POLI 102 – Political Science Statistics Lab
(POLI R Lab for SOSC 302)

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Class Hours: Thurs., 7PM-7:50PM
Fri., 2PM-2:50PM
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Or by appointment

1 Course Description

This course will serve as an introduction to R, a popular programming language for data analysis. This course will put an emphasis on using data to answer questions about politics, but the core concepts can be applied to any field that relies on data. During the course you will learn to use R to inspect, clean, transform, analyze, and visualize data.

Interest and motivation are key! So we will try to cover topics that interest you. To do this, use this link to post questions, phenomena and/or data that you would like us to work on throughout the course. Assignments and the syllabus will be updated accordingly. This is not a mandatory task, you can do several entries and at different times, and the link will remain available throughout the semester. The form is anonymous, the only request is that you log in with your Rice account.

Sample questions/topic ideas:

- What is the ideology of different parties?
- Are some groups of people more affectively polarized than others?
- How does party registration change how individuals feel about the political parties?
- What are the regional differences in terms of gender, racial, age, and class representation around the world/US?
- Are all left/right-wing parties the same across the globe? How do they differ?
- What is the relationship between economic growth/development and democracy?
- What individual socioeconomic and demographic factors help explain political preferences and voting behavior?
- How do demographics affect how individuals feel about policy issues?

- Is the identity of voters and/or legislators related in any way to their political behavior? How?
- The global average life expectancy has increased significantly over the past 50 years. How else have living conditions around the world changed? Has anything else improved? Stayed the same? Got worse?
- Where can I gather data on *X*? And what can I do with it?
- What are some ways to show/test *X* with my data?

2 Objectives and Learning Outcomes

The course has three primary objectives:

1. Introduce students to `R`, a free software environment for statistical computing and graphics.
2. Familiarize students with best ways to clean, transform, analyze, and visualize social, political, and economic data.
3. Provide students with the tools to learn and use `R` by themselves.

In particular, at the end of this course you will be able to:

1. Use `R` to inspect, clean, transform, analyze, and visualize data.
2. Assess social, political, and economic phenomena from a data-driven perspective.
3. Learn `R` by yourself.

3 Required Materials and Other Resources

3.1 Materials

There are no required texts or materials for this class that you need to access ahead of time. However, I recommend the following book, available online through the Fondren Library:

- Urdinez, Francisco and Andres Cruz. 2020. *R for Political Data Science: A Practical Guide*. CRC Press. [permalink]

Additionally, there are many resources for learning `R` available for free online. Here are some you can consult:

- General
- `tidyverse` (but also general `R` and `ggplot2`)
- `ggplot2` (`ggplot2` tabs in table of contents on the left)

If applicable, I will try to indicate which part of each of these is related to the things we are learning at each moment, in case you choose to support your learning throughout the course using them.

There might also be some cheat sheets and brief news articles or editorials assigned for some classes. If any, these materials will be posted on Canvas.

3.2 Additional Help

In general, the main recommendation in terms of course materials is that whatever you want to achieve or get stuck with, look it up online. The solution should easily find its way to you.

Coding and statistics can be difficult. If you are having trouble with a homework assignment there are several options:

1. The internet is your friend. There are many sites (StackOverflow) that are dedicated to helping individuals with coding problems. Looking for help on the internet is a normal part of coding (I do it all the time). You should find an answer to your problem within 2-30 minutes. If you are spending more than an hour on the internet for one problem you may want to try a different approach.
2. Canvas! Please post your questions on Canvas, your classmates may have the same question or even the answer! I will answer any questions you post and encourage you to do the same if you think you have a solution to some of the issues/questions that are posted.
3. Ask an *actual* friend/classmate. You can collaborate with each other on assignments. I do not, however, want you to 'copy/paste' your mate's code; everything you write should be your own.
4. Email me, come to office hours, talk to me during class. I am here to help!

3.3 Computing

I encourage you to bring your laptop to class or whatever device you will be using `R` on.

In order to avoid a sluggish and organization-heavy start of the course, installation of all software components used in this course is to be completed in advance.

We will use `R` and `RStudio` in this class, both of which you can download for free. Please use the first week of classes that we will not meet to complete these steps:

1. Install `R`.
2. Install `RStudio`.
3. Ask me any questions you have about the course and/or the installation process.

4 Course Assignments and Evaluation

This course will be based on both lectures and practicals. While the main goal of this lab is to be a very hands-on course, in class I will have to show you how you can do different things in `R` so you can work on it yourself. Thus, the success or failure of the course will turn on students' ability to engage in lab sections, the willingness to put some effort into learning `R`, and apply what they have learnt throughout the different assignments.

Assessment of performance is based on in class participation, individual homework assignments, and a group final project. The weight given to each group of assignments is summarized in the table below.

