

## **POLS 5020: Research Methods**

Fall 2022 – Tuesdays 4:15-7:00 pm

Professor Matthew Nanes

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Office Hours: Wednesday 11-12 and by appointment

### ***Course Description and Introduction***

This course presents the fundamental tools that social science researchers use to ask and answer questions about the world. While the class is geared towards Political Science MA students, early-stage graduate students in any social science discipline should find it useful and are welcome to enroll. I also welcome undergraduate students who want to dig a bit deeper into the basic toolkit of social science research and are up for a small challenge (really, just a small one!).

The course teaches students to use the scientific method to generate knowledge about the way political actors operate and interact with one another. It is not a math class. You can succeed in this class without doing any math by hand, though you will learn how to tell a computer to do complex math on your behalf. Rather, the course explains how scientific methods of inquiry can be used for research on politics, presents a toolkit developing and answering questions you care about, and trains you to use those tools productively.

This course will cover qualitative and quantitative methods. Many the topics we cover – theory building, accuracy and precision, hypothesis testing, and field research – transcend any division between the two methods. You will learn to do evidence-based research; evidence comes in many forms.

For the portions of the class which do involve statistics, we will use Stata. Stata is freely available on most campus computers at SLU. I will use examples from Stata in class, and you are expected to turn in assignments completed in Stata.

### ***Course Goals***

By the end of this course, you will:

- Produce knowledge using scientific methods and empirical evidence
- Identify the limitations of statistics presented in the media and communicate those limitations effectively to a non-specialist audience
- Understand and evaluate the claims, strengths, and weaknesses of qualitative and quantitative evidence in contemporary social science research
- Use statistical methods appropriately to draw inferences about politics
- Interpret and evaluate evidence presented in political science research

### ***A Note on Learning Methods***

Empirical (i.e. evidence-based) analysis involves a lot of judgement calls. There is very rarely a single, clear-cut “right” way to test a hypothesis. The messier the data, the truer this statement. This can be frustrating because, as a student, you want someone to tell you when you’ve arrived at the right answer. Unfortunately, there can be more than one right answer, and varying degrees

of what's "right." Expect to have to justify the decisions you make. If you can do that convincingly, then you have probably arrived at **a** right answer.

Everyone learns differently. This course exposes you to four sets of voices on any given topic: your professor, the textbook author, the supplementary reading authors, and your classmates. This repetitive approach is by design. If my explanations aren't working for you, it does not mean you're doing anything wrong (nor does it mean I'm a bad teacher, though it might if the entire class thinks my explanations are useless). It simply means that you need the explanation from another voice. The key is to seek out the style that works for you.

Students come to this class with widely-varied experiences. You should never, ever be afraid to admit you don't understand something, even if your classmates appear to understand it. Ask questions, and keep asking until you are fully satisfied.

*NOTE:* I've written out the most important course policies below in plain English. You will find the official University-mandated language for these and other policies at the end of this syllabus.

### ***Attendance Policy***

Attendance and active participation are critical if you are to get anything useful out of this class. You are allowed 1 unexcused absence with no penalty. Additional absences will be excused in the case of a genuine need that is beyond your control. Each unexcused absence will result in a 5 point penalty on your final course grade. Illness is an excused absence. If you are sick, do not come to class.

### ***Grading and Assignments***

The assignments evaluate you based on the course goals listed above, with an emphasis on the appropriate use of a wide range of tools to ask and answer questions about politics using scientific methods and empirical evidence.

- 50% Homework and Classroom Assignments
- 25% Midterm Exam
- 25% Baby Research Paper (BRP)

Unless otherwise specified, all assignments should be uploaded to Canvas

I will convert your numeric grades to a letter course grade using this scale:

A	93-100	B+	87-89	C+	77-79	D	60-70
A-	90-92	B	83-86	C	73-76	F	below 60
		B-	80-82	C-	70-72		

### ***Academic Integrity:***

I take academic integrity very seriously. I intend to make the guidelines for each assignment clear regarding outside sources. If you are not sure what is allowed on an assignment, you should contact me for clarification. Unless I specify otherwise, assignments should be completed on your own with no input from anyone else. Unless otherwise specified, all assignments are closed-book and you may not use any resources to help complete them. Any violation of academic integrity will result in an automatic F in the class.

