From: noreply@wsu.edu
To: curriculum.submit

Subject: 631433 New or Restore Course: SOC 527

Date: Wednesday, February 3, 2021 4:33:57 PM

Attachments: 2021.02.03.16.30.56.86.FormData.html

2021.02.03.16.30.56.31.currentFileUpload Soc527 Proposal rotolo v1.pdf

Thomas Rotolo has submitted a request for a major curricular change. His/her email address is: rotolo@wsu.edu.

Course Subject: SOC

Course Number: 527

Title: Social Network Analysis Practicum

Lecture Hours: 3

Total Credits: 3

Prerequisite: none

Catalog Description: Practical research experience with social network theory, concepts, measurement, and data collection/analysis.

Grading Type: Letter graded A-F

Requested Effective Date: Spring 2022

Dean: Swindell, Samantha - Assoc Dean - CAS

Chair: Johnson, Monica K. – Chair – Sociology

UCORE Committee All-University Writing

Approval Date Com / Date

Catalog Subcommittee AAC, PHSC, or GSC Faculty Senate Approval Date Approval Date Approval Date

From: <u>Johnson, Monica Kirkpatrick</u>

To:curriculum.submitCc:Swindell, Samantha

Subject: RE: 631433 New or Restore Course: SOC 527

Date: Thursday, February 4, 2021 8:21:06 AM

1. I approve this proposal in its current form.

As Dr. Rotolo wrote yesterday, we don't need to have this considered in time for a Spring 2022 start date (although that is also fine).

Monica

Monica Kirkpatrick Johnson Professor and Chair Department of Sociology Washington State University

From: curriculum.submit@wsu.edu <curriculum.submit@wsu.edu>

Sent: Wednesday, February 3, 2021 4:31 PM

To: Johnson, Monica Kirkpatrick <monicakj@wsu.edu>

Cc: Swindell, Samantha <sswindell@wsu.edu> **Subject:** 631433 New or Restore Course: SOC 527

Johnson, Monica K. – Chair – Sociology,

Swindell, Samantha - Assoc Dean - CAS,

Thomas Rotolo has submitted a request for a major curricular change.

Course Subject: SOC

Course Number: 527

Title: Social Network Analysis Practicum

Lecture Hours: 3

Total Credits: 3

Prerequisite: none

Catalog Description: Practical research experience with social network theory, concepts, measurement, and data collection/analysis.

From: <u>Swindell, Samantha</u>

To: <u>Johnson, Monica Kirkpatrick</u>; <u>Rotolo, Thomas</u>; <u>curriculum.submit</u>

Subject: RE: 631433 New or Restore Course: SOC 527

Date: Friday, February 5, 2021 1:17:34 PM

Thank you, Monica.

I approve this proposal.

Sam

From: Johnson, Monica Kirkpatrick <monicakj@wsu.edu>

Sent: Friday, February 5, 2021 11:15 AM

To: Rotolo, Thomas <rotolo@wsu.edu>; Swindell, Samantha <sswindell@wsu.edu>;

curriculum.submit <curriculum.submit@wsu.edu> **Subject:** RE: 631433 New or Restore Course: SOC 527

Hi,

Yes; happy to address "a" and "c" of the enhanced justification.

- a. This will have no impact on faculty load and unit resources. We will not increase the number of graduate classes offered each semester or academic year. 527 will be offered in rotation with the other methods classes, but having the advantages Tom outlined for having its own number and title.
- C. We are not aware of any other units offering courses that would be impacted by this course addition. The course (when offered as a version of 522) already attracts a few graduate students from outside of sociology who seek social networks analysis training that is not offered in other WSU units. Giving it its own number may increase this, with the potential of shifting enrollments somewhat, but in our experience students are coming from a wide range of disciplines (i.e. 1 here and 1 there, not a cluster from a specific unit that would be affected) so there are not specific units with which to coordinate.

Please let me know if I can clarify or if you need anything further. Thanks, Monica

From: Rotolo, Thomas < rotolo@wsu.edu> Sent: Friday, February 5, 2021 10:25 AM

To: Swindell, Samantha <sswindell@wsu.edu>; curriculum.submit <curriculum.submit@wsu.edu>;

Johnson, Monica Kirkpatrick < monicakj@wsu.edu>

Subject: Re: 631433 New or Restore Course: SOC 527

Yes, Soc 522 would continue to exist. Soc 522 allows rotating topics so it made sense to use this course number for the social networks course. The department has tried to tie content in 522 more closely to the course description, and the social network material fits better as its

own course within the practical series.

While I cannot speak directly to the budget, I would not expect 522 to be offered in the same academic year as the Soc 527 course (in part because I teach 522 regularly). The courses numbered between 522 and 527 (if approved) serve the same purpose for graduate credit toward the degree (methods courses). I hope this makes sense. If not, I can give you a call or Monica can probably explain it better!

From: Swindell, Samantha <<u>sswindell@wsu.edu</u>>

Sent: Friday, February 5, 2021 9:41 AM

To: curriculum.submit <<u>curriculum.submit@wsu.edu</u>>; Johnson, Monica Kirkpatrick

<monicakj@wsu.edu>

Cc: Rotolo, Thomas < rotolo@wsu.edu>

Subject: FW: 631433 New or Restore Course: SOC 527

Dear Monica and Tom,

I am interpreting this to mean that SOC 522 would continue to exist. You simply want to add a new course (SOC 527) with a new title that better represents the course Tom has been teaching as SOC 522.

Monica – can you please address the questions posted below as part of the college required "enhanced justification"? I think Tom's rationale addressed "b" but if this is an additional course – and given the current budget situation – we have to consider the implications for instructional resources ("a") and speaking to "c" would also be helpful.

