Quantitative Methods in International Relations

American University • School of International Service

SIS-806 • Fall 2017

Course Information:

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Office Hours: Mondays 2:30-4:00; Wednesdays 4:30-6:00; Thursdays 4:30-5:30

Course Meeting Time: Mondays 11:20-2:10

Meeting Location: SIS 348

Course Description and Objectives

The purpose of this course is to provide you with a basic set of statistical analysis skills that will allow you to be an informed consumer and producer of statistical knowledge, as well as prepare you for future statistics courses, should you wish to take them. The course first covers descriptive statistics, data sources, and how to present data clearly in tables and figures. We then move on to bivariate comparison of two variables at a time, and conclude with multiple regression analysis, which allows for the simultaneous assessment of the effect of different factors on an outcome of interest. We will cover techniques for both continuous and categorical dependent variables (ordinary least squares and logistic regression, respectively), as well as briefly touch on panel data. As part of the course, you will learn how to use Stata software.

Learning Outcomes

By the end of the course you will be able to:

1) Ask research questions relevant to the field of international affairs and apply the appropriate statistical techniques to answer them
2) Write a research paper of publishable quality based on original quantitative data analysis
3) Interpret and critique quantitative analyses commonly found in international affairs journals (e.g., *International Studies Quarterly*, *World Development*, and *World Politics*)

With specific reference to statistics, by the end of the course you will be able to:

♦ Present data in figures and tables using Microsoft Excel and Word
♦ Interpret results of commonly performed statistical procedures
♦ Conduct descriptive, bivariate, and multivariate analyses using statistical software (Stata)

Texts
- ♦ <u>Required</u> - Kellstedt, Paul M. and Guy D. Whitten. 2013. *The Fundamentals of Political Science Research*, 2nd Edition. New York: Cambridge University Press.

The book retails for $45 on Amazon, there are used copies available for ~$40, you can rent for the semester for $21, and there is a copy on reserve at AU's library. There is a first edition (2009); I will teach from the pagination and examples of the 2nd (2013) edition.

All other readings (articles, sections of other textbooks, etc.) will be available through the course's Blackboard page.

Software

The course will be based on Stata, an all-purpose statistical analysis software package for the social sciences. You need never have used statistical analysis software to be successful in the course as much of our time will be spent learning and applying relevant commands. Homework assignments and the research paper require the use of Stata, and we will use it frequently in class, so you will need to bring a laptop with you. You have several options to access Stata:

- ♦ <u>Recommended</u> - buy a six-month ($45) or one year ($89) license of "Stata/IC" (http://www.stata.com/order/new/edu/gradplans/student-pricing/), available for either Windows or Mac. Or, if you anticipate using statistical analysis regularly throughout graduate school, you should consider buying a perpetual license ($198).
- ♦ Access through the Virtual Computing Lab (VCL), available anywhere campus that has an internet connection. Details are available at http://www.american.edu/vcl/index.cfm

Background Knowledge

The most important thing to remember for this course is that statistics is not about math, it is about adjudicating between rival arguments. Statistics is thus about using evidence in a systematic way to determine which theories we should treat as more true/correct among the competing alternatives. In addition, even if you are skeptical about numerical analysis and positivist claims—and we will talk about these issues some—the course will proceed from the assumption that social categories and phenomena can be usefully represented using numbers. The seriousness with which your critiques will be taken can only be increased by your knowledge of that which you are criticizing.[1]

The course presumes that you have participated in the math "bootcamp" offered for two days the week before classes start (recommended), or that you are already familiar with the material covered by the bootcamp. The bootcamp covers the notation and basic concepts used in the book, and while the course is not heavily math oriented and does not emphasize calculation, we will at times use math in order to better understand a statistical concept.

Course Activities
- ♦ *Pragmatics* The course meets once a week for 14 weeks, excluding the week of Labor Day (9/4/17). Each class lasts two hours and forty minutes, and we will always take a

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[1] With thanks to Stephen Vaisey for the language in this paragraph!

10-minute break in the middle of class to stretch and have a snack. We will organize collective snack sign-up for the semester during the first meeting. You are welcome to eat food during class.

♦ *Class Time* Class time will be divided between lectures, Q&A, discussion of examples of statistics in the published literature and learning Stata and accessing data on your laptop.

