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|  | <p>Social Network Analysis Sociology 613 R 9:00-11:50, 714 PLC Fall 2025 Ryan Light Office Hours: Thursday, 1:00-3:00, 731 PLC, arrange Zoom and/or alternative windows by email. Email: light@uoregon.edu</p> |
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Course Description:

This course explores the foundations of social network analysis. Social network analysis (SNA) is motivated by the understanding that social actors do not live in isolation but depend upon one another for better or worse. In SNA we turn to the relations that bind people together moving from simple dyadic relationships (i.e. mother-daughter) to infinitely more complex structures involving thousands of actors, organizations, and so forth. SNA is a technique derived from theory; therefore, we will attend to the theoretical underpinnings of SNA and the questions that these theories address: how do things, such as disease or ideas, flow through our networks, how is social power generated and maintained, how do our social relations influence what we do and even how we think, and many more. Moving beyond theory, we will spend a significant amount of time thinking about the methods that help us answer these types of questions from simple visualizations (i.e., family trees) to statistical models of networks.

Expected Learning Outcomes:

- *You will describe and identify major concepts in social network analysis, like density, community, centrality, and cohesion.
- *You will be able to compare different ways of measuring these concepts and select the best form of measurement for your research question.
- *You will understand the structure of network data and how to collect data in your area of interest. You will visualize and model social networks using R.
- *You will put your knowledge to work by constructing a social scientific research paper using social network analysis.

Course Modality and Structure

This class will operate as an in-person seminar and workshop. Participation is key and we need consistent participation from every class member to be successful as a class. Readings are expected to be completed by the class session, the first half of which will consist of a seminar-style discussion. The second half of each class will consist of a SNA in R workshop starting week 3.

Course Policies

Communicating with Me: How and Why

Our class will communicate through our Canvas website. Announcements and emails are available there and are archived. They are automatically forwarded to your UO email and can be sent to you via text if you prefer (adjust this setting under account/notifications). I respond to emails in 48 hours or fewer, usually excluding the weekends. In the event that I do not respond in two days, please send a follow-up email as the original likely got “lost in the shuffle.”

Office Hours

I will host office hours on Thursdays from 1-3pm in 731 PLC. If you cannot meet during this time or if you would like to meet over Zoom, please contact me via email to set up a meeting at an alternative, agreed-upon time.

Requirements:

The main requirement of this seminar is a **research paper** (about 5,000 words) that uses the methods or ideas of social network analysis. This may be a revision of previous work (an MA paper, another course paper, etc.) or a new paper. If this is a revision of a previous paper, you need to show that the addition of network ideas or methods significantly contributes to the revision. You may collaborate with up to 2 other students (3-authors total) on your final paper. A collaborative paper should be closer to a finished product and a “complete” paper for your field in length and style. This paper is due on **December 11th at 5 pm**. The second requirement for the class is **a set of homework assignments** designed to build familiarity with analyzing networks in R. Assignments are due on Tuesday at noon following the week that they are assigned (so an assignment listed on class 1 (10/2) is due the next Tuesday (10/7) and can be completed in groups. **Article presentations:** You are required to present one reading from the syllabus between weeks 3-10. This is a flash presentation and should consist of no more than 3 slides and last no longer than eight minutes. Finally, since this is a seminar, **in-class participation is necessary**. As such, **attendance is required**. If you believe that you will miss more than one class, you should consider another course.

Distribution:

Research Paper: 40%

Homework Sets: 40%

In-class Participation: 10%

Article Presentation: 10%

Texts Available via the Library – No need to purchase!:

Kadushin, Charles. 2011. *Understanding Social Networks: Theories, Concepts, and Findings*. Oxford UP. You can access this book [here](#).

Light, Ryan and James Moody. 2020. *The Oxford Handbook of Social Networks*. Oxford UP. If you are logged into remote access via VPN or the library you can access [here](#).

Recommended Texts:

Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. New York: Cambridge UP... this is the “bible” of social network analysis and a source that all SNA specialists cite and return to frequently.

Or

Jackson, Matthew O. 2010. *Social and economic networks*. Princeton university press.

