

PSY300: Quantitative Methods in Psychology
Fall 2004
Department of Psychology

Prof. Theodore Walls
University of Rhode Island
Kingston Campus
Classroom: Chafee 273
T,Th 12:30-1:45

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1 Course Description

This course provides a first exposure to statistical thinking, computations, and applications in behavioral science. The main objectives of the course are to prepare *you* to read and comprehend psychological research articles and to help *you* to develop a basic command of elementary statistical techniques. Basic knowledge of statistics is a key skill for work in many applied and professional fields, and in advanced higher education (such as in your major and later if you attend graduate school). Most importantly, you can use statistics in daily life; you will probably never read a newspaper article about an election or a survey in the same way again after this course. Knowledge of statistics can also help you make better decisions about things like buying a house or car, choosing a city to live in, or choosing a treatment for a serious disease.

Many people think that statistics is a math course. Statistics certainly can be taught as a math course. However, in this case, we are just relying on some special *symbols* (like μ , pronounced “Mu”, for a mean or σ , pronounced “sigma” for a standard deviation) to help us remember some simple quantities. We use some basic equations like $\sum X_i/n$ (read as “the sum of scores (X) for all subjects (i) divided by the sample size) for the calculation used to determine

the mean. These symbols help us to make “inferences” about data to answer psychological questions. Our focus is on the concepts and interpretation of statistics. In order to have this focus, however, we need to develop some computational skills. So, you will see some math stuff and use computations, but the subject of statistics is much more exciting than simply memorizing formulae and practicing computations.

Welcome to PSY300! The 25 course sessions, readings and assignments are all essential parts of the course. It will be difficult to succeed if you do not attend lectures. Come to class prepared to learn, study regularly and attentively, and keep up with the assignments. If you do these things, you should do fine in this course.

2 Textbook

- Required: Hinkle, D.E.; Wiersma, W.; & Jurs, S.G. (2003). *Applied Statistics for the Behavioral Sciences*. (5th Edition.) Boston: Houghton Mifflin.
- Recommended supplementary textbook: Cohen, B.H. & Lea, R.B. (2003). *Essentials of Statistics for the Social and Behavioral Sciences*. New York: Wiley.
- *Optional Software*: SPSS Version 12. This software is available for student purchase through Prentice Hall. It is not required or necessary for this course. Students with interests in further quantitative work should consider purchasing this software after discussing it with me.

3 Material to be Covered

New material is covered for approximately one week per chapter.

1. *Read Chapter 1: Introduction* Thursday, Sept 9; Tuesday, Sept 14
2. *Read Chapter 2: Organizing and Graphing Data* Thursday, Sept 16 (No quizzes–Rosh Hashanah); Tuesday, Sept 21; NOTE EARLY DROP DEADLINE SEPT 17

3. *Read Chapter 3: Describing Distributions* Thursday, Sept 23; Tuesday, Sept 28
4. *Read Chapter 4: The Normal Distribution* Thursday, Sept 30; Tuesday, Oct 5
5. **Exam 1: Thursday, October 7, in class**
6. *Read Chapter 7: Sampling, Probability, and Sampling Distributions* Tuesday, Oct 12; Thursday, Oct 14
7. *Read Chapter 8: Hypothesis Testing: One Sample Case for the Mean* Tuesday, Oct 19; Thursday, Oct 21
8. *Read Chapter 9: Estimation: One Sample Case for the Mean* Tuesday, Oct 26; Thursday, Oct 28; NOTE MIDTERM GRADES FOR FRESHMEN DUE OCT 26 by 5 PM
9. *Read Chapter 11: Hypothesis Testing: Two-Sample Case for the Mean* Tuesday, Nov 2 (Election Day, class WILL be held); Thursday, Nov 4; Tuesday Nov 9; NO CLASS ON Thursday Nov 11 (Veteran's Day)
10. **Exam 2: Thursday, November 18, in class**
11. *Read Chapter 14: Hypothesis Testing, K-Sample Case* Tuesday, Nov 23; Tuesday, Nov 30; NO CLASS ON Thursday, Nov 25 (Thanksgiving Day)
12. *Read Chapter 15: Multiple Comparison Procedure* Thursday, Dec 2
13. *Read Chapter 16: Analysis of Variance, Two-Way Classification* Tuesday, Dec 7 (No quizzes–Hanukkah)
14. *Read Chapter 5: Correlation: A Measure of Relationship* Thursday, Dec 9 (LAST CLASS)
15. **Final Exam: Comprehensive Exam. Saturday, Dec. 18, from 11:30 AM to 2:30 PM**

4 Guidelines

4.1 Class Attendance

Attendance will be critical to your success in this class. I do not recommend skipping classes because statistical concepts build on one another. If you do miss class due to illness or other unavoidable situation, it is essential that you contact a peer in the class and catch up right away. Because students who do not attend class often wonder why they perform poorly on exams, I take attendance sometimes. Then, if you come to my office I can review this information with you. I grade class participation based on index cards that you complete during some classwork sessions.

4.2 Group Learning

Many studies have shown that math and statistics can be mastered more quickly by studying with others. Work to identify study partners right away and plan to meet regularly to go through homework assignments and prepare for tests. We will also use informal self-selected groups in class.

4.3 Computer Work

I will demonstrate several computer programs in class and encourage you to make use of a statistical software package in relation to your homework assignments and test preparation. I will make use of computer work in extra credit assignments.

4.4 Reading

Before you read each chapter, I will "preview" the chapter with you, meaning I will flip through the pages of Hinkle, Wiersma & Jurs and point out possible problems and make suggestions about where to focus. In order to learn to use statistics, you need to **CAREFULLY** read the chapters and understand the principles and procedures. Use the Cohen text to supplement your understanding; you can probably share copies of this book.

4.5 Grading

I will assign grades for your performance on the three tests (25% each). Homework assignments will be worth 25% of your grade (pop quizzes = 10%, class participation = 5%, homework = 10%). I will offer a few extra credit assignments during the semester by which you can raise your grade by approximately a half letter grade.

4.6 Office Hours

Your first choice for additional assistance studying and assignments with this course is Cathy Stephan. My office hours are Tuesday and Thursday after class until 3. My office is in the Cancer Prevention Research Center, West Wing, Ground Floor, Office 15W. I will advise you from week to week whom to consult on which issues. In general, Cathy will focus more on assignments and test preparation and I will help you with more serious issues, in room 313 Chafee. There are also great resources for tutoring on campus: <http://www.uri.edu/aec/> or <http://www.math.uri.edu/Info/tutoring/>. If you need special accommodations due to documented disabilities please work with disabilities services at <http://autocrat.uri.edu/dss.html> and keep me informed.

5 Contact Info

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