

INTL 4004E: Data Analytics for International Policy

Summer 2025 - Fully Online Course

All Materials Available Via eLC

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Online Office Hours: Fridays, 2:00–5:00 PM via <https://zoom.us/my/yugewang>, and other times by appointment.

1 Course Description and Objectives

This course will provide students with the tools to find, critically examine, analyze, understand, and present politics-related data to a broad audience. Although the focus is on data analytics, no background in statistics or programming is expected or required. The course offers an overview of using R, a leading statistical programming language, to work with various types of data relevant to the policy community. By the end of the course, students will have developed a working knowledge of R, social network analysis, geospatial visualization, quantitative data analysis, and experimental methods.

2 Online Course Format

This course is completely online! All materials are accessible through UGA's eLearning Commons (eLC) portal. The course is asynchronous, meaning you can work through the materials on your own schedule throughout the week.

The course consists of nine modules, roughly one per week. Each module includes required readings, videos, and slides. Most weeks will include both reading questions and a problem set (note: there are no required readings or reading questions during the first, shortened week). Except for the final week, all module reading questions and assignments are due by Sunday at 11:59 PM (Eastern Time). One suggested way to stay on track is to focus on the readings and answer the related questions on Monday and Tuesday, watch the videos on Wednesday, and then complete the problem set on Thursday and Friday. Alternatively, you could wait until the weekend to go through all the materials on Saturday and complete the assignments on Sunday. However, keep in mind that if you choose the latter approach, you will not have access to office hours before the due date in case you encounter any difficulties. For the final week, due to the shortened schedule, Module 9 will be due by 11:59 PM on Wednesday, July 30th. You are welcome to work ahead at any time.

You're free to approach each week's work in whatever way works best for you! As long as you complete each module by the deadline, you can work whenever and wherever it suits you.

I am here to support you however I can. Please feel free to email me anytime. I have set aside my entire Friday afternoon each week for office hours via Zoom, and I am also happy to schedule a time to talk if that works better for you.

3 Course Textbook

No book purchases are required for this class. All readings are drawn from academic journal articles, online resources, and book chapters. These materials will be available on the course's eLearning Commons (eLC) page or accessible online.

This course will use statistical software. Students need to install R before the class begins. You can follow this link – <https://posit.co/download/rstudio-desktop/> – to install R first, and then install RStudio. Since each assignment must be submitted as a PDF file, I recommend that Windows users install MiKTeX, and macOS users install MacTeX. Otherwise, you may encounter errors when compiling the document. Fortunately, all of these software packages are completely free.

4 Grading

Your final grade will be calculated on the following scale:

- 94 – 100 A
- 90 – 93.9 A–
- 87 – 89.9 B+
- 84 – 86.9 B
- 80 – 83.9 B–
- 77 – 79.9 C+
- 74 – 76.9 C
- 70 – 73.9 C–
- 60 – 69.9 D
- 59 and below F

5 Homework

Except for Module 1, each semi-weekly module will include two reading questions and one problem set. You are expected to complete the reading questions after finishing all the assigned readings. The purpose of these questions is to encourage you to do the readings before watching the videos or attempting the problem sets. The problem set for each module is designed to help you practice and assess whether you have fully understood the tools and concepts introduced in the module, typically using statistical software.

There will be one problem set for Module 1, worth 4 points. From Module 2 through Module 9, each module will include two reading questions (2 points each) and one problem set (worth 8 points). Extra credit may occasionally be offered in some problem sets. All assignments (reading questions and problem sets) should be submitted to the assignment dropbox on eLC.

For each module, please submit your reading questions and problem set as **separate PDF files**. This helps ensure your work is properly formatted and easy to review.