Item	Weight
Participation	10
Homework (HW)	70
Final Project	20
Total	100

- **Participation**: Participation entails coming to class prepared to ask and answer any questions that may arise. If you are uncomfortable with speaking up in class, an interested in developing this trait please let me know and we will design a strategy that suits your needs. Also, keep in mind participation does not mean "talking a lot" nor more importantly, being the one that always provides answers. Sensitivity to other people in the class is taken very seriously in this course. The extent to which all of us engage in meaningful and constructive conversations does not just depend on how much you participate but also in how much you help creating an environment in which every one feels comfortable participating. This course is also intended to help you improve these abilities. The following scale will be used to assess participation each class:
  - Missing: Excused absence.
  - 0: Unexcused absence.
  - 1: Student is present and conscious.
  - 2: Student is present, conscious, and engaged.
- **Homework (HW)**: You will complete a series of 7 homework assignments (10 points each) throughout the semester that will require you to applied what we learnt considering different questions, topics, and data sets in Political Science. These assignments provide an opportunity for you to apply POLI 102 and SOSC 302 contents using `R`. They also provide a starting point for learning `R` by yourself and going beyond class contents if wanting to.
- **Final Project**: There are no exams in this course, however the last couple of assignments will focus on a final project. This will be a group project in which you will apply all the course content by focusing on a Social Science question/topic of your own interest, using a data set of your choice. To make this task smoother, it will be divided into two assignments. First, the completion of a **Draft Project** (10 points) by performing any necessary data wrangling (merging, cleaning, creating data), visualizing your data, calculating basic associations, and designing any additional analysis you wish to perform for the Final Project. Second, the completion of the **Final Project** (10 points), in which you, at your discretion, will incorporate feedback provided by me and potentially your classmates on your Draft Project, perform final analyses, and polish the final document.

5 Course Policies

5.1 Attendance and in-class participation

Excuses for absence will be accepted before class. In extenuating circumstances, valid excuses with proof will be accepted after class. Any unexcused absences will yield no participation points for that day.

We will be using the course chat in Canvas to help me keep track of attendance. Please, send a random message at any time during class to the Canvas chat.

I encourage you to speak up as much as you want in class to ask questions, comment on what we are doing, or raise any concerns you may have. However, I know that for different reasons sometimes we tend to remain silent. Therefore, we will use this link so that you can post live anonymous comments at our sections. I will have it open during class to answer anything you want me to address. You will also be able to view others' comments and 'upvote' them with a thumbs up if you have the same concern/question/comment. At the end of the day, that will also help me assess how we are doing and what topics/tasks we might need to focus on a bit more.

5.2 Grades

Final course grades are assigned based on the weighted average of the assignments outlined above. This course will adhere to the following grading scale. A minimum grade of 60% is required to pass the class. Usual rounding rules apply.

A+	98-100	B+	87-89	C+	77-79	D+	67-69
A	93-97	B	83-86	C	73-76	D	63-66
A-	90-92	B-	80-82	C-	70-72	D-	60-62

5.3 Special Accommodations

I am open to discussing any academic, physical, or personal needs that you believe require special accommodations throughout the course. I am understanding and supportive of most situations and want this course to work best for your own learning process, so please come talk to me if you think there is something we can work on together to better tailor the course to your needs.

5.4 Disability Resource Center

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with the Disability Resource Center (Allen Center, Room 111 / adarice@rice.edu / 713-348-5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

5.5 Discrimination

Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation will not be tolerated in this course. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. The University policies covering discrimination, harassment, and retaliation may be accessed here.

5.6 Academic Integrity and Honesty

In this course, all students will be held to the standards of the University Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. If you have doubts about whether you are documenting and citing your sources properly, please consult me before submitting an assignment so that we can work on it together.

5.7 Syllabus Change

This syllabus is only a guide for the course and is subject to change with advanced notice.

6 Student Support Services

College can be stressful. Almost all students and scholars feel anxious and/or depressed at one time or another. Short term counseling is available free of cost to you via the Rice Counseling Center.

7 Tentative Schedule

The schedule is tentative and subject to change. More information about the weekly lab session will be posted on Canvas in advance.

Homework deadlines will be set to be at the end of the day (11:59PM) on the Monday after the date of the assigned lab sessions.

Draft/Final Project deadlines will be set to be at the end of the day (11:59PM) on the assigned date.

Class	Topic	Deadlines	Notes
January 12/13	Installing R and R Studio		*No class meeting*
January 19/20	Intro and Fundamentals R Math		
January 26/27	Bringing in Data Creating Data		
February 2/3	Data Cleansing Data Visualization I		
February 9/10	*Spring Recess*		*No class meeting*
February 16/17	HM 1 Q&A Data Summarization	HM 1 (10 pts)	
February 23/24	Measures of Central Tendency and Dispersion Data visualization II	HM 2 (10 pts)	
March 2/3	Measures of Association I	HM 3 (10 pts)	
March 9/10	Data Visualization III	HM 4 (10 pts)	
March 16/17	*Spring Break*		*No class meeting*
March 23/24	Measures of Association II	HM 5 (10 pts)	
March 30/31	Data Visualization IV	HM 6 (10 pts)	
April 6/7	Modelling I: Bivariate regression	HM 7 (10 pts)	
April 13/14	Modelling II: Multiple regression	Draft Project (10 pts)	*Recorded lecture*
April 20/21	Final Project Q&A	Final Project (10 pts)	