

# PSC 451: Empirical Political Analysis

Section A (Undergraduate): 3 credits

Section B (Graduate): 4 credits

Fall 2023

Online

**Instructor:** Matthew Geras, Assistant Professor

**Office:** PAC 358

**Office Hours:** Thursdays: 1:30-4:30pm central (in person or via Zoom)

 By appointment (in person or Via Zoom)

**Phone:** 217-206-7884

**Email:**  mgera2@uis.edu

## **Course Description**

This course explains how empirical 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, and 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 analysis, and regression.

## **Course Objectives**

Upon completion of the course, students will:

* Learn how to conduct research that can rigorously answer questions about the social world.
* Learn how to judge evidence in terms of reliability and validity to assess 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.
* Be able to use R scripts to generate output for descriptive and inferential statistics and correctly interpret this output to evaluate substantive hypotheses and theories.
* Have a working knowledge of the strengths and weaknesses of several research designs.

**Learning Outcomes**

* The best way to learn quantitative analyses is to consistently practice, so students will complete assigned readings, lectures, R tutorials, and weekly participation assignments to demonstrate their active participation in class and their learning progress throughout the semester.
* Students will complete four data assignments and an abridged research paper to demonstrate their understanding of several different quantitative analyses, including measures of central tendency and spread, controlled comparisons, tests of significance, and linear regression, as well as their ability to use R and RStudio.
* Students will complete article analysis assignment(s) to demonstrate their ability to consume and evaluate empirical social science research.
* Students will demonstrate their overall knowledge of empirical quantitative research by completing a cumulative final exam.

## **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, lecture videos, short participation assignments, R tutorials, 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. Except for instances where this would cause assignments to be due on UIS recognized holidays, assignments for this class will always be due on Monday evenings at 11:59pm. This staggered calendar-week schedule is designed so everyone has the option of completing their assignments and class work either during the week or on weekends. Additionally, the Monday deadlines provide everyone, including those who complete most 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 asynchronous course which means each week you will complete the readings and assignments associated with each module at your own pace. 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 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 (remote) 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 accommodation, 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**

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

**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 III, Philip H., and Barry C. Edwards. 2020. *The Essentials of Political Analysis*. 6th ed. CQ Press.
2. Pollock III, Philip H. and Barry C. Edwards. 2023. *An R Companion to Political Analysis.* 3rd ed. CQ Press.

[ISBN: 978-1-0718-6241-4]

We will be using both books extensively. In fact, we will be reading both books almost cover to cover. If you have taken other classes with me, you know I rarely assign textbooks, but these are truly necessary to complete this course. Students should have both books no later than the second week of class.

## **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 Career Development Center](http://www.uis.edu/career/)

## **Course Requirements**

## Complete all assigned readings, lecture videos, and graded assignments. As a best practice, please keep a backup copy of all assignments that you submit. As a UIS student you have access to a [Box](https://www.uis.edu/its/services-uis/box) account, which can be used to back up your assignments.

## **Adhere to assignment deadlines as outlined on Canvas and the course schedule. I accept late work, but assignments submitted after their due date will be subject to a penalty of 2% per day. I recognize that some late work occurs due to circumstances outside a student’s control. As a result, I may waive this penalty in such circumstances, especially if you are proactive in letting me know you will be submitting work late before the assignment deadline. Most importantly, keep in mind that if you are consistently submitting assignments late, you are limiting your ability to receive feedback on your assignments. If you submit late work after the last recognized day of classes, I cannot guarantee it will be counted towards your final score due to the university’s grading timeline.**

## ***While it is important that we all do our best to adhere to these requirements, I recognize we all continue to live through unprecedented times. 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.***

## **Technology Requirements**

Students will use the internet to access the Canvas course page and their UIS email. Other programs used will be Zoom, Microsoft Office, Zotero or some other bibliographic management software (optional), and resources from the UIS library. All these programs are available to students through their enrollment in UIS classes or are freely available online.

*Downloading R and RStudio*

In Module 2, students will be given specific instructions on how to download R and R Studio, and how to access a cloud-based version of R Studio if students would prefer not to download these programs onto their personal computers. Throughout the course, students will complete many R tutorials and students are expected to complete their data assignments and abridged research paper using R. R and R Studio are open source and free to individuals and can be downloaded using the following links.

* R Project ([www.r-project.org](http://www.r-project.org)– download R here
* RStudio (<https://posit.co/>) – download R interface here

## **Course Communication**

The best way to contact me is through email or the messenger function on Canvas. As needed, we can also schedule Zoom meetings and telephone consultations. I typically respond to emails within 24 hours Monday through Thursday and within 48 hours Friday through Sunday. You will likely receive a response from me much 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 you are welcome to contact me again.

Keep in mind that the messenger app on Canvas sometimes struggles with file attachments, especially in cases where you are responding to a Canvas message through email. As a result, email or UIS’s protected email application ([PEAR](https://www.aits.uillinois.edu/services/application_services/PEAR/)) is the better option in these circumstances. Additionally, keep in mind that I am not allowed to discuss grades through email.

Office Hours:

My office hours are Thursdays from 1:30pm to 4:30pm central and by appointment. 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 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. All office hours will be available either in person or via Zoom.

### Netiquette

In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. 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.

## **Methods of Evaluation**

## Students will be assessed on four data assignments, an article-analysis assignment (two if you are a graduate student), a final exam, an abridged research paper, and several shorter weekly participation assignments.

