

SYLLABUS

STA 4322
STA 5328

Introduction to Statistics Theory
Mathematical Methods of Statistics II

Fall, 2005
Fall, 2005

Instructor: Malay Ghosh

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Office Hours: 3:00-4:00 P.M. M W and by appointment

Objective:

The objective of STA 4322/ STA 5328 is to introduce students to the basic aspects of the theory of statistical inference. We will cover topics such as the χ -square, t and F distributions, point estimation, Testing hypotheses and assessing goodness of fit, comparing two samples, and the analysis of variance. In particular, we will cover in details Chapters 6, 8 and 9 of "Mathematical Statistics and Data Analysis (2nd Edition)" by John A. Rice and a few selected topics from Chapters 11 and 12.

Policy:

A student's grade for the Fall Semester is determined from scores on the quizzes (20%), two midterm exams (25% each), and a final exam (30%). The quizzes will be based entirely on the assigned homework.

Quiz and Exam Dates:

Quiz 1: 9/2; Quiz 2: 9/9; Quiz 3: 9/16; Quiz 4: 9/23; Quiz 5: 9/30.

EXAM I: October 5, 2005.

Quiz 6: 10/14; Quiz 7: 10/21; Quiz 8: 10/28; Quiz 9: 11/4.

EXAM 2: November 9, 2005.

Quiz 10: 11/18; Quiz 11: 12/2.

FINAL EXAM: December 13, 2005 (3:00-5:00 P.M.).

I WILL NOT OFFER ANY MAKE-UP EXAM EXCEPT UNDER UNAVOIDABLE CIRCUMSTANCES

Course Outline:

A. Review of Discrete and Continuous Distributions.

B. Review of Expectations, Variances, Correlation, MGF etc.

C. Review of Law of Large Numbers and Central Limit Theorem.

D. Chapter 6: 6.1, 6.2, 6.3.

E. Chapter 8: 8.2, 8.3, 8.4, 8.5, 8.6, 8.7.

F. Chapter 9: 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.10.

G. Chapter 11: 11.2.1, 11.2.2, 11.3.1, 11.3.3.

H. Chapter 12: 12.2.1, 12.2.2, 12.3.1, 12.3.2.

Textbook: Mathematical Statistics and Data Analysis (2nd Edition). John A. Rice. Duxbury Press.

Homework:

Chapter 2: 21, 23, 28, 30, 44, 45, 57, 67.

Chapter 4: 21, 22, 31, 48, 51, 53.

Chapter 5: 2, 5, 16, 26.

Chapter 6: 5, 6, 10, 11.

Chapter 8: 6, 14, 16, 17, 24, 25, 29, 30, 40, 45, 47, 50, 54, 55, 57, 62.

Chapter 9: 4, 5, 10, 12, 18, 20, 22, 24, 26, 27, 28, 30, 31, 33, 36, 37, 38.

Chapter 11: 1, 2, 3, 6, 14, 15, 30, 31, 32.

Chapter 12: 2, 3, 4, 5, 6, 7, 10, 14.