

University of Nevada, Las Vegas
Department of Mathematical Sciences
STA767 Mathematical Statistics I

SYLLABUS (Fall 2009)

Instructor: Hokwon A. Cho, Ph.D., Associate Professor, CDC-1008, Office: 895-0393, e-mail: cho@unlv.nevada.edu.

Time and Location: Tue. and Thu. 4:00 p.m. - 5:15 p.m., CBC-129.

Office Hours: Tue. and Thu., 11:00 a.m.-Noon and 2:00 p.m.-3:30 p.m. or by appointment.

Textbook: *Statistical Inference*, 2nd Edition by G. Casella and R. Berger. Duxbury.

Scope of the Course:

The course provides the theoretical infrastructure of mathematical statistics. The essential and indispensable mathematical concepts and methods will be covered based on the probability theory. In chronological order, the following topics will be treated (subject to minor changes).

1. *Probability Theory* - Basic concepts of set theory, sample space, events, and some topology.
2. *Random Variables and Their Distributions* - Discrete and continuous random variables, their expectations, conditional probability, independence and correlation.
3. *Distributions of Functions of Random Variables* - Special distributions and derived distributions, transformations, change of variable technique.
4. *Sampling and Sampling Distributions* - Order statistics, quantiles. (Monte Carlo method, Bootstrap).
5. *Limiting Distributions* - Modes of convergence, Central Limit Theorem. (If time permitted.)

Homework: The weekly assignments will be given in class and expected to turn in on time. No late homework will be accepted. Some of the problems will be discussed in class.

Exams: Two tests will be most likely on 5th/6th and 10th/11th week. The final exam is scheduled to be on Tuesday, Dec. 8, from 6:00 p.m. to 8:00 p.m.

Grading: The course grade will be based on a weighted average of standardized scores from (1) homework assignments = 20% (2) two mid-semester exams = 25% each, and (3) a final exam = 30%.

Grade Scale: A-A⁻: 85% or above, B⁺-B: 75% or above, C⁺-C: 65% or above, D⁺-D: 55% or above, F: Below 55%.

Notes: (1) No make-up tests will be given at any case except a pre-arrangement by the instructor. The above schedule or contents may be changed without notice. (2) Holiday observance: Labor Day: Mon., Sep. 7, Veteran's Day: Wed. Nov. 11, Thanksgiving Day: Thu., Nov. 26 - Fri., Nov. 27.

NOTE: STATEMENT FROM THE DISABILITY CENTER

Learning Enhancement Services (LES) houses Disability Services, Tutoring Services and Learning Strategies. If you have a documented disability that may require assistance, you will need to contact LES for coordination in your academic accommodations. LES is located in the Reynolds Student Services Complex, suite 137. The phone number is 702-895-0866, or TDD 702-895-0652. You may also visit our web site at <http://www.unlv.edu/studentlife/les>.