

**EDP 380C 4-Correlation and Regression Methods****Fall 2015 – Unique #: 10740****TTH 11:00 – 12:30****SZB 435****Instructor**

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Wednesdays: 4:00 – 5:00pm &amp; by appointment

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**Teaching Assistants**

Melissa Rodgers

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Mondays and Wednesdays: 1:00-2:30pm

Office: SZB 536 (Open Area)

**Course Description**

- Topics will include simple linear regression, multiple regression, partial and semipartial correlation, multiple regression for prediction, hierarchical modeling, and regression analysis with categorical and continuous independent variables.
- The prerequisite for the course is EDP 380C 2-Fundamentals of Statistics.

**Required Course Materials**

- Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques* (2<sup>nd</sup> ed.). Los Angeles, CA: Sage.
- Class notes, available on our Canvas website. Class notes will be posted prior to the day on which the notes are discussed in class and may be retrieved on Canvas: [canvas.utexas.edu](https://canvas.utexas.edu).

**Accommodations For Persons With Disabilities**

Students with disabilities who require special accommodations need to get an accommodation letter that documents the disability from the Services for Students with Disabilities (471-6259 voice or 471-4641 TTY for users who are deaf or hard of hearing). This letter should be presented to the instructor in each course at the beginning of the semester and accommodations needed should be discussed at that time. Five business days before an exam, the student should remind the instructor of any testing accommodations that will be needed. See the following website for more information: <http://ddce.utexas.edu/disability/>.

**Course Assessment**

1. *Exams:* Three in-class exams will be administered at the start of class (**9/24, 10/29, 12/3**). Each exam will cover material from the lessons since the last exam (unless otherwise specified). You may use one 8.5" X 11," two-sided page of notes (students will likely be much better prepared if they don't need to rely on it). Missed exams may not be made up unless arrangements have been made prior to class.

2. *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. You will complete and submit these assignments using Canvas.

### **Course Grades**

Your exams (percentage correct on each exam) will be weighted equally. Grades will be posted to our Canvas website – please periodically check for any keypunch errors. Final grades will then be assigned based on the scale below.

<i>Assessment</i>	<i>Weight</i>
Total quiz points converted to a percentage	75%
Total homework points converted to a percentage	25%

<i>Overall Course Percent</i>	<i>Grade</i>
93% - 100%	A
90% - 92%	A-
87% - 89%	B+
83% - 86%	B
80% - 82%	B-
77% - 79%	C+
73% - 76%	C
70% - 72%	C-
below 70%	F

Unless a computational error has been made, grades will not be changed after the end of the semester.

*No Extra Credit:* Your course grades are based only on the above information. There will be no extra-credit opportunities.

*Grades of "Incomplete:"* Unless the student can demonstrate that near catastrophic events have led to a case of extreme hardship, grades of "Incomplete" will not be given.

*Attendance:* Attendance will not be part of your grade. Students who attend class, of course, tend to be better prepared for assignments.

### **Access to IBM SPSS**

- IBM SPSS is available in the following campus labs: MEZ 2.104 (5 copies).
  - Campus Labs: 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](http://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/](http://www.edb.utexas.edu/education/ito/tutorials/connect/coe_desktop_resources/coe-stats-vdi/)

