

Psychological Statistics
Psychology 301, Section 001
Bruce Brown
Fall Semester 2009
Monday/Wednesday/Friday 8:30 to 9:45 a.m.
Class in 341 MARB and Lab in 112 SWKT

date	day	topic	readings
August 31	Monday	Introduction to the Course	
September 2	Wednesday	Introduction to Stats, Statistical Language	Chapter 1
September 4	Friday	Displaying and Summarizing Data	Chapter 2
September 7	Monday	Labor Day Holiday	
September 9	Wednesday	Measures of Central Tendency	Chapter 3
September 11	Friday	Lab	
September 14	Monday	Measures of Central Dispersion	Chapter 4
September 16	Wednesday	Measures of Central Dispersion	Chapter 4
September 18	Friday	Lab	
September 21	Monday	The Normal Distribution and Z-Scores	Chapter 5
September 23	Wednesday	"Probability Lite"	Chapter 6
September 25	Friday	Lab	
September 28	Monday	"Probability Lite", Hypothesis Testing	Chapters 6 & 7
September 30	Wednesday	Hypothesis Testing	Chapter 7
October 2	Friday	Lab	
<p><i>Exam 1 in the Testing Center, Oct 2 to Oct 10 (Chapters 1 to 7).</i> Sample Exam</p>			
October 5	Monday	Relationships Between Variables (Correlation)	Chapter 8
October 7	Wednesday	Making Predictions of Quantitative Variables (Regression)	Chapter 9
October 9	Friday	Lab	
October 12	Monday	Making Predictions of Quantitative Variables (Regression)	Chapter 9

October 14	Wednesday	Other Predictions	Chapter 10
October 16	Friday	Lab	
October 19	Monday	Probability (Heavy)	B&W 7
October 21	Wednesday	Probability (Heavy)	B&W 7
October 23	Friday	Lab	
October 26	Monday	Sampling Distributions	B&W 8
October 28	Wednesday	Differences Between a Sample and a Population	Chapter 11
October 30	Friday	Lab	
November 2	Monday	Differences Between Two Related Samples	Chapter 12
November 4	Wednesday	Differences Between Two Related Samples	Chapter 12
November 6	Friday	Lab	
<i>Exam 2 in the Testing Center, Nov 6 to Nov 13 (Chapters 8 to 12 plus B&W 7 and 8).</i>			
November 9	Monday	Differences Between Two Independent Samples	Chapter 13
November 11	Wednesday	Differences Between Two Independent Samples	Chapter 13
November 13	Friday	Lab	
November 16	Monday	Differences Between More Than Two Groups	Chapter 14
November 18	Wednesday	Introduction to Analysis of Variance Designs (ANOVA)	Chapter 14
November 20	Friday	Lab	
November 23	Monday	More Complex Difference Tests (2-Way ANOVA)	Chapter 15
November 24	Tuesday	Differences and Associations Within Categorical Data	Chapter 16
November 27	Friday	Thanksgiving Holiday	
November 30	Monday	Effect Size and Statistical Power	Chapter 17
December 2	Wednesday	Nonparametric Analyses	Chapter 18
December 4	Friday	Lab	
December 7	Monday	Advanced Statistical Analysis	Chapter 19
December 9	Wednesday	Review	

Final Examination

Tuesday, December 15, 2009, 7:00 to 10:00 a.m.

Text

Colin Wilson Key (2008). *Simple Stats: A Practical Guide to Statistical Theory and Computation in the Behavioral Sciences, Second Edition*. Provo, Utah: BYU Academic Publishing.

Syllabus Location on the Internet:

<http://psychology.byu.edu/faculty/blb6/Files/P301/p301sept09.htm>

Competencies

At the end of the semester you should have achieved these competencies:

- You should be able to explain the rationale of statistical significance tests as derived from the binomial.
- You should be able to read statistical notation in research reports, such as $F = 3.59, p < .05$.
- You should be able to calculate standard statistical quantities such as variance, standard deviation, means, correlation coefficients, etc., from memory.
- You should be able to calculate bivariate regression statistics from memory.
- You should be able to calculate t tests, z tests, and analysis of variance from memory.

