Political Analysis (PLS 300-01) Winter 2018

Professor: H. Whitt Kilburn, Ph.D.

Class Location Lake Superior Hall (LSH) 229, 2:00 pm - 2:50 pm, Monday and Wednesday. Asynchronous online component.

Email: kilburnw@mail.gvsu.edu

Course Prerequisite: STA 215 (Introductory Applied Statistics) or equivalent credit, or permission of instructor.

Office: ASH 1103, (616) 331-8831

In Person Office Hours: Check the Political Science department, 1103 ASH. When my door is open, feel free to stop by to talk on any day of the week! On Mondays and Wednesdays I hold official hours from 1pm to 2 pm. I'm also available by appointment. And this semester, I would like to try to make use of the GVSU Gmail chat system — make sure I'm on your contacts and when I'm available, ask away.

Course Website: We will use Blackboard. Data analysis files will be posted there in a compressed format, .zip. Make sure you know how to open compressed files on your computer.

Course Description: This course provides an introduction to fundamental concepts in data analysis and quantitative research methodology for political science; it is one of the courses in the Bachelor of Science degree cognate for Political Science. There is much to be learned about data analysis by actually doing it, rather than reading about it. But first, rather than learn by trial and error, we will identify some principles that should inform quantitative political science research at its inception. The overarching goal of the course will be for us to learn how to identify and develop compelling theories, manage common sources of data in political science, and apply fundamental tools of data analysis to develop insights into the world of politics.

Good data analysis is not a mechanical, purely objective process. It requires subjective judgment, sound theory, and testable hypotheses, all of which become better with practice — and familiarity with 'best' practices. So we will read what others have written on the subject of data analysis and will focus our attention on developing fundamental skills in four main areas: 1) research design, 2) theory development and hypothesis testing, 3) data organization and analysis, and 4) research writing and oral communication. The third area will require you to draw upon what you have learned in Statistics 215.[1] Assignments will include a semester long original research paper, numerous in-class and homework problems, and a research project presentation.

Our course goals are as follows:

1. Build empirical measures of key theoretical concepts in political science research.

2. Analyze relationships between variables in quantitative datasets.

3. Prepare a written, professional analysis of quantitative data.

4. Explain the logic of causal inference in experimental and observational research.

5. Construct visualizations of quantitative data.

6. Apply statistical linear and nonlinear modeling techniques to quantitative datasets.

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[1]Of course, you may have forgotten a thing or two, which is basically OK. We'll review some concepts in class, and if you need a refresher there are plenty of Internet sources for help. A free textbook covering STA 215 material is http://onlinestatbook.com/2/index.html. If you know of other resources, please share with the class.

Our data analysis assignments will focus on the following subjects:

1. Records of Michigan lottery sales receipts in Michigan places and their social-demographic correlates, along with school district level funding;

2. gerrymandering and standards for evaluating the claim of 'wasted votes' in legislative districts;

3. Country level observations of global indicators of political and economic development from the World bank;

4. An investigation of the authorship of the disputed series of Federalist Papers;

5. County level (within U.S. States) election results and various social-demographic indicators; and

6. a nationally representative survey dataset of the American electorate, the 2016 American National Election Study;

Class Structure: The course is officially designated as 'Hybrid'. Roughly half of our class time will be spent in virtual (online) sessions. The purpose of the online class settings is to allow you to complete data analysis projects on your own computer and pace, with my support, rather than at a set group pace within a large campus computer lab. In the absence of in-person class time, you will be expected to review online lectures and demonstrations from within Blackboard and complete the data analysis assignments. While the online sessions are scheduled as asynchronous — meaning we will not work together at the same time — I will be available online each week for support. Through screencasts, handouts, and my availability to meet with you in person, you will have all the resources you need to meet the course objectives.

When you enrolled in a Hybrid GVSU class, you agreed to verify that you have access to adequate computing technology. Please review the requirements here `http://www.gvsu.edu/online/what-about-the-technology--8.htm`, as you will need access to a computer with at least these specifications. It is possible to complete the Hybrid portion of the course from a campus lab computer, if you have technical problems with your own. Just plan ahead for campus lab hours and computer availability.