Thank you, Sam

1. The CAS Dean's office requires an enhanced justification that includes:

- a. An explicit statement regarding the impact of the proposal on faculty load and unit resources. Address the potential impact this change may have on department resources, positive or negative, and if negative, what will be done to address that issue.
- b. A clear statement on the strategic impact; that is, how does the request strengthen priority areas within the department and/or college? Frame your justification with reference to the departmental, college, and/or WSU strategic goals.

c. If the proposed change has the potential to effect on other units (including those on other WSU campuses), a statement indicating that those units have been consulted and an articulation of the decision reached during those discussions.

From: curriculum.submit@wsu.edu

Sent: Wednesday, February 3, 2021 4:31 PM

To: Johnson, Monica Kirkpatrick < monicaki@wsu.edu>

Cc: Swindell, Samantha <<u>sswindell@wsu.edu</u>>

February 3, 2021

New Course Rationale Statement

Department of Sociology

I am requesting a (new) course number and title for a graduate course (proposed SOC 527: Social Network Analysis Practicum). I have discussed this request with the Department of Sociology Chair, Professor Monica Johnson. I have taught this graduate course in "Social Network Analysis" for over two decades at WSU as SOC 522: Advanced Sociological Methodology. SOC 522 topics vary and may be repeated for credit, cumulative maximum 12 hours. The social network course has been taught as a SOC 522 course approximately every three years since the late 1990s/early 2000s. Identifying the social network course with its own course number, in sequence with the other methods practicum courses, would offer several advantages, as I explain below.

First and foremost, identifying the course as SOC 527: Social Network Analysis Practicum more accurately reflects the approach of the course. The Social Network Analysis course I teach is organized around the practical application of social network concepts, measurement, and methods, from a sociological perspective. The course requires students to write an empirical research paper, reflecting all stages of the research process. The required final paper in this class involves the development of a research question, the construction of a bibliography / literature review, critical consideration of conceptualization and measurement, and the collection, analysis, and interpretation of data. In contrast, SOC 522 topics tend to relate to extensions of material from SOC 521: Regression Models, and often involve exams and homework exercises to evaluate student learning outcomes.

Second, the new proposed course number and title fits well with the existing sequence of methods-based practicum courses in the Department of Sociology: SOC 523: Qualitative Methods Practicum and SOC 525: Practicum in Survey Research. This type of continuity makes it easier for students within and outside of Sociology to identify the courses they would like to take and will likely lead to even higher enrollment in the already well-enrolled social networks course.

I have included a version of the syllabus for this course with this rationale statement. The course has not been taught since 2018 so it is unlikely any student would attempt to retake for credit. The department will monitor enrollment. There are no other obvious or immediate impacts to colleges or departments. The earliest this course will be taught is the spring 2022 semester. If you have any questions or require additional information, please do not hesitate to contact me.

Thanks,

Thomas Rotolo, Professor Department of Sociology



Sociology 527: Social Networks (3 credits) Fall 2022, Wilson-Short Hall, Room 201, Tuesdays, 2:50-5:40 PM

Professor Thomas Rotolo (<u>rotolo@wsu.edu</u>)

Office: Wilson Hall, 252

Office Hours: Tuesdays, 10 AM – noon

INTRODUCTION

Social network analysis involves both theory and method. Social network theory in the discipline of sociology derives from some of the core theoretical work of the first sociologists. Social network analysis methods have become a standard strategy in a variety of social sciences, including anthropology, communications, political science, and psychology.

Corresponding to the spread of the internet in the 1990s, the network literature experienced rapid change and development. Most of these developments occurred under the broad canopy of the "network science" label. Network science involves quantitative computational, statistical, and methodological innovations. A complete understanding of developments in network science require familiarity with a variety of mathematical and statistical topics, including matrix algebra and graph theory.

This course is not intended to provide you with a comprehensive understanding of these recent methodological innovations in social network analysis, nor do we review the mathematical foundations of network science in much depth. Rather, the primary objective of this course is to introduce you to the sociological foundations of social network theory and analysis. Table 1 below shows an outline of learning outcomes, course topics, and objectives.

This course introduces you to some primary concepts and ideas from the sociological literature related to social network theory and analysis. From this basic introduction, you can move into one of more sophisticated and specialized areas of the network literature, as your research requires. Additionally, this course intends to persuade you to think about social structure from the structuralist point of view. Along the way, we will be exposed to a radical view of what the enterprise of sociology should involve.

In the first few weeks, the course sets the stage for the empirical studies that we explore later in the semester. To start, you will learn about what the structuralist approach in sociology implies. You will read theoretical work from the social network literature. Then, you will become acquainted with the basics of social network analysis. You will learn how to develop research questions appropriate for network analysis, how to collect, manage, and maintain social network data, how to develop measures of social network properties, and how to conduct basic social network analysis using social network software.

Once we have obtained a foundation in social network theory and methods, we will consider a portion of the large empirical literature on social networks. Along the way, you might read about: friendships in grade school, the social structure of a monastery, how voluntary associations grow and decline, how societies are constrained by their trade relations, how interlocking corporate directorates affect our economy, why the development of elites is

inevitable in society, why you are several handshakes away from the President of the United States, how people get jobs, how social movements get started, why physicians prescribe the drugs they do, or the social structure of gibbons.

We will also get some practical experience in network analysis by analyzing network data using UCINET. There are several underexploited datasets that are available, including the readily obtainable General Social Survey network module, some cross-national data on networks, and many example datasets. Further, archival data sources and texts – along with some creative thinking - can provide ample opportunity for social network analysis. Or, after submitting a research proposal to the institutional review board at WSU, you might collect your own social network data.

I require that you have an open mind about the relationship between reality and theory. You will need to develop an interest in social structure. I ask that you have a willingness to work hard and contribute to the class by attending, reading, and discussing the work. Finally, you will need to have an interest in writing a paper that demonstrates that you know how to develop a research question that is appropriate for social network analysis, obtain data that allows you to answer the research question, and analyze and interpret social network data in an attempt to answer your research question.

