

POS 4931: Political Network Analysis

University of Florida

Syllabus: Spring 2024

Instructor: Dr. Drew Rosenberg
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Class location: 0117 Matherly Hall
Class time: Tu, 08:30–10:25
Th, 09:35–10:25
Office hours: W, 13:00–15:00

Schedule a meeting with me: <https://calendly.com/asrosenberg>.

Course Description

Networks are ubiquitous in politics. Countries are linked in trade and alliance networks. Legislators are tied in co-sponsorship networks. Rebel groups are connected in information networks. In this class, we will not only study the theory underlying these networks, but we will also analyze them. In so doing, we will learn to apply the multi-disciplinary field of network analysis to important political science applications.

This course is an introduction to network analysis in political science. There are no formal prerequisites; we will start with the basics, but some background in data analysis will be helpful. Network analysis is a relatively new field, so you will need to be ready and willing to learn some new concepts that initially seem far afield from what you've studied in previous political science classes. By the end of the semester, you will be able to analyze and interpret interdependent phenomena using these concepts and techniques.

We will have two class meetings per week. The first meeting will cover a conceptual topic. In the second meeting, you will get hands-on experience applying that topic to real-world data.

Course Goals:

1. Students will learn the substantive and theoretical framework for social network analysis and (some of) the methodological tools that we can use to conduct network research.

Expected Learning Outcomes:

- Know the major theoretical ideas on which network research is based.
- Collect and organize social network data.
- Analyze and interpret social network data.

Course Materials:

1. All required readings will be posted online. *You do not need to purchase any books.*
2. A laptop computer with R and R Studio installed. I will show you how to install R and R Studio in class.

Statistical Software

NB: This is the section that will seem overwhelming at first. Please bear with me; I promise that the computer skills you learn now will pay massive dividends later.

Proficiency in political data analysis requires one to analyze political data! With this end in mind, we will be playing with data from the very first week of this course. We will use the open source and free statistical software **R** in our course: <http://www.r-project.org/>.

What is R and why use it?

- Widely-used in academia and industries
- Open-source and free
- Power and flexibility
- Graphical capabilities
- Learning R = learning basic programming
- When you accomplish things, it will feel awesome
- And more!

The *New York Times* described R as

a popular programming language used by a growing number of data analysts inside corporations and academia. It is becoming their lingua franca [...] whether being used to set ad prices, find new drugs more quickly or fine-tune financial models. Companies as diverse as Google, Pfizer, Merck, Bank of America, the InterContinental Hotels Group and Shell use it. [...] “The great beauty of R is that you can modify it to do all sorts of things,” said Hal Varian, chief economist at Google. “And you have a lot of prepackaged stuff that’s already available, so you’re standing on the shoulders of giants.”¹

I recommend that you also install the free RStudio interface (<http://www.rstudio.com/>), which makes working with **R** a little easier. I will provide a handout that will walk you through the process of installing **R** and RStudio on your own computer/laptop. If the installation stuff overwhelms you, first take a deep breath. R is free, but quite annoying to install.

1. Vance, Ashlee. 2009. “Data Analysts Captivated by R’s Power.” *New York Times*, January 6.

Assignments:

1. **Problem Sets, Code-alongs, and Labs** (20% of Overall Grade) Throughout the term, you will participate in several labs with your peers and independently. These exercises are crucial for your understanding of how to do network analysis. Through these experiences, you'll gain hands-on skills in analyzing network data using your computer, an essential component of this course. The assignments are structured to progressively build your analytical abilities and integrate the theoretical aspects discussed in class. Code-alongs are class periods during which you will follow a coding exercise that I lead. Problem sets are traditional take-home assignments. Group labs are in-class exercises that you will complete with your peers. In the event that you miss a group lab, you will be required to complete the assignment independently.
2. **Final Paper** (20% of Overall Grade) The final group paper is the main writing activity for the course. This 12-18 page policy-oriented research paper requires students to use network theory to analyze a politically important event or issue in the United States, another country, or globally. You can choose from one of four broad topics: Political Polarization (Group 1), Disinformation on Social Media, International Conflict, or Globalization. While you may reference various actors and ongoing events, your paper should primarily focus on the chosen topic and incorporate course readings and additional research.

All paper topics must be approved by the end of week four, and you are encouraged to start working on this project early in the course. Throughout the term, there will be multiple opportunities for individual and group discussions about the paper. Electronic copies of the final paper must be submitted by the specified deadline; late submissions are only accepted with prior approval. Additionally, a response to peer review comments, must be attached to your final paper submission. Failure to include this response will result in a 5% deduction from the final paper grade. Detailed submission instructions, including the requirement for a peer evaluation form, are available on Canvas. Note that assignments submitted without a peer evaluation form will not receive credit.

