Data Analysis II
Psy 612
CRN 25456
Winter 2017
1000-1120 Tuesday & Thursday
Eslinger 193

Instructor:

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Laboratory

Friday 0900-1020; 1030-1150

Course Information

This is the second course in a three-course graduate level data analysis sequence. This course is devoted to topics in multiple regression with special emphasis on complex analysis of variance and experimental design. We assume that all students have successfully completed Psy 611 (Data Analysis I) or equivalent. In general, the text chapters listed in the syllabus cover the material planned for class on the day that they are assigned. This material provides more depth and often alternate explanations of some of the issues.

Inclement Weather Policy

If Eugene School District 4J cancels (not delays) school, we will cancel class. Nothing we do in this class can't wait until it is safe to travel.

Texts:

Cohen, J. & Cohen, P., West, S., & Aiken, L. (2003). Applied Multiple Regression /Correlation Analysis for the Behavioral Sciences, 3rd Ed. Taylor & Francis, NY.

Keppel, G. & Wickens, T. (2004). Design and Analysis: A Researcher's Handbook, 4th Ed. Prentice Hall: Upper Saddle River, NJ.

Class notes available on Canvas

Other Useful Books:

Analysis of Variance & Experimental Design

Hays, W. L. (1994). Statistics (5th ed). Harcourt Brace College Publishers: Fort Worth.

Tamhane, A., & Dunlop, D. (2000). Statistics and Data Analysis. Prentice Hall: Upper Saddle River, NJ.

Winer, B. J. (1971). Statistical principles in experimental design (2d ed). McGraw-Hill: New York.

Multiple Regression & Related Issues

Pedhazur, E. J. (1997). Multiple Regression in Behavioral Research (3rd Ed.). Harcourt Brace: San Diego, CA.

Wonnacott, R. & Wonnacott, T. (1970). Econometrics. J. Wiley: New York.

Conducting Empirical Research

Abelson, R. (1995). Statistics as Principled Argument. Lawrence Erlbuam: Hillsdale, N.J.

Class Requirements:

Complete take-home midterm examination (35% of grade), final examination (50% of grade), and weekly homework assignments (15%) of grade. Responses to all homework and examination problems should follow standard reporting formats; see the Guidelines handout for examples. Homework will be assigned and due each Thursday. Homework should be uploaded to Canvas by 1000 on the Thursday that it is due. The laboratory section may have additional assignments.

Syllabus

General Linear Model

Date	Topic	Reading	Homework
1/10	Linear Regression	CCWA 1, 2	
1/12	Regression Diagnostics	CCWA 4	21, 23
1/17	Multiple Regression	CCWA 3	
1/18	Partitioning variance	CCWA 5	13, 19
1/24	Omitted Variables, Multicollinearity, & Heteroscedasticity	CCWA 10	
1/25	Nonlinear relations	CCWA 6	17, 20
1/31	Regression with categorical variables	CCWA 7	
2/2	Analysis of interactions	CCWA 8	14, 22
2/7	Analysis of covariance, Mediation & Moderation	CCWA 9, 12 KW 15	
2/9	Probability, Significance, & Bayesian Approaches		Midterm

Complex Analysis of Variance

Date	Topic	Reading	Homework
2/14	Representation of Experimental Designs	KW Section I & II	
2/16	Multiple Sources of Variance: Random Factors	KW Section V	1,2,3,4,15
2/21	Factorial Analysis of Variance	KW Section III	
2/23	Nested & Non-Orthogonal Designs; Missing Data	CCWA 11, KW Section VI	5,6,8,16
2/28	Repeated Measures		
3/2	Repeated Measures		7,9,10
3/7	Introduction to Multi-Level Models		
3/9	Introduction to Multi-Level Models	CCWA 14	11,12,18

Special Topics

Date	Topic	Reading	Homework
3/14	Introduction to Time Series Analysis	CCWA 15	
3/16	Categorical Dependent variables	CCWA 13	Final Exam
3/23	FINAL DUE 8:00 AM uploaded to Canvas		

CCWA: Cohen, Cohen, West, & Aiken (2003).
KW: Keppel & Wickens (2004).

Note: Topics and homework may be adjusted as the course proceeds.