Support Resources for Data Analysis: If on campus, please visit the Data Inquiry Lab for help with quantitative data analysis. In the Mary Idema Pew library, room 135 (within the Knowledge Market), a graduate student in statistics is available for tutoring for drop-in hours. Check the website `http://www.gvsu.edu/datainquirylab`. A simple, yet effective place to practice your skills and learn others, is at DataCamp, `https://www.datacamp.com/courses/free-introduction-to-r` or `https://www.codeschool.com/courses/try-r`. These websites are useful for learning the basics of R, the statistical software we will use throughout the course.

Required texts for purchase or download

Meys, J. and A. de Vries. 2012. *R for Dummies*. (2nd edition). New York: For Dummies.

> Meys and de Vries' book is an introduction to one piece of software we will use throughout the course. This textbook is a required purchase — you will use it as a reference. Since it is written in the accessible "for Dummies" style, you would be expected to read through the chapters on

your own, in addition to specific pages assigned in class. *The second edition is required, not the first.*

Kellstedt P. and G. Whitten. 2013. *The Fundamentals of Political Science Research*. Cambridge, UK: Cambridge University Press.

Kellstedt and Whitten's book is an introduction to the logic of research design — and data analysis — in political science. We will read the second edition.

Optional text for download through GVSU library

Monogan, J. 2015. *Political Analysis Using R*. Berlin: Springer. Available free online at `http://link.springer.com.ezproxy.gvsu.edu/book/10.1007/978-3-319-23446-5`

Monogan's book contains some pointers for using R. This book is strictly an optional resource; chapters will not be assigned formally as part of the class. It is available as an e-book through the library. You can download or print PDF copies of individual chapters.

Other PDFs of Journal Articles, etc.

Our Blackboard site will contain PDF documents of various journal articles and other supplementary assignments. You should always check Blackboard for a copy of the class reading assignments.

Schedule and Activities

statistical data analysis and visualization software We will spend some time reviewing fundamental concepts of statistical inference through paper and pencil exercises. But for most analyses of data, we will use a few pieces of data analysis software. The most commonly used will be the software application called R, which is a freely available application for managing, analyzing, and displaying quantitative data. I've taken steps this semester to make learning R more fun and less tedious than prior semesters. Still, learning good data analysis skills takes time and effort. You'll have to be patient and persistent.

Given the sea of information in which we live our lives, being skilled in making sense of data is an essential liberal arts skill. Beyond that, why should you care to learn fundamental data analysis? On multiple occasions, I have received emails and phone calls from slightly anxious GVSU students on an internship, looking for help with their assignment to "do something with the data". So let's learn these skills now. Nevertheless, the learning curve is steep at times. *So you will need to be patient and persistent.* But the rewards for doing so are great. In the campus computer labs, R is located under "Departmental Applications" folder "Statistics" — in the folder "CRAN R". As a Hybrid class, you will be expected to download R to your own personal computer. Instructions for doing so appear in *R for Dummies*.

Data analysis assignments These assignments will completed and submitted as an online journal of data analysis, posted and updated throughout the semester. Each student will have a journal. We will collectively have access to a Blackboard discussion board for exchanging tips on data analysis. You are all welcome to work with a partner or group on the data analysis assignments, but only in the sense that you decide collectively how to best approach an answer to each question, exchange

tips, and troubleshoot problems. Each student, however, must post his or her own work to their own individual journal. So you can not simply copy and paste someone else's R code or graphics to your own. (Beyond a poor strategy for learning, doing so would be an honor code violation.) Data analysis journals will be evaluated periodically throughout the semester. Late assignments may be submitted for 75% credit up to 1 day late, then half credit (50%), up to one week past the due date.

