

# PSC 451: Empirical Political Analysis

Section C (Undergraduate): 3 credits

Section D (Graduate): 4 credits

Spring 2021

Online

**Instructor:** Matthew Geras, Assistant Professor

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**Office Hours:** By Appointment

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## **Course Description**

This course explains how research is done in political science and in many other social sciences. We will cover research design (how you set up research to learn about the social world). We will do several analyses of real-world data. To do this, we will learn about several different statistical tools, and how to do them in the open source statistical program R. Specifically, we will cover measurement, sampling, hypothesis testing, correlation, and regression.

## **Course Objectives**

Upon completion of the course, students will:

* Learn how to conduct research that can rigorously answers questions about the social world.
* Learn how to judge evidence in terms of reliability and validity as to how much it tells you about the social world.
* Become comfortable enough with quantitative analysis to be able to critically analyze scientific research. When you read “studies have shown…” or “they say…,” you will be able to have a sense of how the original research was done and decide for yourself what the research really means.

**Learning Outcomes**

* Working knowledge of the strengths and weaknesses of several research designs
* Nuanced understanding of the concepts of reliability and validity in regard to measurement and empirical findings in the social sciences
* Use R scripts to generate output for descriptive and inferential statistics. Interpret output from statistical analyses and correctly apply that information to substantive hypotheses and theories

## **Course Expectations**

Students will use the internet to access the Canvas course page. The course has a modular structure and for the most part, each module will last one calendar week (Tuesday to Monday). Each module will consist of a combination of required readings, videos, short participation assignments, R labs, and a few longer data assignments. Instructions and due dates for activities and assignments are clearly articulated so students know what is expected of them and can easily stay on track. For the most part, assignments for this class will always be due on Monday evenings at 11:59pm. This staggered calendar-week schedule is designed so that everyone has the option of completing their assignments and class work either during the week or on the weekends. Additionally, the Monday deadlines provide everyone, particularly those who complete the majority of their work on weekends, enough time to reach out with any questions or concerns they may have about their assignments before having to submit them. This is an asynchronistic course which means each week, you will complete the readings and assignments associated with each module at your own pace, but some weekly assignments will have due dates that are staggered throughout the week in order to give students time to read and comment on their classmates' work before the next module begins.

By registering for this online course, students commit to self-motivated study, participation in online course activities, and the submission of all assignments on time. Furthermore, they commit to accessing Canvas and checking email at least four times a week and to devoting at least as much time to this online course as to a comparable traditional class on campus.

## **UIS Academic Integrity Policy**

I support the UIS policy on Academic Integrity, which states, in part: “Academic integrity is at the heart of the university’s commitment to academic excellence. The UIS community strives to communicate and support clear standards of integrity, so that undergraduate and graduate students can internalize those standards and carry them forward in their personal and professional lives. Living a life with integrity prepares students to assume leadership roles in their communities as well as in their chosen profession. Alumni can be proud of their education and the larger society will benefit from the University’s contribution to the development of ethical leaders. Violations of academic integrity demean the violator, degrade the learning process, deflate the meaning of grades, discredit the accomplishments of past and present students, and tarnish the reputation of the university for all its members.”

Academic sanctions range from a warning to expulsion from the university, depending on the severity of your violation and your history of violations. Whatever the sanction, I will file a report of academic dishonesty to the Office of the Provost.

You are responsible for understanding and complying with the [UIS Academic Integrity Policy](http://www.uis.edu/academicintegrity).

Academic dishonesty in an online learning environment may include the following scenarios:

* Having a tutor or friend complete a portion of your assignments
* Having a reviewer make extensive revisions to an assignment
* Copying work submitted by another student to a public class meeting
* Using information from online information services without proper citation
* Posting any work as your own that has been written by another author(s)

## **Academic Accommodations**

If you are a student with a documented temporary or ongoing disability in need of academic accommodations, please contact the Office of Disability Services at 217-206-6666.

Disabilities may include, but are not limited to: Psychological, Health, Learning, Sensory, Mobility, ADHD, TBI and Autism Spectrum Disorder.  In some cases, accommodations are also available for shorter term disabling conditions such as severe medical situations. Accommodations are based upon underlying medical and cognitive conditions and may include but are not limited to extended time for tests and quizzes, distraction free environment for tests and quizzes, a note taker, interpreter and FM devices.

