

Course: Statistical Methods

Class Time: MWF 9:15-10:20 AM in Science 3650

Prerequisite: High school higher algebra

Instructor: Jong-Min Kim, Statistics Displine

Office: 2380 Science (Tel:589-6341)

Office Hours: 2:30-3:30 MWF, or by appointment.

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Required Course Materials:

- McClave and Sincich , *Statistics*, Tenth Edition, Prentice Hall, 2005
- Calculator with statistical functions (not necessarily a graphing calculator)

Course Desription: The course will concentrate on Probability Theory and Statistical Methods and cover the following topics: (i) Probability Theory; Transformations and expectations; expected values, moments and moment generating functions. Common families of distribution; discrete and continuous distributions. Properties of a random sample and central limit theorem. (ii) Graphical and Descriptive Statistical Methods; stem-and-leaf displays, histograms, boxplots, quantile plots, measures of location, variation and position. (iii) Methods of Statistical Inference; estimation, test of hypothesis, linear regression and correlation, analysis of variance, nonparametric statistics; use of statistical computer packages (WEBSTAT, STATLETS or Excel).

Homework: There will be homework problems given in most class periods. No late homeworks will be accepted without a valid excuse.

Quizzes: There will be quizzes in class over suggested homework problems and/or concepts discussed in class. The quizzes will be open book and open notes. A short quiz will be given in class, so it is imperative to bring all essential materials with you to each class. Be prepared! No makeup quizzes will be given.

Examinations: Three midterm examinations and a final exam will be given. No make-up exams will be given. If you must miss an exam, the relevant material on the final exam will be used for the missing midterm score. Each exam (including the final) will be closed-book and closed notes. however, you may use one $8\frac{1}{2} \times 11$ inch sheet of notes if you wish. You may also use a calculator. The tentative time table for the examinations is given below:

Midterm 1 Science 3610 9:15 -10:20 am Fri, February 17

Midterm 2 Science 3610 9:15 -10:20 am Wed, March 29

Midterm 3 Science 3610 9:15 -10:20 am Fri, April 21

Final Exam Science 3610 11:00 - 1:00 pm Tues, May 9

Grading

Grades for the course will be determined using the following weights for each component of the course:

Midterm 1	100 pts.
Midterm 2	100 pts.
Midterm 3	100 pts.
Final Exam	100 pts.
Homework	50 pts.
Quizzes	50 pts.
TOTAL	500 pts.

Rules for dropping and adding classes are the same as those for the university. Students are expected to attend all classes. University rules associated with academic dishonesty will be followed.

Disabilities: Reasonable accommodations will be provided for students with documented physical, sensory, learning, and psychiatric disabilities. Contact Disability Services to work out the details of accommodations. Please feel free to discuss other special needs with me.

Course Topics

- INTRODUCTION TO STATISTICS
- DESCRIPTIVE STATISTICS
- PROBABILITY
- DISCRETE(CONTINUOUS) RANDOM VARIABLES
- SAMPLING DISTRIBUTIONS
- ESTIMATION
- TESTS OF HYPOTHESES
- INFERENCE BASED ON TWO SAMPLES
- ANALYSIS OF VARIANCE
- LINEAR REGRESSION
- CHI-SQUARE TEST
- NONPARAMETRIC STATISTICS (if time permits)
- MULTIPLE REGRESSION (if time permits)