POLS 418/GEOG 418: Quantitative Methods
Fall 2018

CRN 18853/18852
Tuesday and Thursday11:00 AM- 12:15 PM
Batten Arts & Letters 3070

Assistant Professor Joshua N. Zingher, Ph.D.
Department of Political Science & Geography
Office: Batten Arts & Letters 7016

Contact:
Email: jzingher@odu.edu
Phone: 757-683-6036 (direct)

Fall 2018 Office Hours:
Monday 10:00 to 11:30 AM
Friday 10:00 to 11:30 AM

Catalogue Description and Objectives

This course is a survey of and practicum in the basic techniques of quantitative research, including measurement, data description, hypothesis testing, and the use of appropriate statistical techniques. This hands-on course uses STATA, a software package of standard statistical methods, to help you analyze data and report findings. Although the course involves some math, it focuses on the practical applications of those statistical methods that you will find commonly used in the social and physical sciences. Students will undertake practical book and computer exercises that require critical thinking and analytical skills. The course covers a variety of topics in quantitative methods, including the identification and development of concepts; formulation of hypotheses and specification of corresponding models; use of descriptive statistics including graphs and cross tabulation; techniques of sampling and corresponding logics of inference; measurement of associations and tests of significance; and bivariate, multivariate, and logistic regression. When the student has completed the course, he or she will possess (a) a working knowledge of basic statistical techniques in social and physical sciences; (b) the knowledge to read, comprehend and criticize existing studies that utilize these techniques; and (c) the skills to apply these statistical techniques, in conjunction with STATA, to test hypotheses as part of a comprehensive research design.

Prerequisites

The course assumes students possess a basic understanding of descriptive statistics and the fundamentals of research design, as elaborated in Statistics 130M: Elementary Statistics and Political Science/Geography 308: Research Design. ***Both*** courses are pre-requisites for this course. If you have not successfully completed both courses you will not be allowed to take POLS/GEO 418

In addition, students must have an ODU email account and password with which to access course materials and information through the Blackboard system. An email account with an off-campus service provider (such Gmail) will not provide you the access to materials you need.

Required Books

Pollock III, Philip H. 2016. *The Essentials of Political Analysis*. Fifth Edition. Washington, DC: CQ Press. ISBN 978-1-5063-5083-7 available at amazon.com.

and optional companion:

Pollock III, Philip H. 2015. *An STATA Companion to Political Analysis*. Third Edition. Washington, DC: CQ Press. ISBN 978-1-4522-4042-8 available at amazon.com.

Please note that you can order the two Pollock books as a single bundle that saves you about $30. The ISBN for the bundled package is 978-1-5063-2901-7 available at cqpress.com.

Required Software

We will use STATA/IC v. 15 this semester.

I recommend you purchase a student version of STATA. We will be able to secure a group discount as part of the course. A six-month license will cost you around $45. You should bring your laptop to class. We will be learning how to utilize the software in basically every class meeting. If you do not have a laptop talk with me and we can make arrangements.

Course Requirements and Evaluation

Student grades are based upon three elements of the course:

1. **Exams** (each worth 20 percent of your grade): The student will take two exams, the first on **October 25th** and the second on **December 11th**. Exams will cover all required reading materials, lectures, and problem set assignments. You should be prepared to take exams on the scheduled dates and at the start of class. Examinations will end five minutes prior to the end of the scheduled class time. I reserve the right to change the dates of exams if we must adjust our schedule due to inclement weather or other unforeseen circumstances.

2. **Problem Sets** (60 percent): The student will complete six problem sets throughout the term, due on the dates as specified in the Course Plan and Schedule section. I have designed problem sets to assess your understanding of the course materials presented in lecture and in the readings. *Problem sets are due at the beginning of class on the dates specified below.* I will post problem sets and any associated data sets to the course's Blackboard page. Students should expect to receive their problem sets from Blackboard.

    I expect you to type your problem sets. Do not include a cover page for your problem sets. However, you should **include the following information in the upper left-hand corner** of every page of your problem set: your name, the problem set number, the due date, and the date you submit the work. Please staple together all sheets of your problem set. I will penalize your problem set if it does not satisfy these guidelines.