Table 1: Soc 522 Learn	ning Outcomes, Course Topics, and Objectives	
Sociology Graduate Learning Outcome	Course topics	The objective will be evaluated by
1. Formulate an important, viable sociological research question within field of expertise, including situating that research question within the relevant literature.	The development of a relevant sociological research question precedes data collection and determines data management tasks.	Milestones at points throughout semester; Final paper
2. Collect or identify data from which to draw conclusions about the research question.	Data management is an essential part of the collection and identification of data. Each week of the course will address important issues related to the collection and identification of data. The course will always stress the importance of drawing proper conclusions from data analysis.	Final paper
3. Appropriately analyze research data	Basic network properties, analysis with computer software; discussions in class.	Exercises; in class discussion; Final

and present results in		Paper
a clear, concise		
manner.		
4. Draw implications	Reading assignments involving theoretical and empirical	In-class discussions;
about sociological	work.	Final Paper
knowledge from		
research findings.		

This course also addresses the second objective of the WSU Sociology Graduate Program, "Preparing students to contribute to scholarly dialogue," with assignments that require the production of work suitable for presentation of students' research at professional conferences (Objective 2-A) and publication in peer-reviewed journals (Objective 2-b).

ASSIGNMENTS

The primary assignment in this class is your final research paper. The final paper due date will be assigned in class as the semester moves along. The paper will be worth 70% of your final grade. The schedule includes milestones for the papers, including deadlines for proposals, outlines, and updates. Failure to submit material by a deadline will reduce your grade on the final paper.

The remaining 30% of your final grade will be based on class participation (15%) and homework (15%). If you do not speak up in class and show everyone (me) that you have completed the reading assignments and attempted to understand the material, you will <u>not</u> receive full participation credit. I reserve the right to administer the occasional "pop-quiz" to make sure you're keeping up with reading assignments. Quizzes will count toward your participation grade.

There will be homework assignments. Most of these assignments will be exercises using the UCINET software, but details will be discussed in class. Homework will be graded.

GRADING

Your final grade will be computed using the following grading scheme:

A:	93.5% or higher	C+:	77.5-80.4%	F:	Below 55.5%
A-:	89.5-93.4%	C:	74.5-77.4%		
B+:	87.5-89.4%	C-:	70.5-74.4%		
B:	84.5-87.4%	D+:	65.5-70.4%		
B-:	80.5-84.4%	D:	55.5-65.4%		

COURSE MATERIALS

We will be reading from a variety of sources, as outlined below. Along with articles from a variety of journals, we will be using one required textbook:

1) Wasserman, Stanley and Katherine Faust. 1994. <u>Social Network Analysis: Methods and Applications</u>. New York: Cambridge University Press. ISBN: 978-0521387071

You will need to purchase the UCINET software (required); full-time students can order a full version on the website: http://www.analytictech.com/. You can download a full version of the software for a trial period of 30 days. The User's Guide can also be downloaded on the web site.

I recommend, but do not require:

Degenne, Alain and Michel Forsé. 1999. <u>Introducing Social Networks</u>. Thousand Oaks, CA: Sage Publications. ISBN: 978-0761956044

Watts, Duncan J. 2003. <u>Six Degrees: The Science of a Connected Age</u>. New York: Norton. ISBN: 978-0393325423

Most of the articles we will read are available on-line, through the journal resources on griffin.wsu.edu (e.g., Proquest) or JSTOR. Other articles not available through these electronic sources will be in the file cabinets in the main sociology office, Wilson-Short Hall, 204.

We cover only a small subset of readings from the network literature. I encourage you to review the on-line abstracts available through the WSU web site journal services from the journal "Social Networks". Additionally, I can point you toward network literature that addresses specific topics that might interest you, such as: family, political sociology, markets, organizations, gender, community, health, the global system, social movements and collective action, education, and many other sociological topics.

SCHEDULE

UCINET should be purchased and installed on your computer by the end of the third week. Spend at least one hour playing with UCINET to become familiar with the program

I will also assign reading from the Hanneman and Riddle UCINET tutorial, although these assignments are not always listed in the schedule of reading below because the order and sections depend on our progress: http://faculty.ucr.edu/~hanneman/nettext/

A schedule of course reading material follows, although we might fall behind or combine some sections, especially in the first few weeks when reading the Wasserman and Faust text. Please note that this is only a sample of readings from the network literature. For your final paper, you

will need to review on-line abstracts available through the WSU web site journal services from the journal "Social Networks". Additionally, I can point you toward network literature that addresses a number of topics that might interest you, such as family, political sociology, markets, organizations, gender, community, health, the global system, social movements and collective action, education, and many other sociological topics.

The schedule listed below is subject to change, with other readings added or readings listed below removed. I will update the schedule as needed in lecture. UCINET should be purchased and installed on your computer by next week. Once installed, spend at least one hour with UCINET to become familiar with the program.

In most class meetings, I will discuss how to use UCINET, either with general use or a data management topic in mind or with respect to a week's substantive network topic I will treat you as a professional academic. You should keep up with the readings on your own, even if we do not discuss the material in class. If you have questions about any of the reading assignments, please ask.

Week 1: In the Beginning

Simmel, G. 1909. "The Problem of Sociology." American Journal of Sociology 15:289-320

Rapoport, A. and W.J. Hovarth. "A Study of a Large Sociogram." Behavioral Science 6:279-291

Week 2: The Edge of the Envelope

Mayhew, B.H. "Structuralism versus Individualism: Part 1, Shadowboxing in the Dark." Social Forces 59:335-375. 1980.

Mayhew, B.H. "Structuralism versus Individualism: Part II, Ideological and Other Obfuscations." Social Forces 59:627-648. 1981.

Wasserman and Faust, Chapter 1

Week 3: Groundwork: Fundamentals of Social Networks

Wasserman and Faust, Chapter 2

Wellman, B. 1983. "Network Analysis: Some Basic Principles." Sociological Theory 1:155-200.

