

## **PSYCH 308**

### **Psychological Statistics**

Instructor: Brett D. Campbell, Ph.D.  
Office: 1070 SWKT  
Hours: MW 4:00 – 5:50  
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#### **Course materials**

Text: *Applied Statistics for Behavioral Sciences* (5th Ed.), Hinkle, Wiersma & Jurs (2003). Worth: New York.

Calculator: You will need one. A basic calculator will do as long as it includes a square root key. Bring to every class.

SPSS: A portion of your grade is based on homework assignments using the statistical software package SPSS (Statistical Package for the Social Sciences). You have two options. The first is to download and rent the GradPack 23 (Statistics Base) for \$39.99. A second option is to use SPSS on campus. There are a number of locations, including the computer labs in the SWKT basement and PsychCentral

#### **Course Description**

The purpose of this course is to provide basic knowledge of statistical principles and software (i.e., SPSS). We cover two types of statistics: Descriptive and inferential. Descriptive statistics include measures of central tendency and variability based on the normal distribution. Inferential statistics are used to make inferences from a sample to population based on a sampling distribution of means. The main emphasis is on practical use of statistics when reading and interpreting research.

#### **Course objectives**

##### Recognize and understand notation, formulae, and concepts

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

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

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

##### Select and use formulae appropriately

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

## Course Assignments

### Homework

The homework assignments are specifically designed to provide students with additional practice on relevant applied problems including exposure to SPSS

### Portfolio

At the end of the semester you will turn in a statistics portfolio. This portfolio is a personalized resource for this semester and possible future research opportunities. The purpose is to help you integrate course material and provide you with an accessible tool. The portfolio will cover 12 topics: 9 assigned, 3 are selected by you. See the accompanying table for topics. Each topic will be written as if you conducted an analysis of a research problem that required that specific statistic test. Minimum coverage includes step-by-step procedures, analyses, and interpretation examples. Grading is rubric-based covering accessibility, utility (how useful each sample is), and depth. There will be periodic portfolio checks during the semester listed on the calendar.

| Section                     | Topic   |
|-----------------------------|---|
| Table of Contents           | Description of Data Set<br>Decision Flow Chart (1)  |
| Descriptive Analysis        | Measures of Central Tendency (2)<br>Measures of Variability (3)   |
| Inferential analysis        | Pearson Product Moment correlation (4)<br>Simple Regression (5)<br>Independent t-test (6)<br>Dependent t-test (7)<br>One-way ANOVA with post hoc analysis (8)<br>Chi-square (9) |
| Optional topics<br>(pick 3) | Tabular and Graphical Analysis<br>Spearman rho correlation<br>Multiple Regression<br>Two-way ANOVA<br>McNemar $\chi^2$<br>Reliability & Validity                                |

You will need to use one of the available data sets to demonstrate hand calculations and SPSS outputs for each topic. You can use one data set for the entire portfolio; different variables will be used for different topics. Data sets will be available on Learning Suite.

### Late Work

If you miss class, you will be able to make up projects and assessments. You will not be able to turn in-class participation activities, unless prior arrangements were made. If you believe you should be allowed to turn in work because of extenuating circumstances, you can discuss this with me during office hours or other appropriate time.

### Extra credit

Every semester student and faculty researchers are searching for participants for their various research projects. Participating in such projects provide students with a deeper understanding of the research process and topics covered in the course. Opportunities to participant are found on the SONA website ([byu.sona-systems.com](http://byu.sona-systems.com)) and sometimes announced in class. *Students may earn up to 5 SONA credits as extra credit.*

### **Grade Accumulation**

|              |     |
|--------------|-----|
| Homework     | 40% |
| Portfolio    | 50% |
| Presentation | 10% |

Letter grades will be assigned according to the following scale:

### Percentage Range Grade

|              |    |
|--------------|----|
| 94-100       | A  |
| 90-93        | A- |
| 87-89        | B+ |
| 84-86        | B  |
| 80-83        | B- |
| 77-79        | C+ |
| 74-76        | C  |
| 70-73        | C- |
| 67-69        | D+ |
| 64-66        | D  |
| 60-63        | D- |
| 59 and below | F  |

### **Disclaimer**

Dr. Campbell reserves the right to make changes in (a) the course schedule, (b) course requirements, (c) the course grading procedures, and/or any other aspects of the course at any time. Any alterations will be made in the best interests of the students, the course, and the professor.

## **BYU Policies**

### Academic Dishonesty

All students sign the honor code which obligates them to not engage in plagiarism or cheating; clear instances of cheating on exams or plagiarism on papers will be noticed and due action taken. We do understand that you may need to learn how to correctly cite sources and that access to the internet has made it easy to cheat in a variety of ways. Thus, we will take time in class you systematically lead you through the paper - writing process and give you support in your assignment. See <http://www.byu.edu/honorcode> for specific examples of intentional plagiarism, inadvertent plagiarism, and fabrication and falsification.

### Plagiarism

Plagiarism, as defined by the BYU Honor Code, is a form of intellectual theft. It is an act of fraud; it is dishonest, deceitful, unethical, and can lead to serious and lasting negative consequences for your academic and professional career. It is an act of plagiarism to "borrow" ideas or quotes from former students' old papers and from the papers of students presently taking the course. Plagiarism also includes quoting or paraphrasing passages from any of your references without giving proper credit to the real authors (i.e., an APA-style citation). Doing so implies that this information came from you. Presenting the ideas of others as one's own is called plagiarism.

### Classroom Technology

Use of laptops or other products can be helpful and are allowed to students who wish to use them to take notes. However, they can be distracting if used for other purposes. In order to prevent distracting other students (or being distracted yourself), focus on only taking notes for class, but nothing else, even if you think it is distantly related to class (for example, doing your homework during a class discussion is not appropriate even though it is a class-related activity.) Our policy is to trust students until we are given a reason not to trust them. Details will be discussed on the first day of class.

### Preventing Sexual Misconduct

As required by Title IX of the Education Amendments of 1972, the university prohibits sex discrimination against any participant in its education programs or activities. Title IX also prohibits sexual harassment—including sexual violence—committed by or against students, university employees, and visitors to campus. As outlined in university policy, sexual harassment, dating violence, domestic violence, sexual assault, and stalking are considered forms of "Sexual Misconduct" prohibited by the university.

University policy requires any university employee in a teaching, managerial, or supervisory role to report incidents of Sexual Misconduct that come to their attention through various forms including face-to-face conversation, a written class assignment or paper, class discussion, email, text, or social media post. If you encounter Sexual Misconduct, please contact the Title IX Coordinator at [t9coordinator@byu.edu](mailto:t9coordinator@byu.edu) or 801-422-2130 or Ethics Point at <https://titleix.byu.edu/report-concern> or 1-888-238-1062 (24-hours). Additional information about Title IX and resources available to you can be

found at [titleix.byu.edu](http://titleix.byu.edu).

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### 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 contact the Equal Employment Office at 422-5895 or 367-5689 (24-hours) or contact the Honor Code Office at 422-2847.

### 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).

### Students with Disabilities

BYU is committed to providing a working and learning atmosphere which 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 (SSD) office at 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified documented disabilities. Services are coordinated by the SSD office. If you need assistance or 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 422-5895, D-282 ASB.