Course Syllabus
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Statistical Methods in Education I
Spring, 2014

Instructor: Mehmet Kaplan

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Place: Room 208 Graduate School of Education (ED 208)

Time: Wednesdays 4:50pm-7:30pm

Office Hour: Wednesdays 3:40pm-4:40pm or by appointment

Text: Moore, D. S., & McCabe, G. P. (2012). Introduction to the practice of statistics (7th edition). New York: W. H. Freeman

Software: SPSS for Windows (Version 18). New York: Prentice-Hall

Course Description

This course is the first part of a one-year sequence in statistical methods designed to introduce students to the most commonly used methods in educational and social science research. No prior knowledge of statistics is required, but essentials of arithmetic and basic algebra will be used throughout the semester. Topics covered in this course include graphical representations, descriptive statistics, correlation, regression, experimental designs, basic probability, sampling distributions, confidence intervals, and hypothesis testing.

Course Goals

Upon successful completion of this course, you will be able to complete the following tasks:

1. Understand and interpret how to use graphical representations.
2. Understand the basic probability theory, the foundation of statistical methods.
3. Understand the normal distributions of random variables as well as their properties.
4. Have a basic understanding of estimating correlation and linear regression.
5. Carry out the basic statistical analysis using calculator or computer software (SPSS).
6. Conduct the basic test research hypotheses and perform confidence intervals.
7. Make a decision based on the statistical results and interpret the results.

Course Requirements

1. Email & eCollege Access: Emailing and eCollege are the two communication tools that we heavily rely on. To maximize the teaching and learning effects, you have to check your email account frequently and make sure you are able to read information, download files, drop messages, do homework, and access your grades from our webpage.

2. Exams: The two exams, midterm and final, are worth 30% and 30% of the final grade, respectively.

3. Homework Assignments: Approximately 10 homework assignments, worth 40% of the final grade, will be given throughout the semester. Homework assignments will be assigned on Mondays after class and are due on Mondays the week after they are assigned. So basically you have a whole week to work on a homework assignment. You have to hand in all of the homework assignments as a hardcopy. Late homework will not be accepted.

4. Participation: Your participation is expected during the semester.

5. Calculator: A calculator that performs basic operations (e.g., arithmetic and square-root operations) is necessary for homework assignments and exams but not for the class.

Final Grade

Final letter grade will be assigned as follows:

Final Score	Letter Grade
90% and Above	A
80%-89%	B+
75%-79%	B
65%-74%	C+
60%-64%	C
Below 60%	F

A calculator that performs basic operations (e.g., arithmetic and square-root operations) is necessary for homework assignments, class exercises, and exams.

Reading assignments must be completed prior to each lecture.

Date	Topic	Assigned Readings
Week 1: Jan 22	Displaying and Describing Distributions	1.1, 1.2
Week 2: Jan 29	Normal Distribution Theory	1.3
Week 3: Feb 5	Scatter Plots and Correlation	2.1, 2.2
Week 4: Feb 12	Regression Analysis	2.3
Week 5: Feb 19	Cautions About Regression and Correlation	2.4
Week 6: Feb 26	Designs of Experiment and Statistical Inference	3.1, 3.3
Week 7: March 5	MIDTERM EXAM	Sections 1.1 - 3.3
Week 8: March 12	Randomness and Probability Models	4.1, 4.2
Week 9: March 26	Random Variables and Moments	4.3, 4.4
Week 10: Apr 2	Sampling Distributions of Means	5.1, 5.2
Week 11: Apr 9	Hypothesis Testing	6.2
Week 12: Apr 16	Confidence Interval	6.1
Week 13: Apr 23	Use and Abuse of Tests	6.3
Week 14: Apr 30	Review Session	1.1 - 6.3
Week 15: May 7	FINAL EXAM	Sections 1.1 - 6.3

Policy on Academic Integrity

Please refer to the Policy on Academic Integrity for Undergraduate and Graduate Students at http://academicintegrity.rutgers.edu. I will follow the policy strictly.