PSYCH 308 - Psychological Statistics

Spring 2015

Section 001: 2104 JKB on M T W Th from 9:00 am - 10:50 am

Instructor/TA Info

Instructor Information

Professor Nadal
Office: 1151 SWKT
Office Hours: By appointment
Email: ambercazzell@gmail.com

TA Information

Natasha Hunt
Office: Psych Central 1150 SWKT
Office Hours: 11am-12pm M W
Or by appointment
Email: natasha.hunt.96@gmail.com

Course Information

Description

Welcome to Psychological Statistics! Psychology is part of the social sciences, and as such, is a scientific discipline. This class will help you learn how psychological researchers use quantitative data (i.e., numbers) to try to understand how people think, feel, and behave. We will tinker with numbers and formulas, but, you don't need to be a math whiz or have a fancy calculator - so don't stress. Many students who have gone through this class have reported that they enjoyed the class much more than they thought they would. So, you might be pleasantly surprised at how fun it is to play with stats. Additionally, some students report that this class was one of the most useful classes they took while at BYU. So, the knowledge and skills you will gain in this class are broadly applicable to almost any path you pursue in life.

Learning Outcomes

1. Recognize and understand notation, formulae, and concepts

Students will be able to recognize and understand basic statistical notation, formulae, and concepts.

Measurement: Multiple choice and short answer exams

2. Speak and write about notation, formulae, etc.

Students will be able to accurately speak and write about statistical formulae, concepts, analyses, and results.

Measurement: Short essays.

3. Select and use formulae appropriately

Students will be able to correctly select and use basic statistical formulae and appropriately interpret the results.

Measurement: Multiple choice tests, short essays.

Grading Policy
Grades are based on the percentage of points earned out of the total possible points. In borderline cases I will give students the benefit of the doubt if they have faithfully attended class, participated in class discussions and activities, and completed assignments. This is my way of rewarding effort.

Late Work
Late work will not be accepted, and missed quizzes cannot be made up. The exceptions to this rule are medical absences and absences due to school-sponsored or school related activities. If you will be missing a quiz due to school related activities, come and see me ahead of time so we can work something out.

Attendance Policy
Attendance is required. I do not take attendance. But, my experience is that those who attend class do better in the class. Statistics can be hard to learn on your own, so, attendance in class is critical to your learning and to your achievement in the class. I will do my best to make your time in class worthwhile.

Study Habits
If you want to do well in this class, please take note of the following suggestions:

1. Read the assigned textbook pages.It is best to read them read them before class, and then go back through them after class as you are working on homework. Often you will find that it will make much more sense after lecture.
2. Do the homework.Since you are graded based on completion (completion meaning you write out answers to each question), these are basically free points. Also, the homework will help you learn the concepts and statistical procedures and help you prepare for exams.
3. Attend and participate in class.It is really hard to learn statistics from a book, or even a book and a set of lecture handouts. It is much easier to learn statistics in a classroom setting where you are free to ask questions, and where you get a chance to discuss the concepts with other students, and get multiple explanations from the instructor. Also, participation aids learning.
4. Attend and participate in lab.First of all, you need to attend lab to take the quizzes and complete the lab projects. But, lab is also a time to reinforce your learning of the concepts. Students find it very valuable, even though it might seem redundant. You can make the best of lab by

going with questions (such as questions from the homework, or things that were unclear in lecture). Further, lab gives you additional opportunities to help your peers understand statistics, and often we learn best by teaching others.

5. Attend the exam reviews.This is another time to reinforce concepts, and a chance to get more specifics on what you will need to know and be able to do for the exam.
6. Organize a study group. Research has shown study groups to be helpful for learning, as you get a chance to get help and help others understand the course material. In the case of this class, it is helpful while working through problems to collaborate with others and double-check each others' work.
7. Drop the class if you are busy or distracted. This is a class where you will really get lost if you miss too many classes, because each class builds on prior classes, so you have to keep up to know what's going on. If you think you will miss a lot of classes due to family issues, work, athletics, illness, etc., it may be best to take the class at another time.

Materials

Image	Item	Vendor	Price (new)	Price (used)
	Essentials of Statistics for the Behavioral Sciences Required by Nolan, Susan Worth Publishers; Edition 2 (1367560800) ISBN: 9781429242271	BYU Bookstore	151.35	113.55
	Calculator Required (1969-12-31) You will also need a calculator. Any calculator will do, as we do not do anything too fancy in this class. Scientific calculators are ideal, and are relatively cheap (there are a number of options online and in the bookstore for under $20). It is important to have a calculator where you can see all the operations as you enter them, so you can double-check things as you go (such as the TI-30 calculators).			

