

## Introduction to Statistics for Psychology PSYC 203

**Meetings:** Tuesdays & Thursdays, 12:45-2:00, HECC 105  
**Instructor:** Dr. Heather C. Lench  
**Office:** PSYCH 255  
**Phone:** 845-0377  
**email:** hlench@tamu.edu  
**Office Hr.:** Tuesdays 12-class, Wednesdays 12-1, or by appointment  
**Website:** www.heatherlench.com, under “courses”

**Required Text:** Salkind, N.J. (2008). Statistics for people who (think they) hate statistics (3<sup>rd</sup> edition). Thousand Oaks, CA: Sage Publications.

You can use a calculator (without memory functions) for assignments and tests. A calculator is not required, but will save you from some hand calculations. You cannot share calculators during tests, so bring your own if you would like to use one.

**Contacting Me:** You can call or email with questions (email is best). Allow 72 hours for a response.

**Goals of the Course:** This course will introduce you to the basic statistics used in psychological research. Psychology has developed scientific methods to explore questions about humanity and this course will introduce you to the statistics used to interpret and evaluate research findings. The goal is to provide you with a foundation to continue your training in psychology and to think critically about psychological findings reported in research articles and the media. Specifically, this class will teach you to: neither fear nor revere statistics, use statistics to share observations, understand statistical inferences, use SPSS to analyze data, and interpret results obtained during analysis. You will also develop the ability to write clearly and concisely about scientific research in APA format.

**Course Website:** The website will be a useful supplement. There are recommendations on the site about how to take notes in this course. Over the semester, relevant links will also be posted that will help you expand your knowledge on various topics.

**Lecture and Reading Policy:** Attendance and reading are both required to be successful in this course. The reading will be most helpful to you if you have completed it before the class. I will assume that you've already read the text in class and will refer to it during lecture. Statistics is like learning a foreign language and it is difficult to catch up if you begin to fall behind – be sure to attend class and read beforehand in order to get the most out of each class and ensure that you can follow class discussion.

**Tests (150 points):** There will be three tests during the term. If you arrive late, you may not have time to complete the test. Each test will consist of essay questions, open-ended questions, and multiple choice answers, with problems similar to those covered in lecture, lab, and your text. You must show your work for the problems (although not

the portion that can be completed with a calculator). Each test is worth 50 points and will have about 15 questions. They are not cumulative, except to the extent that concepts build upon one another in class. You are responsible for providing your own pen. Make up tests will only be considered in rare and **extraordinary** circumstances, and only if you contacted me **before** the scheduled test. There are no make ups for students who did not contact me beforehand unless they have documentation proving **extreme** circumstances that incapacitated them to the point that they could not contact me before the test.

**Advice for Tests:**

1. Always guess, even if you do not know the answer.
2. Work through the problems in your text and/or study guide and check your answers.
3. Do not wait until the last minute to study. You'll understand the concepts most clearly if you study every week and work through the problems as we talk about each concept. You'll also be able to identify where you're having trouble.
4. When you have problems, see me or your TA during office hours or send an email or phone one of us. We are here to help you understand statistics – take advantage of that resource.

**Lab Lecture (5 points for attendance and participation at each lab; 5 extra points for perfect attendance):** See lab syllabus for details.

**Course Project and Writing Assignments (150 points):** You will conduct a group research project that will serve as the basis for your writing assignments. This project will be designed in your first lab class and your TA will give you additional instructions on the types of variables that you need to include. You'll be working with the data for a while, so be sure that you pick a topic that you find interesting! A portion of each lab will be devoted to discussion about the projects so come prepared with data or files, as instructed by your TA. Small group collaborative learning has been shown to be effective in helping students to learn material – students who understand the material learn by teaching other students and students who do not know the answer learn from their peers. However, each student should work independently on typing and completing the writing assignments throughout the semester (plagiarism is not permitted). You must turn in a hard copy of your output with each assignment. There will be four writing assignments during the semester, worth 30 points each. Type your answers (except for calculations and equations, which can be written in). Show your work. Assignments that are not typed, do not show work or output, are too similar to other people's assignments, or not stapled will not be accepted. Late assignments will be accepted, however, 10% will be deducted for each day late (unless you have an extraordinary and documented excuse). At the end of the semester we will hold a research conference for the class. Each group will create a poster presentation and engage in discussion about their own and others' research. People will be graded individually and as a group for the final poster presentation (worth 30 points). Individuals will report what their role was as a group member, what their grade should be, and why and identify the roles of other group members. The grading rubric for the final presentation will be posted on the website.

**Quizzes (30 points):** There will be three quizzes during the semester in the lab. You will be asked to analyze data and report your analyses using techniques and wording discussed in lab. Be sure you know how to use SPSS to run each analysis, identify the relevant information in the output, and describe the result in narrative form. There are no make up quizzes without an **extraordinary** and documented excuse and only if you contacted the TA **before** the scheduled quiz.

**Extra Credit (Optional):** You have the option to earn 10 additional points in the course through extra credit in one of two ways. 1. Locate statistics in the media (journal articles through Psycinfo, newspapers, or reputable online sources), identify and discuss the statistic (by defining what the statistic is and how it was used), and critique its use and the related inferences in the article (this critique must consist of more than saying it was used well). You can complete one typed report for each separate statistic we discuss in class. Each report is worth 2 points, but credit is not guaranteed – you must complete the assignment as described above. Any reports are due at the same time as the writing assignment that includes the relevant statistic. 2. Points will be offered in class to the first student or group to correctly answer questions at the discretion of the instructor.

