

Psychology 301 - Section 8
Psychological Statistics
T TH 5:00-6:50 PM
341 MARB

Professor: Stephen Francis, MA candidate

Email: steve.byu@gmail.com

Office: 1151 SWKT

Office Hours: Mon-Thu 9-10 am or by appointment

TA: Peter Clayson

Email: peter.clayson@gmail.com

Office: Psych Central (1150 SWKT)

Office Hours: Tue 2-3 pm or by appointment

Required Textbooks: Huff, D. & Geis, I. (1982). *How to Lie with Statistics*. Norton: New York. ISBN: 978-0393310726

Gravetter, F. J., & Wallnau, L. B. (2007). *Statistics for the Behavioral Sciences*, 7th ed. Belmont, CA:Thomson Wadsworth. ISBN: 978-0495095200

Course Objectives and Expected Student Learning Outcomes:

- (1) Fulfill the Department of Psychology Expected Student Learning Outcomes for Majors (found at https://learningoutcomes.byu.edu/wiki/index.php/Psychology_BS)
- (2) Be able to demonstrate that they understand and can apply basic research methods in psychology, including research design, data analysis, and interpretation of results in light of previous findings.
- (3) Know how to do basic computations using statistical packages (specifically SPSS).
- (4) Be able to apply statistical knowledge to real-world situations.
- (5) Understand the assumptions behind statistics in the behavioral sciences and the assumptions' interface with the restored gospel of Jesus Christ.

- (6) Understand and be able to apply basic statistics.
- (7) Participate in and actively create a community of learning that is both edifying and knowledge-and-skill enabling.

Evaluations of Learning (based on the above Course Objectives):

Exams: There will be four exams administered during the semester, the last one being the final. Exams will be four-part: multiple-choice (i.e. multiple-guess), computational, applicational, and essay. Students will be expected to be able to answer questions concerning statistical assumptions (e.g. assumptions necessary for proper use of a z distribution), to be able to do proper statistical computations, to be able to write a small report analyzing data with proper research design, statistics, and conclusions, and to be able to articulate in a small essay the interface between statistical and religious assumptions (in-class training will be had on this part). Exams will be worth 120 points each (30 points multiple-choice, 60 points computational, 20 points application, 10 points essay). The first exam will include questions from the syllabus to assess your reading and understanding of the material herein. Each exam builds on the material and skills needed for previous exams. Exams will be in the testing center (including the final). Exams as a learning evaluation fulfill objectives 4, 5 and 6 above.

Chapter Assignments: Problems from the chapters are to help in understanding the process of statistical computations and in understanding the possible contexts in which statistical methods may apply. I expect you to do the odd problems from each chapter (answers are in the back of the book). You do not need to complete redundant computational questions (not questions you just don't understand or know how to do). Just write "repetitively redundant" in the place where you would have completed the problem. Assignments are 10 points each. You will receive credit for completing the chapter problems on time (no points for late assignments; early assignments will receive 10 points). Chapter assignments fulfill objective 6 above.

Statistical Package (SPSS) Training: You will need to attend class and participate in SPSS training. This training will occur near the end of the semester. The 30 points for this assignment will be based on your attendance and participation.

Statistics Article Assignments: There will be *two* assignments during the semester in which you will need to choose an article (which I will post on blackboard) with which you will interpret their results (what do the results mean?) and apply current class stats to their data. You will be trained in class on how to do these tasks. Each assignment is worth 40 points. These article assignments fulfill objective 4 above.

Other Issues to Cover:

Class, Textbook, Lab: You are expected to come to class, having read the assigned chapter for the day. You are expected to come to lab for SPSS training or homework help. Lab will be every Thursday that we hold class. The class is a community in which teaching, learning, and proper

education can be fostered and occur. Being absent, coming late, leaving early, not being prepared, or being disruptive (e.g. talking on your cellphone, texting your mother, watching YouTube videos on your new iPhone) are not tolerated. Your actions affect the whole learning community, for good or for ill. This syllabus is a contract that you will do your best to foster a positive learning environment for all through your preparation, attendance, and influence. Any problems will be dealt with privately (if the problems become chronic, we may impose other sanctions). Unless you are a statistics major, I am 97.45% (even though 87.9% of statistics may be made up on the spot) sure that you will not succeed in this course (or life) without reading, doing the assignments, and coming to class and lab. We will administer in-class quizzes to assess your reading of the chapter. These quizzes will count for your attendance of 2 points each quiz. By participating properly in the course, you will be fulfilling objective 7 of the Course Objectives.