The focus on each problem set is on **progress, not perfection**. As such, each application problem set will be graded in the following way:

Rubric for Grading

Components	Unacceptable	Acceptable	Good	Excellent
Problem Set (Module 1) - Worth 4 points	Problem set not submitted by the deadline (0 Points)	An unfinished problem set submitted by the deadline (1 Point)		The problem set is submitted by the deadline, and the turned-in document addresses all assigned issues. (4 points)
Reading Questions (Modules 2–9) - 2 points each - Two questions per module	Answers not submitted by the deadline (0 Points)	Answers turned in by the deadline but off-topic (1 Point)		Answers submitted by the deadline and effectively addressing the questions (2 Points)
Problem Sets (Modules 2–9) - 8 points each - One problem set per module	Problem set not submitted by the deadline (0 Points)	An unfinished problem set submitted by the deadline (2 Points)	Problem set submitted by the deadline, with documentation provided, but containing minor analytical errors or omissions (6 Points)	Problem set submitted by the deadline, with documentation provided and a complete, correct analysis (8 Points)

6 Useful Information and University Policies

Attendance Policy and Make Up Policy

This course is completely asynchronous, meaning you can work at your own pace throughout each week. This flexibility is designed to help you manage the course materials and stay on track with deadlines. That said, late submissions will generally not be accepted. You are expected to complete the reading questions and problem sets ahead of each deadline. If, for any specific reason, you are unable to watch the videos or complete the corresponding assignments for more than a week, please contact me in advance with a reasonable explanation. Please note that even with an approved excuse, late assignments may not receive full credit.

Final grades must be submitted immediately after the course ends (July 30th), so any late or missing work at that point may affect your final grade and cause delays in grade reporting.

Diversity, Preferred Name and Pronouns

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I am eager to address you by your preferred name and/or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

Prohibition on Recording Lectures

In the absence of written authorization from the UGA Disability Resource Center, students may not make a visual or audio recording of any aspect of this course. Students who have a recording accommodation agree in writing that they:

- Will use the records only for personal academic use during the specific course. Understand that instructors have copyright interest in their class lectures and that they agree not to infringe on this right in any way.
- Understand that the instructor and students in the class have privacy rights and agree not to violate those rights by using recordings for any reason other than their own personal study.
- Will not release, digitally upload, broadcast, transcribe, or otherwise share all or any part of the recordings. They also agree that they will not profit financially and will not allow others to benefit personally or financially from lecture recordings or other course materials.
- Will erase/delete all recordings at the end of the semester.
- Understand that violation of these terms may subject them to discipline under the Student Code of Conduct or subject them to liability under copyright laws.

University Honor Code and Academic Honesty Policy

UGA Student Honor Code: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at "honesty.uga.edu."

I expect that the Student Honor Code will guide your efforts in this course. A lack of knowledge of the academic honesty policy does not explain a violation. Please email me with any questions.

Changes to the Syllabus Could Occur

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary

FERPA Statement

The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. See the registrar's explanation at "www.reg.uga.edu/general-information/ferpa/." FERPA allows disclosure of directory information (name, address, telephone, email, date of birth, place of birth, major, activities, degrees, awards, prior schools), unless requested in a written letter to the registrar.

Disability Services

The following is taken verbatim from the [Disability Resource Center](#):

“If you plan to request accommodations for a disability, please register with Accessibility and Testing. Accessibility and Testing can be reached by visiting Clark Howell Hall, by calling 706-542-8719 (voice) or 706-542-8778 (TTY), or by visiting <http://accessibility.uga.edu>”

Mental Health and Wellness Resources

The following is taken verbatim from the [Syllabus Checklist](#):

“UGA Well-being Resources promote student success by cultivating a culture that supports a more active, healthy, and engaged student community.

Anyone needing assistance is encouraged to contact Student Care & Outreach (SCO) in the Division of Student Affairs at 706-542-8479 or visit sco.uga.edu. Student Care & Outreach helps students navigate difficult circumstances by connecting them with the most appropriate resources or services. They also administer the Embark@UGA program which supports students experiencing, or who have experienced, homelessness, foster care, or housing insecurity.

UGA provides both clinical and non-clinical options to support student well-being and mental health, any time, any place. Whether on campus, or studying from home or abroad, UGA Well-being Resources are here to help.

- Well-being Resources: well-being.uga.edu
- Student Care and Outreach: sco.uga.edu
- University Health Center: healthcenter.uga.edu
- Counseling and Psychiatric Services: caps.uga.edu or CAPS 24/7 crisis support at 706-542-2273
- Health Promotion/ Fontaine Center: healthpromotion.uga.edu
- Disability Resource Center and Testing Services: drc.uga.edu

Additional information, including free digital well-being resources, can be accessed through the UGA app or by visiting <https://well-being.uga.edu>.”

