COUN 613 (01W, CRW), PSY 681 (01W)

Advanced Statistical Technique

COURSE SYLLABUS: FALL 2014

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COURSE INFORMATION

Required Materials

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

2. **Software**: SPSS Statistical software (version 17.0 or higher are recommended).

   • You can purchase SPSS for download SPSS from http://www.onthehub.com/spss/

   • You can also get a copy from http://studentdiscounts.com that 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.

   • Computers in the student lab at the Mesquite Metroplex Center and in various labs on the Commerce campus have SPSS.

OTHER MATERIALS AND RESOURCES

The textbook's student resources and accompanying web site are not required, yet you may want to explore them in case they suit your needs and learning style. (*Please see "*Technology Requirements*" for other requirements.*)

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.

STUDENT LEARNING OUTCOMES

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

- The uses and limitations of statistical software, namely, SPSS
- The reasoning and assumptions underlying the inferential statistical process
- Exploratory data analysis to check statistical assumptions
- Validity and reliability, particularly as it applies to surveys
- Simple and multiple linear regression
- Analysis of variance (ANOVA)
- Factorial ANOVA, including post hoc and multiple comparisons
- Application and interpretation of inferential tests
- Writing a simple description of methodology and results from analyses

COURSE REQUIREMENTS

Activities and Due Dates

The semester is divided into "Weeks." Students complete a list of tasks in a typical Week, which opens at 12:00 a.m. on a Monday and closes at 11:59 p.m. on the following Sunday. The university works on Central Time (UTC -6:00); if outside of the Central Time zone, please adjust accordingly.

Weekly tasks include a combination of studying content in the textbook and additional materials, watching instructional videos, completing practice exercises and graded assessments, and submitting written work.

Assignments and assessments must be submitted by the due date. Failure to complete work will result in a score of zero. Barring reasonable extenuating circumstances, no late work will be accepted, nor will quizzes or exams be reopened.

Contact the instructor about individual needs or special requests in advance or as soon as concerns or extenuating circumstances come up. Special requests will be resolved case-by-case.

GRADING

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

- **Assignments and Self-Grading Assignments (35%):** Typically, an "Assignment" consists of running and interpreting a data analysis. The instructor will grade manually a product that you submit online. A "Self-Grading Assignment" (SGA) is completed online and graded automatically.

  Completing assignments is crucial as assignments provide practice and application. Mistakes are expected, so they typically do not result in a significant penalty as long as there is evidence of a well thought-out attempt. Thus, do not equate high scores on assignments with readiness for quizzes and exams. Deductions will be made for poorly organized, poorly attempted, mislabeled, careless, or incomplete work.

  You are allowed multiple attempts for an SGA, so it provides both practice and a form of self-assessment. A low score on the first attempt indicates you should review related materials before attempting the SGA again for a better score.

- **Quizzes (25%):** Most weeks have a timed quiz testing all materials assigned in the week. Although Quizzes are not cumulative, your knowledge of statistics is, so quizzes may require you to draw on previously learned materials. You will often answer questions based on a data analysis you must perform; therefore, you may need access to SPSS to complete some of the weekly quizzes.

- **Comprehensive Midterm and Final Examinations (20% each):** The midterm and final examinations are timed and cumulative, covering all materials taught prior to the examination. Exams include theoretical and practical components.

  Exams may not coincide with the institution's "exam week." The exam will be available on eCollege at midnight on the Wednesday of the scheduled exam and will close at 11:59 p.m. on the following Sunday.

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.

TECHNOLOGY REQUIREMENTS

Browser Check

It is strongly recommended that you perform a "Browser Test" prior to the start of your course. To launch a browser test, login in to eCollege, click on the "myCourses" tab, and select the "Browser Test" link under Support Services"

Other

This is a "printer-heavy," online course. You must have access to the Internet and a printer.

To be able to view Adobe presentations, you must have the latest version of Adobe Reader installed on 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. (*See* "Browser Check" *for more information on technical requirements.*)

All written assignments must formatted in APA style and submitted as Microsoft Word or Rich Text Format (.rtf) documents. If you use a different piece of software, you must use the program's "Save As" feature to save the document in one of the aforementioned formats.

ACCESS AND NAVIGATION

eCollege Technical Concerns

- **Chat Support:** Click "Live Support" on the tool bar within your course to chat with an eCollege Representative.

- **Phone:** For the HelpDesk, call (toll-free) 1-866-656-5511 to speak with an eCollege Representative.

- **Email:** To initiate an eCollege support request, the Help Desk is available 24/7 at helpdesk@online.tamuc.org

- **Help:** Click the "Help" button on the toolbar for information about working with eCollege (e.g., how to submit to Dropbox, how to post to discussions, etc.).

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 Fall 2014 semester, the last day to drop a class is December 2, 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. 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 when convenient; however, this is not a self-paced course. You must keep up with the weekly tasks 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 a single study session. Working consistently and at a steady pace will give you 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 or no time until an assignment is due.

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

ADDITIONAL NOTES

- Circumstances may require changes to the syllabus or scheduled activities at the instructor's discretion.

- It is the student's responsibility to stay informed about course-related information or changes. If you miss a class in a classroom-based course, be sure to check with a fellow student about information shared in your absence. If taking the course online, check your e-mail and the course for messages daily for any updates.

- 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 provide copies of your work.

- Never fax or mail anything to me without first making arrangements. If we make alternative arrangements, always keep a copy of the assignment in case it is not received.

- University closings are irrelevant for online courses. For classroom-based courses, check the university's web site closings or cancellations due to weather. Also, check KETR radio on 88.9 FM and television channels 4, 5, and 8 (channel 7 for Tyler & Longview Area).

COMMUNICATION AND SUPPORT

Interaction with the Instructor

- It is best to communicate with me by email. You can also call and leave a message, or we can schedule a time for a call. When leaving a voice message, include your full name, course, and a call-back number.

- When sending an email, **start the subject line with the course (COUN 613)**; otherwise, your message may be overlooked or accidentally deleted.

- If you receive no reply within *two school days*, re-send the message.

- Limit all email communication to course-related topics (e.g., no chain letters or jokes).

- 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 whole class.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

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

ADA Office URL: http://www.tamuc.edu/CampusLife/CampusServices/ studentDisabilityResourcesAndServices/default.aspx

ADA Office Email: 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. (*Refer to the institution's* "Code of Student Conduct" *from* "Student Guide Handbook.") Follow all guidelines of academic honesty. If you plagiarize, cheat or collude, 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 violates academic honesty guidelines, consult the instructor. Materials on plagiarism are available at plagiarism.org and other sources on the Internet.

COURSE OUTLINE / CALENDAR

The calendar below is tentative. Under certain conditions, it may change depending on the progress the class makes during the semester. Changes are communicated to students through course announcements on eCollege.

Week 1   Statistics review. Preparing the SPSS data file.

Week 2   Statistics review. Preliminary data analyses.

Week 3   Basic statistical models. The Central Limit Theorem.

Week 4   Null Hypotheses and significance testing. Graphing and manipulating data.

Week 5   Simple regression.

Week 6   Multiple regression.

Week 7   Validity and reliability

Week 8   ***Comprehensive Midterm Examination***

Week 9   One-way ANOVA and *post hoc* tests

Week 10   More practice with one-way ANOVA and *post-hoc tests.*

Week 11   Factorial designs, factorial ANOVA, and a priori contrasts.

Week 12   More practice with factorial designs.

Week 13   Repeated-measures ANOVA

Week 14   Review Week

Week 15   ***Comprehensive Final Examination***

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 (theory) and Part 2 (practice) of the examination.