Friedkin, N.E. "Social Networks in Structural Equation Models" *Social Psychology Quarterly* 53: 316-328

Pool, I.S. and Kochen, M. 1978. "Contacts and Influence." Social Networks 1:1-48.

Hanneman and Riddle, Sections 1-2

Week 4: Nuts and Bolts: Data, Graph Theory, Social Network Notation, Basic Concepts

Marsden, P.V. 1990. "Network Data and Measurement." *Annual Review of Sociology*, 16: 435-463.

Wasserman and Faust, Chapters 3-4

Week 5: Visualizing Network Data

Laumann, E.O. and F.U. Pappi. 1973 "New Directions in the Study of Community Elites." *American Sociological Review* 38: 212-230.

McGrath, C., J. Blythe, and D. Krackhardt. 1997. "The Effect of Spatial Arrangement on Judgments and Errors in Interpreting Graphs." *Social Networks*. 19:232-242.

Freeman, L. 2000. "Visualizing Social Networks" *Journal of Social Structure* 1. Available at: http://www.cmu.edu/joss/content/articles/volindex.html

Freeman, L. 2005. Graphic Techniques for Exploring Social Network Data, Chapter 12 in Carrington, Scott and Wasserman (eds.) Models and Methods in Social Network Analysis. Draft available at: http://moreno.ss.uci.edu/87.pdf

Moody, J., D. McFarland, and S. Bender-deMoll. 2005. "Dynamic Network Visualization." *American Journal of Sociology*, 110: 1206-1241

Week 6: Cohesion and Balance

Paper milestone #1: Idea due by Friday, September 28: Core paper, data collection, approach, etc.

Wasserman and Faust: Chapter 6, Chapter 7, Examples using UCINET (e.g., p.274)

Ennett, S.T. and K.E. Bauman 1993. "Peer Group Structure and Adolescent Cigarette Smoking: A Social Network Analysis" *Journal of Health and Social Behavior* 34: 226-236.

Week 7: Centrality

Wasserman and Faust: Chapter 5, Examples using UCINET - e.g., Pp.182-3

Freeman, L. 1979. Centrality in Social Networks: I. Conceptual Clarification. *Social Networks* 1:215-239.

Brass, D.J. 1984. "Being in the Right Place: A Structural Analysis of Individual Influence in an Organization" *Administrative Science Quarterly*, 29: 518-539.

Bonacich, P. 1987. "Power and Centrality: A Family of Measures" *American Journal of Sociology* 92: 1170-1182.

Friedkin, N. 1991. "Theoretical Foundations for Centrality Measures." *American Journal of Sociology* 96: 1478-1504

Week 8: Egocentric Networks, Measurement and Egocentric Network Data

Burt, R.S. 1984. "Network items and the General Social Survey." Social Networks 6:293-339.

Burt, R.S. 1991. "Kinds of relations in American discussion networks." In C. Calhoun, M.W. Meyer, and W.R. Scott (eds.) <u>Structures of Power and Constraint: Papers in Honor of P.M. Blau.</u> New York: Cambridge University Press. (Note: Might be difficult to locate; access discussed in class.)

Marsden, P.V. 1987. "Core discussion networks of Americans." American Sociological Review 52: 122-131.

Marsden, P.V. 1990. "Network Data and Measurement." *Annual Review of Sociology*, 16: 435-463.

Week 9 (Oct 15): Two Methodological Extensions

Part 1: Two Mode Network Data, Hypernetworks

Wasserman and Faust: Chapter 8

Breiger, R.L. 1974. "The Duality of Persons and Groups." Social Forces 53:181-190

McPherson, J.M. 1982. "Hypernetwork Sampling: Duality and Differentiation among Voluntary Organizations." Social Networks 3:225-249

Part 2: Simulation

Carley, K. 1991. "A Theory of Group Stability" American Sociological Review 56: 331-354.

Carley, K. and M. Palmquist. 1992. "Extracting, Representing, and Analyzing Mental Models" *Social Forces* 70: 601-636.

Mark, N. 1998. "Beyond Individual Differences: Social Differentiation from First Principles" *American Sociological Review* 63: 309-330.

Thomaeuben J. and N. Mark. 2013. "Population Size, Network Density, and the Emergence of Inherited Inequality" *Social Forces* 9:521-544 Week 10: Positional Analysis, Blockmodels, and Structural Equivalence

Paper milestone #2: Annotated bibliography due by start of class.

Wasserman and Faust: Chapters 9-10

S.P. Borgatti and M.G. Everett 1992. "Notions of Position in Social Network Analysis" Pp 1-35 in P.V. Marsden (ed.) <u>Sociological Methodology 1992</u>. Oxford, UK: Basil Blackwell, Ltd.

Snyder, D. and E.L. Kick. 1979. "Structural Position in the World System and Economic Growth, 1955-1970: A Multiple-Network Analysis of Transnational Interactions." *American Journal of Sociology* 84: 1096-1126.

Week 11: Potpourri: The Small World, Social Capital, Structural Holes and Weak Ties

J. Travers and S. Milgram. "An Experimental Study of the Small World Problem." Sociometry 32:425-443. 1969.

Watts, D.J. 1999. "Networks, Dynamics, and the Small-World Phenomenon." *American Journal of Sociology* 105: 493-527

Granovetter, M.S. "The Strength of Weak Ties." *American Journal of Sociology* 78:1360-1380. 1973.

Burt, R.S. 1997. "The Contingent Value of Social Capital" *Administrative Science Quarterly* 42: 339-365.

Morgan, S.L. and A.B. Sørensen 1999. "Social Capital Parental Networks, Social Closure, and Mathematics Learning: A Test of Coleman's Social Capital Explanation of School Effects" *American Sociological Review* 64: 661-681.

Burt, R.S. 2004. "Structural Holes and Good Ideas." *American Journal of Sociology* 110:349-399.