You should familiarize yourself with the university's general guidelines on academic integrity found here: <http://www.slu.edu/arts-and-sciences/student-resources/academic-honesty.php>

### ***Students with Disabilities***

Students who wish to request academic accommodations are encouraged to contact Disability Services to discuss accommodation requests and eligibility requirements. Please visit the Office of Disability Services website (<http://www.slu.edu/life-at-slu/student-success-center/disability-services>) for details. Please also contact me as soon as possible if you wish to discuss any of these options.

### ***Books***

The two **required** books for this class are:

- Ethan Bueno de Mesquita and Anthony Fowler, *Thinking Clearly With Data*. Princeton University Press.
- Kosuke Imai and Lori D. Bougher, *Quantitative Social Science: An Introduction in Stata*. Princeton University Press.

There will also be required supplemental readings, listed below. These are either available online or I will post them on Canvas.

## **Course Outline**

\*Homework assignments are due the following Monday at 9 am (the day before the next class). For example, the assignment listed under Week 1 should be turned in via Canvas by 9 am on the Monday of week 2.

\*Reading assignments are listed for the day on which we will discuss them.

1. August 30<sup>th</sup>: The Scientific Method
  - READING for 8/30:
    - BDM and Fowler, ch. 1 (all pages) and ch. 2 p.13-24
    - Lyall 2021, p.1-26
    - Imai and Bougher, p.8-16 and 20-21
    - <https://stats.oarc.ucla.edu/stata/modules/descriptive-information-and-statistics/>
    - <https://stats.oarc.ucla.edu/stata/modules/an-overview-of-stata-syntax/>
  - In class:
    - Why is it called political science?
    - What is a theory and where do I find one?
    - Developing research questions
    - Installing Stata
    - Intro to data analysis (Stata)
  - HOMEWORK for week 2:
    - “Theory-Building, Hypotheses, and Causal Inference” on Scandinavian Crime Fiction article (details on Canvas, due via Canvas before Class 2)
2. September 6<sup>th</sup>: Theory building and hypotheses

- READING
    - BDM and Fowler, ch. 4 (all)
    - Lyall 2021, p.26-35
    - Pape 2021, “Analysis of 377 Capitol Rioters”
    - Imai and Bougher, p.21-23 (merges), 23-24 (packages), 32-44 (operators and conditions)
    - <https://stats.oarc.ucla.edu/stata/modules/collapsing-data-across-observations/>
    - <https://stats.oarc.ucla.edu/stata/modules/combining-data/>
  - In class:
    - Selecting cases
    - Units of analysis
    - Subsetting data (Stata)
  - HOMEWORK:
    - Schedule a meeting with Professor Nanes to discuss the Baby Research Paper
    - “Collapsing Data” (via Canvas before Class 3)
3. September 13<sup>th</sup>: Describing your data
- READING:
    - <https://statisticsbyjim.com/basics/measures-central-tendency-mean-median-mode/>
    - <https://statisticsbyjim.com/basics/variability-range-interquartile-variance-standard-deviation/>
    - Imai and Bougher, p.18-19, 67-75, 86-95
    - <https://stats.oarc.ucla.edu/stata/modules/missing-values/>
  - In class:
    - Measures of central tendency: mean, median, and mode
    - Measures of uncertainty: variance, standard errors, confidence intervals
  - HOMEWORK:
    - Meet with Professor Nanes about the Baby Research Paper
    - “BRP – Theory and Hypotheses” (via Canvas before Class 4)
4. September 20<sup>th</sup>: Sampling and Distributions
- READING:
    - BDM and Fowler, p.94-109, 113-118
    - Imai and Bougher, p.199-205, 210-218, 266-267
  - In class
    - Uncertainty
    - Adding and multiplying probabilities
    - Dice activity
    - Normal distribution and hypothesis testing
  - HOMEWORK
    - “Sampling, Probability, and Description” (via Canvas before class 5)
5. September 27<sup>th</sup>: Relationships with “perfect” data; Experiments

