CED 611, Intermediate Graduate Statistics
Spring 2014

<u>Instructor</u>:   Marcelo F. Pinto, Ph.D.

CONTACT

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> When sending an email, please start the **subject line with the course (CED 611)**; otherwise, your message may be overlooked or accidentally deleted.
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> If you receive no reply within *two school days*, re-send the message.

Please limit all email communication to course-related topics (no chain letters, jokes, or other unrelated messages).

If you leave a voice message, include your full name, course, and a callback number.

For individual questions or concerns, your messages will always be confidential. From time to time, the answer to a student's question may benefit all students; I may then send a blanket response to the class.

REQUIRED MATERIALS

1. <u>Textbook</u>. *Discovering Statistics Using IBM SPSS Statistics* by Andy Field. Sage Publications (2013). Fourth Edition. ISBN-10: **1446249182** | ISBN-13: **978-1446249185**

2. <u>Software</u>. 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); you may want to share the cost with a fellow student. Be sure to select the **Statistics Standard Grad Pack.** You can get a 6- or 12-month license.

- SPSS is also installed on computers in the student lab at the Mesquite Metroplex Center and various labs on the Commerce campus.

OTHER MATERIALS AND RESOURCES

As this is an online course, you must have Internet access and a printer. (This is a printer-heavy course.) To be able to view presentations, you must have the latest version of Adobe Reader installed in your computer. (More information is provided on the course pages.) In rare instances, you may be unable to view the presentations unless other supporting software (e.g., Java) are installed and updated properly. I may try to help, but I cannot provide computer-related technical support as each computer can be set up differently.

The textbook's student resources and accompanying web site will not be required in the course. Yet, you may want to explore it in case it suits your needs and learning style.

All written assignments must be submitted as Microsoft Word or Rich Text Format (.rtf) documents. If you use a different piece of software, please save the document as a .doc, .docx, or .rtf file.

COURSE DESCRIPTION

This course is intended to provide graduate students with an introduction to 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, t-tests, 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 Mesquite Metroplex Center and on the Commerce campus in certain computer labs.

COURSE OVERALL OBJECTIVES

This course is designed so students develop and demonstrate an understanding of

- How statistics and research methodology does not have to be grueling
- 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
- Linear regression and 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, simple regression, and multiple regression
- How to write a simple description of methodology and results from analyses

GRADING

Assignments and assessments must be submitted by the due date. Barring reasonable extenuating circumstances, late work will not be accepted nor will quizzes or exams be reopened. Failure to complete work will result in a score of zero on the assessment or assignment. Please contact me in advance or as soon as concerns or extenuating circumstances come up. I will deal with special requests case-by-case.

The course grade will be determined by the following combination of criteria (and percent of the final course grade):

- **Assignments and Self-Grading Assignments (35%).** An "Assignment" will typically consist of running and interpreting data analysis. You will submit a product online, which the I will grade manually. A "Self-Grading Assignment" (SGA) is completed online, so you will see your score upon completion. Attempting assignments is very important because it gives you an opportunity practice and application. Mistakes are expected, so incorrect answers typically do not result in a significant penalty as long as there is evidence you put forth a well thought-out attempt and the work is not incomplete or partially complete. Thus, do not assume that high scores on assignments represent readiness for quizzes and exams. Deductions will be made for poorly organized, poorly attempted, mislabeled, careless, or incomplete work.

  View Self-Grading Assignments (SGAs) as both practice and a self-assessment. Usually, you will be allowed three opportunities to complete an SGA. If you attempt it and your score is low, review related materials, redo related tasks, and clear up questions before attempting the SGA again.

- **Quizzes (25%).** Weekly quizzes cover readings, homework, and additional materials covered in the week. Quizzes are not cumulative, yet your knowledge of statistics is, so quizzes may require you to draw on previously learned materials. You will often interpret and answer questions based on an SPSS printout or data analysis you must perform. Quizzes are timed.

- **Comprehensive Midterm and Final Examinations (20% each).** The midterm and final examinations are cumulative, covering all materials taught up to that point in the course. Exams include theoretical and practical components; you may also be asked to analyze data and interpret results. Exams are timed. Exams may not coincide with the institution's "exam week."