Week 12: The Mayhew Connection

Mayhew, B.H, L.N. Gray and J.T. Richardson. 1969. "Behavioral Measurement of Operating Power Structures: Characterizations of Asymmetrical Interaction." *Sociometry* 32: 474-489.

Mayhew, B.H. and R.L. Levinger. 1976. "On the Emergence of Oligarchy in Human Interaction." *American Journal of Sociology* 81:1017-1049.

Mayhew, B.H. and R.L. Levinger. 1976. "Size and the Density of Interaction in Human Aggregates." *American Journal of Sociology* 82:86-110. Mayhew, B.H., J.M. McPherson, T. Rotolo, and L. Smith-Lovin. 1995.

"Sex and Race Homogeneity in Naturally Occurring Groups" *Social Forces*, 74: 15-52.

Paper milestone #3: Detailed final paper status update due by noon

Meetings available all week (extended office hours announced in class)

Week 13: The McPherson Connection

Blau, Peter M. 1977. "A Macrosociological Theory of Social Structure." *American Journal of Sociology* 83:26-54.

McPherson, J..Miller. 1983. "An Ecology of Affiliation." *American Sociological Review* 48: 519-532.

McPherson, J.Miller and Lynn Smith-Lovin. 1982. "Women and Weak Ties: Differences by Sex in the Size of Voluntary Associations." *American Journal of Sociology* 87: 883-904.

McPherson, J. Miller and Thomas Rotolo. 1996. "Testing a Dynamic Model of Social Composition: Diversity and Change in Voluntary Groups." *American Sociological Review* 61: 179-202.

McPherson, J. Miller, Lynn Smith-Lovin and James M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." Pp. 415-444 in Karen S. Cook and John Hagen (eds.) *Annual Review of Sociology* Volume 27. Palo Alto: Annual Reviews.

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

Week 14: Statistical Analysis of Network Data

Wasserman and Faust: Chapter 13

Wasserman and Faust: Chapter 15

Anderson, Carolyn J., Stanley Wasserman and Bradley Crouch. 1999. "A P* Primer: Logit Models for Social Networks." *Social Networks* 21:37-66

Week 15 (Dec 3): Neglected topics, the future of network analysis, and wrap up.

Final paper due on Wednesday, December 5 by noon. Online submission details will be discussed in class.

IMPORTANT ITEMS

Expectation of Student Effort Statement

For each hour of lecture equivalent, students should expect to have a minimum of two hours of work outside class.

Attendance Statement

Attendance will not be taken nor counted toward your final grade. While attendance is not required, this is a graduate-level methods seminar, so attendance is highly recommended. If you must miss class, ask a classmate for notes.

Assigning Incompletes Statement

University policy (Academic Regulation #90) states that Incompletes may only be awarded if: "the student is unable to complete their work on time due to circumstances beyond their control". Please refer to WSU policy for the latest on assigning incompletes and non-letter grades this semester.

Academic Integrity Statement

Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will a zero on the graded work, will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If you have any questions about what is and is not allowed in this course, you should ask the course

instructor before proceeding. If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at conduct.wsu.edu.

Access Center Statement

Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. For more information contact a Disability Specialist, 509-335-3417, Washington Building 217; http://accesscenter.wsu.edu, Access.Center@wsu.edu

Safety Statement

Classroom and campus safety are of paramount importance at Washington State University and are the shared responsibility of the entire campus population. WSU urges students to follow the "Alert, Assess, Act," protocol for all types of emergencies and the "Run, Hide, Fight" response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able). Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI's Run, Hide, Fight video and visit the WSU safety portal.

Religious Statement

Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures.

COVID-19 Statement

Students are expected to abide by all current COVID-19 related university policies and public health directives. These directives may be adjusted to respond to the evolving COVID-19 pandemic. Directives may include, but are not limited to, compliance with WSU's COVID-19 vaccination policy, wearing a cloth face covering, physically distancing, and sanitizing common use spaces. All current COVID-19 related university policies and public health directives are located at https://wsu.edu/covid-19/. Students who do not comply with these directives may be required to leave the classroom; in egregious or repetitive cases, student non-compliance may be

referred to the Center for Community Standards for action under the Standards of Conduct for Students.

Sociology 527: Social Networks (3 credits) Fall 2022, Wilson-Short Hall, Room 201, Tuesdays, 2:50-5:40 PM

Professor Thomas Rotolo (<u>rotolo@wsu.edu</u>)

Office: Wilson Hall, 252

Office Hours: Tuesdays, 10 AM – noon

INTRODUCTION

Social network analysis involves both theory and method. Social network theory in the discipline of sociology derives from some of the core theoretical work of the first sociologists. Social network analysis methods have become a standard strategy in a variety of social sciences, including anthropology, communications, political science, and psychology.

Corresponding to the spread of the internet in the 1990s, the network literature experienced rapid change and development. Most of these developments occurred under the broad canopy of the "network science" label. Network science involves quantitative computational, statistical, and methodological innovations. A complete understanding of developments in network science require familiarity with a variety of mathematical and statistical topics, including matrix algebra and graph theory.

This course is not intended to provide you with a comprehensive understanding of these recent methodological innovations in social network analysis, nor do we review the mathematical foundations of network science in much depth. Rather, the primary objective of this course is to introduce you to the sociological foundations of social network theory and analysis. Table 1 below shows an outline of learning outcomes, course topics, and objectives.

This course introduces you to some primary concepts and ideas from the sociological literature related to social network theory and analysis. From this basic introduction, you can move into one of more sophisticated and specialized areas of the network literature, as your research requires. Additionally, this course intends to persuade you to think about social structure from the structuralist point of view. Along the way, we will be exposed to a radical view of what the enterprise of sociology should involve.

