PSY2100-001 Statistical Methods / Spring 2012
3:30-4:45pm Mon/Wed University Hall 5150F

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Course Information

Required Texts: *Statistics: Plain and Simple* (2010) (Jackson)

Prerequisite: C- or better in Math 1320 (or a higher math)

Calculator: Required

Course website: http://www.dl.utoledo.edu

Course Description

This course provides a basic understanding of the statistics used most commonly by social scientists. Topics to be covered include summarizing data with graphs and numbers, generalizing from samples to a population, and determining the effect of one variable on another. The course will also allow you to understand research reports in social science publications and in the press. We will particularly emphasize the application of statistics, or using and interpreting the statistics (rather than the mathematical proofs underlying these statistical methods). Even students who say they have "math anxiety" can excel in this class, if they are willing to keep up with the work. By the end of this class, you should be able to:

1. summarize and organize data,
2. select and calculate an appropriate statistic to decide whether a variable reliably affects another variable, or whether such findings are driven by chance,
3. critically evaluate research findings in scientific journals and in the media,
4. work with a statistical software program (SPSS), and
5. possess a basic understanding of statistics that can be built upon in future research design and statistics classes.

Course Requirements

Exams

There will be 4 exams during the semester (note that "Exam 4" is the final exam). Each of the exams is worth 100 points and consists of a combination of multiple-choice, calculation, and essay-style questions. Each exam will cover information presented in class and on assigned readings *since* the previous exam. Therefore, none of the exams are comprehensive (although material that comes up later in the course will build on material learned earlier). You must bring a photo ID, pencil, and calculator to each exam. Exams should not be missed, but exams will be rescheduled if the student has a legitimate, university-sanctioned reason for missing the exam. If you can anticipate that you must miss an exam (e.g., for a participatory athletic event, religious holiday), contact me (Dr. Rose) via email at least *one week prior* to the exam. If you are unable to take an examination on time due to illness or emergency, notify me *before* the examination is scheduled to begin by sending me an email or by calling my office. Be prepared to take the make-up exam at the earliest possible date (this will be arranged with the TA). If you do not follow these procedures exactly, you will not be permitted to make up the exam.

Homework Assignments

Homework is essential for success in this course. The assignments will solidify your understanding of course material. There will be 10 homework assignments worth 10 points each. Assignments will be posted on the course website 1 week prior to the listed due date. Assignments must be handed in at the beginning of class on the listed due dates. Assignments that are not completed right at the beginning of class, or are handed in during the middle or end of class will not be accepted. If you anticipate missing a homework assignment, notify me via email at least *one week prior* to the assignment's due date. If you are ill or have an emergency on a day that a homework assignment is due, you must notify me *before* class and be prepared to hand in your assignment as soon as is possible. If you do not follow these procedures exactly, you will not be permitted to hand in your homework late and your grade will be "0" for that assignment.

Grading Policy

You earn points in the class as follows:

Assignment	Weight	Possible Points
4 Exams - 100 pts each	80%	400 points
10 Homework Assignments - 10 points each	20%	100 points
Total		500 points

Letter Grades

A	93+%	> 463 points	C	73-76%	363-382
A-	90-92%	448-463	C-	70-72%	348-362
B+	87-89%	433-447	D+	67-69%	333-347
B	83-86%	413-432	D	63-66%	313-332
B-	80-82%	398-412	D-	60-62%	298-312
C+	77-79%	383-397	F	< 60%	<298

Class Policies

- No cell phones or other electronic devices (except calculator). Please turn them off.
- Arrive on time and do not leave early.
- The computers on your desks are to remain off unless we are working on an in-class exercise that requires the use of computers (e.g., SPSS).
- Do not talk in class unless it is part of an assignment (or asking the instructor questions).
- Be attentive in class.
- Ask questions.

University of Toledo Policy Pertaining to Academic Integrity

Academic dishonesty will not be tolerated. Among the aims of education are the acquisition of knowledge and development of the skills necessary for success in any profession. Activities inconsistent with these aims will not be permitted. Students are responsible for knowing what constitutes academic dishonesty. If students are uncertain about what constitutes plagiarism or cheating they should seek the instructor's advice. Examples of academic dishonesty include, but are not limited to:

- Plagiarizing or representing the words, ideas or information of another person as one's own and not offering proper documentation;
- Giving or receiving, prior to an examination, any unauthorized information concerning the content of that examination;
- Referring to or displaying any unauthorized materials inside or outside of the examination room during the course of an examination;
- Communicating during an examination in any manner with any unauthorized person concerning the examination or any part of it;
- Giving or receiving substantive aid during the course of an examination;
- Commencing an examination before the stipulated time or continuing to work on an examination after the announced conclusion of the examination period;
- Taking, converting, concealing, defacing, damaging or destroying any property related to the preparation or completion of assignments, research or examination;
- Submitting the same written work to fulfill the requirements for more than one course.

Students with Disabilities

Reasonable accommodations will be made for anyone with a disability that may require some modification of seating, testing, or other class requirements. Students must contact the Office of Accommodations (Rocket Hall 1820) for an evaluation and a form specifying what course accommodations are judged reasonable for that student. Please contact the instructor after class or during office hours so that appropriate arrangements may be made.

