PSC 2101: Scope and Methods of Political Science  
Spring 2018, Tuesday and Thursday, 8:00am-9:15am  
The George Washington University, Department of Political Science

Instructor:  
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Office Hours: By appointment

Course Description

This course explores research methods in Political Science, with a focus on quantitative methodology. It provides an overview of how political scientists conceptualize, count, categorize, measure, and interpret the world around them. It does not focus on a specific political issue, country, era, or topic, but rather, provides students with a more general basis for evaluating and conducting research. We will use the R statistical program as a tool to help explore and analyze data. After completing this course, students will become more critical consumers of social scientific research. Students will also be equipped with the necessary resources to conduct their own research.

Learning Objectives
As a result of completing this course, students will be able to:

- undertake independent empirical research projects.  
- read and understand a wider range of literature in political science and other social sciences.  
- critically evaluate research that uses statistical methods, whether in political science, policy analysis, sociology, health and medicine, or other fields.  
- use the R statistical program to explore data.

Required Materials


Optional Texts (selections will be available online)

Grades
As a rule, there will be no make-up assessments, make up tests, or deadline extensions given in this course. Exceptions only will be made with prior consent for planned events such as sponsored GWU activities or religious observances or under unusual circumstances such as a documented medical emergency. Your course grade will be based on the following components:

20%: Participation
40%: Assessments
20%: Midterm exam
20%: Final exam

Your participation grade will your contributions to in-class discussion (and necessarily your attendance).

We will have ten assessments throughout the semester. They will consist either of an in-class quiz (administered on Blackboard) or a take home assignment. Your eight highest assessment scores will count toward your final grade. The assessments will either take place or be assigned on Thursdays on the following dates: 1/25, 2/1, 2/8, 2/15, 2/22, 3/1, 3/22, 4/5, 4/2, and 4/19. Take home assessments are due the following Tuesday. The assessments cover the material assigned for the dates of the assessment. So, for example, for the 1/25 assessment covers material from Chapter 1 of Kellstedt and Whitten (as well as prior material).

The midterm and final exams will be closed book, closed note exams, though you will be allowed to bring a single page (front and back) of notes to each.

Week 1: Introduction

1.16: No assigned reading

1.18:


Week 2: Research Design

1.23:


“Introduction to R, RStudio”
https://web.stanford.edu/class/stats101/intro/intro-lab01.html

1.25:

*Assessment 1 (Take Home)*

KW Chapter 1 (p. 1 – 23)

“Basic R Commands”
https://www.youtube.com/watch?v=h_Nruq9-NQw

Week 3: Theory and Causality

1.30:

*Assessment 1 Due*

KW Chapter 2 (p. 24 – 50)


2.1:

*Assessment 2 (Quiz)*

KW Chapter 3 (p. 51 – 68)


Week 4: Measurement and Survey Research

2.6:

KW 5.1 – 5.7 (p. 92 – 111)


2.8:

**Assessment 3 (Take Home)**

Kennedy, C. and Deane, C. 2017. “A basic question when reading a poll: Does it include or exclude nonvoters?” Pew Research Center.  
http://www.pewresearch.org/fact-tank/2017/02/16/does-poll-include-or-exclude-nonvoters/

Salganik, M. 2017. *Bit by Bit: Social Research in the Digital Age*. 3.3-3.4  


Week 5: Experiments

2.13:

**Assessment 3 Due**

KW 4.1 – 4.2.3 (p. 69 – 82)


http://journals.sagepub.com/doi/pdf/10.1177/2053168015622073

2.15:

**Assessment 4 (Quiz)**


Week 6: Descriptive Statistics

2.20:  


2.22:  
**Assessment 5 (Quiz)**  

KW 5.8 – 5.12 (111 – 126)


Week 7: Probability and Statistical Inference

2.27:  


3.1:  
**Assessment 6 (Take Home)**  
KW Chapter 6 (p. 129 – 144)

“Basic Probability Simulations” https://rstudio-pubs-static.s3.amazonaws.com/21866_0cfc0bfb22904a76924ac89e9b8f18a7.html

Week 8: Inference Continued

3.6:  
**Assessment 6 Due**  
3.8:  

*Midterm Exam*

***Spring Break***

Week 9: Bivariate Analysis

3.20:

KW Chapter 7 (145 – 170)

3.22:

**Assessment 7 (Take Home)**

Monogan, J.E. “Basic Inferences and Bivariate Association” *Political Analysis Using R* (p. 63 – 76)


Week 10: Regression Models

3.27:

**Assessment 7 Due**

KW 8.1 – 8.4.3 (171 – 181)

Linear Regression
[http://r-statistics.co/Linear-Regression.html](http://r-statistics.co/Linear-Regression.html)

3.29:

KW 8.4.4 – 8.5.4 (181 – 194)


Week 11: Multiple Regression and Model Predictions

4.3:

KW Chapter 9 (197 – 219)

4.5:

**Assessment 8 (Take Home)**


Week 12: Presenting and Evaluating Evidence

4.10:  
**Assessment 8 Due**


4.12: **Assessment 9 (Quiz)**

“Data Visualization Using R”  
https://www.youtube.com/watch?v=WOhsomgBNhM


Week 13: Transparency and Replicability

4.17:  
https://www.thecut.com/2015/05/how-a-grad-student-uncovered-a-huge-fraud.html


4.19:

**Assessment 10 (Quiz)**

Read the description of the Cooperative Congressional Election Study (CCES):
https://cces.gov.harvard.edu


Ashwanden, C. “Science Isn’t Broken – It’s just a hell of a lot harder than we give it credit for.” *FiveThirtyEight*. https://fivethirtyeight.com/features/science-isnt-broken/#part1

**Week 14: Data Science and Machine Learning**

4.24:


4.26:


**Final Exam (TBD)**