Grading Scale

Grades	Percent
A	93%
A-	90%
B+	87%
B	83%
B-	80%
C+	77%
C	73%
C-	70%
D+	67%
D	63%
D-	60%
E	0%

Source of Points	How Many	# Points Each	Total Points
Quizzes	12	4	48
Homework	13	5	65
Lecture Exams	3	100	300
		Total Course Points:	413

Assessments

Your grade in the course will be based on your performance on homework, quizzes, and exams.

Homework. A set of homework exercises will be assigned for each chapter. These homework problems will come from the problem sets at the back of each chapter. To know which questions to answer, see the course Schedule. You will find for each chapter a list of the required homework problems, as well as the due date. These are primarily calculation problems. The answers to each question are in the back of the book. To get credit for completing the questions, for each question you need to show all your work. Even in cases where there are no calculations (the conceptual questions), please write out a one or two sentence justification for the answer. Some questions ask you to explain something to a friend. You can just write out an explanation if you prefer not to bore your friend.

Quizzes. The quizzes will be administered in the lab sections. You will have a short quiz at the beginning of each lab section, and these will primarily be conceptual questions. These will be graded during lab, and used for discussion. The questions will come from the Key Concepts on the last slide of each lecture handout.

Exams. You will have three exams throughout the semester that will cover the assigned readings and the material discussed in lecture. These exams will not necessarily be cumulative, but much of the material learned later in the semester will build on the concepts learned earlier. The final exam in particular will entail knowledge of material learned throughout the entire course. The

exam reviews (one during class with me, and at least one provided by the TAs) will help you focus your study efforts. You will not be allowed to use your book or work with other students on the exams.

Extra Credit. You can complete two extra credit assignment for 2 points each, for a total of 4 points extra credit. You can get extra credit by attending research talks. These can be thesis or dissertation defenses, visiting speakers, job candidates, or talks by BYU faculty. The talks must present research. To get credit, you must do a one-page write-up for each talk you attend, and the write-up must include a summary and a discussion of some of the statistics presented in the talk and how they relate to concepts or statistics discussed in our course.

University Policies

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.

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 or contact one of the following: the Title IX Coordinator at 801-422-2130; the Honor Code Office at 801-422-2847; the Equal Employment Office at 801-422-5895; or Ethics Point at http://www.ethicspoint.com, or 1-888-238-1062 (24-hours).

Student Disability

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 University Accessibility Center (UAC), 2170 WSC or 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. The UAC can also assess students for learning, attention, and emotional concerns. Services are coordinated with the student and instructor by the UAC. 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

The first injunction of the 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.

Respectful Environment

"Sadly, from time to time, we do hear reports of those who are at best insensitive and at worst insulting in their comments to and about others... We hear derogatory and sometimes even defamatory comments about those with different political, athletic, or ethnic views or experiences. Such behavior is completely out of place at BYU, and I enlist the aid of all to monitor carefully and, if necessary, correct any such that might occur here, however inadvertent or unintentional. "I worry particularly about demeaning comments made about the career or major choices of women or men either directly or about members of the BYU community generally. We must remember that personal agency is a fundamental principle and that none of us has the right or option to criticize the lawful choices of another." President Cecil O. Samuelson, Annual University Conference, August 24, 2010 "Occasionally, we ... hear reports that our female faculty feel disrespected, especially by students, for choosing to work at BYU, even though each one has been approved by the BYU Board of Trustees. Brothers and sisters, these things ought not to be. Not here. Not at a university that shares a constitution with the School of the Prophets." Vice President John S. Tanner, Annual University Conference, August 24, 2010.

