

Advanced Psychological Statistics – PSY 406

Fall 2015

TR: 12:30-1:45

Henderson – 207

Instructor: Dr. Benton H. Pierce

Benton Pierce

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Office Hrs: Tuesdays & Thursdays, 2:00 – 3:00 pm, or by appointment

Course Description. This course is designed to provide students with a deeper understanding of statistical analyses. Along with reviewing the basic concepts covered in PSY 302 (Psychological Statistics), we will cover such topics as probability theory, statistical power, multiple regression, and nonparametric procedures. We will also cover some basic concepts involving survival analysis, meta-analysis, and factor analysis.

Textbook. Howell, David C. (2014). *Fundamental Statistics for the Behavioral Sciences*, (8th ed.). Belmont, CA: Wadsworth.

In addition to the required textbook, I will provide handouts covering the topics that go beyond the book.

Homework. There will be eight written homework assignments during the semester. These assignments are designed to increase your understanding of the topics being covered and give you the opportunity to apply course material to *real world* situations. These will be distributed in class and are to be turned in on dates that will be announced in class. Correct, on-time completion of these assignments earn points toward your final grade. These assignments represent realistic examples and simulations of social science research problems. Questions relating to the substantive content of the assignments will appear on the semester and final exams. Be sure to turn in more than just your answers. I need to know how you arrived at your answers. Be sure to respond to the verbal questions and inquiries. What you think about a result is just as important as the result itself. Write in clear, complete sentences. Typed or word-processed material would be appreciated.

Exams. There will be three (3) exams during the semester plus a final exam. There will be three mid-semester exams and one final exam. **Exams will be cumulative. On each exam, there will be questions relating to material covered on the previous exam(s).** The questions will require not only recognition of concepts and correct answers, but will be designed to test comprehension and application of concepts as well. Material for the exams will be drawn from the text, and the lectures. There will be no make-up exams except as mandated by University policy for University-excused absences, religious holidays and major illnesses. Students should contact the professor **prior** to the scheduled exam if possible, or within 24 hours of missing the exam due to accident or illness.

Note: If you are a graduate student taking this course for graduate credit, you will be required to complete a mini meta-analysis. This project will be worth 100 points and will take the place of the final exam. I will provide details on what is required for the meta-analysis by the end of the fourth week of the semester.

Grades. Grades will be based on a total number of points earned through your performance on the exams and your homework assignments. Please note that there will be two separate grading systems for undergraduate and graduate students.

Grading System for Undergraduate Students

Possible Points		Grading System
Task:	Points	
Exam 1	100	A: 89.5% - 100%
Exam 2	100	B: 79.5% - 89.4%
Exam 3	100	C: 69.5% - 79.4%
Final Exam	100	D: 59.5% - 69.4%
Homework Assignments	100	F: Below 59.5%
 Total:	 500	

Grading System for Graduate Students

Possible Points		Grading System
Task:	Points	
Exam 1	100	A: 89.5% - 100%
Exam 2	100	B: 79.5% - 89.4%
Exam 3	100	C: 69.5% - 79.4%
Final Exam	100	D: 59.5% - 69.4%
Homework Assignments	100	F: Below 59.5%
Meta-Analysis	150	
 Total:	 650	

Calculators. You will need a pocket calculator for this class. Be sure that the machine has a square root button and can do basic statistical calculations (means and standard deviations). You should bring your calculator to class and use it to follow the examples. You will also need your calculator for the exams.

Academic Conduct & Honesty. Texas A&M University-Commerce has explicit rules and regulations governing academic dishonest and academic misconduct. These policies are stated in the Students Guide Handbook. Each student is expected to read and abide by these policies, which will be followed in this class. In essence, **cheating** and **plagiarism** of all forms will not be tolerated. Do not copy and/or turn in other people's work. Do not allow other people to utilize your own good work. Do not trust previous tests and assignments for this class! Do your own work! If you have questions or concerns about what constitutes cheating please see me. [Consult the *University Catalog* and *Students Guidebook* for policies concerning Academic Honesty and disruptive behavior.] **Students who engage in cheating or plagiarism will earn an F in the course.**

Electronic-Devices Usage Policy. Turn off all cell phones and put them out of sight **BEFORE** entering class. If you have special circumstances that require access to your cell phone during class (e.g., you are expecting a health-related call), please come and talk to me before class.

Accommodations for Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination 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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Halladay Student Services Building
Room 303 A/D
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

Office Hours. As previously stated, I will keep office hours on Tuesdays and Thursdays from 2– 3 pm. If you absolutely cannot come during one of those times, contact me and we will set up an appointment.

Student Learning Outcomes

Undergraduate students: Learning outcomes for undergraduate students will be assessed through performance on the semester exams, the final exam, and the homework assignments. You must make a C or above to demonstrate that you have sufficient mastery of the course material.

Graduate students: In addition to your performance on the exams and homework assignments, graduate students must show a minimum level of proficiency on their assigned meta-analysis. This will require a grade on the assignment of C or better.

Nondiscrimination Statement: A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Schedule (Tentative)

Date	Topics	Chapter
9/1/2015	Introduction and Brief Overview	1
9/3/2015	Basic Concepts	2
9/8/2015	Displaying Data	3
9/10/2015	Measures of Central Tendency and Variability	4 & 5
9/15/2015	The Normal Distribution and Z Scores	6
9/17/2015	Exam I	
9/22/2015	Basic Concepts of Probability	7
9/24/2015	Probability (continued)	7
9/29/2015	Basic Principles of Survival Analysis	Handout
10/1/2015	Sampling Distributions and Hypothesis Testing	8
10/6/2015	Hypothesis Testing – One Sample	12
10/8/2015	Hypothesis Testing – Two Independent Samples	14
10/13/2015	Hypothesis Testing – Two Related Samples	13
10/15/2015	Statistical Power	15
10/20/2015	Exam II	
10/22/2015	One-Way Analysis of Variance	16
10/27/2015	Factorial Analysis of Variance	17
10/29/2015	Repeated-Measures Analysis of Variance	18
11/3/2015	Correlation	9
11/5/2015	Linear Regression	10
11/10/2015	Multiple Regression	11
11/12/2015	Exam III	
11/17/2015	The Chi-Square Statistic	19
11/19/2015	No Class	
11/24/2015	Other Nonparametric Tests	20
11/26/2015	No Class: Thanksgiving Break	
12/1/2015	Basic Concepts of Meta-Analysis	21
12/3/2015	Meta-Analysis (continued)	21
12/8/2015	Basic Concepts of Factor Analysis	Handout
12/9/2015	Factor Analysis (continued)	
Final Exam	To be announced	