In the first few weeks, the course sets the stage for the empirical studies that we explore later in the semester. To start, you will learn about what the structuralist approach in sociology implies. You will read theoretical work from the social network literature. Then, you will become acquainted with the basics of social network analysis. You will learn how to develop research questions appropriate for network analysis, how to collect, manage, and maintain social network data, how to develop measures of social network properties, and how to conduct basic social network analysis using social network software.

Once we have obtained a foundation in social network theory and methods, we will consider a portion of the large empirical literature on social networks. Along the way, you might read about: friendships in grade school, the social structure of a monastery, how voluntary associations grow and decline, how societies are constrained by their trade relations, how interlocking corporate directorates affect our economy, why the development of elites is

inevitable in society, why you are several handshakes away from the President of the United States, how people get jobs, how social movements get started, why physicians prescribe the drugs they do, or the social structure of gibbons.

We will also get some practical experience in network analysis by analyzing network data using UCINET. There are several underexploited datasets that are available, including the readily obtainable General Social Survey network module, some cross-national data on networks, and many example datasets. Further, archival data sources and texts – along with some creative thinking - can provide ample opportunity for social network analysis. Or, after submitting a research proposal to the institutional review board at WSU, you might collect your own social network data.

I require that you have an open mind about the relationship between reality and theory. You will need to develop an interest in social structure. I ask that you have a willingness to work hard and contribute to the class by attending, reading, and discussing the work. Finally, you will need to have an interest in writing a paper that demonstrates that you know how to develop a research question that is appropriate for social network analysis, obtain data that allows you to answer the research question, and analyze and interpret social network data in an attempt to answer your research question.

Table 1: Soc 522 Learning Outcomes, Course Topics, and Objectives			
Sociology Graduate Learning Outcome	Course topics	The objective will be evaluated by	
1. Formulate an important, viable sociological research question within field of expertise, including situating that research question within the relevant literature.	The development of a relevant sociological research question precedes data collection and determines data management tasks.	Milestones at points throughout semester; Final paper	
2. Collect or identify data from which to draw conclusions about the research question.	Data management is an essential part of the collection and identification of data. Each week of the course will address important issues related to the collection and identification of data. The course will always stress the importance of drawing proper conclusions from data analysis.	Final paper	
3. Appropriately analyze research data	Basic network properties, analysis with computer software; discussions in class.	Exercises; in class discussion; Final	

and present results in a clear, concise		Paper
,		
manner.		
4. Draw implications	Reading assignments involving theoretical and empirical	In-class discussions;
about sociological	work.	Final Paper
knowledge from		_
research findings.		
Tosom on Internigo		

This course also addresses the second objective of the WSU Sociology Graduate Program, "Preparing students to contribute to scholarly dialogue," with assignments that require the production of work suitable for presentation of students' research at professional conferences (Objective 2-A) and publication in peer-reviewed journals (Objective 2-b).

ASSIGNMENTS

The primary assignment in this class is your final research paper. The final paper due date will be assigned in class as the semester moves along. The paper will be worth 70% of your final grade. The schedule includes milestones for the papers, including deadlines for proposals, outlines, and updates. Failure to submit material by a deadline will reduce your grade on the final paper by 5% for every 24 hours late. If the final paper is not submitted by the deadline, you will receive a zero on the paper (no exceptions as this paper is due at the end of the semester). Late assignments submitted during the regular semester will be reduced 5% for every 24 hours late.

The remaining 30% of your final grade will be based on class participation (15%) and homework (15%). If you do not speak up in class and show everyone (me) that you have completed the reading assignments and attempted to understand the material, you will <u>not</u> receive full participation credit. I reserve the right to administer the occasional "pop-quiz" to make sure you're keeping up with reading assignments. Quizzes will count toward your participation grade.

There will be homework assignments. Most of these assignments will be exercises using the UCINET software, but details will be discussed in class. Homework will be graded.

GRADING

Your final grade will be computed using the following grading scheme:

A:	93.5% or higher	C+:	77.5-80.4%	F:	Below 55.5%
A-:	89.5-93.4%	C:	74.5-77.4%		
B+:	87.5-89.4%	C-:	70.5-74.4%		
B:	84.5-87.4%	D+:	65.5-70.4%		
B-:	80.5-84.4%	D:	55.5-65.4%		

COURSE MATERIALS

We will be reading from a variety of sources, as outlined below. Along with articles from a variety of journals, we will be using one required textbook:

1) Wasserman, Stanley and Katherine Faust. 1994. <u>Social Network Analysis: Methods and Applications</u>. New York: Cambridge University Press. ISBN: 978-0521387071

You will need to purchase the UCINET software (required); full-time students can order a full version on the website: http://www.analytictech.com/. You can download a full version of the software for a trial period of 30 days. The User's Guide can also be downloaded on the web site.

I recommend, but do not require:

Degenne, Alain and Michel Forsé. 1999. <u>Introducing Social Networks</u>. Thousand Oaks, CA: Sage Publications. ISBN: 978-0761956044

Watts, Duncan J. 2003. <u>Six Degrees: The Science of a Connected Age</u>. New York: Norton. ISBN: 978-0393325423

Most of the articles we will read are available on-line, through the journal resources on griffin.wsu.edu (e.g., Proquest) or JSTOR. Other articles not available through these electronic sources will be in the file cabinets in the main sociology office, Wilson-Short Hall, 204.

We cover only a small subset of readings from the network literature. I encourage you to review the on-line abstracts available through the WSU web site journal services from the journal "Social Networks". Additionally, I can point you toward network literature that addresses specific topics that might interest you, such as: family, political sociology, markets, organizations, gender, community, health, the global system, social movements and collective action, education, and many other sociological topics.