308 Schedule

Date	Lecture Topic	Work Due
T - Apr 28	(Lecture 1) Introduction to the Course (Lecture 2) Introduction to Stats and Methods (and Intro to SPSS) Lab: Lectures 1-2	
W - Apr 29	**Quiz 1** (Lecture 3) Frequency Distributions; Displaying Data; Central Tendencies (Lecture 4) Variability	**Quiz 1** Lectures 1-2 **Homework 1 (Intro & Methods)** Chap 1 17, 23, 29, 34, 36
Th - Apr 30	Lab: Lectures 3-4	**Quiz 2** Lectures 3-4 **Homework 2 (Frequency Dist & Displaying Data)** Chap 2 27, 36, 39 Chap 3 21, 27
M - May 04	(Lecture 5) Probability & z-scores (Lecture 6) Sampling Distributions	**Homework 3 (Central Tendencies & Variability)** Chap 4 14, 22, 27, 29, 35 (not d)
T - May 05	Lab: Lectures 5-6	**Quiz 3** Lectures 5-6 **Homework 4 (Probability & z-scores)** Chap 5 29 Chapter 6 20, 26, 40, 43
W - May 06	(Lecture 7) Hypothesis Testing with z Tests (Lecture 8) Hypothesis Testing with z Tests - Review	**Homework 5 (Sampling Dist)** Chapter 6 29, 30, 31, 45, 47
Th - May 07	Lab: Lectures 6-7	**Homework 6 (z-tests)** Chapter 5

		49, 54 Chapter 7 38, 48, 49 **Quiz 4** Lectures 7-8
M - May 11	(Lecture 9) Effect Sizes (Lecture 10) Power	
T - May 12	Lab: Lectures 8-9	**Quiz 5** Lectures 9-10
W - May 13	Exam Review TA Exam Review(No Quiz) **EXAM 1 OPENS**	**First day to take Exam 1** **Homework 7 (Effect Sizes & Power)** Chap 8 31, 32, 40, 42, 44
Th - May 14	(Lecture 11) Single-Sample t Test (Lecture 12) Paired-Samples t Test	
Fri - May 15 **M** - May 18	**EXAM 1 CLOSES** Lab: Lectures 11-12	**Last day to take Exam 1** **Mid-Course Evaluation** Possible 2 points extra credit for taking a course evaluation survey. **Quiz 6** Lectures 11-12
T - May 19	(Lecture 13) Independent-Samples t Test (Lecture 14) Independent-Samples t Test continued	**Homework 8 (Single-Sample & Paired-Samples t-tests)** Chapter 9 37, 43 (not g-h), 44 (a-e, g, i-j), 39 (not c), 45
W - May 20	Lab: Lectures 13-14	**Quiz 7** Lectures 13-14
Th - May 21	(Lecture 15) One-Way ANOVA (Lecture 16) ANOVA - Calculating *F*	**Homework 9 (Independent-Samples t-tests)** Chapter 10 23 (not e-h), 25 (not c-e), 27 (not c-e), 28, 32
M - May 25	**Memorial Day Holiday**	
T - May 26	Lab: Lecture 15-16	**Quiz 8** Lectures 15-16
W - May 27	(Lecture 17) ANOVA - Beyond F (Lecture 18) ANOVA review	

Th - May 28	Lab: Lectures 17-18	**Homework 10 (ANOVA)** Chapter 11 30 (not J), 31 (not J), 51, 61 (not e-g), 62 (not e-i) **Quiz 9** Lectures 17-18
M - Jun 01	Exam Review TA Exam Review **EXAM 2 OPENS**	**First day to take Exam 2**
T - Jun 02	(Lecture 19) Correlation (Lecture 20) Correlation - Hypothesis Testing	
W - Jun 03	Lab: Lectures 19-20 **EXAM 2 CLOSES**	**Last day to take Exam 2** **Quiz 10** Lectures 19-20
Th - Jun 04	(Lecture 21) Regression (Lecture 22) Regression - Hypothesis Testing	**Homework 11 (Correlation)** Chapter 13 19 (the data are X and Y scores for 6 people, they just present it in two columns), 28, 32, 33, 46 (not d or g)
M - Jun 08	Lab: Lectures 21-22	**Quiz 11** Lectures 21-22
T - Jun 09	(Lecture 23) Multiple Regression (Lecture 24) Chi-Square	
W - Jun 10	Lab: Lectures 23-24	**Homework 12 (Regression)** Chapter 14 27, 37, 39, 40, 42 (not h-k) **Quiz 12**
Th - Jun 11	Exam Review	**Homework 13 (Chi-Square)** Chapter 15 33, 46, 50, 51, 66 (not d-m)
M - Jun 15	Exam Review	**Other Extra Credit** **Final Course Evaluation** Extra credit.
T - Jun 16	**Exam Preparation Day**	
W - Jun 17	**Final Exam available in the Testing Center**	
Th - Jun 18	**Final Exam available in the Testing Center**	