PUBP 811: Quantitative Methods and Research Design
(Statistical Analysis for Public Policy)

University of Saskatchewan Campus

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Office Hours: Thursdays between 1:30 and 3:30 p.m. (but feel free to contact me at other times)
Office Location: Diefenbaker 158
Term: Term 1 (fall)
Room: Diefenbaker 162 (board room)
Time: Fridays from 9:00 a.m. to 11:50 a.m., September 11 to December 4

CALENDAR DESCRIPTION
Provides students with the statistical concepts and techniques required for conducting research and critically evaluating empirical studies. Topics include statistical inference, sampling theory, and data and regression analysis as applied to problems in public policy.

COURSE CONTENT AND APPROACH
This course is designed to introduce you to the basic principles of bivariate and multivariate regression analysis, and to apply the regression model to problems in political science, public administration, and public policy research. Various modifications to the regression model will be examined, as will several problems that often plague regression models. Finally, you will become familiar with the regression routines of the statistical package STATA. This software will be used in completing class assignments.

This course emphasizes the application of statistical procedures more than the theoretical or mathematical principles behind them. While you will learn the basic theoretical and mathematical principles of regression analysis, the overall objective of the course is to learn how to apply this method to diverse empirical problems in public policy.

The course has a lecture format. However, discussion is encouraged. As well, portions of class time will be devoted to the discussion of journal articles in which techniques learned in lectures are applied to specific research topics.

REQUIRED READINGS
One text has been ordered and is available at the bookstore:
SUPPLEMENTARY READINGS

Other readings (i.e., book chapters and journal articles used for discussion) are available on reserve in the graduate student room (Diefenbaker, room 159). If you are looking for an introductory text on statistical methods, I would recommend:


In this course, I assume that most of you have no experience using STATA. I will supply help sheets for using this program, and the statistics “primer” sessions led by Steve White will introduce you to STATA. Should you desire more exhaustive resources, there are many manuals available in the library, bookstore, and online.

EVALUATION

There will be four assignments and one article summary. The first assignment is primarily a written assignment. The other three assignments involve more extensive use of STATA. The second assignment requires a short presentation (of approximately 5-10 minutes) to the class on the results of some basic data analysis. Each student will also be responsible for presenting a summary of one of the various journal articles that will be discussed in this term. More details on the requirements of the article summary will be provided in class. There will be two exams: an in-class mid-term and a final. Neither will require a calculator.

Assignment 1  Bivariate Regression-paper and pencil 10%
Assignment 2  Bivariate Regression-computer 10%
Assignment 3  Multiple Regression 20%
Assignment 4  Logistic Regression 20%
Article summary 10%
Mid-term examination 10%
Final examination 20%
Total: 100%

LATE ASSIGNMENTS

Without compelling reasons, late assignments will not be accepted and will result in a mark of zero.

STUDENTS WITH SPECIAL NEEDS

All students who have special needs are encouraged to register with Disability Services for Students (DSS). Access to most services and programs provided by DSS is restricted to students who have registered with the office. Once you have registered, please contact the professor to discuss accommodations.

ACADEMIC INTEGRITY AND CONDUCT

Ensuring that you understand and follow the principles of academic integrity and conduct as laid out in the University of Regina’s Graduate Calendar and the University of Saskatchewan’s Guidelines for Academic Conduct is vital to your success in graduate school. Ensuring that your work is your own and reflects both your own ideas and those of others incorporated in your work is important: ensuring that you acknowledge the ideas, words, and phrases of others that you use is a vital part of the scholarly endeavour. If you have any questions at all about academic integrity in general or about specific issues, contact your course instructor and to discuss your questions.
Introduction to PUBP 811: Quantitative Methods and Research Design

Session 1 – September 11: Course introduction: overview of statistical analysis

REQUIRED READINGS

SUPPLEMENTARY READINGS

Session 2 – September 18: Introduction to correlation and linear regression: bivariate OLS

REQUIRED READINGS
- Kahane, Regression Basics, Chapter 1; Chapter 2, pp. 19-29.

SUPPLEMENTARY READINGS

Session 3 – September 25: Regression model assumptions and the analysis of residuals

REQUIRED READINGS
- Kahane, Chapter 2, pp. 30-34; Chapter 6, pp. 119-131.
Session 4 – October 2: Hypothesis testing and model performance

REQUIRED READINGS
- Kahane, Chapter 3

Session 5 – October 9: Mid-term review

Session 6 – October 16: Mid-term examination

Session 7 – October 23: The multiple regression model: Partial slopes

REQUIRED READINGS
- Kahane, Chapter 4.

SUPPLEMENTARY READINGS

Session 8 – October 30: Diagnostics and data transformations

REQUIRED READINGS
- Kahane, Chapter 5, pp. 79-83.

Session 9 – November 6: The multiple regression model: interaction effects and dummy variables

REQUIRED READINGS
SUPPLEMENTARY READINGS


Session 10 – November 13: The multiple regression model: choosing a specification

REQUIRED READINGS

- Kahane, Chapter 6, pp. 113-119.

SUPPLEMENTARY READINGS


Session 11 – November 20: Limited dependent variables: logistic regression

REQUIRED READINGS

- Kahane, Chapter 7.

SUPPLEMENTARY READINGS


Session 12 – November 27: Time series data

REQUIRED READINGS

- Kahane, Chapter 5, pp. 101-107; Chapter 6, pp. 127-131.
SUPPLEMENTARY READINGS


Session 13 – December 4: End of term review