- READING:
    - Imai and Bougher, p.106-114
    - Carlisle 2014, “Arguing for a Negligible Effect.” *American Journal of Political Science*.
    - Haim, Nanes, and Ravanilla, “Community Policing in the Philippines: Communication, Trust, and Service Provision”
  - In class:
    - T-tests,  $r^2$ , correlations, and plots (Stata)
    - Null effects
    - Experiments
  - HOMEWORK:
    - “Hypothesis Testing” (via Canvas before Class 6)
    - “BRP - Data” (via Canvas before Class 6)
6. October 4<sup>th</sup>: Threats to inference
- READING:
    - BDM and Fowler, p.159-187
    - Imai and Bougher, p.96-104
  - In class:
    - Threats to inference: omitted variables, directionality, missing data, measurement error, selection
  - HOMEWORK
    - “Imperfect Data” (via Canvas before Class 7)
7. October 11<sup>th</sup>: MIDTERM EXAM
- At home during scheduled class time
  - Material from topics 1 through 6
  - HOMEWORK
    - “BRP – Summary Statistics (via Canvas before Class 8)
8. October 18<sup>th</sup>: Case studies; Ethics
- READING:
    - Lyall 2021, p.90-150. *\*You are not responsible for the historical details in the narrative. Rather, pay close attention to how the author structures the narrative to "code" variables and establish causality. Feel free to skim.*
    - Blair, Christia, and Weinstein, “Understanding Partnerships with the Police.” *\*This chapter discusses ethical issues related to the policing experiment you read about in Haim et al for week 5. Pay attention to the ethical challenges the researchers faced and how they responded to them.*
  - In class:
    - Mixed methods analysis
    - Montana GOTV
    - “Do no harm”
    - IRB
    - Taking sides in politics
  - HOMEWORK:

- Revisions to BRP summary statistics (if needed)
9. October 25<sup>th</sup>: Intro to Regression
- READING (complete in the order listed):
    - BDM and Fowler, p.74-79
    - BDM and Fowler, p.193-197 (basics)
    - Imai and Bougher, p.144-149 (bivariate regression)
    - BDM and Fowler, p.198-211 (control variables)
    - Imai and Bougher, p.171-175 (multivariate regression)
    - BDM and Fowler, p.211-213 (reading tables)
  - In class:
    - Notation
    - Ordinary least squares (OLS)
    - Interpreting results
  - HOMEWORK
    - Start thinking about the research design for your BRP (see next week's assignment). Meet with Professor Nanes (recommended).
10. November 1<sup>st</sup>: Intro to Regression (continued)
- READING:
    - <https://stats.oarc.ucla.edu/stata/modules/labeling-data/>
    - Imai and Bougher, p.16-18 (labels)
    - Imai and Bougher, p.336-342 (regression with uncertainty)
  - In class:
    - Being realistic with errors: clustering, “robust”
    - Making tables and presenting results (Stata)
  - HOMEWORK:
    - “Multivariate Regression” (via Canvas before Class 11)
    - “BRP – Research Design” (via Canvas before Class 11)
11. November 8<sup>th</sup>: Visualizing regression results
- READING:
    - BDM and Fowler, p.306-315
    - Imai and Bougher, p.183-184
    - <https://stats.oarc.ucla.edu/stata/modules/graph8/twoway/>
    - <https://stats.oarc.ucla.edu/stata/modules/graph8/gen-opts/>
  - In class:
    - Plotting results (Stata)
12. November 15<sup>th</sup>: Transformations and Interactions
- READING:
    - BDM and Fowler, p.30-33 and 79-86
    - Imai and Bougher, p.177-183
    - *\*Whichever of the following works best for you:*
    - <https://stattrek.com/regression/linear-transformation.aspx>
    - <http://fmwww.bc.edu/repec/bocode/t/transint.html>

- <https://www.coursera.org/lecture/linear-regression-business-statistics/transformation-of-variables-in-a-regression-improving-linearity-FOYXk>
    - In class:
      - Interactions between variables
      - Plotting interactions
      - Torturing your data (transformations)
    - HOMEWORK:
      - “BRP – Preliminary Results”
13. **November 22<sup>nd</sup>**: Time as data
- READING:
    - Vanden Eynde, Kuhn, and Moradi (2018), “Trickle-Down Ethnic Politics: Drunk and Absent in the Kenya Police Force.” *American Economic Journal: Economic Policy* 10(3).
    - <https://stats.oarc.ucla.edu/stata/modules/using-dates-in-stata/>
  - In class:
    - Serial correlation: challenges to inference, design solutions
    - Dates in Stata
  - HOMEWORK:
    - Interactions assignment
14. **November 29<sup>th</sup>**: Panels
- READING:
    - i. Catch up
  - In class:
    - Panel data and designs
  - HOMEWORK
    - i. Work on BRP
15. **December 6<sup>th</sup>**: Non-linear multivariate regression; Wrap-up
- In class:
    - Menu of common models and their applications