General Background Texts:

Christakis, Nicholas A. and James H. Fowler. 2009. *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*. New York: Little Brown.

Watts, Duncan J. 2003. *Small Worlds: The Science of a Connected Age*. New York: Norton.

Freeman, Linton C. 2004. *The Development of Social Network Analysis: A Study in the Sociology of Science*. Vancouver, BC: Empirical Press...a detailed history of social network analysis from one of the “founders” of the contemporary field.

Programs:

We will use R to analyze and draw social networks in this course. If you aren't familiar with R, you are encouraged to take an introductory online course.

Other R and Rstudio resources:

Hadley Wickham's R for Data Science: <https://r4ds.hadley.nz/>

Roger Peng's Book: <https://leanpub.com/rprogramming>

Cheatsheets: <https://www.rstudio.com/resources/cheatsheets/>

Swirl Courses: <http://swirlstats.com/scn/title.html>

Course Schedule (Subject to change with appropriate notice in class or through email):

Week 1 (10/2): Introductions

Kadushin: Chapter 1

Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. "Network Analysis in the Social Sciences." *Science* 323:892-895.

Light, Ryan and James Moody. 2020. "Network Basics: Points, Lines, and Positions." Pp. 17-33 in *The Oxford Handbook of Social Networks*. Edited by Ryan Light and James Moody. Oxford University Press.

Exercise: Draw your family tree going 3-steps from ego (Try in R?).

Week 2 (10/9): Foundations and Theoretical Perspectives

Gamper, M. (2022). Social Network Theories: An Overview. *Social Networks and Health Inequalities*, 35.

Emirbayer, Mustafa. 1997. "Manifesto for a Relational Sociology." *American Journal of Sociology* 103(2): 281-317.

Burt, R. S. (2017). Structural holes versus network closure as social capital. *Social capital*, 31-56.

Fuhse, Jan, and Sophie Mützel. "Tackling connections, structure, and meaning in networks: quantitative and qualitative methods in sociological network research." *Quality & quantity* 45, no. 5 (2011): 1067-1089.

Roth, A. R. (2022). Social Network Theory and Comedy: Insights from NBC's The Office. *Socius*, 8, 23780231221141524.

Exercise: Thinking with networks

Week 3 (10/16): Collecting and Visualizing Network Data

Kadushin: Chapter 11

adams, jimi, Santos, Tatiane, and Venice Ng. Williams. 2020. "Strategies for Collecting Social Network Data: Overview, Assessment, and Ethics." Pp. 119-136 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Small, Mario Luis. "Weak ties and the core discussion network: Why people regularly discuss important matters with unimportant alters." *Social networks* 35, no. 3 (2013): 470-483.

Moody, James and Ryan Light. 2020. "Network Visualization." Pp. 352-67 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Exercise: Network Visualization

Week 4 (10/23): Network Composition, Distance, and Balance

Kadushin Chapters 2 and 8

Smith, Jeffrey A. "The Continued Relevance of Ego Network Data." Pp. 177-188 in The Oxford Handbook of Social Networks. Edited by Ryan Light and James Moody. Oxford University Press.

Granovetter, Mark S. 1973. "[The Strength of Weak Ties](#)." *American Journal of Sociology* 78:1360-80.

You can choose one of these two if you'd like:

Chase, I. D. (1980). Social process and hierarchy formation in small groups: a comparative perspective. *American Sociological Review*, 905-924.

Kovacs, B., Caplan, N., Grob, S., & King, M. (2021). Social networks and loneliness during the COVID 19 pandemic. *Socius*, 7, 2378023120985254.

Exercise: Local network basics

Week 5 (10/30): Centrality and Power

Kadushin: Chapter 3

Borgatti, S. P., & Brass, D. J. (2019). Centrality: Concepts and measures. *Social networks at work*, 9-22.

Ortega, L., Boda, Z., Treviño, E., Arriagada, V., Gelber, D., & del Rosario Escribano, M. (2020). The centrality of immigrant students within teacher-student interaction networks: A relational approach to educational inclusion. *Teaching and Teacher Education*, 95, 103126.

