EPE/EDP 711: SOCIAL NETWORK ANALYSIS & EDUCATION

Instructor: [Joseph J. Ferrare](#), Ph.D.

Fall 2018, Tuesdays 4:00pm - 6:30pm, TEB 140

Office: 145C [Taylor Education Building](#)

Office Hours: Tuesdays 3 - 4pm or by appointment

OVERVIEW

At the most general level, social network analysis (SNA) is a set of research methods and theories for studying the structure, process, and meaning of social relationships. Social network analysis has seen wide application across the social sciences, and in this course we will pay close attention to the use of these techniques in education research. With that said, students should expect to leave this course with a strong foundation of social network analysis applicable to a range of problems in the social sciences. In particular, we will cover techniques related to SNA research design, data collection and management, analysis, and interpretation. While this is primarily a course in research methods, we will nevertheless spend considerable time connecting these methods to theory. In the process, we will examine a selection of the empirical literature that uses SNA to inform education practice, reform, and policy. These investigations will take us through a variety of foundational concepts in SNA.

The design of this course assumes no prior knowledge of SNA. However, it is assumed that students have at least a basic understanding of statistical hypothesis testing and regression analysis.

OBJECTIVES

Students who successfully complete the requirements of this course should expect the following:

1. To be able to apply and interpret basic and advanced techniques of SNA to the study of social relationships in education and other areas of social scientific inquiry
2. To become competent users of UCINET and Netdraw software used to analyze and visualize social network data
3. To be able to evaluate and identify when research questions are well aligned to the use of SNA

FORMAT

The format for our class meetings will consist of lectures/presentations, small group work, and individual exercises—all of which will take place in a computer lab. The lectures/presentations are designed to provide an introduction to key concepts in social network analysis, and to offer examples of these concepts as they apply to education and social science more generally. The small group and individual exercises will give you opportunities to practice using these techniques in practical scenarios.

REQUIREMENTS AND MODES OF EVALUATION

Your work in this course will be evaluated through multiple assignments. The specific modes of evaluation and corresponding grading weights are described below. Grades will be assigned using the following scale:

A: 90% – 100%, B: 80% – 89%, C: 70 – 79%, D: 60% – 69%, E: below 60%

When evaluating your work I will consider criteria specific to each assignment. In general, though, I consider grade ranges to meet the following generic standards:

95% – 100%: Exemplary work that exhibits mastery over the task

90% – 94%: Excellent work that approaches mastery but falls short in one key area

85% – 89%: High quality work that has ample room for improvement

80% – 84%: Work that exceeds minimum expectations but contains a number of mistakes or lacks quality in key areas

75% – 79%: Work that meets, but does not exceed, the minimum expectations

70% – 74%: Work that exhibits reasonable effort but falls short of the minimum expectations

60% – 69%: Work of poor quality that shows little effort or understanding of the task

below 60%: Work that exhibits no effort or understanding of the task

1. *Participation* (5%)

My expectation is that you will come to class regularly having closely engaged with the assigned readings and ready to make substantive contributions to discussions and group work. Missing two or more class meetings and/or not engaging in class activities will negatively impact your participation grade.

2. *Assignments/Problem Sets* (25%): Due Oct. 9 & Nov. 20

Throughout the semester you will be asked to complete two assignments related to key concepts in SNA. These assignments are meant to give you an opportunity to practice analyzing and interpreting social network data using foundational concepts and analytic techniques (including software) in SNA. The assignments will be distributed in class one week prior to the due date, and should be uploaded to Canvas as a Word document so that I can insert comments.

3. *Midterm Exam* (25%): Oct. 30, 4pm - 6:30pm

The midterm exam will serve as an opportunity to demonstrate your understanding of the foundational concepts and techniques in SNA. A solid understanding of this material is critical for doing SNA and for learning more advanced techniques in the field. The exam will consist of two distinct components, one of which will be completed outside of class during the week prior to the exam date.

4. *Research Paper* (35%) and Presentation (10%): *Proposals Due Oct. 23 / Paper due Dec. 7 @ 6pm / Presentations will be given on November 27 & December 4 during class*

The seminar paper/presentation is an opportunity for you to focus on a specific research question for which SNA is appropriate. There are two types of papers that are appropriate for this assignment. The first is an original research paper in which you analyze and interpret data using SNA. The use of archival or secondary data is highly encouraged, as there will be limited time to administer a survey or conduct interviews (not to mention getting IRB approval to do so). The second option involves a research design proposal similar to what you would submit for research grant or dissertation proposal. More information will be provided during the first few weeks of the course. **Note: A 1-page proposal is due on October 23**.

