Instructor: Prof. S. Cerrai

Office: MTH 2304.

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

Office hours: Tuesday 3:15pm-4:15pm and Thursday 12:30pm-1:30pm.

Teaching assistants:

- Zi Ding, e-mail address: zding@math.umd.edu, office: 4202 MATH, office hours: Mon and Fri 12:30pm-1:30pm.

- Jayna Resman, e-mail address: jresman@math.umd.edu, office: 4423 MATH, office hours: Wed 2:30pm-4:30pm.
• **Zhang Zhang**, e-mail address: zsquared@math.umd.edu, office: CSS 4326, office hours: Thu 1:00pm-3:00pm.

**Homework policy:** The week’s homework will be assigned on my web page after the Tuesday lecture. By the following Monday, at your discussion section, 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.

**Grading policy:** Homework quizzes will contribute 300 points to the final grade, 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 student’s 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 meritng 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.

Exam dates:

1. First Midterm: October 23,
2. Second Midterm: November 15,
3. Final: December 13, 8:00am - 10:00am, Armory 0135.

Homework assignment

1. Homework 1: Chapter 2, Exercises 2, 6, 8, 16, 18, 22, 26 (due on 09/10).
2. Homework 2: Chapter 2, Exercises 32, 36, 38, 40, 44, 46, 48, 50 (due on 09/17).
3. Homework 3: Chapter 2, Exercises 66, 68, 80, 82, 84, 88, 98, 104 (due on 09/24).
4. Homework 4: Chapter 3, Problems 16, 18, 24, 32, 34, 36, 38, 42 (due on 10/2).
5. Homework 5: Chapter 3, Exercises 48, 52, 56, 60, 66, 70, 71, 76 (due on 10/9).
7. Homework 7: Chapter 4, Exercises 10, 22, 30, 32, 38, 42, 48, 54, (due on 10/30).
8. Homework 8: Chapter 4, Exercises 68, 70, 102, 106 (due on 11/05).
9. Homework 9: Chapter 5, Exercises 2, 4, 6, 8, 12, 24, 30, 32 (due on 11/19).
10. Homework 10: Chapter 5, Exercises 48, 52, 54, 60, 68, 78, 82, 90 (due on 12/04)