Students who have made a request for an academic accommodation that has been reviewed and approved by the ODS will receive an accommodation letter which should be provided by the student to the instructor as soon as possible, preferably in the first week of class.

For assistance in seeking academic accommodations please contact the UIS Office of Disability Services (ODS) in the Human Resources Building, Room 80, phone number 217-206-6666.

## **Library Resources**

Get help at your library!  You can access library resources, databases, and helpful research guides from [Brookens Library](http://library.uis.edu/).

For in-depth help, please contact one of our librarians directly via email or schedule a one-on-one research consultation conducted in-person, over the phone, or online.

[View full list of librarians by subject](https://libguides.uis.edu/librarians).

**The Learning Hub**

The Learning Hub provides students on campus with many services including online and face-to-face tutoring for writing, science, exercise science, academic skills, business, computer science, and math; supplemental instruction; workshops; and online resources. Any student who is enrolled at UIS is eligible for the free services.

If you feel like you need extra help in the class, please use this service along with instructor help.

Appointments can be made by contacting The Learning Hub at (217) 206-6503, thehub@uis.edu, or in person at Brookens 460. You may also use this link to access a “Make an Appointment” form to ensure you give them all the information needed to schedule an appointment. When making an appointment, please have the following information ready:

Course number

Instructor

Assignment/Paper Length

Available Days and Times

## **Required Texts**

1. Pollock, Philip H. 2016. *The Essentials of Political Analysis, 5th Edition.* CQ Press.

[ISBN: 978-1506305837] \*

1. Pollock, Philip H. and Barry C. Edwards. 2017. *An R Companion to Political Analysis, 2nd Edition.* CQ Press.

[ISBN: 978-1506368849]

\*There is a newer version of this book, but it is significantly more expensive. You are welcome to buy/rent the newer version if you prefer, but please note I will be using the 5th edition.

## **UIS Resources**

[University of Illinois at Springfield](http://www.uis.edu/)

[[Information Technology Services (ITS)](http://www.uis.edu/)](http://www.uis.edu/its)

[University Webmail](http://webmail.uis.edu)

[Canvas](https://go.uis.edu/canvas)

[The Learning Hub](http://www.uis.edu/thelearninghub/)

[Documentation Style Guides](http://www.uis.edu/thelearninghub/writing/handouts/#Helpful) (from The Learning Hub)

[The Career Development Center](http://www.uis.edu/career/)

## **Course Requirements**

## Complete all assigned readings, videos, discussions, R labs, and graded assignments. As a best practice, please keep a backup copy of all assignments that you submit.

## **Access the course materials and complete assignments** within the guidelines as established in the course calendar. You should be visiting the course Canvas page several times a week.

## **Adhere to assignment deadlines as outlined on Canvas and the course schedule. Late submissions may be subject to partial or no credit. However, I recognize we are all living through unprecedented times and many of us are currently facing, or may in the future face, unexpected challenges. If you find yourself in a situation where your ability to meet course deadlines is compromised, please let me know. I will, to the best of my abilities, work with you to come up with a solution that will allow you to complete the required components of this course.**

## **Course Communication**

The best way to contact me is through email or through the messenger function on Canvas, but we can also schedule Zoom meetings and telephone consultations as needed. I typically respond to emails within 24 hours Monday through Friday and within 48 hours on weekends. You will likely receive a response from me faster than this timeline. If fact, if you do not receive a response from me within this timeframe, it is okay to assume I did not receive your original message and please feel free to contact me again.

Office Hours:

Since this is an online class, I will hold office hours by appointment via Zoom. To set up a meeting, send me an email with some suggested times. I encourage all students to attend office hours whenever they wish to discuss, or ask questions about, course content and assignments. Please view my office hours as time that I have set aside to answer your questions, clarify class discussions, and help you succeed in class.

### Netiquette

In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. I recommend you review the following [tips for interacting online](https://www.livinginternet.com/i/ia_nq.htm) in e-mail and/or discussion board messages compiled by Chuq Von Rospach and Gene Spafford.

Everyone must plan an active role in helping to facilitate and maintain a safe and comfortable learning environment where everyone should feel free to participate, ask questions, engage the course and support one another. To do this successfully, we must remain mindful and respectful of each other’s freedom of thought and speech and provide mutual respect. Everyone should feel comfortable expressing themselves and their views. There must be a clear respect for diversity of participants including respect for gender, race/ethnicity, religion, disability, age, sexual orientation, socio-economic status, as well as culture, beliefs and personal values.

