FA 2018 - A 205 J100

Class Number: 6483   Delivery Method: In Person

Th 5:30 PM – 8:20 PM	Dec 13, 2018
HCC 2270, Vancouver	7:00 PM – 10:00 PM
	HCC 1505, Vancouver

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Recommended: 30 units.

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The collection, description, analysis and summary of data, including the concepts of frequency distribution, parameter estimation and hypothesis testing. Intended to be particularly accessible to students who are not specializing in Statistics. Students cannot obtain credit for STAT 205 if they already have credit for - or are taking concurrently - STAT 101, 201, 203, 285, or any upper division STAT course. Quantitative.

This course was formerly named STAT 101

This course may be applied to the Certificate in Liberal Arts

Outline:

Aimed at a non-mathematical audience, this course discusses procedures that are most commonly used in the summary of statistical surveys and in the interpretation of experimental data. The rationale for these procedures is explained in detail, but the use of mathematical formulas is kept to a minimum.

Chapters covered:

This course covers Chapters 1-9, 11, 12, 15-22, and 24-27 of the textbook. Chapters 7, 11, 19, and 24 are section reviews (and thus are optional). Details of the other chapters are as follows:

1. **Descriptive Statistics (Chapters 1, 2, and 4 of text)** Basic graphical statistics (e.g. bar graphs, pie charts, histograms, time plots, scatterplots) and basic numerical statistics (e.g. mean, median, mode, quartiles, standard deviation, correlation) are discussed. Scales of measurement are distinguished (e.g. nominal, ordinal, ratio and interval).
2. **Probability (Chapters 3 and 12 of text)** The normal and binomial distributions are introduced along with probability rules.
3. **Sampling (Chapter 8 of text)** Various sampling designs such as simple random sampling are discussed. The implementation of sampling procedures is also presented.
4. **Experiments and Observational Studies (Chapters 8 and 9 of text)** The design of experiments is introduced with an emphasis on randomization, treatments, subjects, factors, pairing and controls. Comparisons are made with observational studies.
5. **Inference (Chapters 15, 16, 17, 18)** Concepts related to the construction of confidence intervals (e.g. sampling distributions, confidence level, width, interpretation, the effect of sample size) are discussed. Also basic concepts related to the testing of hypotheses (e.g. hypotheses, p-values, statistical significance) are presented.
6. **Estimation and Testing for One Sample Problems (Chapters 20 and 22 of text)** Procedures for means and proportions are discussed with an emphasis on the use of statistical software and the interpretation of results.
7. **Estimation and Testing for Two Sample Problems (Chapters 21 and 23 of text)** Procedures for means and proportions are discussed with an emphasis on the use of statistical software and the interpretation of results.
8. **One Way ANOVA (Chapter 27 of text)** One way analysis of variance procedures are discussed with an emphasis on implementation using statistical software and the interpretation of results.
9. **Chi-Square Tests (Chapters 6 and 25 of text)** Procedures for testing in contingency tables are discussed with an emphasis on the use of statistical software and the interpretation of results. Measures of association are discussed.
10. **Regression (Chapter 5 and 26 of text)** Simple linear regression is introduced with an emphasis on carrying out regression on actual data using statistical software and the interpretation of results. Related concepts including residuals, least squares fit, testing and the construction of confidence intervals is addressed.