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(s) and as a result, instructions for each data assignment will be introduced in the corresponding module. That being said, since data assignments are longer than weekly participation assignments, you will always be given at least two full weeks 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 Analysis Assignments

Once during the semester, twice if you are a graduate student, you will be asked to read and analyze a political science research article on a topic of your choice. This assignment(s) is 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 the article you read. For example, among other things, you will be asked to identify the independent and dependent variable(s) used in the article and to consider whether these are good measures of the underlying concept(s) the authors are trying to measure. You are welcome to use an article that you have been assigned in another class when completing this assignment, but you are also allowed to find other articles on your own. The article 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 other requirement is that the articles you select must 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. The article analysis assignment which everyone will complete will be due by 11:59pm on **October 23rd** and the second article analysis assignment, which only graduate students need to complete, will be due by 11:59pm on **November 13th**.

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. However, 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 class and will be due by 11:59pm on **December 11th**.

Abridged Research Paper

By the end of the semester, each student will write a significantly abridged empirical research paper. Students will state their hypothesis in words, test it using data from the R Companion, 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 a greatly abridged version of the types of research article you will have read in this class as well as other classes. 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. The requirements for this paper will vary for graduate and undergraduate students, but all papers will be due by 11:59pm on **December 11th.**

Weekly Participation Assignments

During each module, you will be asked to complete a variety of shorter, miscellaneous assignments. The form of these assignments will vary in 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 completion meaning if you submit your assignment on time, you will receive full credit. However, if you skip questions or do not follow instructions, you will only receive partial credit. Seeing as the purpose of these shorter assignments is to give me an indication of where everyone stands with the course content and whether we may need to go over specific topics 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 your answers are perfectly correct. You will always receive feedback from me on weekly participation assignments, which means you will be able to learn from your mistakes. Overall, you should view these shorter assignments as being similar to class participation or the in-class activities you would complete in a traditional on-campus class.

**Grading Scale**

|  |  |
| --- | --- |
| **Undergraduate Students** | **Graduate Students** |
| Final Exam 20%Participation 20%Abridged Paper 15%Data Assignment 1 10% | Final Exam 20%Participation 20%Abridged Paper 15%Data Assignment 1 10% |
| Data Assignment 2 10% | Data Assignment 2 10% |
| Data Assignment 3 10% | Data Assignment 3 10% |
| Data Assignment 4 10% | Data Assignment 4 10% |
| Article Analysis 5% | Article Analysis 1 2.5%Article Analysis 2 2.5% |
|  |

| 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. In addition to this schedule, I will provide a weekly to do list, called a module roadmap, for each module on Canvas that will include your weekly participation assignments. With the exception of weeks containing UIS recognized holidays, weekly participation assignments will always be due on Mondays at 11:59pm.

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

EPA = *The Essentials of Political Analysis* by Pollock & Edwards

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

**Module 1: Class Introductions and Overview of Political Analysis (8/25 - 9/4)**

Readings:

* EPA: Introduction

**Module 2: Introduction to R and R Studio (9/5 - 9/11)**

Readings:

* RC: Introduction
* RC: Chapter 1

**Module 3: The Definition and Measurement of Concepts; Survey Research (9/12 - 9/18)**

Readings:

* EPA: Chapter 1

**Module 4: Measuring and Describing Variables (9/19 – 9/25)**

Readings:

* EPA: Chapter 2
* RC: Chapter 2

Assignments:

* Data Assignment 1 **(Due: October 9th, 11:59pm)**

**Module 5: Proposing Explanations, Framing Hypotheses, and Transforming Data in R (9/26 – 10/2)**

Readings:

* EPA: Chapter 3 (pg. 72-85)
* RC: Chapter 3

**Module 6: Making Comparisons (10/3 – 10/9)**

Readings:

* EPA: Chapter 3 (pg. 85-98)
* RC: Chapter 4
* RC: Chapter 5 (required for graduate students; encouraged for undergraduate students)

**Module 7: Research Design, the Logic of Control, and Experiments (10/10 - 10/16)**

Readings:

* EPA: Chapter 4

Assignments:

* Article Analysis 1 **(Due: October 23rd 11:59pm)**
* Article Analysis 2 **(Due: November 13th 11:59pm – Graduate Students Only)**

**Module 8: Making Controlled Comparisons (10/17 - 10/23)**

Readings:

* EPA: Chapter 5
* RC: Chapter 7

Assignments:

* Data Assignment 2 **(Due: October 30th 11:59pm)**

**Module 9: Foundations of Statistical Inference (10/24 - 10/30)**

Readings:

* EPA: Chapter 6

Assignments:

* Abridged Research Paper **(Due: December 11th 11:59pm)**

**Module 10: Tests of Significance and Measures of Association 1 (10/31 – 11/6)**

Readings:

* EPA: Chapter 7 (pg. 199-215)
* RC: Chapter 9

**Module 11: Tests of Significance and Measures of Association 2 (11/7 - 11/13)**

Readings:

* EPA: Chapter 7 (pg. 215-234)
* RC: Chapter 10

Assignments:

* Data Assignment 3 **(Due: November 20th 11:59pm)**

**Module 12: Correlation and Bivariate Regression (11/14 - 11/20)**

Readings:

* EPA: Chapter 8 (pg. 239-257)
* RC: Chapter 11

**Module 13: Multiple Regression (11/21 – 12/4)**

Readings:

* EPA: Chapter 8 (pg. 257-272)
* RC: Chapter 12

Assignments:

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

**Module 14: Review of Multiple Regression & Semester Wrap Up (12/5 - 12/9)**

Readings:

* EPA: Chapter 10
* RC: Chapter 15

Reminder of Final Assignments:

* Final Exam **(Due: December 11th 11:59 pm)**
* Abridged Research Paper **(Due: December 11th 11:59 pm)**