Kamis, C., & Copeland, M. (2020). The long arm of social integration: gender, adolescent social networks, and adult depressive symptom trajectories. *Journal of Health and Social Behavior*, 61(4), 437-452.

You can choose to read one of these two if you like:

Fowler, James H. 2006. "[Legislative cosponsorship networks in the US House and Senate](#)." *Social Networks* 28: 454-65.

Gould, R. V., & Fernandez, R. M. (1989). Structures of mediation: A formal approach to brokerage in transaction networks. *Sociological methodology*, 89-126.

Exercise: Centrality

Week 6 (11/6): Cohesion and Community Detection

Kadushin: Chapters 4

Prell, Christina, Kuishuang Feng, LaCixiang Sun, Martha Geores, and Klaus Hubacek. "The economic gains and environmental losses of US consumption: a world-systems and input-output approach." *Social Forces* 93, no. 1 (2014): 405-428.

González-Bailón, Sandra, and Ning Wang. "Networked discontent: The anatomy of protest campaigns in social media." *Social networks* 44 (2016): 95-104.

Burdick-Will, J., Grigg, J. A., Nerenberg, K. M., & Connolly, F. (2020). Socially-structured mobility networks and school segregation dynamics: The role of emergent consideration sets. *American Sociological Review*, 85(4), 675-708.

Exercise: Cohesion and Community

Week 7 (11/13): Two-Mode Networks

Kadushin: Chapter 6

Mutzel, Sophie and Ronald Breiger. "Duality Beyond Persons and Groups." Pp. 392-413." Edited by Ryan Light and James Moody. Oxford University Press.

Banerjee, T., & Murray, J. (2021). Class dominance or fracturing? Sources of broad interest in lobbying by Fortune 500 corporations. *Sociological Perspectives*, 64(2), 157-175.

Hellsten, I., Opthof, T., & Leydesdorff, L. (2020). N-mode network approach for socio-semantic analysis of scientific publications. *Poetics*, 78, 101427.

Exercise: Two-Mode Networks

Week 8 (11/20): Diffusion and Preliminary Statistics

Kadushin: Chapter 9

Frank, K. A., Zhao, Y., & Borman, K. (2004). Social capital and the diffusion of innovations within organizations: The case of computer technology in schools. *Sociology of education*, 77(2), 148-171.

González-Bailón, Sandra, Javier Borge-Holthoefer, Alejandro Rivero, and Yamir Moreno. "The dynamics of protest recruitment through an online network." *Scientific reports* 1 (2011): 197.

Moolenaar, N. M., Slegers, P. J., Karsten, S., & Daly, A. J. (2012). The social fabric of elementary schools: A network typology of social interaction among teachers. *Educational Studies*, 38(4), 355-371.

Exercise: Threshold Model and QAP

Week 9 (11/27): Thanksgiving Holiday (No class)

Week 10 (12/4): Introduction to Statistical Models

Robins, Garry, Philippa Pattison, Yuval Kalish, and Dean Lusher. 2007. "An Introduction to Exponential Random Graph (p^*) Models for Social Networks." *Social Networks* 29(2):173-91.

Smith, Chris M., and Andrew V. Papachristos. 2016. "Trust thy crooked neighbor: multiplexity in Chicago organized crime networks." *American Sociological Review* 81, no. 4 (2016): 644-667.

Gondal, N. (2018). Duality of departmental specializations and PhD exchange: A Weberian analysis of status in interaction using multilevel exponential random graph models (mERGM). *Social Networks*, 55, 202-212.

Exercise: ERGM

FINAL PAPER DUE 5pm, December 11th to Canvas

Additional University and Course Policies

Access and Accommodations:

The University of Oregon and I are dedicated to fostering inclusive learning environments for all students and welcomes students with disabilities into all of the University's educational programs. The Accessible Education Center (AEC) assists students with disabilities in reducing campus-wide and classroom-related barriers. If you have or think you have a disability (<https://aec.uoregon.edu/content/what-disability>) and experience academic barriers, please contact the AEC to discuss appropriate accommodations or support. Visit 360 Oregon Hall or aec.uoregon.edu for more information. You can contact AEC at 541-346-1155 or via email at uoaec@uoregon.edu.