SCHEDULE

UCINET should be purchased and installed on your computer by the end of the third week. Spend at least one hour playing with UCINET to become familiar with the program

I will also assign reading from the Hanneman and Riddle UCINET tutorial, although these assignments are not always listed in the schedule of reading below because the order and sections depend on our progress: http://faculty.ucr.edu/~hanneman/nettext/

A schedule of course reading material follows, although we might fall behind or combine some sections, especially in the first few weeks when reading the Wasserman and Faust text. Please note that this is only a sample of readings from the network literature. For your final paper, you will need to review on-line abstracts available through the WSU web site journal services from the journal "Social Networks". Additionally, I can point you toward network literature that addresses a number of topics that might interest you, such as family, political sociology, markets, organizations, gender, community, health, the global system, social movements and collective action, education, and many other sociological topics.

The schedule listed below is subject to change, with other readings added or readings listed below removed. I will update the schedule as needed in lecture. UCINET should be purchased and installed on your computer by next week. Once installed, spend at least one hour with UCINET to become familiar with the program.

In most class meetings, I will discuss how to use UCINET, either with general use or a data management topic in mind or with respect to a week's substantive network topic I will treat you as a professional academic. You should keep up with the readings on your own, even if we do not discuss the material in class. If you have questions about any of the reading assignments, please ask.

Week 1: In the Beginning

Simmel, G. 1909. "The Problem of Sociology." American Journal of Sociology 15:289-320

Rapoport, A. and W.J. Hovarth. "A Study of a Large Sociogram." Behavioral Science 6:279-291

Week 2: The Edge of the Envelope

Mayhew, B.H. "Structuralism versus Individualism: Part 1, Shadowboxing in the Dark." Social Forces 59:335-375. 1980.

Mayhew, B.H. "Structuralism versus Individualism: Part II, Ideological and Other Obfuscations." Social Forces 59:627-648. 1981.

Wasserman and Faust, Chapter 1

Week 3: Groundwork: Fundamentals of Social Networks

Wasserman and Faust, Chapter 2

Wellman, B. 1983. "Network Analysis: Some Basic Principles." Sociological Theory 1:155-200.

Friedkin, N.E. "Social Networks in Structural Equation Models" *Social Psychology Quarterly* 53: 316-328

Pool, I.S. and Kochen, M. 1978. "Contacts and Influence." Social Networks 1:1-48.

Hanneman and Riddle, Sections 1-2

Week 4: Nuts and Bolts: Data, Graph Theory, Social Network Notation, Basic Concepts

Marsden, P.V. 1990. "Network Data and Measurement." *Annual Review of Sociology*, 16: 435-463.

Wasserman and Faust, Chapters 3-4

Week 5: Visualizing Network Data

Laumann, E.O. and F.U. Pappi. 1973 "New Directions in the Study of Community Elites." *American Sociological Review* 38: 212-230.

McGrath, C., J. Blythe, and D. Krackhardt. 1997. "The Effect of Spatial Arrangement on Judgments and Errors in Interpreting Graphs." *Social Networks*. 19:232-242.

Freeman, L. 2000. "Visualizing Social Networks" *Journal of Social Structure* 1. Available at: http://www.cmu.edu/joss/content/articles/volindex.html

Freeman, L. 2005. Graphic Techniques for Exploring Social Network Data, Chapter 12 in Carrington, Scott and Wasserman (eds.) Models and Methods in Social Network Analysis. Draft available at: http://moreno.ss.uci.edu/87.pdf

Moody, J., D. McFarland, and S. Bender-deMoll. 2005. "Dynamic Network Visualization." *American Journal of Sociology*, 110: 1206-1241

Week 6: Cohesion and Balance

Paper milestone #1: Idea due by Friday, September 28: Core paper, data collection, approach, etc.

Wasserman and Faust: Chapter 6, Chapter 7, Examples using UCINET (e.g., p.274)

Ennett, S.T. and K.E. Bauman 1993. "Peer Group Structure and Adolescent Cigarette Smoking: A Social Network Analysis" *Journal of Health and Social Behavior* 34: 226-236.

Week 7: Centrality

Wasserman and Faust: Chapter 5, Examples using UCINET - e.g., Pp.182-3

Freeman, L. 1979. Centrality in Social Networks: I. Conceptual Clarification. *Social Networks* 1:215-239.

Brass, D.J. 1984. "Being in the Right Place: A Structural Analysis of Individual Influence in an Organization" *Administrative Science Quarterly*, 29: 518-539.

Bonacich, P. 1987. "Power and Centrality: A Family of Measures" *American Journal of Sociology* 92: 1170-1182.

Friedkin, N. 1991. "Theoretical Foundations for Centrality Measures." *American Journal of Sociology* 96: 1478-1504

Week 8: Egocentric Networks, Measurement and Egocentric Network Data

Burt, R.S. 1984. "Network items and the General Social Survey." Social Networks 6:293-339.

Burt, R.S. 1991. "Kinds of relations in American discussion networks." In C. Calhoun, M.W. Meyer, and W.R. Scott (eds.) <u>Structures of Power and Constraint: Papers in Honor of P.M. Blau.</u> New York: Cambridge University Press. (Note: Might be difficult to locate; access discussed in class.)

Marsden, P.V. 1987. "Core discussion networks of Americans." American Sociological Review 52: 122-131.

Marsden, P.V. 1990. "Network Data and Measurement." *Annual Review of Sociology*, 16: 435-463.

Week 9 (Oct 15): Two Methodological Extensions

Part 1: Two Mode Network Data, Hypernetworks

Wasserman and Faust: Chapter 8

Breiger, R.L. 1974. "The Duality of Persons and Groups." Social Forces 53:181-190

McPherson, J.M. 1982. "Hypernetwork Sampling: Duality and Differentiation among Voluntary Organizations." Social Networks 3:225-249

Part 2: Simulation

Carley, K. 1991. "A Theory of Group Stability" American Sociological Review 56: 331-354.

Carley, K. and M. Palmquist. 1992. "Extracting, Representing, and Analyzing Mental Models" *Social Forces* 70: 601-636.

Mark, N. 1998. "Beyond Individual Differences: Social Differentiation from First Principles" *American Sociological Review* 63: 309-330.