♦ *Homework* There are 6 homework assignments. They include problems to solve, practice interpreting statistics from published materials, and Stata exercises. You will need a basic calculator. Assignments will be posted on the course's Blackboard site. *Research Project* The research project will provide you with an opportunity to practice asking a research question, familiarizing yourself with the relevant literature, finding and analyzing data to answer your question, and presenting the results in both visual and written form. The final paper will include an original, statistical analysis of data pertinent to your question. You will receive feedback on your paper at several points during the semester, and you will give an oral presentation of your findings on the last day of class (12/4/17).

♦ *Exams* The course has two exams. The midterm, taken in week eight, covers the first six weeks of material. It does not require use of Stata, but does require interpretation of Stata output. Calculation is not the emphasis, but some is required, so you will need a basic calculator. The final, taken during the course's scheduled exam time on 12/11/17 will require use of Stata and also focus on interpretation of statistical results in published literature.

Evaluation
Your final grade is out of 1,000 points and has four components:

Midterm Exam	15%	150 points
Homework	30%	6 assignments worth 50 points each
Research Project	40%	50 points- literature review 25 points- data set 75 points- 1st Draft Analysis 75 points- Presentation 25 points- Peer Review 150 points- final paper
Final Exam	15%	150 points

Homework is graded on a √+, √, √-, √-- (etc.) basis, where a √+ corresponds to 50 points, a √ to 45 points, a √- to 40 points, and so forth. Your homework may be typed or handwritten, and the pages should be stapled together. If you write up your homework by hand, please try to be at neat as possible. It is OK to use Excel for its calculating capabilities, but please do not use the formula commands. I encourage you to work together on homework, but ask that you please write up your own assignment.

At the end of the semester, your total points will be converted to a letter grade based on the following schema:

> ➤ A 95% and higher
> ➤ A-90-94.9%
> ➤ B+ 87-89.9%
> ➤ B 83.5-86.9%
> ➤ B- 80-83.4%
> ➤ C+ 77-79.9%
> ➤ C 73.5-76.9%
> ➤ C-70-73.4%

An "A" means outstanding work, a "B" good work, a "C" satisfactory work, a "D" unsatisfactory and/or incomplete work, and an "F" below minimum-standard work.

Participation, which includes coming to class, asking questions, and contributing to discussions, is expected and so therefore is not attributed a specific percentage of the total grade.

Policies

♦ As members of the same intellectual community, we benefit from one another's insights and presence, so your attendance at all class sessions is expected. If you miss class, please be sure to contact your peers for notes and information on assignments (email addresses are available through Blackboard).

♦ The best way to communicate with me is by coming to my office hours. If you cannot come to my office hours, I am willing to try to schedule appointments for other times (which may need to be by phone or Skype). Logistical questions that are not answered on the syllabus can be asked by email or in class. Substantive questions about course content or about assignments can be raised in class or in office hours—I find that email discussions of such topics are not always an efficient use of your or my time. I will not answer emails received over the weekend until Monday. Finally, remember your classmates as resources.

♦ Homework assignments must be turned in during class *in hard copy*. Homework assignments will not be accepted late, as we will always discuss them immediately following their completion.

♦ All research paper assignments are to be turned in *electronically* via Blackboard by the beginning of class the day they are due. Please upload assignments as Word/Excel documents (not PDFs), and do not write me comments in Blackboard. (Comments should be in the Word/Excel file, or sent via email.) For assignments related to the research paper, I will automatically grant you a 24-hour extension *if and only if it is requested at least 24 hours before the due date*. The grades of late papers (those turned in anytime after class the day the paper was due, or anytime after a 24-hour extension) will be reduced by one letter grade and will be accepted no later than a week after the original due date.

♦ All requests for grade changes must be made in writing, and submitted to me in person within one week of the return of the test/assignment. I reserve the right to increase or decrease a disputed grade.

Additional Support
If you experience difficulty in this course for any reason, or if you anticipate experiencing difficulties of any sort, please don't hesitate to consult with me. In addition to what I can offer, a wide range of services is available to support you in your efforts to meet the course requirements:

♦ The **Academic Support and Access Center** (x3360, MGC 243, http://www.american.edu/ocl/asac/index.cfm) offers individual academic counseling, skills workshops, tutor referrals, supplemental Instruction, and writing appointments. Writing support is also available from the College of Arts and Sciences Writing Center (Bender Library first floor, http://www.american.edu/cas/writing/). If you qualify for accommodations because of a disability, please notify me in a timely manner with a letter from the Academic Support and Access Center so that we can make arrangements to address your needs.