**Grading:** Grades will be based on the total number of points obtained on the tests, quizzes, assignments, lab and presentation. Grading will be on a curve at the end of the semester if warranted.

**Total Points: 400**

Scores required for each letter designation in the grading system:

A: 350-400 points

B: 300-349 points

C: 250-299 points

D: 200-249 points

F: any score below 200 points

**ADA Policy Statement**

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Cain Hall, or call 845-1637.

**Texas A&M University Philosophy of Academic Integrity:** Aggies do not lie, cheat or steal or tolerate those who do.

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work.

Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. <http://www.tamu.edu/aggiehonor/>

<u>Dates</u>	<u>TOPIC</u>	<u>READING</u>
T 1/19	Introduction to course	Ch. 1
R 1/21	Methods overview	-
T 1/26	Measures of central tendency	Ch. 2
R 1/28	No class	-
T 2/2	Variability	Ch. 3
R 2/4	Graphing data	Ch. 4
T 2/9	Correlation coefficients	Ch. 5
R 2/11	Reliability and validity	Ch. 6
T 2/16	Test 1	-
R 2/18	Hypotheses	Ch. 7
T 2/23	Probability & Zs	Ch. 8
R 2/25	Significance testing	Ch. 9
T 3/2	Independent sample t-tests	Ch. 10
R 3/4	Paired sample t-tests	Ch. 11
T 3/9	Review & Catch Up Day	-
R 3/11	Test 2	-
	Spring Break	-
T 3/23	Analysis of Variance	Ch. 12
R 3/25	Factorial Analysis of Variance	Ch. 13
T 3/30	Factorial ANOVA continued...	-
R 4/1	Correlation Coefficients	Ch. 14
T 4/6	Linear Regression	Ch. 15
R 4/8	Linear Regression continued...	-
T 4/13	Chi square	Ch. 16
R 4/15	Overview of other tests	Ch. 17
T 4/20	Practical statistics redux	-
R 4/22	Review & Catch Up Day	-
T 4/27	Test 3	-
R 4/29	Presentation Day	-

## Introduction to Statistics for Psychology PSYC 203 Lab

**Meetings:**  
**Instructor:**  
**Office:**  
**Phone:**  
**email:**  
**Office Hr.:**

**Required Text:** Yockey, R.D. (2008). *SPSS demystified: A step-by-step guide to successful data analysis*. Upper Saddle River, NJ: Pearson Prentice Hall.

**Goals of the Course:** This lab will supplement your main statistics class and the work and assignments evaluated as part of the lab are required to pass the course as a whole. In the lab, you will complete a project as a scientist. During the first class, you will form a group and develop a research idea and a list of variables to include in the study. The data you collect will form the basis for the projects that you complete for the rest of the semester. You will learn to conduct relevant statistical tests in SPSS and will learn to make appropriate inferences from the results and to report the results to others. You will also learn to write about results in APA format.

**Lecture and Reading Policy (see course syllabus for points):** Attendance and reading are both required to be successful in this course. Things move quickly in the lab, so it is important that you complete the assigned reading before the class in which we will cover that topic. Pay attention during lab lecture and if something is unclear – ask! You will learn more from the lab if you are engaged during the lab session by taking notes, solving the problems we discuss, and offering answers or comments. If you do not attend a lab class, it is critical that you contact a fellow student for information about what was missed (please get someone's contact information at the start of the course).

**Writing Assignments (MANDATORY; see course syllabus for points):** There will be four writing assignments. This class fulfills a university writing requirement and the writing assignments are therefore mandatory to pass the course. Writing assignments will be distributed and are due in the lab portion of class. A portion of each lab will be devoted to small group discussion about the assignments. Each student must turn in their own assignment that they completed independently – plagiarism is not permitted. These assignments must be typed and follow APA style. You must turn in a hard copy of your output with each assignment. These are writing assignments and you will be graded not only on your ability to correctly analyze data and report findings, but also on your ability to write effectively and clearly. Assignments that are not typed, do not show work or output, are too similar to other people's assignments, or not stapled will not be accepted. Late assignments will be accepted, however, 10% will be deducted for each day late (unless you have an extraordinary and documented excuse).

**Quizzes (see course syllabus for points):** There will be three quizzes during the semester. You will be asked to analyze data and report your analyses using techniques and wording discussed in lab. Be sure you know how to use SPSS to run each analysis,

identify the relevant information in the output, and describe the result in narrative form. There are no make up quizzes without an extraordinary and documented excuse and only if you contact the TA before the scheduled quiz time.

**Grading:** Grades will be based on the total number of points obtained. See the main course syllabus for details.

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<u>Week</u>	<u>TOPIC</u>	<u>Reading</u>	<u>Writing</u>
1	Intro to lab, pick projects		
2	Intro to SPSS, descriptive statistics	Ch. 1 & 2	#1 assign
3	Graphs, creating figures	Ch. 3	
4	Correlation coefficients	Ch. 4 & 12	#1 due; #2 assign
5	Quiz, project discussion and analyses	-	#1 return
6	Hypotheses, probability	-	#1 final due
7	Independent & paired sample t-tests	Ch. 6 & 7	#2 due
8	Quiz, project discussion and analyses	-	#2 return; #3 assign
9	Spring Break!!	-	-
10	Analysis of Variance	Ch. 8	#2 final due
11	Factorial Analysis of Variance	Ch. 9	#3 due; #4 assign
12	Linear regression	Ch. 13	#3 return
13	Chi square	Ch. 15	#3 final due; #4 due
14	Practical statistics	-	#4 return
15	Quiz, discussion of presentations	-	#4 final due