Scoring and Quality of Work

I maintain rigorous standards for this class and expect students to provide high-quality work. When grading, I expect the student's work to demonstrate (a) a thorough understanding of the subject matter and how it applies beyond the materials we discuss in the course; (b) precision and clarity of thought and writing; and (c) neat and orderly presentation. On problem sets, I will award grades of 9 or 10 only to work that is exceptional or superior in its mastery of course materials, techniques, and concepts, in its presentation of its findings, and in the clarity and incisiveness of its analysis. I will award grades of 8 to 9 to work that is well written, and that demonstrates an understanding of the subject matter. Students who demonstrate a satisfactory understanding of the material will receive grades in the range of 7 to 8. Grades below a 7 indicate non-satisfactory work. A student who regularly receives a 7 or below on their problem sets should arrange to meet with me immediately to discuss how we may improve their performance in the course. Please note that the quality of your presentation matters: slipshod presentation of tables and graphs will cost you points.

Exams consist of multiple-choice questions; identification questions, graphical and tabular analysis, and short-answer questions. Except for this last category, all questions are objective, with only one correct answer. On short-answer questions, I assign points according to the student's mastery of the concepts and problems raised in the question. The best short answers use clear prose, complete sentences, define any necessary terms, and fully explore the issues raised in the question.

Final Letter Grades

Student's final letter grades are based on a "double curve." First, I curve student grades for each of the three exams by taking the highest scoring exam, subtracting this from 100, and adding the difference to everyone's score. For example, if the highest score on an exam is a 78, then each raw score will be adjusted by (100 – 78) = 22 points. Thus a 78 would be curved to a 100, and a 60 would become an 82. By construction, then, this curve pulls everyone's scores up.

At the end of the semester, I tally each student's total points and standardize all scores (we will learn how to standardize variables this semester). A student's letter grade is determined by how

many standard deviations above or below the mean his or her total points are. Based on your on-time completion of the required assignments and your adherence to the University's honor code (see below), I will assign you a final grade from the following grade scale:

Standard Deviations from the mean	Final Grade
+1 or more	A
+0.8 to +1	A–
+0.6 to +0.8	B+
+0.3 to +0.6	B
0 to +0.3	B–
-0 to -0.3	C+
-0.3 to -0.7	C
-0.7 to -1.0	C–
-1 to -1.3	D+
-1.3 to -1.5	D
-1.5 to -1.8	D–
less than -1.8	F

Given the complexity of this grading system, I will provide you with updates on your course performance after the midterm exam.

Attendance

Attendance is **mandatory**. I reserve the right to ***drop or fail*** any student who misses ***more than half*** of the classes or ***three consecutive*** classes. In my experience, students who fail to attend class regularly perform poorly both on problem sets and examinations. Because your course grade is set by a curve, furthermore, your failure to attend class regularly simply serves to push your grade further down the curve while elevating the grades of those who do attend class. For this reason, I do not impose a grade penalty on students who do not attend class: the curve will penalize you sufficiently. If you cannot attend class, I expect you to notify me at least 12 hours before class begins (i.e. no later than the afternoon before we meet). With prior notification, I can arrange to provide with any course materials you may have missed. Otherwise, my policies on late work (see below) will apply.

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Important Course Information

All University policies are in full force and effect in this course.

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College Classroom Conduct
The following standards are intended to define acceptable classroom behavior that preserves academic integrity and ensures that students have optimum environmental conditions for effective learning.

1. Students must turn off cell phones and pagers during class or have them set to vibrate mode.
2. Classes are expected to begin on time, and students will respect the time boundaries established by the professor. If classroom doors are locked, students may not knock or seek entrance in other ways.
3. Students should notify instructors in advance when a class will be missed. In the event of an emergency that causes a class to be missed, instructors must be notified as soon as possible.
4. Instructors may require that cell phones and other electronic devices be left on their desks during tests or examinations.
5. Students must not engage in extraneous conversations during classes. Such acts are considered to be violations of the Code of Student Conduct.
6. Students will activate their Old Dominion email accounts and check them before each class. If the student chooses to have his/her messages forwarded to another account, it is the student's responsibility to take the necessary steps to have them forwarded.
7. Consumption of food and drink during class is prohibited, except when the professor has specifically approved of such acts.
8. Offensive language, gestures and the like are disrespectful and disruptive to the teaching-learning process. [http://studentservices.odu.edu/osja/ccc_pamphlet.pdf]

Honor Code: The Old Dominion University Honor Code is in effect at all times in this class. Your name on an exam, paper, or homework assignment constitutes your acceptance of the Honor Code:

> "I pledge to support the Honor System of Old Dominion University. I will refrain from any form of dishonesty or deception such as lying, cheating, and plagiarism, which are honor violations. I am further aware that as a member of the academic community it is my responsibility to turn all suspected violators of the Honor System. I will report to an Honor Council hearing as summoned."

