



CED 611: Intermediate Graduate Statistics
COUN 613: Advanced Statistical Techniques
PSY 681: Intermediate Statistics
COURSE SYLLABUS: Fall 2014

Instructor: Katy Denson, Ph. D

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COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook Required: *Discovering Statistics Using IBM SPSS Statistics* 4th edition by Andy Field. Sage Publications (2013). If you already have the 3rd edition, that will work fine. Some of the chapters have been renumbered and content is slightly different, particularly in Chapters 1 and 2.

Course Description: This course is intended to provide graduate students with a working knowledge of intermediate statistics and is approved by the Graduate School as a Level III research tool. The emphasis in this course will be upon understanding statistical concepts and applying and interpreting tests of statistical inference. Content will include but not be limited to: the application of selected inferential statistical procedures, including advanced correlational methods, multiple regression, ANOVA, two-way factorial ANOVA, reliability and other advanced procedures. Computer software (SPSS) will be employed to assist in the analysis of data for this course. Students should have access to a computer, SPSS software, and the Internet. This access is available at the Metroplex Center and on the Commerce campus in certain computer labs.

Student Learning Outcomes

- How interesting and fun statistics can be
- The uses and limitations of statistical software
- The reasoning and assumptions underlying the inferential statistical process
- Exploratory data analysis to explore assumptions
- Reliability, particularly as it applies to surveys
- Multiple regression
- Analysis of variance (ANOVA)
- Factorial ANOVA, including post hoc and multiple comparisons
- The appropriate application and interpretation of inferential tests applied to ANOVA and multiple regression
- How to write a simple description of methodology and results from analyses

COURSE REQUIREMENTS

Instructional / Methods / Activities / Assessments

Datasets: Datasets will be provided for each homework assignment. The appropriate datasets will be available each week in Doc Sharing.

Guided Practice Exercises:

There will be exercises included each week that are for your practice in understanding how to use SPSS and interpret the output you receive. A task will be given and questions will be asked about the SPSS output. You can use accompanying course materials to answer the questions. The answers will be given and explained. These exercises are NOT for a grade, but to help you increase your understanding.

GRADING

Grading: The course grade will be determined by the following combination of criteria:

- Written Assignment: A written assignment will be assigned for each class session. It may consist of problems from the text or running and interpreting some form of data. Completing or attempting the homework is very important to success in this class because it gives you an opportunity for practice and application. It is expected that mistakes will occur in practice; therefore, incorrect (not incomplete or partially complete) answers on homework problems will not result in a significant penalty. For that reason, do not assume that high homework grades represent readiness for success on exams. Deductions will be made for poorly organized and labeled assignments or incomplete responses. Homework will count 45% of the course

grade. The lowest homework grade will be dropped from the calculation of the final grade.

- Self-Assessments: Self-Assessments are assigned each week and are due at midnight on the Wednesday before class. Each Self-Assessment is a set of multiple choice or True/False questions that will help you determine if you are ready for the next week's class. You can take Self-Assessments as many times as three times. You will know if you missed a question, but you will not be given the correct answer. If you missed something, you know that you need to go back and review that concept. The last grade you get is the grade that goes in the gradebook. Self-Assessments will count 15% of the course grade.
- Participation: Because this will be a "flipped" class, it is essential that you are prepared each week to participate in class discussions. Preparation will include watching lecture presentations on your own time; then coming to class with questions. Discussions will occur during each session and will cover homework, readings, and previous discussions. You should be prepared to ask and answer questions regarding discussion material that will be posted on eCollege for that week. It will be helpful if you have completed the discussion questions before coming to class. Participation will count 10% of the course grade.
- Mid-term Exam: Will be cumulative to that point, open book and notes, and will count for 15% of the course grade.
- Final Exam: Will be cumulative, open book and notes, and will count for 15% of the course grade.

TECHNOLOGY REQUIREMENTS

Software: SPSS Statistical software (version 17.0 or higher are recommended). You can purchase and download a copy from <http://www.onthehub.com/spss/>. You can also get a copy from <http://studentdiscounts.com> (can be installed on two computers). Be sure that you choose the **Statistics PREMIUM Grad Pack**. You can get a 6 month or 12 month license. The software is also on the computers in the student lab at the Metroplex and various labs on the Commerce campus.

Datasets: If you have your own data from a pilot study or work or some other project, you may use that data for your homework assignments. There may be times that your data is unsuitable for the topic. If you do not have your own data or your data is unsuitable, datasets will be provided. If you have your own data, you will need to discuss it with me for suitability.

ACCESS AND NAVIGATION

Class Notes: Because this a web-enhanced course, lectures and class notes for each session will be available on eCollege. Feel free to print anything you want to bring to class. The materials will be in Doc Sharing under the appropriate week. SPSS presentations and datasets for the homework will also be there.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

University Specific Procedures

ADA Statement

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

Gee Library- Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc.edu

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Code of Student Conduct from Student Guide Handbook).

COURSE OUTLINE / CALENDAR

Session	Topics	Readings	Self-Assessment Due
August 26 Week 1	Statistics Review Using SPSS	Field, Chapter 1	
September 2 Week 2	Statistics Review Using SPSS	Field, Chapter 1	September 1
September 9 Week 3	Statistical Models	Field, Chapters 1 and 2	September 8
September 16 Week 4	Hypothesis Testing	Field, Chapter 2	September 15
September 23 Week 5	Simple Regression	Field, Chapter 5	September 22
September 30 Week 6	Multiple Regression	Field, Chapter 7	September 29
October 7 Week 7	Mid-term Exam		
October 14 Week 8	Reliability	Field, Chapter 17	October 6
October 21 Week 9	One-way ANOVA and Post Hoc Tests	Field, Chapter 10	October 20
October 28 Week 10	Two-way ANOVA – nonsignificant interaction	Field, Chapter 12	October 27
November 4 Week 11	Two-way ANOVA – significant interaction	Field, Chapter 12	November 3
November 11 Week 12	Repeated Measures ANOVA	Field, Chapter 13	November 10
November 18 Week 13	Choosing the Right Statistic	Presentation	November 17
November 25	NO CLASS - THANKSGIVING		
December 2 Week 14	Review for Final Exam		
December 9 Week 15	FINAL EXAM		