Here are some tips for discussing serious and potential sensitive topics with your peers:

* Be empathetic and remember that this environment is a safe place for making mistakes.
* Use nonjudgmental language and phrases that do not attack an individual. One way of doing this is to ask the individual to discuss his/her process for making the final decision he/she made.
* Use specific questions, examples, and research as a way of making your point.

**Downloading R and R Studio**

In Module 2 of the class, students will download R and R Studio. Throughout the course, students will complete several R tutorials and students are expected to complete their data assignments using R. R and R Studio are open source and free to individuals and can be downloaded using the following links.

* R Project (<https://www.r-project.org/>) – download R here
* RStudio (<https://rstudio.com/>) – download R interface here

## **Methods of Evaluation**

## Students will be assessed on four data assignments, two article analysis assignments, a final exam, and several shorter weekly participation assignments. Graduate students will also complete a graduate project, which will take the form of a fifth data assignment.

Data Assignments

Specific instructions for each data assignment will be provided in separate assignments sheets, but generally, each assignment will ask students to recode, graph, and/or analysis a provided dataset in R. Each data assignment will be connected to the topics discussed in a particular module and as a result, instructions for each data assignment will be introduced in the corresponding module. That being said, since data assignments are typically longer than weekly participation assignments, you will always be given at least week to complete your data assignments and they will typically be due at the end of the following module. These assignments are intended to assess your ability to apply the statistical tools and R code learned in class to real world data.

Article Analyses

Twice during the semester, you will be asked to read and analyze a political science research article on a topic of your choice. These assignments are intended to assess your ability to use what you have learned in class to evaluate the strengths and weaknesses of the research design employed in each article. For example, among other things, you will be asked to identify the independent and dependent variable(s) used in each article and to consider whether these are good measures of the underlying concept(s) the article’s authors are trying to measure. You are welcome to use articles that you have been assigned in other classes when completing these assignments, but you are also allowed to find other articles on your own. The articles you read can be about any topic and use any quantitative or qualitative method as long as it tests a hypothesis or evaluates a political science theory. The only requirement is that the articles you select have to have been published in a peer-reviewed journal. Specific instructions for the article analysis assignments will be provided in Module 7, once we have completed our discussion of research design. Your first article analysis will be due by 11:59pm on **March 15th** and your second article analysis will be due by 11:59pm on **March 29th**.

Final Exam

Students will take an open-note, open-book cumulative final exam at the end of the semester. The exam will assess both a student’s theoretical knowledge of the material covered in class, for example differentiating between reliability and validity, and their ability to use the statistical tools learned in class to describe, analysis, and interpret date, for example determining the mean from a list of numbers. That being said, you will not be required to use R or R Studio to complete the final exam. More information on the final exam will be given as we approach the end of the semester. The final exam will be distributed during the final module of the class and will be due by 11:59pm on **May 10th**.

Weekly Participation Assignments

During each module, you will be asked to complete a variety of shorter, miscellaneous assignments. The number and form of these assignments will vary each module, but they may take the form of reading and discussing a research article, participating in a discussion board, completing a problem set, or completing an R lab. For the most part, these assignments will be graded based upon full completion. Seeing as the purpose of these shorter assignments is to give me an indication of what material we may need to go over in more detail, I am more concerned that you have made an honest attempt at completing all components of these assignments than I am that all of your answers are correct. You should view these shorter assignments as being similar to class participation and in-class activities in a traditional on-campus class.

Graduate Project

Each graduate student must complete a graduate project which will ask them to complete a hypothesis test from beginning to end. Specifically, students will state their hypothesis in words, test it using data, and then interpret the results of their empirical analysis. Specific instructions for this project will be provided in a separate assignment sheet during Module 9, but you should view this assignment as an abridged research paper. The purpose of this assignment is to assess your ability to complete the analysis portion of a political science research project from start to finish. Graduate Projects will be due by 11:59pm on **May 3rd**.