### **Syllabus statements required by the office of the provost:**

#### **Academic Integrity**

*Academic integrity is honest, truthful and responsible conduct in all academic endeavors.* The mission of Saint Louis University is “the pursuit of truth for the greater glory of God and for the service of humanity.” Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care, and community service through which SLU fulfills its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern. The full University-level Academic Integrity Policy can be found on the Provost’s Office website at: [https://www.slu.edu/provost/policies/academic-and-course/policy\\_academic-integrity\\_6-26-2015.pdf](https://www.slu.edu/provost/policies/academic-and-course/policy_academic-integrity_6-26-2015.pdf).

Additionally, each SLU College, School, and Center has its own academic integrity policies, available on their respective websites.

### **Disability Accommodations**

Students with a documented disability who wish to request academic accommodations must formally register their disability with the University. Once successfully registered, students also must notify their course instructor that they wish to use their approved accommodations in the course.

Please contact Disability Services to schedule an appointment to discuss accommodation requests and eligibility requirements. Most students on the St. Louis campus will contact Disability Services, located in the Student Success Center and available by email at [Disability\\_services@slu.edu](mailto:Disability_services@slu.edu) or by phone at 314.977.3484. Once approved, information about a student's eligibility for academic accommodations will be shared with course instructors by email from Disability Services and within the instructor's official course roster. Students who do not have a documented disability but who think they may have one also are encouraged to contact Disability Services. Confidentiality will be observed in all inquiries.

### **Title IX**

Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual harassment, including sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. If you speak with a faculty member about an incident that involves a Title IX matter, **that faculty member must notify SLU's Title IX Coordinator and share the basic facts of your experience.** This is true even if you ask the faculty member not to disclose the incident. The Title IX Coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus.

Anna Kratky is the Title IX Coordinator at Saint Louis University (DuBourg Hall, room 36; [anna.kratky@slu.edu](mailto:anna.kratky@slu.edu); 314-977-3886). If you wish to speak with a confidential source, you may contact the counselors at the University Counseling Center at 314-977-TALK or make an anonymous report through SLU's Integrity Hotline by calling 1-877-525-5669 or online at <https://www.lighthouse-services.com/StandardCustomURL/LHILandingPage.asp>. To view SLU's policies, and for resources, please visit the following web addresses: <https://www.slu.edu/here4you> and <https://www.slu.edu/general-counsel>.

IMPORTANT UPDATE: SLU's Title IX Policy (formerly called the Sexual Misconduct Policy) has been significantly revised to adhere to a new federal law governing Title IX that was released on May 6, 2020. Please take a moment to review the new policy and information on the following web address: <https://www.slu.edu/here4you>. Please contact the Anna Kratky, the Title IX Coordinator, with any questions or concerns.

### **Mandatory Syllabus Statement on Face Masks (2021-2022)**

Throughout the COVID-19 pandemic, key safeguards like face masks have allowed SLU to safely maintain in-person learning. If public health conditions and local, state, and federal restrictions demand it, the University may require that all members of our campus community wear face masks indoors.

Therefore, any time a University-level face mask requirement is in effect, face masks will be required in this class. This expectation will apply to all students and instructors, unless a medical condition warrants an exemption from the face mask requirement (see below).

When a University-wide face mask requirement is in effect, the following will apply:

- Students who attempt to enter a classroom without wearing masks will be asked by the instructor to put on their masks prior to entry. Students who remove their masks during a class session will be asked by the instructor to resume wearing their masks.



- Students and instructors may remove their masks briefly to take a sip of water but should replace masks immediately. The consumption of food will not be permitted.
- Students who do not comply with the expectation that they wear a mask in accordance with the University-wide face mask requirement may be subject to disciplinary actions per the rules, regulations, and policies of Saint Louis University, including but not limited to those outlined in the *Student Handbook*. Non-compliance with this policy may result in disciplinary action, up to and including any of the following:
  - dismissal from the course(s)
  - removal from campus housing (if applicable)
  - dismissal from the University
- To immediately protect the health and well-being of all students, instructors, and staff, instructors reserve the right to cancel or terminate any class session at which any student fails to comply with a University-wide face mask requirement.