FINAL COURSE GRADE

Based on the weighted average of your course work, the **final course grade** is converted using the following grading scale: A = 90-100; B = 80-89; C = 70-79; F = 0-69.

"COURSE WEEK" AND DUE DATES

For the purposes of this course, a week starts at 12:00 a.m. on a Monday and ends at 11:59 on the following Sunday. The university works on Central Time (UTC -6:00). **Unless otherwise noted**, all assignments are due by 11:59 p.m. at the end of the week on the Sunday.

ACCESS AND NAVIGATION

eCollege Technical Concerns. For the HelpDesk, call (toll-free) 1-866-656-5511. To reach the Online Chat, click the "Live Support" within the course. The eCollege HelpDesk is available 24/7 at helpdesk@online.tamuc.org

Other Questions or Concerns. Contact the appropriate TAMU-C department for questions or concerns. If you are unable to reach the appropriate department with questions about course enrollment, billing, advising, or financial aid, call 903-886-5511 Monday-Friday between 8:00 a.m. and 5:00 p.m.

DROPPING/WITHDRAWING FROM THE COURSE

Students are responsible for following University procedures to drop a class. If you stop attending the class for any reason, you must initiate the process of dropping; otherwise you will receive a grade, including zeros for work you did not complete. In the Spring 2014 semester, the last day to drop a class is April 25, 2014, at 5 p.m. **Plan to initiate the withdrawal process several days in advance to allow time for all the required procedures**.

SCHOOL DAYS AND HOLIDAYS

I will be available on school days, that is, regularly scheduled working days in the institution's calendar. The course calendar takes holidays into account (e.g., spring break, Thanksgiving). If a short holiday falls during a scheduled week, you must still complete the work for that week.

ENGAGEMENT IN THE COURSE

Online courses offer flexibility to work on the materials when convenient; **however**, **this is not a self-paced course**. You must keep up with the weekly assignments and assessments to meet due dates. Plan to dedicate a **minimum** of 6-8 hours a week to the course **consistently**. After 2-3 weeks, you will be able to gauge your individual needs and adjust your study time. It works best to plan study time for the course throughout the week rather than attempting to cram a week's worth of work into a single day; this way, you will give yourself time to absorb and practice the information. In addition, if you send me a message, for example, late Friday night, you may not receive a reply until late Sunday, leaving you little time until assignments and assessments are due.

Please maintain a working email address on eCollege and check for messages **daily**. I also frequently post announcements on eCollege.

ADDITIONAL NOTES

This syllabus and course description are provided as general guidelines to help you plan. Circumstances may lead to changes to the syllabus or course schedule at the instructor's discretion. Any changes will be communicated to the class; however, it is the student's responsibility to keep up with any changes. If you miss a class in a classroom-based course, be sure to check with your fellow students or the instructor whether any changes were made while you were away. If taking this course online, check your e-mail and the course for messages daily.

1. 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 132
    Phone (903) 886-5150 or (903) 886-5835
    Fax (903) 468-8148
    StudentDisabilityServices@tamu-commerce.edu
    http://web.tamuc.edu/studentLife/campusServices/studentDisabilityResourcesAndServices/

2. 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). Follow all guidelines of academic honesty. If you cheat or fail to complete assignments on your own in any way, you will receive a failing course grade and be subjected to further disciplinary action at the discretion of the institution. If in doubt whether any action is in violation of academic honesty guidelines, consult the instructor.

3. Back up all your work and graded assignments during the semester in case you are asked to resubmit or redo an assignment. Keep track of your grades and save all records. If there are any discrepancies, you may be asked to show a backup copy.

4. **Never** fax or mail (U.S. Mail or otherwise) anything to me without first making arrangements. Turning in assignments and projects **on time** and **as assigned** (online or in person) is the responsibility of the student. If we make alternative arrangements, **always** make a copy of the assignment so that you will have a backup in case the assignment is not received.