Generative AI Policies

The following policy has been adapted and revised by the instructor in accordance with the [Generative AI for Instructors](#) guidelines:

The use of Generative AI (GAI) tools is permitted in this course, but only under specific conditions: to explore additional knowledge and to assist with coding tasks in assignments when you encounter difficulties. You are welcome to use GAI tools to support your learning, but their use should be limited to helping you develop your understanding and ideas—not to generate final answers or replace your own work.

Please note that GAI tools **may not** be used to answer any of the reading questions.

Remember, AI tools are best used to augment—not replace—your skills. It's important to recognize the limitations of GAI tools; they may contain inaccuracies, outdated information, or reflect bias. You are responsible for critically evaluating the validity and applicability of any AI-generated content you incorporate into your work.

Additionally, any work that includes content not created entirely by you must be properly cited. For GAI tools, this includes the name of the tool used, the prompt, and the date accessed. For detailed guidance, please refer to the APA Style article, [*How to Cite ChatGPT*](#).

Finally, keep in mind that this AI-permissive policy applies **only** to this course. Using AI tools in other courses without explicit permission may violate UGA's Academic Honesty policies and be considered unauthorized assistance. Always consult the specific guidelines for each course you take.

7 Course Outline

******NOTE: All sample code and datasets used in the videos or slides are also provided in eLC. Please download this information for each module and follow along with the video.***

Module 1: Course Introduction and Software Setup (June 5-8)

- Readings:
 - Syllabus
- Videos:
 - Introduction Part One
 - Introduction Part Two (Software Installation)
- Slides:
 - Introduction
- Assignments
 - Problem Set 1 – Due June 8th, 11:59 pm Eastern

Module 2: Descriptive Analysis (June 9-15)

- Readings:
 - Wickham, Hadley, Mine Çetinkaya-Rundel, and Garrett Grolemund. 2023. "Data Visualization." In *R for Data Science: 2nd Edition*.
 - <https://r4ds.hadley.nz/data-visualize.html>.
 - Soetewey, Antoine. 2020. "Descriptive Statistics in R." In *Stats and R*.
 - <https://statsandr.com/blog/descriptive-statistics-in-r/>.
- Videos:
 - Descriptive Analysis Part One
 - Descriptive Analysis Part Two
 - Descriptive Analysis Part Three (Analyses in R)

- Slides:
 - Descriptive Analysis
- Assignments
 - Two Reading Questions – Due June 15th, 11:59 pm Eastern
 - Problem Set 2 – Due June 15th, 11:59 pm Eastern

Module 3: Linear Regression Analysis (June 16–22, excluding June 19, which is a holiday)

- Readings:
 - Zhang, Susu. 2023. “Week 6 Linear Regression.” In *R for Psychometrics*.
 - https://bookdown.org/sz_psyc490/r4psychometrics/linear-regression.html.
 - Gallo, Amy. 2015. “A Refresher on Regression Analysis.” *Harvard Business Review*.
 - <https://hbr.org/2015/11/a-refresher-on-regression-analysis>.
- Videos:
 - Linear Regression Analysis Part One
 - Linear Regression Analysis Part Two (Analyses in R)
- Slides:
 - Linear Regression Analysis
- Assignments
 - Two Reading Questions – Due June 22nd, 11:59 pm Eastern
 - Problem Set 3 – Due June 22nd, 11:59 pm Eastern

Module 4: Network Analysis (June 23-29)

- Readings:
 - Asal, Victor, and R. Karl Rethemeyer. 2006. “Researching Terrorist Networks.” *Journal of Security Education* 1 (4): 65–74.
 - Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. “Network Analysis in the Social Sciences.” *Science* 323, no. 5916: 892–895.
- Videos:
 - Network Analysis Part One
 - Network Analysis Part Two
 - Network Analysis Part Three (Analyses in R)
- Slides:
 - Network Analysis
- Assignments
 - Two Reading Questions – Due June 29th, 11:59 pm Eastern
 - Problem Set 4 – Due June 29th, 11:59 pm Eastern

