Course Objective
Much of the work of public policy analysis involves quantitative methods, particularly statistical methods. This course will provide students with an introduction to basic statistical techniques, as well as one of the most popular statistical packages, Stata. The emphasis will be on enabling students to understand the logic behind statistics, to interpret statistics used in public policy research, to be able to use appropriate statistical methods, to present statistical information in an effective fashion, and to incorporate statistics into their work as policy analysts. Good students will also become skeptical consumers of statistical claims.

Learning Outcomes
At the conclusion of this course, students should:

- be knowledgeable about the general concepts of statistical analyses;
- be knowledgeable about and be able to collect, manage, and manipulate data for statistical analyses;
- possess the skills needed to select statistical methods appropriate for statistical analyses;
- possess the skills needed to interpret and present results based on statistical analyses;
- be knowledgeable about and be able to communicate and present statistical findings to policy makers and other audiences; and
- be proficient at managing and analyzing data using Stata.

Required Course Texts
- Alan C. Acock, A Gentle Introduction to Stata, 5th edition (Stata Press).
- Additional readings, provided by the instructor, may be distributed during the course.

Course Software
- STATA 14 I/C
- Students are recommended to purchase six- or one-year license of Stata I/C GradPlan for $98. The software should come with a copy of the book “Getting Started with STATA”. The homework and paper assignments require students to use Stata. For more information, visit http://www.stata.com/order/new/edu/gradplans/. Alternatively, you could use the computers in the Arlington computer lab. Stata should be installed in all machines in the lab.


**Expectations and Course Assignments**

During class lectures, the instructor will engage students in Stata exercises. These exercises will help students learn how to use Stata and prepare them for homework assignments, exams, and the class paper. Students are expected to save their work resulting from these Stata exercises. Thus, the use of a flash drive to save your work is highly recommended. The data work performed in Stata in previous lectures will be used in the following lectures, so saving your work and have access to it during each lecture is vital.

Most weeks there will be homework assigned. Students will need to have access to a computer that can load the program. When homework assignments are based on Stata exercises, students are required to submit their Stata output along with their answers to the questions. In addition, the instructor will greatly appreciate homework assignments where the Stata output is pasted into a Word document, so that the Stata output used to answer a particular question follows the answer to the respective question.

Students are expected to complete and turn in their homework on time at the beginning of class. Unless previously authorized by the instructor, late homework will not be graded. Homework will be announced each week by the instructor. If you are not present, you should receive the assignment from a classmate with whom you have a prior arrangement. Ignorance of the homework is not an excuse for non-completion.

Homework will be graded based on the instructor’s assessment of the level of effort put forth. It is okay to get the wrong answer on a homework assignment. It is not okay to turn in homework that is incomplete or sloppy.

Homework should reflect your own work and your own understanding of the material. However, some students thrive in a small group environment when studying statistics. If you work through the problems with one to three other people, each person must turn in a separate assignment. They should not be identical in language and in the presentation of computation. If you are not understanding the work, but merely copying someone else’s work, you are not going to be able to pass the midterm or final. Students should also purchase a decent calculator. It does not have to be an expensive “statistics” calculator.
In previous classes, the best predictor of final exam grade was not performance on the midterm, but quality of homework. Put the time into the homework early, and you won’t be weeks behind at the final.

At the end of the semester, each student will be expected to present a statistical analysis paper based on the data from the survey project described below. You may pose any question and use any method we have studied to answer it. If you would prefer to use one of the homework data sets provided to the class by the instructor, that is fine. Findings must be presented to the class in 5-8 minutes, covering the statistics and what they show.

**The GMU Graduate Student Profile Project**

In order to fully understand data collection, analysis, and the uses to which public policy analysts can put data, the class will write a short survey on national and international issues. Each member of the class is required to bring in a completed survey from at least 10 George Mason graduate students. The data set will form the basis for the final homework assignment for each student, as well as the topic of their presentation.

One student will serve as the survey director, responsible for collating all the data and distributing it to the students. Another will serve as the survey designer, responsible for vetting the questions, typesetting the survey, and distributing it to the students. The method of distribution will be paper and/or email.

**The Statistical Analysis Paper**

At the end of the semester, each student will be expected to present a “finding” based on the data from the survey project described below. You may pose any question and use any of these methods: correlation analysis, regression analysis, or cross tabular analysis. If you would prefer to use one of the homework data sets provided by the instructor, that is fine. Your finding will need to be at least 4 pages of text (1,000 words), with at least 2 pages of additional charts and/or tables.

Your finding should follow this format: Introduction, Hypothesis, Data and Methods, Analysis, Conclusion. You do not need to conduct a literature review. The paper should be doubled spaced, numbered, and stapled.