Academic Misconduct:

The [University Student Conduct Code](#) defines academic misconduct, which includes using unauthorized help on assignments and examinations, the use of sources without acknowledgment, and recording class without “the express written permission of the instructor(s).” Academic misconduct is prohibited at UO. I will report all suspected misconduct to the Office of Student Conduct and Community Standards. If the Office finds a student has committed misconduct, consequences can include failure of the relevant assignment or exam, or of the course.

While unauthorized help and use of sources without citation is prohibited, learning together and citing sources is crucial! Each assignment and assessment will have a note about whether and how you might work with others so that you can clearly act with academic integrity. All assignments will use the format of your choice (e.g., ASA, APA, MLA) and you can find more support in using citation methods at the [UO Libraries' Citation Guides research guide](#).

If at any point in the term you are unsure about whether a behavior aligns with academic integrity in our course, please contact me. I view student questions about academic integrity as a desire to act with integrity, so I welcome your questions.

Being A Good Academic Citizen:

What it means to be a good academic citizen is changing at a rapid pace. Classroom norms differ between departments and professors. Technology and our relationship to it have much to do with these ambiguities. So, being a good academic citizen means following traditional norms of good academic behavior: don't plagiarize, including non-appropriated paraphrasing and quotation, be respectful of others ideas, and so forth. But, it is also worth considering newer norms. For my class your phones should be put away. It is distracting to others to have people fidgeting with their text messages. You *can* use a laptop, but you should stay on task and respectful of others around you. If someone is being distracting, please contact me or a GTF. Last, you may NOT sell material for this class (notes, study guides, etc.). Any student who needs help with note-taking should talk to me.

Artificial Intelligence Use:

All work you submit for this course toward completion of course requirements must be your own original work done specifically for this course and without substantive assistance from others, including artificial intelligence systems (e.g., ChatGPT). Work you've completed for previous courses or are developing for other courses this term should not be submitted for this course. Please note that your work may be submitted to AI or plagiarism detection tools to ensure all work is human-created and original. Please also carefully read the academic integrity policy concerning plagiarism.

Your Well-being:

Life at college can be very complicated. Students often feel overwhelmed or stressed, experience anxiety or depression, struggle with relationships, or just need help navigating challenges in their life. If you're facing such challenges, you don't need to handle them on your own--there's help and support on campus.

As your instructor if I believe you may need additional support, I will express my concerns, the reasons for them, and refer you to resources that might be helpful. It is not my intention to know the details of

what might be bothering you, but simply to let you know I care and that help is available. Getting help is a courageous thing to do—for yourself and those you care about.

[University Health Services](#) help students cope with difficult emotions and life stressors. If you need general resources on coping with stress or want to talk with another student who has been in the same place as you, visit the Duck Nest (located in the EMU on the ground floor) and get help from one of the specially trained Peer Wellness Advocates.

University Counseling Services (UCS) has a team of dedicated staff members to support you with your concerns, many of whom can provide identity-based support. All clinical services are free and confidential. Find out more at counseling.uoregon.edu or by calling 541-346-3227 (anytime UCS is closed, the After-Hours Support and Crisis Line is available by calling this same number).

Basic Needs

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course is urged to contact the Dean of Students Office (346-3216, 164 Oregon Hall) for support.

[The UO Basic Needs Resource Guide](#) includes resources for food, housing, healthcare, childcare, transportation, technology, finances, and legal support.

Grade Culture

A: Quality of performance is outstanding relative to that required to meet course requirements; demonstrates mastery of course content at the highest level.

B: Quality of performance is significantly above that required to meet course requirements; demonstrates mastery of course content at a high level.

C: Quality of performance meets the course requirements in every respect; demonstrates adequate understanding of course content.

D: Quality of performance is at the minimal level necessary to pass the course, but does not fully meet the course requirements; demonstrates a marginal understanding of course content.

F: Quality of performance in the course is unacceptable and does not meet the course requirements; demonstrates an inadequate understanding of course content.