♦ **Ask a Librarian** (http://www.american.edu/library/ask/index.cfm) allows you to IM a reference librarian, and has links to other helpful parts of the library's web site.

♦ The **Counseling Center** (x3500, MGC 214, http://www.american.edu/ocl/counseling/) offers counseling and consultations regarding personal concerns, self-help information, and connections to off-campus mental health resources.

Green Teaching
This is a Certified Green Course. This means, for example, that I will try to limit the number of printed materials I hand out, and that I will use Blackboard extensively to post handouts, collect assignments, and provide you with feedback on assignments. To help make our class as green as possible, I encourage you to buy used books, minimize paper use by submitting assignments electronically as instructed, and read course readings online rather than printing copies. If you choose to print, please print double-sided or on paper that has already been used on one side, and recycle the paper after the end of the semester.

Academic Integrity
University policies on academic integrity (this includes plagiarism!) will be strictly enforced. By registering, you have acknowledged your awareness of the Academic Integrity Code (http://www.american.edu/academics/integrity/code.cfm), and you are obliged to become familiar with your rights and responsibilities as defined by the Code.

To plagiarize is to use the work, ideas, or words of someone else without attribution. Plagiarism may involve using someone else's wording without using quotation marks – a distinctive name, a phrase, a sentence, or an entire passage or essay. It may also involve misrepresenting the sources that were used.

Plagiarism is a very serious offense. If you are unsure about whether or not something might be considered plagiarism, please speak to me or to someone at the Writing Center.

Emergency Preparedness
In the event of an emergency (including a declared pandemic), American University will implement a plan for meeting the needs of all members of the university community. Should the university be required to close for a period of time, we are committed to ensuring that all aspects of our educational programs will be delivered to our students. These may include altering and extending the duration of the traditional term schedule to complete essential instruction in the traditional format and/or use of distance instructional methods. Specific strategies will vary from class to class, depending on the format of the course and the timing of the emergency. Faculty will communicate class-specific information to students via AU e-mail and Blackboard, while students must inform their faculty immediately of any absence. Students are responsible for checking their AU e-mail regularly and keeping themselves informed of emergencies. In the event of an emergency, students should refer to the AU Web site (www.prepared.american.edu) and the AU information line at (202) 885-1100 for general university-wide information, as well as contact their faculty and/or respective dean's office for course and school/college-specific information.

My Teaching Philosophy
Successful learning means mastering the relevant subject matter as well as acquiring and practicing associated skills. As a teacher, it is my responsibility to 1) foster an environment where all students can learn, 2) equip students with the tools necessary for that learning to occur, and 3) provide necessary support along the way. I will try to anticipate your needs, but it your responsibility to let me know if your needs are not being met. To that end, I will ask you to complete a mid-term evaluation of my teaching and the course overall, and welcome your feedback at any point.

Additional Resources
- *Data Wiki* http://quantitativeanalysissis600.pbwiki.com/?pwd=8FmENQWisN I will authorize everyone to add materials to the Wiki.
- *Center for Teaching, Learning, and Research Stata Resources* Provides written tutorials (http://www.american.edu/ctrl/software_stata.cfm)
- *AU Library's List of Statistics Databases* http://subjectguides.library.american.edu/sb.php?subject_id=37531
- *iTunes Statistics Tutorials* (https://itunes.apple.com/itunes-u/statistics-tutorials-stata/id438297258#ls=1) Includes eight tutorials on Stata.
- *Center for Teaching, Research, and Learning (CTRL) Lab* Located in Hurst 202, this computer lab is staffed by graduate students knowledgeable about statistics and Stata who are paid to help you! (http://www.american.edu/ctrl/lab.cfm) The lab's phone number is (202) 885-3862 and its hours are:

Monday-Thursday	9:30 am – 8:30 pm
Friday	9:30 am – 7:00 pm
Saturday	12:00 pm – 7:00 pm
Sunday	Closed

- *StatSoft Electronic Textbook* Online textbook with clear descriptions of statistical concepts, from the basic to the complex (http://www.statsoft.com/textbook/stathome.html)

- *The Math Forum* An amazing resource for all things math, including a database of problems and their solutions, with commentary from math experts (http://mathforum.org/)
- *UCLA Stat Computing Portal* Includes links to a variety of online statistics resources, organized by software (including Stata) and type of analysis (multilevel, survey, etc.) (http://www.ats.ucla.edu/stat/)
- *Web Center for Social Research Methods* Includes a neat statistical "advisor" (under "Selecting Statistics") that helps you select the appropriate statistics to use (http://www.socialresearchmethods.net/)

Detailed Schedule

You are expected to have completed readings and assignments *before* class time. K&W = Kellstedt and Whitten (2013).

