

EDP 380C-4: CORRELATION & REGRESSION (3 CREDITS)

SPRING 2016 (Unique #: 10630)

General Information

Lecture meeting time: Tuesday & Thursday, 11:00am – 12:15pm.

Location: George I. Sanchez Building (SZB), Room 278

Instructor

Name: Dr. Jodi Casabianca

Office hours: Wednesdays, 3:30-5:00pm, and by appointment in **SZB 352A**

E-mail: jcasabianca@austin.utexas.edu

Teaching Assistant

Name: Ms. Wen Qu

Office hours: Tuesdays/Thursdays from 3:30-5:00pm, and by appointment in LTC (5th Floor)

E-mail: wenqu0716@gmail.com

Be sure to contact **BOTH** the TA and me **by email** if you cannot meet with us during our scheduled office hours and would like to schedule another appointment.

Course Description

This course covers topics in correlation and regression methods. As a student in the class, your goals are to: (a) learn how to identify when to use correlation and regression techniques, (b) understand associated assumptions and how to test them, (c) make the appropriate inferences, and (d) describe and discuss correlation and regression and associated inferences. The course will involve a combination of lecture, data analysis demonstrations, and assessments to help you meet these learning goals.

Prerequisites

To gain entrance into the course, you must have either successfully completed EDP 380C-2 (Fundamental Statistics) or passed the proficiency examination.

Required Textbook and Materials

Textbook. There is one required textbook for the course: **Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques* (2nd ed.). Los Angeles, CA: Sage.** The text provides some information not covered in class and similarly some material is covered in class that might not be mentioned in the text. You are responsible for material covered in class. I will assign reading assignments on a weekly basis. **It is your responsibility to complete the reading assignment for the following week in order to prepare for class.** Everyone learns differently, but from my own experience, doing a complete reading *before* and then again *after* class should almost guarantee your success in understanding the concepts. If you have questions about how to learn and study, please let me know and I can suggest some strategies.

Class Handouts. Class handouts matching the overheads used by the instructor will be made available on Canvas (<http://canvas.utexas.edu>) to students the night before class. I update overheads to match class progress and thus cannot offer them any earlier. Please print them before coming to class.

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Reading the handouts does not provide the student with the learning experiences nor the materials equivalent to those obtained by attending class. The handouts provide a skeleton of what is being covered each day and will thus be an incomplete version of the material actually covered. They are designed so that the students can pay attention without scribbling down everything that's being said. The handouts contain spaces for the student to fill in the additional material and to practice working through examples that are provided in class.

Calculator. You will be required to calculate statistics by hand to master the use (and interpretation) of the relevant formulae. Therefore, you will need your own calculator to perform relevant mathematical functions (such as taking the natural log, the exponent, square root, etc.) during class and exams. Because you will need your calculator during exams, do not intend to share calculators or use your cell phone's calculator function/app.

Statistical Software/SPSS. You will need to use statistical software to complete your homework assignments. Although you are not required to use SPSS for your assignments, it is to your advantage because this is what will be discussed in class and provided in course materials. If you use another statistical software program, then you are responsible for ensuring the correspondence between procedures and estimation techniques that are used.

Note that there are many different versions of SPSS available and they might look somewhat different (from my version and thus differ somewhat from the screenshots in the course overheads and from each other's versions). However, as these versions change, you will have to be flexible about figuring out where to find the relevant SPSS functions.

Access to IBM SPSS.

- IBM SPSS is available in the following campus lab: MEZ 2.104 (5 copies).
- [UT Campus Computer Store](#) - 1 year license GradPack (PC or Mac)
- [Software Distribution & Sales](#) - 1 year annual license (PC or Mac)
- [e-academy lease licenses](#) - 6 month or 12 month student license
- A FREE option is to run SPSS by logging into a virtual environment from anywhere with a network connection to use the software. Instructions can be found by going to [desktop.edb.utexas.edu](#) and clicking the "Click Here" link under "Message Center." Be sure to also read this page:
http://www.edb.utexas.edu/education/ito/tutorials/connect/coe_desktop_resources/coe-stats-vdi/

Classroom Conduct

This course requires your full attention in class. For that reason, I will restrict classroom use of laptop computers. **You are free to bring your laptops to class, but they should only be open when we are working on statistical analyses.** During lecture, please take notes using the class notes that I have posted on Canvas. They will be available the evening before class (by 11:00pm) so that you have ample time to print them. If you have an accommodation that requires the use of your laptop, please do let me know.

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Assessments

Your course grade will be a combination of your performance on homework assignments (25%), three in-class examinations (75%).

Homework Assignments. There will be four assignments, each designed to give students a chance to apply and practice the concepts learned in class. These will typically involve using SPSS to solve correlation and regression problems. Assignments are due as specified in class, and should be submitted on time for full earned credit. Late work will be accepted for full earned credit IF AND ONLY IF arrangements are made with me PRIOR TO DUE DATE. Otherwise, 5% of the points possible will be deducted for each weekday the assignment is late. Please work alone on your homework assignments.

Exam Dates and Policies. There will be three examinations (2/18, 3/31, 5/5)—the dates of these exams will not change. Each exam will cover material from the lessons since the last exam (unless otherwise specified). Examinations will consist of conceptual, computational and application questions. Students must bring a calculator to the exams. Examinations are not open-book, but you may use one 8.5" X 11" two-sided page of notes during the exam to reduce test anxiety (students will likely be much better prepared if they don't need to rely on it).