5. **University closing due to weather.** Check http://www.tamu-commerce.edu/ regarding class cancellations. Also, check KETR radio on 88.9 FM and television channels 4, 5, and 8 (channel 7 for Tyler & Longview Area). This information is somewhat irrelevant for online courses.

TENTATIVE COURSE CALENDAR

	General Topics	Start-**Due Date**
Week 1	– Statistics review – Preparing the data file	January 13-**19**
Week 2	– Statistics review Preliminary Data Analyses	January 20-26
Week 3	– Basic statistical concepts The Central Limit Theorem	January 27-**February 2**
Week 4	– Null hypotheses and significance testing. Graphing and manipulating data	February 3-**9**
Week 5	Simple regression	February 10-**16**
Week 6	– Multiple regression – Practice simple and multiple regression	February 17-**23**
Week 7	– Validity and reliability.	February 24-**March 2**
Week 8	– **Midterm—All materials covered up to this date.**	**Wednesday March 5-9**
– **Spring Break** *(Week 9 opens during Spring Break but I will not be available.)*		**March 10-16**
Week 9	– One-way ANOVA and *post-hoc tests*	March 10 **23**
Last day to drop 16-week courses officially March 25, 2014. *Give yourself time to submit paperwork.*		
Week 10	– One-way ANOVA and *post hoc tests*	March 24-**30**
Week 11	– Factorial designs; factorial ANOVA and a priori contrasts	March 31-**April 6**
Week 12	– More practice on factorial ANOVAs	April 7-**13**
Week 13	– Repeated-measures ANOVA	April 14-**20**
Week 14	– More practice on repeated-measures ANOVA	April 21-**27**
Week 15	– Review for Final Exam	April 28-**May 4**
Week 16	– **Final Exam—All materials covered in the semester.**	**Wednesday May 7-11**

Notes. Unless otherwise noted, due dates are at 11:59 p.m. Central Standard Time (GMT -6:00). If you live or travel outside this time zone, you must adjust accordingly.

Each exam opens on a **Wednesday** (rather than the typical week) and closes on the following **Sunday.** Plan two 4-hour windows to take Part 1 and Part 2 of the examination.

<h1 style="text-align:center">Useful Tricks and Tips on SPSS</h1>

Adding a Page Break

The SPSS output lays out the information pretty much wherever it may fall. You can add page breaks between output tables so your printed output does not "chop things off." Here's how: When you are looking at your output, there are two windows, the navigation window on the left (skinny column) and the output on the right (larger portion). In the navigation window, single-click the place where you want the page break. At a title is a good place (the title is often on one page and the table on the next). When you click, that section is highlighted. Go to **Insert** at the top of the screen. From the drop-down menu that appears, click **Page Break**. (You can also clear the page break there.) Now click **Output** at the top of the navigation window. The whole output should now be highlighted. Then go to **File**, and select **Print Preview** to see if your page breaks are where you want them.

Shrinking a Table

As you are looking at your output in **Print Preview**, you may see that your table is split onto two pages, which can make a printed output confusing. You can shrink a long table or a wide table to fit on one page. (Just be careful not to over-shrink very long or very wide tables; the result will may be very font-size so small you can't read it.) Here's how to do it:
From the viewer screen, where you are looking at your output, double-click the table to enter editing mode. There should now be a double-hatch line around it. Right-click the table and choose **Table Properties**. Then select the **Printing** tab. Check **Rescale Wide Table to Fit Page** or **Rescale Long Table to Fit Page**. Then click **OK**. You can go to **Print Preview** again to see the result.

Showing Syntax in the Output

By default, SPSS prints the syntax used in the background to run a procedure. If you used SPSS in a previous course, the instructor *may have* asked you to "turn off" the syntax. For this course, make sure to revert back to the default; when you submit work, it helps me understand what analyses you ran in case I need to troubleshoot your results. Allowing SPSS to print the syntax in the output is also helpful to *you* because, if you look at your work weeks later, you will be able to remember how you obtained those results.

If you just installed SPSS, do nothing.

If you disabled "showing the syntax in the output," do the following: Go to **Edit > Options > Viewer**. <u>Below</u> the icons at left, check the **Display commands in the log** box. Click **Apply** and **OK**.