

COURSE SYLLABUS

YEAR COURSE OFFERED: 2015

SEMESTER COURSE OFFERED: Fall

DEPARTMENT: SCE – Mathematics Department

COURSE NUMBER: 1342.01

NAME OF COURSE: Elementary Statistical Methods

NAME OF INSTRUCTOR: Staff

The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Learning Objectives

Provide students with a basic understanding of probability and statistical concepts and an ability to apply exploratory data analysis and basic inferential procedures in solving simple real world problems. Statistical computation will be recommended using EXCEL. Upon completion of the course, students will be able to:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

Core Objectives (CO)

Elementary Statistical Methods addresses the following core objectives to ensure students develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in their lives.

- Critical Thinking Skills - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication

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- Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

Assessment Plan

Learning Outcomes	CO	Assessment Methods	Criteria/Targets
1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.	CT	assignment or test	At least 70% students receive at least 70% correct.
2. Recognize, examine and interpret the basic principles of describing and presenting data.	CT	assignment or test	At least 70% students receive at least 70% correct.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.	EQS	assignment or test	At least 70% students receive at least 70% correct.
4. Explain the role of probability in statistics.	COM	assignment or test	At least 70% students receive at least 70% correct.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.	CT	assignment or test	At least 70% students receive at least 70% correct.
6. Describe and compute confidence intervals.	EQS	assignment or test	At least 70% students receive at least 70% correct.
7. Solve linear regression and correlation problems.	EQS	assignment or test	At least 70% students receive at least 70% correct.
8. Perform hypothesis testing using statistical methods.	CT	assignment or test	At least 70% students receive at least 70% correct.

Major Assignments/Exams

Your grade is based on the following performance scores: homework and in-class quizzes (15% + 15% = 30%), two midterms (40%), final exam (25%), and attendance (5%). Standard percentages will be used in determining final letter grade (i.e. 90-100% = A)

Required Reading

Text: *Elementary Statistics picturing the world – 5th Edition* by R. Larson and B. Farber.

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Recommended Reading

List of discussion/lecture topics

An introduction to the use of statistics in real world. Topics include descriptive statistics, probability distributions, confidence intervals, hypothesis tests, correlation and regression, and the use of statistical computing packages.