Time permitting, you will present to the class your finding, in 5-8 minutes. Presentations will be graded and are worth 10 percent of the paper’s grade. Students are strongly encouraged to use PowerPoint for their presentations.

Papers not turned in to the professor at the beginning of the class the papers are due will be considered late. Papers that are late will be lowered a grade for each day it is delayed. However, no matter how late, an assignment will not receive a zero; it will always be better to turn in an assignment late than to accept a zero on an assignment.
Grades
Grades will be computed based on the following formula:
Midterm  20%
Final    40%
Homework 20% (the average of all the assignments)
Paper & Presentation 20%

Course Topics:
Each course topic is expected to last for at least one lecture session. Some may last longer, some less, depending on the class.

Reading: Berman and Wang, Chapters 1, 2, 3, and 4

No Class on Labor Day, September 5

II. September 12: Introduction to Stata and Survey Project
Reading: Berman and Wang, Chapters 5
Acock, “Support materials for the book,” and Chapters 1, 2, 3, and 4

III. September 19: Basic Statistics: Central Tendency and Dispersion
Readings: Berman and Wang, Chapters 6 and 7
Acock, Chapter 5

IV. September 26: Crosstab Analysis, Normal Distribution, and Z Scores
Readings: Berman and Wang, Chapters 7 (review), 8 and 9
Acock, Chapter 6 (pp. 123-127)

V. October 3: Probability and Sampling Basics

VI. October 11 (Tuesday): Hypothesis Testing and Confidence Intervals
Readings: Berman and Wang, Chapters 10 and 11
Acock, Chapters 6 and 7

VII. October 17: More Hypothesis Testing
Readings: Berman and Wang, Chapter 12
Acock, Chapter 7

October 24: In-Class Midterm Exam

VIII. October 31: Analysis of Variance and Correlations
Readings: Berman and Wang, Chapters 13 and 14 (pp. 245-249)
Acock, Chapters 8 (pp. 189-207) and 9

IX. November 7: Regression
Readings: Berman and Wang, Chapter 14
Acock, Chapter 8 (pp. 207-217)

X. November 14: Multiple Regression Models
Readings: Berman and Wang, Chapter 15
Acock, Chapter 10

XI. November 21: Logistic Regressions
Readings: Berman and Wang, Chapter 16
Acock, Chapter 11

November 23-27, Thanksgiving Recess

XII November 28: Residuals, Diagnostics and Paper Presentations
Readings: Berman and Wang, Chapter 15 (pp. 263-272)
Acock, Chapter 10 (pp. 284-294)

XIII. December 5: Final Papers Due, Continuation of Paper Presentations, Final Exam Review

December 19: FINAL EXAM, 7:30 pm – 10:15 pm
http://registrar.gmu.edu/calendars/fall-2016-semester/final-exams/

Schar School Policy on Plagiarism
The profession of scholarship and the intellectual life of a university as well as the field of public policy inquiry depend fundamentally on a foundation of trust. Thus any act of plagiarism strikes at the heart of the meaning of the university and the purpose of the Schar School of Policy and Government. It constitutes a serious breach of professional ethics and it is unacceptable.

Plagiarism is the use of another’s words or ideas presented as one’s own. It includes, among other things, the use of specific words, ideas, or frameworks that are the product of another’s work. Honesty and thoroughness in citing sources is essential to professional accountability and personal responsibility. Appropriate citation is necessary so that arguments, evidence, and claims can be critically examined.

Plagiarism is wrong because of the injustice it does to the person whose ideas are stolen. But it is also wrong because it constitutes lying to one’s professional colleagues. From a prudential perspective, it is shortsighted and self-defeating, and it can ruin a professional career.

The faculty of the Schar School takes plagiarism seriously and has adopted a zero tolerance policy. Any plagiarized assignment will receive an automatic grade of “F.” This may lead to failure for the course, resulting in dismissal from the University. This dismissal will be noted on the student’s transcript. For foreign students who are on a university-sponsored visa (eg. F-1, J-1 or J-2), dismissal also results in the
revocation of their visa.

To help enforce the Schar School policy on plagiarism, all written work submitted in partial fulfillment of course or degree requirements must be available in electronic form so that it can be compared with electronic databases, as well as submitted to commercial services to which the School subscribes. Faculty may at any time submit student’s work without prior permission from the student. Individual instructors may require that written work be submitted in electronic as well as printed form. The Schar School policy on plagiarism is supplementary to the George Mason University Honor Code; it is not intended to replace it or substitute for it.

**Academic Accommodation for a Disability**

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through the DRC.