**Grading Scale**

|  |  |
| --- | --- |
| **Undergraduate** | **Graduate** |
| Data Assignment 1 12.5% | Data Assignment 1 10% |
| Data Assignment 2 12.5% | Data Assignment 2 10% |
| Data Assignment 3 12.5% | Data Assignment 3 10% |
| Data Assignment 4 12.5% | Data Assignment 4 10% |
| Article Analysis 1 5% | Article Analysis 1 5%  |
| Article Analysis 2 5% | Article Analysis 2 5% |
| Final Exam 15% | Final Exam 15% |
| Participation 25% | Participation 25% |
|  | Graduate Project 10% |

| Percent Range | Letter Grade |
| --- | --- |
| 100-93 | A |
| 92-90 | A- |
| 89-87 | B+ |
| 86-83 | B |
| 82-80 | B- |
| 79-77 | C+ |
| 76-73 | C |
| 72-70 | C- |
| 69-67 | D+ |
| 66-63 | D |
| 62-60 | D- |
| 59 and below | F |

## **Course Calendar**

Below is an outline of the course calendar with the due dates of major assignments. Please note this schedule is subject to change. Additionally, I will provide a weekly to do list, called a roadmap, for each module on Canvas that will include your weekly participation assignments.

\*Note you will be given access to each module on Canvas the Saturday before the module’s official start date. This means your will be given about 10 days, including two weekends, to complete each module.

EPA = *The Essentials of Political Analysis* by Philip Pollock

RC = *An R Companion to Political Analysis* by Philip Pollock & Barry Edwards

**Module 1: Introductions and Overview of Political Analysis (1/19 - 1/25)**

Readings:

* EPA: Introduction

**Module 2: Introduction to R and R Studio (1/26 - 2/1)**

Readings:

* RC: Introduction
* RC: Chapter 1

**Module 3: The Definition and Measurement of Concepts; Survey Research (2/2 - 2/8)**

Readings:

* EPA: Chapter 1

**Module 4: Measuring and Describing Variables (2/9 – 2/15)**

Readings:

* EPA: Chapter 2
* RC: Chapter 2

Assignments:

* Data Assignment 1 **(Due: March 1st 11:59pm)**

**Module 5: Proposing Explanations, Framing Hypotheses, and Transforming Data in R (2/16 - 2/22)**

Readings:

* EPA: Chapter 3 pg. 48-58
* RC: Chapter 3

**Module 6: Making Comparisons (2/23 - 3/1)**

Readings:

* EPA: Chapter 3 pg. 58-77
* RC: Chapter 4

**Module 7: Research Design, the Logic of Control, and Experiments (3/2 - 3/8)**

Readings:

* EPA: Chapter 4

Assignments:

* Article Analysis 1 **(Due: March 15th 11:59pm)**
* Article Analysis 2 **(Due: March 29th 11:59pm)**

**Module 8: Making Controlled Comparisons (3/9 - 3/15)**

Readings:

* EPA: Chapter 5
* RC: Chapter 5

Assignments:

* Data Assignment 2 **(Due: March 22nd 11:59pm)**

**Module 9: Foundations of Statistical Inference (3/16 - 3/22)**

Readings:

* EPA: Chapter 6

Assignments:

* Graduate Project **(Due: May 3rd 11:59pm)**

**Module 10: Tests of Significance and Measures of Association 1 (3/23 - 3/29)**

Readings:

* EPA: Chapter 7 pg. 156-170
* RC: Chapter 6

**Module 11: Tests of Significance and Measures of Association 2 (3/30 - 4/5)**

Readings:

* EPA: Chapter 7 pg. 170-182
* RC: Chapter 7

Assignments:

* Data Assignment 3 **(Due: April 12th 11:59pm)**

**Module 12: Correlation and Bivariate Regression (4/6 - 4/12)**

Readings:

* EPA: Chapter 8 pg. 183-201
* RC: Chapter 8 pg. 117-122 (Stop before reading multiple regression analysis)

**Module 13: Multiple Regression (4/13 - 4/19)**

Readings:

* EPA: Chapter 8 pg. 201-214
* RC: Chapter 8 pg. 122-137 (start with multiple regression analysis and finish the chapter)

Assignments:

* Data Assignment 4 **(Due: April 27th 11:59pm)**

**Module 14: Logistic Regression (4/20 - 4/26)**

Readings:

* EPA: Chapter 9
* RC: Chapter 10

**Module 15: Graphing Regression Results (4/27 - 5/3)**

Readings:

* RC: Chapter 9

**Module 16: Thinking Empirically, Thinking Probabilistically (5/4 – 5/8)**

Readings:

* EPA: Chapter 10
* RC: Chapter 11

Assignments:

* Final Exam **(Due: May 10th 11:59 pm)**