3. **Final Paper Development Process** (20% of Overall Grade) As part of the process towards a successful final paper, students are required to engage in several preparatory steps, cumulatively worth 20% of the course grade. Initially, a brief proposal of no more than two pages must be submitted. This proposal should include at minimum a proposed title, research question, theoretical frameworks, and case studies for the final paper. Proposals are to be posted to Canvas by 11:59pm on the designated due date (5% to the total grade).

The next step involves writing a brief five-page draft of the final paper, accompanied by a one-page reference list. This draft should focus on defining the problem or puzzle to be examined, the argument being proposed, and, crucially, the study design for testing hypotheses. Like the proposal, the draft should be uploaded to Canvas by 11:59pm on its due date (10% of the total grade).

Following the submission of the final paper draft, students are expected to provide constructive feedback on a classmate's draft within two weeks. This peer review, due by 11:59pm on the assigned date, should be at least two pages long and include a summary of the argument, identification of strengths, areas needing further discussion, and suggestions for improvement. This peer review process contributes 5% to the overall grade.

4. **Final Paper Presentations (15% of Overall Grade)**

For this assignment, students will form groups based on similar topics chosen for their final research proposals. Each group will showcase how network analysis helps us understand your chosen political issue. Presentations should offer a clear, cohesive analysis of the topic. Evaluation will be based on the clarity and substance of the presentation, as well as the group's ability to effectively engage in discussions, both by asking and answering questions.

In addition to the presentation, each student will be required to submit evaluations of their group mates. While the entire group will receive the same grade for the presentation, individual scores will be weighted based on these peer evaluations. This process ensures that individual contributions are recognized and accounted for in the final grading.

To facilitate a well-organized review process, groups must upload their presentations to Canvas one full day before their scheduled presentation date. For example, if your presentation is scheduled for Thursday, it must be uploaded by 9:30 AM on Wednesday.

5. **Midterm Exam (15% of Overall Grade)** We will have one midterm exam during Week 11. You will be required to provide your own Blue Book for the exam (available for \$0.55 at the UF bookstore). This exam will cover material from required readings and lectures. This exam offers an opportunity to display your application and analysis of important concepts and themes discussed in class. It will have three sections: identification/definition, short answer, and one essay question. No late or makeup tests will be accepted.
6. **Class Participation (5% of Overall Grade)** To earn points for class participation, students can take part in class discussion during both lectures and labs. To receive full points in this category, students should come to most classes and participate in class at least once per week. However, I have a very broad conception of participation that includes active listening, asking questions of one another (including "what do you mean?"), reading relevant passages aloud, helping peers find correct pages, explaining why you agree or disagree with someone else, taking detailed notes, and engaging in and facilitating discussion. ***You can have at most TWO unexcused absences to receive full participation credit.***
7. **Pop Reading Quizzes (5% of Overall Grade)** To encourage thorough preparation and engagement with course materials, 10% of your final grade will be based on pop quizzes. These quizzes will be administered without prior notice and will focus on the assigned readings for each class. It's essential to complete all readings before class to

be well-prepared for these quizzes and to contribute meaningfully to class discussions.

NB: All written work for this course must be original work that is not AI-generated and has not been previously or simultaneously used for another course.

Summary of most important dates

- JANUARY 26: Problem Set 1 due
- FEBRUARY 16: Problem Set 2 due
- MARCH 9: Problem Set 3 due
- APRIL 2: Prospectus due
- APRIL 25: Final paper due

Grading

Class Participation	5%				
Reading Quizzes	5%				
Labs	20%			A	93–100%
Midterm	15%	B+	87–89%	B	83–86%
Final Paper	20%	C+	77–79%	C	73–76%
Final Paper Development	20%	D+	67–69%	D	63–66%
Final Paper Presentation	15%	E	< 60%	D–	60–62%
				A–	90–92%
				B–	80–82%
				C–	70–72%
				D–	60–62%

Policies and procedures

Lab Policy

Most weeks, I will lead the class in a guided data analysis exercise. This exercise will apply the concepts from the week's readings. This will be done in the R programming language, which students can download at cran.r-project.org. I will distribute a handout that guides students through installing R and R Studio (a GUI interface to R) on their personal computers during the first week of class. Students that have difficulty installing R should contact me immediately so I can help troubleshoot.

While most Thursday class sessions will involve going through the technical implementation of network concepts, students should feel free to raise any other questions during these classes. These classes will be more informal than the Tuesday sessions and will provide a good opportunity for me to provide help and support.