Reading Questions For most Monday or Wednesday class sessions, you will be expected to answer a series of questions — or write a synthesis — on the assigned readings. Your answers must be *type-written*, submitted to Blackboard Course documents prior to the deadline (the start of class Thursday), in the place indicated. When presented as questions, each one will require about a paragraph to answer. Questions are graded from a 'check-plus' (95%), 'check' (85%), 'check minus' (75%), to a 'minus' (50%) basis. Late assignments may be submitted for half credit (50%), up to two weeks past the due date.

Research Paper You will be expected to write a research paper on an assigned topic. The project will involve aspects of defining a research problem, conducting a literature review, outlining a theory, collecting data, writing hypotheses, and testing the results using the quantitative data analysis skills we will develop. This research paper is required of all students. You will present your research paper to the class at the end of the semester. Papers will be at least 10-15 pages (double spaced), with additional pages for the presentation of tables and figures, any appendices, and a bibliography.

We will meet during office hours to plan your data analysis paper. I'll share some ideas with you, and then you'll pick one of the options.

Research paper due dates will be announced in class. You will turn in the first half (a literature review and outline of a theory to be partially empirically tested) followed by a combined first and second half (the data analysis).

Midsemester Examination There will be a midsemester exam that will cover ideas in research design and data analysis from the first half of the course.

Research Presentation You'll also prepare a presentation to the class during the final examination period of the course.

General Policies and Procedures

I will hold you accountable to high standards. Beyond that, there are a few key things you should know about my expectations of you:

1. Please put away your laptop and avoid scrolling through your phone in class. We'll talk about strategies for the class to monitor and correct electronic device distractions; mine is to play a tit-for-tat strategy in an iterated Prisoner's Dilemma type game — student 'defections' (laptop surfing) are responded to with one round of in-class quizzes.

2. I expect you to please arrive to class on time and participate actively. The class suffers when any student routinely skips class or is apathetic about assignments. We are all — myself included — in this together! Let's all learn as much as we can.

3. Assignments should be turned in by the deadline. There are no make-ups for any work assigned and completed in-class, except for the exams, which must be arranged ahead of time.

4. I do not accept assignments via email! (Because you either submit a hard copy or submit it to your journal!)

5. You should *always* bring relevant materials with you to class, whether the assigned reading, a calculator when useful, or responses to the homework.

6. If you believe you will have trouble with the course, I encourage you to call an academic counselor at the Advising Resources and Special Programs Unit, 331-3588.

Grades

Items for each component of your grade are averaged according to category:

Data Analysis Journals 30%
In-Class quizzes, reading questions, other assignments 15%
Mid-Semester Examination 20 %
Research Paper 25 %
Presentation 10%

Unless standardized scores are necessary, averaged grades will be converted to letter grades with the following scale:

A 93-100	A- 90-92
B+ 87-89	B 84-86
B- 80-83	C+ 76-79
C 72-75	C- 70-72
D+ 65-69	D 60-64
F <60	

Code of Academic Integrity: I expect everyone to abide by the GVSU code of conduct regarding academic honesty. You should consult the student handbook and GVSU student bulletin for relevant policies about academic honesty.

Accommodations: If there is any student in this class who has special needs because of a learning, physical, or other disability, please contact the Disabilities Support Services (DSS) Program at 331-3588. If you require an accommodation in this course, it is your responsibility to provide me written notification from DSS.

HOW TO SUCCEED IN THIS COURSE
1. Studiously avoid last-minute preparation and complete all assignments.
2. Attend every class session.
3. Participate regularly in class discussions.
4. Talk to me during office hours about any concerns or to clarify expectations.

Schedule

Progress throughout the course readings depends partially on data analysis assignment completion, class comprehension of concepts, and other factors. Changes to the syllabus should be expected! All updates will be posted on Blackboard. Readings should be completed **by the date assigned** to the left of the reading assignment.

The first few sets of reading questions appear below. Others will be posted on Blackboard.

