STA257-Course Outline

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Text:

MATHEMATICAL STATISTICS AND DATA ANALYSIS, 3rd Edition
By John Rice
Publisher Duxbury
ISBN 0-534-39942-8

Note: This text is also used for STA261 .

Instructor's office hours : after class, via e-mail, by appointment.

TA office hours: Special TA office hours will be available before the test and the final exam.

Tutorials: Begin the 2nd week of class. See Blackboard for details.

Web Page : www.utstat.toronto.edu/philip/courses/sta257/home.html

Marking: one 3-hour test (40%), 3-hour final exam (60%) . No make-up test. Grade = .4xTest+.6xFinal or just the Final (out of 100) if it is to your benefit. A missed test increases the value of the final. Please understand the marking scheme. It is **extremely** unwise to not write the mid-term.

Assignments: None to be handed in. However, problems will be assigned from the lectures and the text. These can be discussed during your tutorials. The text has answers to most. Problems are to be taken up during your tutorials. Please come prepared with your questions.

Date of test:

Wed, Oct 16 from 7-10PM

Note: The test will be handed back during the 6-7PM tutorial. Questions regarding marking are to be directed to your TA.

Coverage:

(A)- Events and random variables, the Bernoulli random variable, Axioms of Probability (and Expectation), Inequalities (Markov, Jensen, etc...),continuity of P and E,distribution functions, Conditional Probability, Independence.

(B)- Discrete and continuous random variables: definitions,probability functions,probability density functions, probability and moment generating functions, characteristic functions, various expectation calculations, examples of the preceding applied to binomial, Poisson, geometric, normal, exponential and other types of random variables, an introduction to the Poisson process.

(C)-Random vectors (multivariate distributions) including the multivariate normal, functions of random vectors, mean vector and variance covariance matrices, the change of variables formula, probability integral transformation.

(D)-Some large-sample results including a central limit theorem and laws of large numbers. Proofs of these.

Note: This corresponds to parts of Chapters 1-->6 of the text and some additional material not found in the text. Please note that the test and the exam are based on the lectures (slightly more advanced than the text), problems and the text. Doing the suggested problems and studying the lectures is excellent preparation for the exam. It is not enough to just know results. You must know why they work. This requires a fair amount of pondering over the material and is difficult to do at the last minute. Don't be alarmed if you find a lecture difficult when you first encounter it in class. This material takes time to learn. There is a lot of new terminology.