

Brigham Young University
CPSE – IP&T 651
Statistics 1: Foundations. (3 credits)
102 SWKT: MW 4:30 – 7:00 p.m.

Catalog Course Description: Emphasis on conceptual understanding and practical application of descriptive and basic inferential statistics to decision making.

Instructors: P. Scott Richards, Ph.D.
Office: 320H MCKB
Office Hours: Wed 2:00 – 3:50 p.m.
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Textbook: Cronk, B. C. (2012). How to use SPSS: A step-by-step guide to analysis and interpretation (7th ed.). Glendale, CA: Pyrczak Publishing.

Online Text: Online Statistics Education: A Multimedia Course of Study. Project Leader: David M. Lane, Rice University.
<http://onlinestatbook.com/2/index.html>

Goals and Objectives

This course will provide a conceptual, user-oriented overview of the most common statistical techniques commonly used in education and psychology. It will also provide an introduction to the use of SPSS Statistical Software. Students will learn how to use SPSS to perform a variety of data analysis tasks. As your instructor, I will serve as your statistical consultant to help you understand how to analyze and interpret the various statistical procedures. We will use a cooperative learning instructional model in this course. You will work cooperatively in small groups with your classmates to help each other master the course content and statistical procedures.

Other Resources

Effect Size Calculators: <http://www.uccs.edu/lbecker/index.html#means%20and%20standard%20deviations>

Power Calculator:

<https://www.dssresearch.com/KnowledgeCenter/toolkitcalculators/statisticalpowercalculators.aspx>

CLASS SCHEDULE

DATES	TOPICS and SPSS EXERCISES	Textbook Chapters	Statistical-Research Study Presentation	Online Statistic Course Topics (Required Sequence)
4/30	Orientation to the Course & Lab; Getting Started; Entering and Modifying Data	Chp. 1 & 2		
5/5	Online Statistics Course			I. Introduction V. Probability VI. Research Design (Parts A, C, D, E, F) XI. Logic of Hypothesis Testing
5/7	Descriptive Statistics; Graphing Data	Chp. 3 & 4	Group 6 (Kim, Rob, Aleta)	
5/12	Online Statistics Course			III. Summarizing Distributions VII. Normal Distributions IX. Sampling Distributions X. Estimation II. Graphing Distribution
5/14	Prediction and Association	Chp. 5	Group 1 (Audryn, Sean, Carrie)	
5/19	Online Statistics Course			IV. Describing Bivariate Data XIV. Regression
5/21	Parametric Inferential Statistics	Chp. 6	Group 4 (Christy, Adrienne, Amy, Laurie)	
5/26	Memorial Day Holiday			
5/28	Parametric Inferential Statistics	Chp. 6	Group 3 (Teresa, Kylie, Harriet, Kelly)	
6/2	Online Statistics Course			XII. Testing Means XV. ANOVA
6/4	Nonparametric Inferential Statistics	Chp. 7	Group 2 Jani, Karen, Kristi)	
6/9	Online Statistics Course			XVII. Chi-square XVIII. Distribution Free Tests
6/11	Understanding and Calculating Power and Effect Size; Test Construction Statistics	Appendix A; Chp. 8	Group 5 Krystine, Rachel, Betsy)	
6/16	Online Statistics Course			XIII. Power XIX. Effect Size VI: Research Design (Part B: Measurement)
6/18	FINAL EXAM (5:00 – 6:50 p.m.)			

Class Participation and Citizenship

Class participation and citizenship (worth 25% of your final grade) consists of attendance at class, completing assigned readings, appropriate participation in class activities and computer exercises, completing all SPSS exercises assigned in the textbook, and participating fully and effectively in your cooperative learning group. Attendance at class is required unless legitimate circumstances prevent it. Out of courtesy, please let the instructor and your cooperative learning group members know if circumstances prevent you from attending class.

Statistics Presentation

Your cooperative learning group is required to find a published research study in the school psychology or special education field that provides a good example of the use of a statistical procedure (e.g., t-test, ANOVA, multiple regression). During a Wednesday class period, your cooperative group will give given up to 30 minutes of class time to do a Power Point presentation in which you summarize the study and discuss the statistics that were used and the conclusions they permitted (worth 25% of your grade).

Online Statistics Homework Project

You are required as a “out-of-class” homework project to work through the *Online Statistics Education: An Interactive Multimedia Course of Study*, developed by Rice University (Lead Developer), University of Houston Clear Lake, and Tufts University (for more information, see the last page of this syllabus). It can be accessed at the link below. An app version of it can also be downloaded for iPad. This online text will provide you with an excellent review of basic statistics in a conceptual, user friendly way. It will help you better understand and interpret the SPSS statistical procedures that we will be covering during class time. Completing this online free text/course in a timely manner will be worth 25% of your grade.

<http://onlinestatbook.com/2/index.html>

Final Exam

There will be a final exam (worth 25% of your grade). Part I of the final exam will be open book and completed in collaboration with your cooperative learning group. It will consist of SPSS data analysis problems similar to those you were given for your homework exercises. You will analyze an actual data set from a research study that was conducted by the instructor and turn in your completed final exam electronically. Part II of the final exam will cover key concepts from the Online Statistics Education course. You will complete it individually. You will complete both parts of the exam during the final exam time on June 18, 2014 (5 – 6:50 pm).

BYU Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Preventing Sexual Discrimination and Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-to-student sexual harassment. BYU's policy against sexual harassment extends not only to employees of the university, but to students as well. If you encounter unlawful sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 422-5895 or 367-5689 (24-hours); or contact the Honor Code Office at 422-2847.

Students with Disabilities

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the Services for Students with Disabilities Office (422-2767). Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. Services are coordinated with the student and instructor by the SSD Office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

Academic Honesty Policy

The first injunction of the BYU Honor Code is the call to be honest. Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. President David O. McKay taught that 'character is the highest aim of education' (The Aims of a BYU Education, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

Plagiarism Policy

Writing submitted for credit at BYU must consist of the student's own ideas presented in sentences and paragraphs of his or her own construction. The work of other writers or speakers may be included when appropriate (as in a research paper or book review), but such material must support the student's own work (not substitute for it) and must be clearly identified by appropriate introduction and punctuation and by footnoting or other standard referencing.

Online Statistics Education: An Interactive Multimedia Course of Study

Developed by Rice University (Lead Developer), University of Houston Clear Lake, and Tufts University

<http://onlinestatbook.com/2/index.html>

[OnlineStatBook Project Home](#)

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