Module 5: Maps (June 30-July 6, excluding July 4, which is a holiday)

- Readings:

- Lovelace, Robin, Jakub Nowosad, and Jannes Muenchow. 2019. "Making Maps with R." In *Geocomputation with R*. Boca Raton, FL: CRC Press.
<https://r.geocompx.org/adv-map#legends>.
- Cohen, Dara Kay, and Ragnhild Nordås. 2014. "Sexual Violence in Armed Conflict: Introducing the SVAC Dataset, 1989–2009." *Journal of Peace Research* 51 (3): 418–428.
- Videos:
 - Maps Part One
 - Maps Part Two (Analyses in R1)
 - Maps Part Three (Analyses in R2)
- Slides:
 - Maps
- Assignments
 - Two Reading Questions – Due July 6th, 11:59 pm Eastern
 - Problem Set 5 – Due July 6th, 11:59 pm Eastern

Module 6: Interviews (July 7-13)

- Readings:
 - Fujii, Lee Ann. 2010. "Shades of Truth and Lies: Interpreting Testimonies of War and Violence." *Journal of Peace Research* 47 (2): 231–241.
 - Knott, Eleanor, Aliya Hamid Rao, Kate Summers, and Chana Teege. 2022. "Interviews in the Social Sciences." *Nature Reviews Methods Primers* 2: 73.
- Video:
 - Interviews
- Slides:
 - Interviews
- Assignments
 - Two Reading Questions – Due July 13th, 11:59 pm Eastern
 - Problem Set 6 – Due July 13th, 11:59 pm Eastern

Module 7: Experiments (July 14-20)

- Readings:
 - Druckman, James N., and Donald P. Green. 2021. "A New Era of Experimental Political Science." In *Cambridge Handbook of Experimental Political Science*, edited by James N. Druckman, Donald P. Green, James H. Kuklinski, and Arthur Lupia. Cambridge: Cambridge University Press.
 - Druckman, James N., Donald P. Green, James H. Kuklinski, and Arthur Lupia. 2006. "The Growth and Development of Experimental Research in Political Science." *American Political Science Review* 100 (4): 627–635.
- Videos:

- Experiments Part One
- Experiments Part Two
- Experiments Part Three
- Slides:
 - Experiments
- Assignments
 - Two Reading Questions – Due July 20th, 11:59 pm Eastern
 - Problem Set 7 – Due July 20th, 11:59 pm Eastern

Module 8: Text as Data (July 21-27)

- Readings:
 - Silge, Julia, and David Robinson. 2017. “Converting to and from Non-Tidy Formats.” In *Text Mining with R: A Tidy Approach*. Sebastopol, CA: O’Reilly Media.
<https://www.tidytextmining.com/dtm.html>.
 - Yadav, Amit. “A Gentle Introduction to the Bag-of-Words Model.” *Biased-Algorithms (Medium)*. Last modified September 29, 2024.
<https://medium.com/biased-algorithms/a-gentle-introduction-to-the-bag-of-words-model-323be25abb09>.
- Videos:
 - Text as Data Part One
 - Text as Data Part Two
 - Text as Data Part Three (Analyses in R)
- Slides:
 - Text as Data
- Assignments
 - Two Reading Questions – Due July 27th, 11:59 pm Eastern
 - Problem Set 8 – Due July 27th, 11:59 pm Eastern

Module 9: Archival Research (July 28-30)

- Readings:
 - Lee, Alexander. 2015. *How (and How Not) to Use Archival Sources in Political Science*. (Unpublished manuscript).
http://www.rochester.edu/college/faculty/alexander_lee/wp-content/uploads/2014/07/archives.pdf.
 - Braun, Robert. 2016. “Religious Minorities and Resistance to Genocide: The Collective Rescue of Jews in the Netherlands during the Holocaust.” *American Political Science Review* 110 (1): 1–14.
- Videos:
 - Archival Research
- Slides:

- Archival Research
- Assignments
 - Two Reading Questions – Due July 30th, 11:59 pm Eastern
 - Problem Set 9 – Due July 30th, 11:59 pm Eastern