The contact information for the Office of Accommodations is as follows:
Campus Address: Rocket Hall 1820, Mail Stop #342
Phone Number: 419.530.4981
Web: http://www.utoledo.edu/utlc/accessibility/

How to Succeed in this Course

I have seen first-hand that many students dread this statistics requirement. Many wonder why a statistics class is necessary for psychology majors. Others think back to math courses with considerable anxiety. I want you to know that I am aware that many students are nervous about this class and, above all, I want to help you succeed in this course. Moreover, I will do my best throughout the semester to convince you that it is quite natural for psychology and statistics to exist together.

Mastering the basics of statistics is much like learning a new language – it requires practice, practice, practice. New material builds on older material, and it is essential that you stay up on the class material. Here are some general strategies to consider when going through the course:

Attend Class

Attending class is critical for success in this course. In fact, research has shown that one of the best predictors of grades in courses is class attendance, and even the brightest students gain more insight by attending classes regularly. This is especially important in a class like statistics, as it is helpful to consume information multiple times and in a number of different formats (e.g., reading, lectures). Moreover, there will be some course material presented in class that does not appear in the book; thus, you will need to attend to get all the information covered on exams.

Read, Study, and Take Notes Actively

Research shows that many individuals read and write passively, that is, without thinking about the meaning of what they are covering. In reading and studying textbook-type material, everyone (professors included) must read actively and as a result somewhat slowly. Research shows that learning is much more effective if new information is related to old information. Passively writing down what is on the overhead screen or what is discussed in class without thinking about it will not help you learn or understand the material.

Study the Summaries and Section Headings Before and While You Read

Summaries and headings help you mentally organize what you read. The authors did not just throw a bunch of information together randomly; they present an organized framework of ideas and information. You should seek to discover and understand their organization. Research shows that information is learned best when it is part of an organized mental framework.

Alter Your Expectations for Studying

Research consistently shows that students greatly underestimate the effort and time it takes to do a quality job of learning the new and complex material that is part of most courses. Academic experts generally agree that for a typical three-credit semester-long course, spending at least 6 hours per week outside of class working on learning is the norm for reasonable achievement.

Do the Homework Assignments

In order to facilitate your mastery of basic statistics, I have included homework assignments (in addition to the 4 exams). The purpose of the assignments is two-fold: 1) they allow you more opportunities to earn points in the course, and 2) they will give you critical practice for building your understanding of the material for exams and facilitate your use/retention of the information.

Keep up with Class Material and Ask Questions

There is a large amount of information to learn in this course, and most of the new material builds upon previously-learned material. Therefore, if you fall behind in the readings or don't understand a key concept, this will severely hurt your progress in the course. So keep up with the readings and ask questions when things are unclear!

Tentative Course Schedule
(Subject to change based on in-class announcements)

Week	Date	Topic	Reading	Assignment
1	Jan. 9	Introduction: Science and Statistics	Module 1	
	Jan. 11	Variables and Measurement	Module 2	
2	Jan. 16	No class (MLK Day)		
	Jan. 18	Data Organization	Module 3	
3	Jan. 23	Data Organization		Assignment 1 due
	Jan. 25	Measures of Central Tendency	Module 4	
4	Jan. 30	Measures of Variation	Module 5	Assignment 2 due
	Feb. 1	Measures of Variation		
5	Feb. 6	Standardized (Z) Scores	Module 6	Assignment 3 due
	Feb. 8	Standardized (Z) Scores		
6	Feb. 13	**Exam # 1 (Modules 1-6)**		
	Feb. 15	Sampling & Distributions	Module 7	
7	Feb. 20	Sampling & Distributions		
	Feb. 22	Hypothesis Testing Basics	Module 8	Assignment 4 due
8	Feb. 27	Single-sample z-tests	Module 9	
	Feb. 29	t-statistic and Single-sample t-tests	Module 10	Assignment 5 due
9	Mar. 5	No class (Spring Break)		
	Mar.7	No class (Spring Break)		
10	Mar. 12	t-statistic and Single-sample t-tests		
	Mar. 14	Independent Groups t-tests	Module 11	Assignment 6 due
11	Mar. 19	Correlated Groups t-tests	Module 12	
	Mar. 21	**Exam # 2 (Modules 7-12)**		
12	Mar. 26	Analysis of Variance (ANOVA)	Modules 13-14	
	Mar. 28	Analysis of Variance (ANOVA)		
13	Apr. 2	RM and Two-Factor ANOVA	Modules 15-17	Assignment 7 due
	Apr. 4	RM and Two-Factor ANOVA		Assignment 8 due
14	Apr. 9	**Exam # 3 (Modules 13-17)**		
	Apr. 10	Correlation	Modules 18-19	
15	Apr. 16	Correlation & Regression	Module 20	
	Apr. 18	Chi-square	Module 21	Assignment 9 due
16	Apr. 23	Chi-square		
	Apr. 25	Choosing the Right Statistic		Assignment 10 due

FINALS WEEK: Exam #4 (Modules 18-21); TBA