Attendance

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Communication and logistics

Outside of class, the primary method of communication will be email. *Your University issued email will be used, so please be sure that you have access to that account and that you check it regularly.* I will try to answer any emails within 24 hours during the week, and 48 hours over the weekend. Thus, you should always prepare to write to me well in advance if you have questions about the course. I will make it a priority to respond as quickly as possible to emergencies and other extreme issues. As always, formal communication models are preferred. I also expect you to use respectful, professional language, as well as proper grammar, spelling, and syntax. In addition, I hold two hours of office hours per week, but you may arrange a meeting outside of those hours if you are unavailable during this time. Please make use of office hours, as that is the time I allocate to be 100% available to you. If you have any questions or are having difficulty completing course requirements, please come see me as soon as possible.

Office Hours Scheduling

Like most professors, I will hold regular office hours during the term. My office hours this term are from 12:00 to 15:00 on Wednesdays. However, rather than just showing up, I encourage you to make use of the meeting scheduling app, Calendly, that I host on my website: <https://calendly.com/asrosenberg>. You can use this app to book meetings with me during my office hours or select other times throughout the week, which will vary week-to-week during the term. If you use this app, you will not risk showing up to office hours, only to wait around and not have time to meet with me!

Accommodations

I encourage you to begin assignments well ahead of time, as I am aware of the heavy workload you will be facing with other courses. Please be aware that I will not make any concessions regarding workload (such as dispensing when you miss class or excusing you from having done assignments). You are responsible for distributing your time according to your obligations every week. I am, however, well aware of the potential negative effect of exogenous factors on your learning or the possibility that you may be facing a tough time or an illness. I will require written confirmation from the counsellor or your physician to engage in dispensation and accommodation, but I will be more than happy to help in any way I can, within reasonable limits. Specific policies are below.

Assignment dispensation policy

Assignments and take-home exams must be submitted *on the day they are due*. If a student is unable to complete an assignment, they will be allowed to turn it in late only if the absence is due to a *documented* medical, family, or similar serious emergency, observance of religious holy days (which requires written notification to the instructor at least 14 days prior to the due date), or properly documented University-sponsored planned activities. *Incomplete assignments or exams in all other cases will result in a score of zero*. If you become aware that you will not be able to complete an assignment or final project ahead of time, please contact the instructor and seek permission for an extension as soon as possible.

Grade disputes

Grade disputes will be considered only if they adhere to this policy. Grade disputes must be made in writing (TYPED!). You must wait at least 2 full days after you receive your grade to submit a grade dispute (“cooling off period”); you may wait no more than 2 weeks after you receive your grade to submit a dispute. Your written dispute must contain a documented logic for why you believe your answer for each disputed item was incorrectly marked—you must cite specific passages in the texts and/or lectures and explain why you thought they applied to the item in question. The instructor will then review your dispute and issue a decision within one week. Failure to comply with this procedure will result in forfeiture of your ability to dispute your grade.

Grade adjustment policy

I do not tolerate emails asking me to round up grades or “find points” that otherwise do not exist. When you ask me to do either of these things, particularly at the end of the term, you are putting me in a position where I feel pressure to treat you differently from your colleagues. The policies above are designed to eliminate ambiguity in this regard. In addition, I have two policies on rounding: 1) I do not round on individual assignments, and 2) I round all final grades to the *nearest tenth*. For example, if you finish the term with a 79.88% in the course, I will round the grade to 79.9%. This policy is not an attempt to be mean. On the contrary, my goal is to hold all students in equal standing.

Technology policy

I do not restrict the use of laptops or tablets in this course. However, please note that improper usage or distraction *will* lead to a lower participation grade. In extreme cases, I reserve the right to consider you absent. In addition, I strongly recommend all students take notes by hand. I make this recommendation for two reasons.

1. Note-taking is not stenography. The purpose of note-taking is to record all *relevant* information, not all information.
2. Recent studies have shown that students who use laptops and other mobile devices perform worse on exams (see, [this article](#).)

Academic misconduct

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.” On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Disability services

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Class Recording Policy

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may

be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Health and Wellness Resources

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352-392- 1575 so that a team member can reach out.
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
- Sexual Assault Recovery Services (SARS) Student Health Care Center, 392-1161. University Police Department, 392-1111 (or 9-1-1 for emergencies). <http://www.police.ufl.edu>

Online Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Course Overview and Schedule:

Week 01, 01/08 & 01/10: Course Introduction

Tuesday: What are networks?

Thursday: Installing R and Intro to R I

- Read the R handout posted on Canvas.
- Elena Llaudet and Kosuke Imai. 2022. *Data Analysis for Social Science*. Princeton: Princeton University Press, Ch. 1 (posted on Canvas).
- Amelia Hoover Green, “How to Read Political Science: A Guide in Four Steps.”