TEXTS

The following serves as the primary text for the course:

> Borgatti, Stephen P., Martin G. Everett, and Jeffrey C. Johnson. 2018. *Analyzing Social Networks, 2nd Edition*. London: Sage.

Additional assigned readings will consist of journal articles and selected book chapters posted on the Course Outline and Readings page.

ACCOMMODATIONS

If any student requires specific accommodations please do not hesitate to speak with me at any point during the semester. This includes accommodations related to the curriculum, instruction, evaluations, or any other factors that would otherwise prohibit your full participation in this course. Any questions or concerns students have about this matter will be held confidential to the best of my ability. In order to receive specific accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 859-257-2754 for coordination of campus disability services available to students with disabilities.

ACADEMIC INTEGRITY

All instances of academic dishonesty will be addressed according to standard UK policies on academic integrity. Please familiarize yourself with these expectations and the Code of Student Rights and Responsibilities.

STATEMENT REGARDING DISCRIMINATION

The University of Kentucky faculty are committed to supporting students and upholding the University's non-discrimination policy.

Discrimination is prohibited at UK. If you experience an incident of discrimination we encourage you to report it to Institutional Equity & Equal Opportunity (IEEO) Office, 13 Main Building, (859) 257-8927.

ACTS OF SEX- AND GENDER-BASED DISCRIMINATION OR INTERPERSONAL VIOLENCE

If you experience an incident of sex- or gender-based discrimination or interpersonal violence, we encourage you to report it. While you may talk to a faculty member or TA/RA/GA, understand that as a "Responsible Employee" of the University these individuals MUST report any acts of violence (including verbal bullying and sexual harassment) to the University's Title IX Coordinator in the IEEO Office. If you would like to speak with someone who may be able to afford you confidentiality, the Violence Intervention and Prevention (VIP) program (Frazee Hall – Lower Level), the Counseling Center (106 Frazee Hall), and the University Health Services are confidential resources on campus.

ESTIMATED COURSE OUTLINE: FALL 2018

The hotlinks below provide access to PDF versions of the readings not included in the Borgatti et al. text.

8-28   *COURSE INTRODUCTION*

9-4   *BASIC CONCEPTS AND MATHEMATICAL FOUNDATIONS IN SNA*

Analyzing Social Networks, ch. 1 & 2

9-11   *SOFTWARE: UCINET & NETDRAW*

Analyzing Social Networks, ch. 5 & 7

9-18   *NETWORK DESIGN ISSUES*

Analyzing Social Networks, ch. 3 & 4

9-25   *MEASURES FOR WHOLE NETWORKS*

Analyzing Social Networks, ch. 9

Song, Mengli and Cecil G. Miskel. 2007. "Exploring the Structural Properties of the State Reading Policy Domain Using Network Visualization Technique." *Educational Policy* 21(4): 589-614.

10-2   *CENTRALITY AND POWER*

Analyzing Social Networks, ch. 10

Atteberry, Allison and Anthony S. Bryk. 2010. "Centrality, Connection, and Commitment: The Role of Social Networks in a School-Based Literacy Initiative." Pp. 51-76 in *Social Network Theory and Educational Change*, edited by Alan J. Daly. Cambridge, MASS: Harvard Education Press.

Young, Tamara V. 2016. "Explaining How Political Actors Gain Strategic Positions: Predictors of Centrality in State Reading Policy Issue Networks." *Educational Policy* 30(6):799-819.

10-9 ANALYZING SUBGROUPS

Assignment #1 due

Analyzing Social Networks, ch. 11-12

10-16 TESTING HYPOTHESES

Analyzing Social Networks, ch. 8

10-23 TESTING HYPOTHESES (CONT.)

Seminar paper proposals due

Siciliano, Michael D. 2016. "It's the Quality Not the Quantity of Ties that Matters: Social Networks and Self-Efficacy Beliefs." *American Educational Research Journal* 53(2)227-262.

Additional reading TBD

10-30 EXAM

Part 1 of exam due at the beginning of class

Part 2 of exam will be completed during class

11-6 EGO NETWORKS

Analyzing Social Networks, ch. 15

Bidart, C., & J. Charbonneau. 2011. "How to Generate Personal Networks: Issues and Tools for a Sociological Perspective." *Field Methods* 23(3):266–286.

11-13   *TWO-MODE NETWORKS*

Analyzing Social Networks, ch. 13

Additional reading TBD

*NOTE: **Assignment #2 due by Tuesday November 20**

11-20   *NO CLASS MEETING*

11-27   *PRESENTATIONS*

12-4   *PRESENTATIONS*

REMINDER: THE FINAL PAPER IS DUE ON FRIDAY DECEMBER 7TH AT 6PM. PLEASE UPLOAD YOUR PAPER TO THE CANVAS SITE.