Week	Date	Readings	Assignment
1	Aug. 28	*Introduction* ▪ Bergh, Andreas and Therese Nilsson. 2010. "Good for Living? On the Relationship between Globalization and Life Expectancy." *World Development* 38:1191-1203. ▪ K&W Chapter 1, "Scientific Study of Politics," and Chapter 3, "Evaluating Causal Relationships" ▪ Edwards, Paul N. "How to Read a Book, v. 5.0" http://pne.people.si.umich.edu/PDF/howtoread.pdf	None
2	Sept. 5	*Probability* ▪ K&W Chapter 6, "Probability and Statistical Inference" ▪ Auerbach, Adam Michael. 2016. "Clients and Communities: The Political Economy of Party Network Organization and Development in India's Urban Slums." *World Politics* 68(1):111-48.	HW 1
3	Sept. 11	*Research Questions, Lit Reviews, Data Sources* ▪ K&W Chapter 4, "Research Design," and Chapter 5.1-5.8, "Getting to Know Your Data" ▪ King, Charles, "How to Write a Research Paper." http://www9.georgetown.edu/faculty/kingch/How_to_Write_a_Research_Paper.htm ▪ Luker, Kristin. 2008. "What is This a Case of, Anyway?" Ch. 4 (p. 51-69) in *Salsa Dancing Into the Social Sciences: Research in an Age of Info-Glut*. Cambridge, MA: Harvard University Press. ▪ Knopf, Jeffrey W. 2006. "Doing a Literature Review." *PS: Political Science and Politics*. 39(1): 127-132.	HW 2
4	Sept. 18	*Bivariate Hypothesis Testing* ▪ K&W Chapter 7, "Bivariate Hypothesis Testing"	Paper proposal

Week	Date	Readings	Assignment
		▪ Wasserstein, Ronald L., and Nicole A. Lazar. 2016. "The ASA's Statement on p-Values: Context, Process, and Purpose." *The American Statistician* 70(2):129-33.	
5	Sept. 25	*Bivariate Regression* ▪ K&W Chapter 8, "Bivariate Regression" ▪ Eisenstadt, Todd A., A. Carl LeVan, and Tofigh Maboudi. 2015. "When Talk Trumps Text: The Democratizing Effects of Deliberation during Constitution-Making, 1974–2011." *American Political Science Review* 109(03):592-612.	HW 3
6	Oct. 2 ***3:30-6!!***	*Multiple Regression* ▪ K&W Chapter 9, "Multiple Regression" ▪ Lall, Ranjit. 2017. "Beyond Institutional Design: Explaining the Performance of International Organizations." *International Organization* 71(2):245-80.	HW 4
7	Oct. 9	*Model Refinement* ▪ K&W Chapter 10, "Model Specification"	Lit review
8	Oct. 16	*Midterm Exam (covers material through week 6)*	None
9	Oct. 23	*Regression Continued: Logistic Regression* ▪ K&W 11.2, "Dummy Dependent Variables" ▪ Wig, Tore. 2016. "Peace from the past: Pre-colonial political institutions and civil wars in Africa." *Journal of Peace Research* 53(4):509-24.	Draft data set
10	Oct. 30	*Data Analysis for Paper Project* ▪ Grassi, Davide, and Vincenzo Memoli. 2016. "Political Determinants of State Capacity in Latin America." *World Development* 88:94-106.	Draft data analysis tables
11	Nov. 6	*Regression Continued: Time Series* ▪ K&W 11.3	Draft data analysis write-up
12	Nov. 13	*Other Types of Regression* ▪ Girod, Desha M., and Jennifer L. Tobin. 2016. "Take the Money and Run: The Determinants of Compliance with Aid Agreements." *International Organization* 70(01):209-39.	HW 5
	Nov. 20	*NO CLASS!!*	
13	Nov. 27	*Topic TBD – Survey data? Experiments?* ▪ Readings TBD	HW 6
14	Dec. 4	*Research Paper Presentations*	None

Dec. 8 (Friday) *Final paper due to Blackboard by 5 pm*
Dec. 11 (Monday) *Final exam, 11:20 am-1:50 pm*