When a University-wide face mask requirement is not in effect, students and instructors may choose to wear a face mask or not, as they prefer for their own individual comfort level.

#### ADA Accommodations for Face Mask Requirements

Saint Louis University is committed to maintaining an inclusive and accessible environment. Individuals who are unable to wear a face mask due to medical reasons should contact the Office of Disability Services (students) or Human Resources (instructors) to initiate the accommodation process identified in the University's [ADA Policy](#). Inquiries or concerns may also be directed to the [Office of Institutional Equity and Diversity](#). Notification to instructors of SLU-approved ADA accommodations should be made in writing prior to the first class session in any term (or as soon thereafter as possible).

#### Attendance

The health and well-being of SLU's students, staff, and faculty are critical concerns. Accordingly, the following University policy statements on in-person class attendance are designed to preserve and advance the collective health and well-being of our institutional constituencies.

1. Students who exhibit any [potential COVID symptoms](#) (those that cannot be attributed to some other medical condition the students are known to have, such as allergies, asthma, etc.) shall absent themselves from any in-person class attendance or in-person participation in any class-related activity until they have been evaluated by a qualified medical official. Students should contact the [University Student Health Center](#) for immediate assistance.
2. Students who exhibit any [potential COVID symptoms](#) (those that cannot be attributed to some other medical condition the students are known to have, such as allergies, asthma, etc.) but who feel well enough to a) attend the course synchronously in an online class session or b) participate in asynchronous online class activities, are expected to do so. Those who do not feel well enough to do so should absent themselves accordingly.
3. Students (whether exhibiting any of potential COVID symptoms or not, and regardless of how they feel) who are under either an isolation or quarantine directive issued by a qualified health official must absent themselves from all in-person course activity per the stipulations of the isolation or quarantine directive. They are expected to participate in synchronous or asynchronous online class activities as they feel able to do so, or absent themselves accordingly.
4. Students are responsible for notifying each instructor of an absence as far in advance as possible; when advance notification is not possible, students are responsible for notifying each instructor as soon after the absence as possible.

5. As a temporary amendment to the current [University Attendance Policy](#), all absences due to illness or an isolation/quarantine directive issued by a qualified health official shall be considered “Authorized” absences (effective August 2020 through May 2021).

### **2021-2022 Mandatory Syllabus Statement on In-Person Class Attendance and Participation**

The health and well-being of SLU’s students, staff, and faculty are critical concerns, as is the quality of our learning environments. Accordingly, the following University policy statements on in-person class attendance are designed to preserve and advance the collective health and well-being of our institutional constituencies and to create the conditions in which all students have the opportunity to learn and successfully complete their courses.

1. Students who exhibit any [potential COVID-19 symptoms](#) (those that cannot be attributed to some other medical condition the students are known to have, such as allergies, asthma, etc.) shall absent themselves from any in-person class attendance or in-person participation in any class-related activity until they have been evaluated by a qualified medical official. Students should contact the [University Student Health Center](#) for immediate assistance.
2. Students (whether exhibiting any of potential COVID-19 symptoms or not, and regardless of how they feel) who are under either an isolation or quarantine directive issued by a qualified health official must absent themselves from all in-person course activities per the stipulations of the isolation or quarantine directive.
3. Students are responsible for notifying their instructor of an absence as far in advance as possible; when advance notification is not possible, students are responsible for notifying each instructor as soon after the absence as possible. Consistent with the [University Attendance Policy](#), students also are responsible for all material covered in class and must work with the instructor to complete any required work. In situations where students must be absent for an extended period of time due to COVID-19 isolation or quarantine, they also must work with the instructor to determine the best way to maintain progress in the course as they are able based on their health situation.
4. Consistent with the [University Attendance Policy](#), students may be asked to provide medical documentation when a medical condition impacts a student’s ability to attend and/or participate in class for an extended period of time.
5. As a temporary amendment to the current [University Attendance Policy](#), all absences due to illness or an isolation/quarantine directive issued by a qualified health official, or due to an adverse reaction to a COVID-19 vaccine, shall be considered “Authorized” absences