stat214 Syllabus

Stat 214: Elementary Statistics

Text: *Essential Statistics, 3rd ed.*, William Navidi and Barry Monk, McGraw-Hill, 2022.

Prerequisites: A minimum ACT math score of 25, SAT math score of 590, credit in MTHS 102 and MTHS 102S, MATH 102, MATH 103 and MATH 104, MTHS 105 and MTHS 105S, MATH 105, MTHS 109 and MTHS 109S, MATH 109, MATH 143, MATH 270, or MATH 272.

ALEKS and a TI-83 series or TI-84 series graphing calculator are required.

This course provides an introduction to statistics for students from various disciplines. The core topics are descriptive statistics, hypothesis testing, confidence intervals, correlation, and regression. Coverage includes: univariate and bivariate graphical and numerical descriptive methods; one and two sample Student's t confidence intervals and test for means; and normal theory methods for inference about one and two proportions. Basic probability concepts, including binomial and normal distributions, are covered to provide a sound base for inferential methods.

The outline given below provides indications of the topics covered and their location in the textbook.

Sections and Topics

Basic ideas: Populations, samples, variables, parameters, statistics, random sampling, and experimentation. (Chapter 1)

Descriptive statistics (univariate): Graphical, tabular, and numerical summaries of data. (Chapters 2 and 3)

Descriptive statistics (bivariate): Relationships between two quantitative variables: Scatterplots, correlation, and regression: Linear association, the correlation coefficient, least squares regression. (Chapter 11)

Probability: Probability, random variables, distributions, sampling distributions, the binomial and normal distributions. (Section 4.1–4.2 and Chapters 5 and 6)

Inference for one parameter: Confidence intervals and hypothesis tests for one mean (normal and Student's t) and for one proportion (normal). (Chapters 7 and 8)

Inference for two parameters: Confidence intervals and hypothesis tests for the difference between two means (Student's t) and the difference between two proportions (normal) based on independent or paired samples. (Chapter 9)

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