PLAN 6930 QUANTITATIVE METHODS

Instructor: Dr. Lance Freeman

Teaching Assistant: Elizabeth Marcello

Class Time: Thursdays 11:00-1:00 p.m.

Class Room: 412 Avery

Lab time: Thursday 2:00-4:00 p.m.

Lab room: 200 Fayerweather

Office Hours: Tuesdays 2:30-4:30 p.m. or by appointment

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Course website: https://courseworks.columbia.edu/welcome/ (Log in and this course should be displayed on the screen).

Course Objectives

The purpose of this class is to introduce students to the concepts, techniques and reasoning skills necessary to understand and undertake quantitative research. By the end of the semester students will be able to:

Design a quantitative research proposal

Conceptualize a quantitative statistical model

Estimate a quantitative statistical model

Interpret the results of descriptive analyses, t-tests, chi-square and multivariate regression analyses.

Conduct statistical power analysis.

Students will learn and hone their skills through a combination of attending weekly class meetings, participating in weekly labs, completing written assignments and writing a research paper that tests a hypothesis using quantitative techniques.

Texts

Below are texts that we will use for the course. The books can be purchased from the Columbia University bookstore.

Acock, Alan C. *A Gentle Introduction to Stata*. Revised 5th edition. College Station, TX: Statapress.

Meier, Kenneth J., Jeffrey L. Brudney, and John Bohte. Applied Statistics for Public and Nonprofit Administration, 9th edition. Boston: Wadsworth

Berry, William D. and Stanley Feldman. *Multiple Regression in Practice*. Newbury Park: Sage Publications.

Menard, Scott. *Applied Logistic Regression Analysis.* Newbury Park: Sage Publications.

Reinhart, Alex. *Statistics Done Wrong: The Woefully Complete Guide.* No Starch Press.

Course Schedule

Meeting		Topic	Readings	Stata Readings	Assignments Due
1.	**9/7**	Conceptualizing quantitative research	*Applied Statistics*Chapters 3		Assignment 1
2.	**9/14**	Probability	*Applied Statistics*Chapter 7, 8		
3.	**9/21**	Inference	*Applied Statistics*Chapters 10;*Statistics done Wrong*, Chapter 1	pp. 156-157	Assignment 2
4.	**9/28**	Inference continued	*Applied Statistics*Chapters 11, 12	pp.157-174	Assignment 3

5.	**10/5**	Inference continued	*Applied Statistics*Chapter 13	pp.157-174	Assignment 4
6.	**10/12**	Statistical Power	*Applied Statistics*Chapter 11 pp. 195-197, Chapter 12 pp. 207-209; *Statistics done Wrong*, Chapter 2	pp. 174-182	Assignment 5
7.	**10/19**	Introduction to Regression: Bivariate Regression	*Applied Statistics* Chapter 17	Chapter 8	Assignment 6 SELECT DATA FOR FINAL PROJECT
8.	**10/26**	Midterm			
9.	**11/2**	Regression: Multiple Regression	*Applied Statistics* Chapter 20	Chapter 10	Assignment 7
10.	**11/9**	Regression: Multiple Regression	*Multiple Regression in Practice*Chapters 1-4	Chapter 10	Research Proposal Due (Read chapters, 7,8 and 9 in *Statistics Done Wrong)*
11.	**11/16**	Regression: Multiple Regression	*Multiple Regression in Practice*Chapters 5 & 6	Chapter 10	Assignment 8

12. 11/30	Regression: Multiple Regression extensions	*Applied Logistic Regression Analysis*Chapters 1 & 2	Chapter 11	Assignment 9
13. 12/7	Regression: Multiple Regression extensions	*Applied Logistic Regression Analysis*Chapters 3 & 4	Chapter 11	Assignment 10
14. 12/14	No Class			**Final Paper Due (Read chapters 5 and 6 in *Statistics Done Wrong)***

Grading

Homework:	60%
Midterm:	20%
Final Paper	20%

Note: Homework assignments are due 11:00 a.m. on the day of class. All assignments must be uploaded to Courseworks. Late assignments will not be accepted.