Psychology 3214	Quantitative Methods	Fall 2009

Section 3/4: 10:30-11:45 TTH

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"Forget not that the earth delights to feel your bare feet, and the wind longs to play with your hair"
Kahlil Gibran

What will I learn in the course?

The Goal: I want you to be able to use your knowledge of statistics and design to decide on the veracity of research conclusions. This class will emphasize the nuts and bolts of how and why we do statistics, with particular emphasis on research in psychology.

Learning Objectives: At the end of the course, students should be able to

1. understand the different statistical tests that are commonly used in psychology
2. you should be able to decide what statistics you should use in a certain situation
3. judge if the conclusions of other researchers make sense.

Why is this material important?

You encounter statistics in all areas of your life and on a daily basis. With the explosion of the information age, we are bombarded with new research and recommendations for daily living, as well as in our field in psychology. It is important to understand what the researchers have done and how they analyzed their data in order to assess the veracity of their conclusions and recommendations.

Doing well in this course

To do well in this course, you must understand the basics in the beginning, so if you have a question, please ask. We want to help you be successful, so please take advantage of office hours and review sessions. You do not need to be a math genius to do well in statistics, but basic math skills of adding, subtracting, multiplying, and dividing are important. If you have any concerns, please see me as soon as the concerns pop-up. You must get a C in this course to take 3914.

What does this class look like? Some nuts and bolts

D2L: I use D2L extensively in this course. All of the necessary reading material for the course (with the exception of the textbook) is on D2L. I also post different opportunities for extra credit, scholarships, talks of interest, etc on the news section. If a course change deadline is necessary, I will post it as well as email it to you. D2L is a great resource to get you information in a timely manner.

Attendance: You are strongly encouraged to attend class and lab. For each, there are attendance points available.

Classroom ethics:
        Academic honesty is expected. See the section on academic dishonesty at
        http://osu.okstate.edu/acadaffr/aa/syllabus.htm for OSU penalties.

Appropriate behavior in class and in all interactions with me and classmates is expected.

Accommodations: Any student who needs special accommodations should see me to make proper arrangements.

Materials: You should have a simple calculator that can take square roots. You should bring your calculator to class. You should also bring an external storage device to lab; alternately you can store your work on the h drive or email it to yourself. It is important to save your work often and save at least two places.

Text: There is no specific text for this class. Rather there are extensive handouts that were written by Dr. Leona Aiken at Arizona State University, that are available at the Cowboy Copy Center on the Strip (by the Barn). This is not an optional study guide, it is the text you need for the course.

Class set-up: You will be assigned to teams during the first class. When we do team work, we will use these teams. One of the things we are going to do to make the numbers we work with more meaningful is to collect our own data. There will be several opportunities in lab to do so. Specifically, you will design a short survey and administer it on campus. You will use this data for several lab projects and will work on the surveys in lab. You must participate in developing the survey and collecting the data with your team.

Lab: The purpose of the laboratory is to practically apply what you are learning in class. More specifically, each student will learn how to use the computerized software package, SPSS (Statistical Package for the Social Sciences), to analyze data. You will have to interpret computer output on most tests, so take really good notes in lab.

Undergraduate TAs: There are 1-2 students per lab section who are there to help you – they are former 3214 students who earned a good grade in the course. You would be wise to listen to their advice! They will be holding study sessions before the tests – last semester these really helped students and I would encourage you to join them.

Assignments and points they are worth

Lecture Attendance: There are up to 20 attendance points that will be given out at random during the semester.

Lab attendance: You can earn 30 attendance points – each lab you attend is worth 2 points.

Tests: There are five non-cumulative tests. You must take all tests. Make-ups are given only in documented emergencies and must be approved by instructor prior to your missing the exam (barring a documented emergency on your way to class). The first three tests are worth 40 points each; the last two are worth 30 points each. You may bring an 8.5 by 11 "cheat sheet" to exams 2 - 5. The 5th test is the final and is non-cumulative.

Homework: There are 12 problem sets. Problem sets are graded on a 6-point scale (6 = excellent and 1 = poor). Homework will consist of mainly hand worked problems. In order to understand what the computer is doing, you need to know how to hand calculate problems so you can see where the numbers come from. The problem sets are designed to help you keep up with the class and prepare for tests. There are 72 possible homework points.

The rules for the grading of problem sets are as follows:
1. Problem sets must be turned in at the beginning of class on the due date to receive full credit.

2. If you turn in a PS after the due date but before the test for that material, you can receive half the credit. If you turn in a PS after the exam but before the final, you can get 1 point credit.

3. For any problem sets in which the problem set is checked at the beginning of class, I will check your work and if it is complete you will receive a 6.

Please write your problem sets neatly, with the questions in the set done in order and clearly numbered. Staple your problem sets and please use regular lined paper with no torn edges.

Projects: There will be 3 lab projects worth a total of 50 points. You will have 2-4 weeks to complete each project. You are encouraged to work on the projects in lab and start them early and not wait until the last minute to start a project. Assignments due dates will be assigned during class. The points for the assignments are as follows:

Assignments	Points possible
Project #1	10
Project #2	15
Project #3	25

The purpose of the projects is so that you get experience actually using SPSS. A second purpose is to prepare you for 3914 - students often come back and comment that the format of the lab projects really helped them in 3914.

Research Points: There are 5 research points. You can either participate in experiments (usually 1-2 points) or attend colloquiums announced in class (1 point).

Bonus Points: You can receive up to 5 extra credit points. You can participate in experiments, attend colloquiums announced in class, or participate in community related activities (such as attending a fundraising dinner, a cultural dinner, doing something like Into the Streets). I will post opportunities on D2L.

Final Grade: Your final grade for the course will be based upon the total number of points you receive. If you get 90-100% of the points you get an A; B, 80-89%; C, 70-79%: D, 60-69%: F, 59% or less. For final grades, I will follow the rules of rounding and will only round up if your decimal is .5 or above, so an 89.3% would be a B.

The syllabus is my best guess at what we will cover and what our pace will be. As such, it is subject to revision. Any changes in due dates or test dates announced in class supersede those in the syllabus.

Class Outline
All pages numbers after the dates refer to pages in the set of handouts you purchased from Cowboy Copy.

8/18 to 8/27 (pages 1-21)
        Introduction
        Terms, Mathematical Concepts
        Frequency Distributions/Graphing
        Central Tendency
        Variability
9/1   Review for test 1
9/3   TEST 1

9/8 to 9/22 (pages 22-46)
        Normal Distributions, Sampling distribution
        Point Estimation/Confidence Intervals
        Hypothesis Testing
        Power and effect sizes
9/24   Review for test 2
9/29   TEST 2

10/1 to 10/15 (pages 47-67)
        1 sample t-tests
        2 sample non-repeated measures tests
        Repeated measures, matched pairs designs
10/20   Review test 3
10/22   TEST 3

10/27 to 11/5 (pages 68-89)
        1 factor between subjects ANOVA
        2 factor between subjects ANOVA
11/10   Review test 4

11/12   TEST 4

11/17 to 11/24 (pages 90-99)
      Correlation
      Regression
12/1   Review for final exam
12/3   Review for final exam

12/8
FINAL, 10-11:50