Thomaeuben J. and N. Mark. 2013. "Population Size, Network Density, and the Emergence of Inherited Inequality" *Social Forces* 9:521-544 Week 10: Positional Analysis, Blockmodels, and Structural Equivalence

Paper milestone #2: Annotated bibliography due by start of class.

Wasserman and Faust: Chapters 9-10

S.P. Borgatti and M.G. Everett 1992. "Notions of Position in Social Network Analysis" Pp 1-35 in P.V. Marsden (ed.) <u>Sociological Methodology</u> 1992. Oxford, UK: Basil Blackwell, Ltd.

Snyder, D. and E.L. Kick. 1979. "Structural Position in the World System and Economic Growth, 1955-1970: A Multiple-Network Analysis of Transnational Interactions." *American Journal of Sociology* 84: 1096-1126.

Week 11: Potpourri: The Small World, Social Capital, Structural Holes and Weak Ties

J. Travers and S. Milgram. "An Experimental Study of the Small World Problem." Sociometry 32:425-443. 1969.

Watts, D.J. 1999. "Networks, Dynamics, and the Small-World Phenomenon." *American Journal of Sociology* 105: 493-527

Granovetter, M.S. "The Strength of Weak Ties." *American Journal of Sociology* 78:1360-1380. 1973.

Burt, R.S. 1997. "The Contingent Value of Social Capital" *Administrative Science Quarterly* 42: 339-365.

Morgan, S.L. and A.B. Sørensen 1999. "Social Capital Parental Networks, Social Closure, and Mathematics Learning: A Test of Coleman's Social Capital Explanation of School Effects" *American Sociological Review* 64: 661-681.

Burt, R.S. 2004. "Structural Holes and Good Ideas." *American Journal of Sociology* 110:349-399.

Week 12: The Mayhew Connection

Mayhew, B.H, L.N. Gray and J.T. Richardson. 1969. "Behavioral Measurement of Operating Power Structures: Characterizations of Asymmetrical Interaction." *Sociometry* 32: 474-489.

Mayhew, B.H. and R.L. Levinger. 1976. "On the Emergence of Oligarchy in Human Interaction." *American Journal of Sociology* 81:1017-1049.

Mayhew, B.H. and R.L. Levinger. 1976. "Size and the Density of Interaction in Human Aggregates." *American Journal of Sociology* 82:86-110. Mayhew, B.H., J.M. McPherson, T. Rotolo, and L. Smith-Lovin. 1995. "Sex and Race Homogeneity in Naturally Occurring Groups" *Social Forces*, 74: 15-52.

Paper milestone #3: Detailed final paper status update due by noon

Meetings available all week (extended office hours announced in class)

Week 13: The McPherson Connection

Blau, Peter M. 1977. "A Macrosociological Theory of Social Structure." *American Journal of Sociology* 83:26-54.

McPherson, J..Miller. 1983. "An Ecology of Affiliation." *American Sociological Review* 48: 519-532.

McPherson, J.Miller and Lynn Smith-Lovin. 1982. "Women and Weak Ties: Differences by Sex in the Size of Voluntary Associations." *American Journal of Sociology* 87: 883-904.

McPherson, J. Miller and Thomas Rotolo. 1996. "Testing a Dynamic Model of Social Composition: Diversity and Change in Voluntary Groups." *American Sociological Review* 61: 179-202.

McPherson, J. Miller, Lynn Smith-Lovin and James M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." Pp. 415-444 in Karen S. Cook and John Hagen (eds.) *Annual Review of Sociology* Volume 27. Palo Alto: Annual Reviews.

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

Week 14: Statistical Analysis of Network Data

Wasserman and Faust: Chapter 13

Wasserman and Faust: Chapter 15

Anderson, Carolyn J., Stanley Wasserman and Bradley Crouch. 1999. "A P* Primer: Logit Models for Social Networks." *Social Networks* 21:37-66

Week 15 (Dec 3): Neglected topics, the future of network analysis, and wrap up.

Final paper due on Wednesday, December 5 by noon. Online submission details will be discussed in class.

IMPORTANT ITEMS

Expectation of Student Effort Statement

For each hour of lecture equivalent, students should expect to have a minimum of two hours of work outside class.

Attendance Statement

Attendance will not be taken nor counted toward your final grade. While attendance is not required, this is a graduate-level methods seminar, so attendance is highly recommended. If you must miss class, ask a classmate for notes.

Assigning Incompletes Statement

University policy (Academic Regulation #90) states that Incompletes may only be awarded if: "the student is unable to complete their work on time due to circumstances beyond their control". Please refer to WSU policy for the latest on assigning incompletes and non-letter grades this semester.

Academic Integrity Statement

Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will a zero on the graded work, will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If you have any questions about what is and is not allowed in this course, you should ask the course

instructor before proceeding. If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at conduct.wsu.edu.

Access Center Statement

Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. For more information contact a Disability Specialist, 509-335-3417, Washington Building 217; http://accesscenter.wsu.edu, Access.Center@wsu.edu

Safety Statement

Classroom and campus safety are of paramount importance at Washington State University and are the shared responsibility of the entire campus population. WSU urges students to follow the "Alert, Assess, Act," protocol for all types of emergencies and the "Run, Hide, Fight" response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able). Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI's Run, Hide, Fight video and visit the WSU safety portal.

Religious Statement

Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures.

COVID-19 Statement

Students are expected to abide by all current COVID-19 related university policies and public health directives. These directives may be adjusted to respond to the evolving COVID-19 pandemic. Directives may include, but are not limited to, compliance with WSU's COVID-19 vaccination policy, wearing a cloth face covering, physically distancing, and sanitizing common use spaces. All current COVID-19 related university policies and public health directives are located at https://wsu.edu/covid-19/. Students who do not comply with these directives may be required to leave the classroom; in egregious or repetitive cases, student non-compliance may be

referred to the Center for Community Standards for action under the Standards of Conduct for Students.