1 Course Introduction and Introduction to Observational Research Design

1/10 Read Chapters 1-2 of Kellstedt and Whitten, *Fundamentals of Political Science Research.* (Chapter 1, "The Scientific Study of Politics", and Chapter 2, "The Art of Theory Building")

Read Blattmann, Christopher. 2009. "From Violence to Voting: War and Political Participation in Uganda." *American Political Science Review* 103(May):231-247.

1. What is the "research question" addressed by Blattmann?

2. What is Blattmann's theory? Explain it in four sentences.

3. What are two specific hypotheses tested by Blattmann? Write each hypothesis in one complete sentence.

4. In testing his theory, what factors (or other independent variables) does Blattmann take care to eliminate as alternative sources of explanation?

5. Why does the situation in Uganda present a unique opportunity to eliminate these sources of alternative explanation? (Hint – it has to do with how children were recruited.)

2 Concepts, Causality, and Research Design

1/17 Read Chapters 3-4, Kellstedt and Whitten, *Fundamentals of Political Science Research.* (Chapter 3, "Evaluating Causal Relationships", Chapter 4, "Research Design")

Poe, Steven C. and C. Neal Tate. 1994. "Repression of Human Rights to Personal Integrity in the 1980s: A Global Analysis." *The American Political Science Review.* 88(4):853-872. Reading Questions:

1. What is the intellectual puzzle — the research question — addressed by Tate and Poe? That is, what do they want to study?

2. How do Tate and Poe define "human rights abuses" , and why do they focus specifically on a subset of rights termed "threats to personal integrity"? (For this second question, you should focus on the reasons beyond their interest in the subject of personal integrity. Discuss why it is necessary for their research — in order to find the factors causally related to human rights abuses.)

3. What sources of data do they identify to measure whether, and how frequently, human rights abuses have occurred? Please be specific.

4. How do they define, and empirically measure "democracy"? Is their measurement strategy legitimate, or does it point toward strong limitations of quantitative empirical studies of politics? Why or why not?

5. Which factors do they find are causally related to human rights abuses, and which are not? In a general, conceptual sense — try to understand the statistics the best you can —- how do they know this? And how do they know that they have not inadvertently found "spurious" relationships, in which they think that (for example) the evidence shows that A causes B, but actually it's that C causes B and A, but the authors did not measure C.

3 Measurement and Causal Inference

1/22 Kellstedt and Whitten, *Fundamentals of Political Science Research*. (Chapter 5, "Measurement and Variations")

1/24 We will use class time to discuss ideas from chapters 1-5 of the textbook, as well as additional concepts in causal inference. No reading questions due today.

4 Research Design: Experimentation

1/29 Review excerpts on experimentation in Chapter 4, and read Chapter 5, Kellstedt and Whitten.

1/31 Read the theory and experimental design for the studies described in this article addressing the questions of whether media frames affect public tolerance of hate speech. Notice how they measure concepts such as "tolerance". An experiment was designed to test the effect: Nelson, Thomas E., Rosalee Clawson, and Zoe M. Oxley. 1997. "Media Framing of a Civil Liberties Conflict and Its Effect on Tolerance". *The American Political Science Review* 91:3 567-583.

Reading questions:

1. In Kellstedt and Whitten's chapter on research design, the authors define an experiment as "An experiment is a research design in which the researcher both controls and randomly assigns values of the independent variable to the participants." In your own words, explain how the researchers in Nelson, Oxley, and Clawson both control and assign values of the independent variable. Specifically, how do the authors plan to achieve statistical control? And what are the possible 'values' (or treatment conditions) of the independent variable that subjects are randomly assigned to?

2. Describe the subject population. Who were the participants in the study? And how closely did the participants mirror the Ohio population?

3. What is the difference between internal and external validity, and why is external validity a greater concern with the experiment on hate speech and tolerance, than internal validity? What is an example of a concern with external validity presented within the study?

4. What is the key difference between random assignment and random sampling? And why is it that the researchers in the article could argue that in their experiment, for estimating the causal inference of how exposure to news media frames affect political tolerance, it doesn't matter that the experimental subjects were college students?