Plagiarism: "A student will have committed plagiarism if he or she reproduces someone else's work without acknowledging its source; or if a source is cited which the student has not cited or used. Examples of plagiarism include: submitting a research paper obtained from a commercial research service, the Internet, or from another student as if it were original work; making simple changes to borrowed materials while leaving the organization, content, or phraseology intact; or copying material from a source, supplying proper documentation, but leaving out quotation marks. Plagiarism also occurs in a group project if one or more of the members of the group does none of the group's work and participates in none of the group's activities, but attempts to take credit for the work of the group." Plagiarism will not be tolerated in this class. (For more information: http://al.odu.edu/al/resources/About%20Plagiarism2.doc)

Late Assignments: Punctuality is essential. In order to incentive punctuality, late assignments will be penalized one letter grade per class meeting late. If you know in advance that you will be forced to turn in an assignment late due to travel, illness, sports, clubs etc… Contact me before the class the assignment is due to make alternate arrangements.

Sexual Harassment: Sexual harassment is defined as unwelcomed and unsolicited conduct of a sexual nature, physical or verbal, by a member of the university community of the opposite sex (or the same sex) in an official university position. Sexual harassment in any situation is

prohibited. It is the policy of Old Dominion University to provide students and employees with an environment for learning and working which is free of sexual harassment whether by members of the same sex or the opposite sex, which is prohibited by Title IX of the Education Amendments of 1972 and Title VII of the 1964 Civil Rights Act. (For more information: http://www.odu.edu/ao/polnproc/pdfs/6320.pdf)

Students with Special Needs: In compliance with PL94-142 and federal legislation affirming the rights of disabled individuals, provisions will be made for students with special needs on an individual basis. The student must be identified as "special needs" by the university and provide a letter from the Office of Educational Accessibility (OEA) located in 1525 Webb Center. Any accommodations will be based upon written guidelines from the OEA. Students needing academic adjustments or accommodations because of a documented disability must present their Faculty Letter from the Accessible Education Office (AEO) and speak with the professor by the end of the second week of the term, *(September 8)*. Failure to do so may result in the Course Head's inability to respond in a timely manner. All discussions will remain confidential, although I may contact AEO to discuss appropriate implementation. All students are expected to fulfill all course requirements.

E-mail: Students are required to use valid Old Dominion University email accounts to send official information and notices and are held responsible for accessing electronic mail to obtain official University communications. Students should use their secure ODU email account to communicate with professors.

Course Evaluations: Student evaluations provide important feedback for me, and they are an essential component of departmental and university-wide measures of teaching effectiveness. Please fill them out when the time arrives.

Career Management Center: The Career Management Center offers a Career Advantage Program, which provides opportunities to gain work experience related to your major through internships, cooperative education or practical experience outside the classroom. The College of Arts and Letters has career coaches to assist in this process by providing help with resumes, cover letters, job search strategies, and interviewing skills. You may stop by the office in BAL 1006 (tel. 757-683-4388) or email cmc@odu.edu for more information. Their website is http://www.odu.edu/ao/cmc/index.php.

Disclaimer
This syllabus is subject to change with notice. Any changes will be posted to the course website and either e-mailed OR announced in class, or both.

Course Schedule

Part 1: Introduction and Measurement

August 28th: Course Overview—What are Quantitative Methods and Data Management
  Reading: Pollock (Introduction)

August 30th: No Class—APSA Conference

September 4th: Measurement—Defining Variables and Accuracy/Validity
  Reading: Pollock (Chapter 1)
  Assignment: Problem Set 1

September 6th Measurement—Defining Variables and Accuracy/Validity

September 11[th:]: Measurement II—The Different Types of Variables
  Reading: Pollock (Chapter 2)

September 13th: an Introduction to STATA

Part II: Hypothesis Testing and Design

September 18th: Hypothesis Testing—The Logic of Comparisons
  Reading: Pollock (Chapter 3)
  Due: Problem Set 1
  Assignment: Problem Set 2

