Course 4213: Mathematical Statistics

Spring 2009

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Office Hours: Monday 10:00 – 11:00 am, 12:00 – 2:00 pm and 3:00-3:30pm
   Wednesday 10:00 –11:00 am, 12:00–2:00 pm and 3:00-3:30pm
   Friday 10:00 – 11:00 am and 12:00-2:00 pm
   Any change in office hours will be notified in class.

Course Number: MATH 4213

Course Title: Mathematical Statistics

Hours Credit: 3 hours

Prerequisites: MATH 4203

Course Description: A continuation of MATH 4203, including sampling distributions, estimation, hypothesis testing, regression, analysis of variance and nonparametric tests.

Topics: Sampling distributions, various hypothesis testing scenarios will be looked at. Introduction to concepts of efficiency, consistency, sufficiency and robustness will be considered. Also regression and correlation and simple design of experiments methods will be studied.

Text: Mathematical Statistics with Applications (Seventh Edition)
Author: John E. Freund

Learning Outcomes:

Upon successful completion of this course, the students will be familiar with various hypothesis testing scenarios. The knowledge of the sampling distributions will help in understanding Design of Experiments. Students will be able to apply regression techniques to various problems. Important concepts in point estimation will also be covered.
Syllabus

Chapter 8: Sampling Distributions
All sections

Chapter 10: Point Estimation
All sections

Chapter 13: Tests of Hypothesis Involving Means, Variances and Proportions
All sections

Chapter 14: Regression and Correlation
14.1 Introduction
14.2 Linear Regression
14.3 The Method of Least Squares
14.4 Normal Regression Analysis (if time permits)
14.5 Normal Correlation Analysis (if time permits)

Chapter 15: Design and Analysis of Experiments
15.1 Introduction
15.2 One-Way Designs
15.3 Randomized-Block Designs
15.4 Factorial Experiments (if time permits)

Chapter 16: Nonparametric Tests
All sections

Grading:

Every week there will be a small quiz in class.
6 Test (100 points each)
1 Final (100 points) : Friday 1st May 2:00-4:00pm

Final Marks = 30% Quizzes + 40% Tests + 30% Final Exam

Grading Scale:

- A = 90-100%
- B = 80% to < 90%
- C = 70% to < 80%
- D = 60% to < 70%
- F = below 60%
Class Policies:

- You get to drop your lowest test and quiz grade.
- All test dates will be announced in class.
- The final exam is COMPULSORY and COMPREHENSIVE for everyone.
- There are NO other extra credits available for this course.
- There are NO make up tests. In case of an illness (with medical certificate) or dire emergency, the instructor must be contacted prior to the test or quiz, via phone or email. Accommodations for missed tests and quizzes will be handled depending on the severity of the situation between the student and the instructor.
- If you need to arrive late or leave early, please clear it with the instructor BEFORE the class begins.
- Cheating of any sort will not be tolerated. If you are found cheating or assisting in any form of cheating, you will be awarded a failing grade in that test or quiz.
- Turn off cell phones and other devices when you enter the classroom.
- Homework sheets will be handed out in class, if you do not get a sheet you can come and collect if from my office after class. Homework will not be graded but you are encouraged to do the homework, as this will be a great help in improving your grade.
- If using email, you must use your university email account (@westga.edu) for any communication; also check your university email account for any announcement regarding the class.
- You can come and see me during my office hours or by appointment. Please feel free to come and talk to me about any problems related to the course.