Learning Outcomes

Each program at BYU has developed a set of expected student learning outcomes. These will help you understand the objectives of the curriculum in the program, including this class. To learn the expected student outcomes for the programs in the psychology department and college go to <http://learningoutcomes.byu.edu> and click on the College of Family, Home and Social Sciences and then the psychology department. We welcome feedback on the expected student learning outcomes. Any comments or suggestions you have can be sent to <FHSS@byu.edu>.

Requirements

I am interested in your class participation as well as your performance on the exams. You are expected to be current in your reading of the text, and to come to class prepared to discuss and ask questions. During each class period, I will occasionally call on one or more students to launch our discussion of a particular topic with a very brief summary or discussion of some of the ideas or concepts from the readings for that day. Your grade for class participation will come from this, supplemented by any other major contribution you make to class discussion. Attendance is also part of your participation grade.

For each of the chapters (except chapter 1) there are *hot links* in this online syllabus to study questions. The study questions are of two types: essay questions and computational questions. It will probably be most helpful to you if you first answer these questions without looking at the answers (to which there are links from this internet site), and then refer to the answers to check yourself. Please turn in your work on these questions each week in lab, and come to lab with any questions from this process. You will find these online questions and answers to be very helpful to you in preparing for the exams. They are quite similar to the actual examination questions, which are also of the two types, essay questions and computational questions.

If you wish to have additional practice, you may also do the practice problems in the book (since there are answers to them in the back of the book by which you can check yourself).

Grading

The final examination is comprehensive. Each examination will consist of a computational test and a concept/essay test. The two parts to each exam will count equally in creating your score for each of the three exams (two semester exams and a final exam).

The grading will not be on a curve, but rather on an absolute scale. There is the possibility of 500 points from exams and class participation:

- (1) The two examinations during the semester will be for 120 points each (total=240).
- (2) The final examination will be comprehensive and will be for 180 points.
- (3) Class participation, performance in the lab, and attendance will count for 80 points.

Your grade for the class will be the percent of your "earned points" compared to this total possible (the "A" range being 90% to 100%, the "B" range being 80% to 90%, etc.

Academic Honesty

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 plagiarism, fabrication or falsification, cheating, and other academic misconduct. Students are responsible not only to adhere to the Honor Code requirement to be honest but also to assist other students in fulfilling their commitment to be honest. (complete version of the Academic Honesty Policy available at honorcode.byu.edu)

Preventing Sexual 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 and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 801-422-5895 or 1-888-238-1062 (24-hours), or <http://www.ethicspoint.com>; or contact the Honor Code Office at 801-422-2847.

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 (378-2767). Reasonable academic accommodations are reviewed for all students who have qualified documented disabilities. Services are coordinated with the student and instructor by the SDD 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. You should contact the Equal Employment Office at 378-5895, D-282 ASB.

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Flu Policy

As are all large communities, BYU is preparing for the potential of the H1N1 influenza virus to spread rapidly throughout the campus during the coming winter. Details of BYU's preparation, and advice on what you can do to prepare, can be found at flu.byu.edu. Please read it! In order to contain any possible infection, the administration has advised course instructors to ask any student who is feeling sick with flu-like symptoms (fever with either sore throat or cough) to remain home, away from class and away from all large gatherings. Sick students should remain at home until at least 24 hours after the fever has gone away. Students should also call their doctor or the student health center for advice as soon as possible.

The administration has asked course instructors to provide adequate make-up opportunities for all work missed during a flu-like illness. Accordingly, I will allow all time as needed to miss class during an illness and to make up work at a reasonable time afterward, provided the student provides a doctor's note to document the illness. ALL students who feel sick with fever and sore throat or cough should call the doctor and visit if so advised. If advised to visit the doctor, please obtain a note whether or not you are diagnosed with the flu! When you are ill please call or email your TA or the instructor as soon as possible, and *continue to communicate* with us until you are well. You should also be in contact as much as possible with one or two class members, in order to keep up on what you miss. We will try to facilitate class communication from the beginning of the semester.

For your protection, your instructors will follow the same rules! If your instructor is sick he or she will try to find a replacement to carry the class forward, else will notify students as soon as possible about a class cancellation. (*Wording taken from a BYU administrative memo to faculty.*)