September 20th: Hypothesis Testing—The Logic of Comparisons

September 25th: Hypothesis Testing II Research Design—The Logic of Control
  Reading: Pollock (Chapter 4)

September 27th: Some Examples in STATA

October 2nd: Research Design III—The Different Types of Associations Between Variables
  Reading: Pollock (Chapter 5)

October 4th: Research Design III—Examples in STATA
Due: Problem Set 2
Assignment: Problem Set 3

Part III: Statistical Inference

October 9th: No Class—Fall Break

October 11th: Foundations I
Reading: Pollock (Chapter 6)

October 16th: Foundations II

October 18th: Significance Tests
Reading: Pollock (Chapter 7)

October 23rd: Significance Tests II

October 25th: ***Midterm Exam***
Due: Problem Set 3
Assignment: Problem Set 4

Part IV: Regression Analysis

October 30th: Correlation and Bivariate Regression
Reading: Pollock (Chapter 8)

November 1st: Correlation and Bivariate Regression

November 6th: Multiple Regression I

November 8th: Multiple Regression II
Due: Problem Set 4
Assignment: Problem Set 5

November 13th: Multiple Regression III

November 15th: Multiple Regression IV

November 20th: Multiple Regression V
Due: Problem Set 5

November 22nd: No Class--Thanksgiving

November 27th: Logistic Regression I
Reading: Pollock (Chapter 9)
Assignment: Problem Set 6

November 29th: Logistic Regression II

December 4th: Logistic Regression III

December 6th: Open Date/Review for final exam

Due: Problem Set 6

December 11th: **Final Exam** (12:30-3:30 PM)

About Plagiarism: A Guide for College of Arts and Letters Students[1]

What is plagiarism?

The ODU *Catalog* defines plagiarism as follows: "A student will have committed plagiarism if he or she reproduces someone else's work without acknowledging its source; or if a source is cited which the student has not cited or used. Examples of plagiarism include: submitting a research paper obtained from a commercial research service, the Internet, or from another student as if it were original work; making simple changes to borrowed materials while leaving the organization, content, or phraseology intact; or copying material from a source, supplying proper documentation, but leaving out quotation marks. Plagiarism also occurs in a group project if one or more of the members of the group does none of the group's work and participates in none of the group's activities, but attempts to take credit for the work of the group."

Hints for Avoiding Plagiarism:

- *More than three words copied in sequence is plagiarism.* This is ordinarily a good yardstick to use when wondering whether or not quotes are appropriate; they are, if you are copying more than three words in sequence that are not part of a common phrase (e.g. "up-to-date").
- *One source is not "common knowledge."* Common knowledge does not require citation. But something is not common knowledge if you have found just one source for the information.
- When in doubt, cite! If you have any doubt about whether or not to cite a source, err on the side of making the attribution.
- *If your co-author sounds surprisingly eloquent, make sure the contribution is his/her own.* We often work in groups and co-author papers and projects. You should ask the question of your co-author if you doubt the work is his/her own. In group work, you are responsible for the project/paper in its entirety.
- *Look away.* When you are writing, do not have open books or papers in front of you as you type. Read your sources, and then put what you have read into your own words.
- *Writing is hard work.* Paraphrasing is relatively easy, writing is hard. Learning to be a good writer is part of what your college education is about. Staring at an empty screen does become less daunting over time!
- *Just because it's on the Internet, doesn't mean it's yours.* The Internet is a fantastic resource and search engines are terrific research tools. But what you find on the Internet was written by someone. You must cite Internet web sites, and if you use a quote, use appropriate quotation procedures.
- *Paraphrasing is more than changing a verb tense or reordering a list.* Essentially, paraphrasing is used to summarize another author's text. A paraphrased passage must be cited.

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[1] This information is adapted from a guide developed by Old Dominion University's College of Business and Public Administration.

- *Use a Style Guide.* Purchase a style guide and refer to it. Your instructor may suggest one that is specific to an academic discipline. You may also ask a reference librarian for recommendations.

The High Cost of Plagiarism

Plagiarism can ruin your reputation and cost you your professional career, along with the respect of your peers and family. Plagiarism at Old Dominion University is an act of academic dishonesty that has serious consequences. Note that plagiarism is specifically covered in the ODU Honor Pledge. Refer to your course syllabus and the Student *Handbook* and the Office of Student Affairs for details about sanctions and penalties for this behavior.