5. In the experiment on tolerance and hate speech, do the authors identify moderator effects or mediator variables in their study? What are the mediators they identify, and how do they have a mediating effect? (Describe it in general.)

   Expect in class to evaluate concept validity and reliability. While not an assigned reading question, you should be able to evaluate the measurement of concepts such as tolerance.

5   Bivariate Comparisons

2/5 Asynchronous online — R analysis homework

2/7 Kellstedt and Whitten, *Fundamentals of Political Science Research*. (Chapter 7, "Bivariate Hypothesis Testing"). The chapter on bi-variate comparisons mostly reviews what you already studied in STA 215. We'll focus instead on the pitfalls of inferential hypothesis testing. Please read the following article from *American Scientist*: (shortened url: `https://goo.gl/HUsUKi`). `https://www.americanscientist.org/issues/pub/2014/6/the-statistical-crisis-in-science/1`

A more in-depth look at the controversy surrounding a psychologist's abuse of hypothesis testing to show that people really do have ESP is at
https://slate.com/health-and-science/2017/06/daryl-bem-proved-esp-is-real-showed-science-is-broken.html

6   Midsemester Examination

2/12-2/14   Midsemester Examination in class.

7   Intro to Regression Analysis

2/19 Kellstedt and Whitten, *Fundamentals of Political Science Research*. (Chapter 8, "Bivariate Regression").

2/21   And read Chapter 1 from Tufte, E. 1974. "Introduction to Data Analysis", in *Data Analysis for Politics and Public Policy*.

Reading questions for the chapter, Introduction to Data Analysis.

1. In the Tufte Chapter, the author investigates the possibility that factors other than safety inspections cause vehicle deaths? What are the other factors the author investigates? How does the author eliminate these factors as sources of influence?

2. Would Tuftes methods of elimination be closer to matching methods or adjustment? Why?

3. What is the authors point in Table 1.1? In other words, what does Table 1.1 tell us about the factor(s) explaining variation in vehicle deaths?

4. In the second half of the chapter, the author estimates a trend line which technically is the ordinary least squares (OLS) regression line described in Chapter 8 of Kellstedt and Whitten. What does the trend line estimate? In other words, what does the trend line show us about the relationship between the two variables plotted on the X and Y axes?

5. Tufte interprets the residuals from the OLS regression line. What does a positive residual mean in terms of traffic deaths, and what does a negative residual mean?

8   Multiple Regression Analysis

2/26 Chapter 9, "Multiple Regression: The Basics".

2/28 Excerpts from Tufte, E. 1974. *Data Analysis for Politics and Public Policy*. Reading questions announced via Blackboard.

First half of research paper due by Friday, 3/2, 11:59pm, posted to Blackboard SafeAssign.

9   Spring Break, week of 3/5

10   Complications to Regression Analysis: diagnostics

3/12-3/14 : Kellstedt and Whitten, *Fundamentals of Political Science Research*. Chapter 10, " Model Specification".

11   Legislative districts and gerrymandering

3/19-3/21 Reading assignment posted on Blackboard.

12   Stylometric Analyses of The Federalist Papers

3/26-3/28 Reading Assignment posted on Blackboard.

13   Online Data Analysis Week

4/2-4/4 Class held online, assignments focusing on data analysis preparation for research papers.

14   Writing and Presentation of Research

4/9 See article P. Eubanks and J. D. Schaeffer (2008). "A kind word for bullshit: The problem of academic writing". *College Composition and Communication*. 59(3): 372-388, `http://writing2.richmond.edu/training/383/383restricted/bullshit.pdf`

4/11 Discussion of Chapter 12, "Putting it All Together".

15   flex week and review

4/16- **4/18** *Complete research paper due by Friday, April 27, 11:59pm, posted to Blackboard Safe-Assign.*

Research Presentation during Final Examination Week

During our final exam time period, Monday, April 23, 2:00 pm - 3:50 pm, you will be expected to prepare a 7-10 minute presentation on your research paper.