Week 02, 01/15 & 01/17:

Tuesday: Intro to R II

- Stephen P. Borgatti et al. 2009. “Network Analysis in the Social Sciences.” *Science* 323 (5916): 892–895.

Thursday: No Class

Week 03, 01/22 & 01/24: Types of Networks: Local, One-mode, Two-mode

Tuesday

- Miller McPherson, Lynn Smith-Lovin, and Matthew E. Brashears. 2006. "Social Isolation in America: Changes in Core Discussion Networks over Two Decades." *American Sociological Review* 71 (3): 353–375.

Thursday: Intro to R II

- **Problem Set 1 due**

Week 04, 01/29 & 01/31: Triads, Balance, Hierarchy

Tuesday

- Lorien Jasny, Joseph Waggle, and Dana R. Fisher. 2015. "An Empirical Examination of Echo Chambers in US Climate Policy Networks." *Nature Climate Change* 5 (8): 782–786.

Thursday: Intro to R III

- Luke (2015), Chapter 1–2, Skim 3–5 (posted on Canvas).
- **Paper topic due**

Week 05, 02/05 & 02/07: Centrality, Power, and Inequality

Tuesday

- Patrick R. Miller et al. 2015. "Talking Politics on Facebook: Network Centrality and Political Discussion Practices in Social Media." *Political Research Quarterly* 68 (2): 377–391.

Thursday: Centrality Code-along

- Luke (2015), Chapter 7 (posted on Canvas).

Week 06, 02/12 & 02/14: It's a Small World

Tuesday

- Stanley Milgram. 1967. "The Small World Problem." *Psychology Today* 2 (1): 60–67.

Thursday: Research Design

- Selections from Wayne C. Booth, Gregory G. Colomb, and Joseph M. Williams. 2003. *The Craft of Research*. Chicago: University of Chicago Press (posted on Canvas).
- **Problem Set 2 due**

Week 07, 02/19 & 02/21: Groups and Communities

Tuesday

- Yan Zhang et al. 2008. “Community Structure in Congressional Cosponsorship Networks.” *Physica A: Statistical Mechanics and its Applications* 387 (7): 1705–1712.

Thursday: Groups and Cliques Code-along

- Luke (2015), Chapter 8 (posted on Canvas).
- **Final Paper Proposal due at 11:59p**

Week 08, 02/26 & 02/28: Homophily and Influence

Tuesday

- Daniel DellaPosta, Yongren Shi, and Michael Macy. 2015. “Why do Liberals Drink Lattes?” *American Journal of Sociology* 120 (5): 1473–1511.

Thursday: Modularity Code-along

Week 09, 03/05 & 03/07: Categories and Positions

Tuesday

- John F. Padgett and Christopher K. Ansell. 1993. “Robust Action and the Rise of the Medici, 1400-1434.” *American Journal of Sociology* 98 (6): 1259–1319.

Thursday: Weighted Networks Code-along

- **Problem Set 3 due**

Week 10, 03/12 & 03/14: No Class. Spring Break!**Week 11, 03/19 & 03/21:** Midterm and Research DesignTuesday: **Midterm Exam**

Thursday: Ego Networks Code-along

Week 12, 03/26 & 03/28: Affiliation Networks

Tuesday: Affiliation Network Lab

- Delia Baldassarri and Amir Goldberg. 2014. “Neither Ideologues nor Agnostics: Alternative Voters’ Belief System in an Age of Partisan Politics.” *American Journal of Sociology* 120 (1): 45–95.

Thursday: **No Class.**

- **Final Paper Draft due at 11:59p on 3/29**

Week 13, 04/02 & 04/04: Weak Ties

Tuesday

- Mark S. Granovetter. 1973. “The Strength of Weak Ties.” *American Journal of Sociology* 78 (6): 1360–1380.

Thursday: Alliance Network Lab

- Luke (2015), Chapter 9 (posted on Canvas).

Week 14, 04/09 & 04/11: Learning in Networks

Tuesday

- Sandra González-Bailón and Ning Wang. 2016. “Networked Discontent: The Anatomy of Protest Campaigns in Social Media.” *Social Networks* 44:95–104.

Thursday: Weighted Network Lab

- **Final Paper Draft Comments due at 11:59p**

Week 15, 04/16 & 04/18: Presentations

Tuesday: Groups 2 and 3

Thursday: Concluding Lecture

- Eric Arias et al. 2019. “Information Provision, Voter Coordination, and Electoral Accountability: Evidence from Mexican Social Networks.” *American Political Science Review* 113 (2): 475–498.

Week 16, 04/23 & 04/25: Presentations

Tuesday: Groups 1 and 4

- **Final Papers due on April 27 at 11:59p**