**Correlation and Regression Methods****Fall 2015 Tentative Schedule, Topics, and Reading Assignments**

<b><u>Date</u></b>	<b><u>Topic</u></b>	<b><u>Warner</u></b>	<b><u>Due</u></b>
8/27	Course Introduction		
9/1	Review of Important Statistical Concepts	Ch. 1-3	
9/3	Measures of Association <ul style="list-style-type: none"> <li>• Pearson product-moment correlation, <math>r</math></li> <li>• Assumptions associated with <math>r</math></li> <li>• Significance testing of <math>r</math></li> </ul>	Ch. 7	
9/8	Pearson Correlation <ul style="list-style-type: none"> <li>• Confidence Intervals for <math>r</math></li> <li>• Factors that affect <math>r</math></li> </ul>		
9/10	Date Screening and Assumptions	Ch. 4	
9/15	Other Measures of Association <ul style="list-style-type: none"> <li>• Spearman correlation</li> <li>• Phi correlation</li> <li>• Chi-Square</li> </ul>	Ch. 8	
9/17	Other Measures of Association (continued) <ul style="list-style-type: none"> <li>• Point-biserial correlation</li> <li>• Biserial correlation</li> </ul>		
9/22	Introduction to Simple Linear Regression <ul style="list-style-type: none"> <li>• Relation to bivariate correlation</li> <li>• Basic model and parameters</li> </ul>	Ch. 9 (pp. 344-352)	<b><u>HW1</u></b>
9/24	<b><u>EXAM 1</u></b>		<b><u>EXAM 1</u></b>
9/29	Simple Linear Regression <ul style="list-style-type: none"> <li>• Tests of significance</li> <li>• Standard Error of Estimate</li> <li>• Confidence intervals</li> </ul>	Ch. 9 (pp. 352-359)	
10/1	More Simple Linear Regression <ul style="list-style-type: none"> <li>• Variance partitioning</li> <li>• Standardized estimates</li> </ul>	Ch. 9 (pp. 359-379)	
10/6	Introduction to Multiple Regression with 2 Predictors <ul style="list-style-type: none"> <li>• Relation to simple regression</li> <li>• Tests of significance</li> </ul>	Ch. 11 (pp. 429-433; 438-462)	
10/8	More Multiple Regression with 2 Predictors <ul style="list-style-type: none"> <li>• Confidence intervals</li> <li>• Factors that affect parameter estimates</li> </ul>		<b><u>HW2</u></b>
10/13	Multiple Regression <ul style="list-style-type: none"> <li>• Multicollinearity</li> </ul>		
10/15	Multiple Regression <ul style="list-style-type: none"> <li>• Partial and semipartial correlation</li> </ul>	Ch. 10 (pp. 384-407) Ch. 11 (pp. 433-438)	

10/20	Multiple Regression (continued) • Patterns of Association	Ch. 10 (pp. 407-426)	
10/22	Outliers and diagnostics		<b>HW3</b>
10/27	Assumptions		
10/29	<b>EXAM 2</b>		<b>EXAM 2</b>
11/3	Categorical independent variables • Dummy coding	Ch. 12	
11/5	Categorical independent variables (continued) • Effects coding		
11/10	Interactions/Moderation • Categorical variables	Ch. 15	
11/12	Interactions/Moderation (continued) • Continuous variables • Continuous and categorical variables		<b>HW4</b>
11/17	Interactions/Moderation (continued) • Describing interactions		
11/19	Introduction to Mediation	Ch. 16 (pp. 645-666)	
11/24	More Mediation • Testing mediation		
11/26	<b>Thanksgiving Holiday</b>		
12/1	Model selection techniques Cross-validation	Ch. 14	
12/3	<b>EXAM 3</b>		<b>EXAM 3</b>

### Other Suggested References

- Berry, W. D. (1993). *Understanding regression assumptions*. Sage University Paper Series on Quantitative applications in the Social Sciences, 07-092. Newbury Park, CA: Sage Publications, Inc.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. (3<sup>rd</sup> ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Edwards, A. L. (1984). *An introduction to linear regression and correlation*. New York, NY: Freeman.
- Glantz, S. A., & Slinker, B. K. (1990). *Primer of applied regression and analysis of variance*. New York, NY: McGraw-Hill, Inc.
- Hamilton, L. C. (1992). *Regression with graphics*. Belmont, CA: Wadsworth, Inc.
- Hardy, M. A. (1993). *Regression with dummy variables*. Sage University Paper Series on Quantitative applications in the Social Sciences, 07-093. Newbury Park, CA: Sage Publications, Inc.
- Lewis-Beck, M. S. (1980). *Applied regression: An introduction*. Sage University Paper Series on Quantitative applications in the Social Sciences, 07-022. Newbury Park, CA: Sage Publications, Inc.
- Liebetrau, A. M. (1983). *Measures of association*. Sage University Paper Series on Quantitative applications in the Social Sciences, 07-032. Newbury Park, CA: Sage Publications, Inc.