No-late work policy: If you are a procrastinator, repent! There will be no late work accepted (except with General Authority approval, j/k). You can turn in homework early and take an exam early (with notification at the beginning of the semester), but late work makes for headaches (for all of us), dishonesty, procrastination-reinforcing, and lost work (in the mix of papers in my office). The only exception to this rule is for the final exam (you can't take it early). This policy is an attempt at fostering a proper community of learning that minimizes procrastination and shoddy work.

Special Needs: Any student with special needs or any student requiring special assistance (as defined by the university) should talk to me as soon as possible.

Academic and Moral Integrity: "We believe in being honest, true, chaste, benevolent, virtuous, and in doing good to all men; indeed, we may say that we follow the admonition of Paul – We believe all things, we hope all things, we have endured many things, and hope to be able to endure all things. If there is anything virtuous, lovely, or of good report or praiseworthy, we seek after these things" (Article of Faith 13; see also Brigham Young University Honor Code in the BYU 1999-2000 Undergraduate Catalog, pp. 6-9). These things are needed for a strong and vibrant learning community.

Cheating: While all students sign the honor code, it is imperative that all students understand how this code applies to the particularities of psychology. For example, please see <http://www.byu.edu/stlife/campuslife/honorcode/honcode.html> for specific examples of intentional and inadvertent plagiarism as well as fabrication and falsification. Cheating also includes providing information to a fellow student that gives them an advantage over others or "helping" with an assignment where such help is inappropriate or disallowed. Cheating of any kind will not be tolerated and will result in a failing grade for the specific assignment, if not the class in general.

Sex Discrimination: 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 either speak to me about it, contact the Equal Employment Office (378-5895 or 367-5689), or contact the Honor Code Office (378-2847).

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.

Grade Breakdown (for quick reference):

Exam 1	120 points
Exam 2	120 points
Exam 3	120 points
Final Exam	120 points
Chapter Assignments	150 points
SPSS Training	30 points
In-class quizzes/Attendance	50 points
Stats Article Assignments	<u>80 points</u>

790 points total

Assigned Grades:

93% and above	A	72%	C
89.5%	A-	69.5%	C-
86%	B+	66%	D+
82%	B	62%	D
79.5%	B-	59.5%	D-
76%	C+	Below 59.5%	E

Tentative Schedule

	date	topic	due
Week 1	1-Sep	Course Outline	your commitment to the course
	3-Sep	Intro to Stats/start Ch 1	Huff, intro & chaps 1-4
Week 2	8-Sep	Basic Stats/Ch 1: Introduction	ch 1 reading; Huff, ch 5-8
	10-Sep	Basic Stats/Ch 2: Frequencies	ch 2 reading; Huff, ch 9 & 10
Week 3	15-Sep	Ch 3: Central Tendency	ch 3 reading, chap 2 hwk
	17-Sep	Ch 4: Variability	chap 3 hwk
Week 4	22-Sep	Ch 5: z-scores	chap 4 hwk
	24-Sep	z-scores	Exam 1 (21-25 Sep)
Week 5	29-Sep	Ch 6: Probability	chap 5 hwk
	1-Oct	Probability	
Week 6	6-Oct	Ch 7: The Distribution of Sample Means	chap 6 hwk
	8-Oct	The Distribution of Sample Means	
Week 7	13-Oct	Ch 8: Hypothesis Testing	chap 7 hwk
	15-Oct	Hypothesis Testing	

Week 8	20-Oct	Ch 9: Introduction to the t Statistic	chap 8 hwk
	22-Oct	Introduction to the t Statistic/Stats article training	Exam 2 (19-23 Oct)
Week 9	27-Oct	Ch 10: The t Test for Two Independent Samples	chap 9 hwk
	29-Oct	The t Test for Two Independent Samples	
Week 10	3-Nov	Ch 13: Introduction to Analysis of Variance	chap 10 hwk
	5-Nov	Introduction to ANOVA	statistics article #1
Week 11	10-Nov	Ch 14: Repeated-Measures ANOVA	chap 13 hwk
	12-Nov	Repeated-Measures ANOVA	
Week 12	17-Nov	Ch 16: Correlation	chap 14 hwk
	19-Nov	Correlation	
Week 13	24-Nov	<i>Friday Instruction</i>	
	26-Nov	<i>Thanksgiving Holiday</i>	
Week 14	1-Dec	Ch 17: Intro to Regression	chap 14 hwk
	3-Dec	Intro to Regression/SPSS Training	Exam 3 (30 Nov-4 Dec)
Week 15	8-Dec	Ch 15: Two-Factor ANOVA or Ch 18: Chi-Square	chap 17 hwk
	10-Dec	Two-Factor ANOVA or Chi-Square	chap 15 hwk/statistics article #2
		<i>Final during finals week</i>	