Syllabus for Statistics 426 - Fall 2012.

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University of Michigan

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1 Instructor information.

Instructor: Moulinath Banerjee.

Office: 451, West Hall.

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Course web-page: www.stat.lsa.umich.edu/~moulib/st426f12.html

Office Hours: 5:45 to 7:00 P.M. on Monday and 1:30 to 2:30 P.M. Wednesday, or by appointment.

2 GSI information.

See course webpage for contact information and office hours.

3 Course information.


Course Notes are available online and the lectures will be based on these notes.

Distribution of weights: Midterm: 24, Homework: 36, Final: 40.

Exam schedule:

- Midterm: October 22 (Monday) in class during class hours.
• Final Exam: December 19 (Wednesday) in class from 8:00 to 10:00 AM.

Outline of topics to be covered:

• **Probability Revision:** Basic probability; Random Variables; Joint Distributions; Expectation; Law of Large Numbers; Convergence in Distribution, Central Limit Theorem.

  Relevant Chapters: 1 - 5

• Distributions related to the Normal; Sampling

  Relevant Chapters: 6 and 7

• **Parametric Statistical Inference (Estimation):** Introduction; Parametric Distributions; Exponential Families and Sufficiency; Estimation Techniques: Method of Moments, Maximum Likelihood Estimation; The Cramer Rao Inequality; Asymptotics of the MLE.

  Relevant Chapter: 8

• **Parametric Statistical Inference (Hypothesis Testing):** Confidence Intervals and Hypothesis Testing; Likelihood Ratio Tests; Chi-Squared Tests.

**Homework information:** There will be 6 (biweekly) homeworks. Each homework will contribute 6 points towards your total grade. Homeworks need to be turned in during class to the instructor. Due dates will be announced in class.