Exams cannot be made-up unless your absence is excused via doctor's note or prior arrangement because of religious holiday observance. If the student becomes ill on the day of an exam, then it is the student's responsibility to ensure the instructor is contacted to notify them, provide them with a doctor's note and to re-schedule the exam. In the case of a religious holiday observance, University policy requires students to notify each of their instructors as far in advance of the absence as possible so that arrangements can be made.

Grading Policy

Your final course grade will be assigned based on the conversion from numeric course grade to letter grade as shown in the below table. Unless there was a computational error in your grade computation, grades will not be changed after the end of the semester.

A :	≥ 93	C+:	76-79
A-:	90-92	C:	73-75
B+:	86-89	C-:	70-72
B:	83-85	D:	60-69
B-:	80-82	F:	<60

Canvas

All electronic materials used for this course will be available on Canvas. Grades for all examinations and assignments will also be available on Canvas. Please access the training for students (<http://edutech.utexas.edu/students/>) for help with setting up your account and navigating the system. You will also be responsible for checking the Canvas course site regularly for announcements, and copies of my overheads. As with all computer systems, there are occasional scheduled downtimes as well as unanticipated disruptions, so plan accordingly.

Please do not email me in Canvas. Please use the UT email system.

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Communication Policy

All students should become familiar with the University's official email student notification policy. The complete text of this policy and instructions for updating your email address are available at <http://www.utexas.edu/its/help/utmail/1564>.

Students are expected to check email on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. In this course, email will be used as a means of communication with students. You will be responsible for checking your e-mail regularly for class work and announcements. I check email several times a day on weekdays (during regular working hours).

Attendance Policy

You are responsible for being present in class and for all lecture and written material covered in class, even if you miss a class. If a student misses a class, then regardless of the reason for class being missed the student is responsible for obtaining both the course material that was missed as well as any class announcements from his/her classmates. While attendance is not part of your grade, you will be better prepared to complete assignments and examinations if you regularly attend class.

In addition to being physically present in the classroom, I expect that all students will be mentally present as well. This means that there should be minimal distractions due to technology including cell phones and other devices.

Accommodations for Religious Holidays

Notify me of your pending absence at least fourteen (14) days prior to the date of observance of a religious holy day. If you must miss a class, an examination, an assignment in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Documented Disability Statement

Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone). Faculty are not required to provide accommodations without an official accommodation letter from SSD. Also please notify me as quickly as possible if the material being presented in class is not accessible (e.g., text on presentation slides too small, etc.).

Policy on Academic Integrity

University of Texas Honor Code. The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at Austin. More specifically, you and other students are expected to maintain absolute integrity and a high standard of individual honor in

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scholastic work undertaken at the University. This is a very basic expectation that is further reinforced by the University's Honor Code. At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

On Working Together for Assignments. You are encouraged to study together and to discuss information and concepts covered in class with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else. Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Code can also be extended to include failure of the course and University disciplinary action.

On Exams. During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.

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Tentative Course Schedule

This schedule may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected. Exam dates will not change.

Date	Topic	Warner	Due
1/19	Course Introduction		
1/21	Review of Important Statistical Concepts	Ch. 1-3	
1/26	Pearson Correlation	Ch. 7	
1/28	- Intro to Pearson product-moment correlation, r - Assumptions for use of Pearson's r		
2/2	- Factors that affect r - Interpretation of r		
2/4	- Significance testing - Confidence Intervals for r		
2/9	Other Measures of Association		
2/11	- Spearman correlation - Phi correlation - Chi-Square - Point-biserial correlation - Biserial correlation	Ch. 8	
2/16	Review/Catch-up		
2/18	Exam 1		Exam 1
2/23	Data Screening and Univariate Assumptions	Ch. 4	
2/25	Simple Linear Regression	Ch. 9	
3/1	- Relation to bivariate correlation - Basic model and parameters		
3/3	- Tests of significance - Standard error of estimate - Confidence intervals - Variance partitioning - Significance of the regression model		
3/8	Multiple Regression with 2 Predictors		HW 1
3/10	- Partial and semipartial correlation - Relation to simple regression - Multiple correlation - Tests of significance - Confidence intervals - Factors that affect parameter estimates	Ch. 11; Ch. 10 (pp. 384-407)	

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3/15	No Class – Spring Break		
3/17	No Class – Spring Break		
3/22	Multiple Regression with 2 Predictors (continued) - Patterns of Association - Suppression	Ch. 10 (pp. 407-426)	
3/24	Multiple Regression with More Than 2 Predictors Multicollinearity	pp. 458-459, 571-572, 598-599	
3/29	Review/Catch-up		HW 2
3/31	Exam 2		Exam 2
4/5	Multiple Regression - Assumptions - Outliers and diagnostics		
4/7	No Class – AERA/NCME		
4/12	Categorical independent variables Dummy coding	Ch. 12	
4/14	Effects coding		
4/19	Interactions/Moderation Categorical variables	Ch. 15	HW 3
4/21	Continuous variables		
4/26	- Continuous and categorical variables - Describing interactions		
4/28	Comparison of Nested Regression Models	Ch. 14	HW 4
5/3	Review/Catch-up		
5/5	Exam 3		Exam 3