This course is intended as an uneven survey of what sociologists would find interesting about social networks. Social networks is an analysis-heavy subfield; this class straddles both substantive and methodological concerns. Those who are interested in a more technical treatment have the option of an add-on session dealing with some advanced methods (see appendix).

Requirements: Regular and cheerful attendance is, as always, expected, as well as keeping up with the readings. Students taking the class for three or more credits are expected to write a paper, and indeed to be able to talk about the relation of your paper to materials when appropriate. You have options, though severely limited, as to the form it takes. (1) [most favored status] An actual research paper; (2) a methodological paper comparing methods of analysis to the same data or something like that; (3) an analytic paper [least favored, but tolerated]. If you do an actual research paper, this may either be a “formal” network analysis, which may be an analysis of original or secondary, or a different type of analysis (e.g. ethnographic).

REQUIRED READINGS
There are 2 (or 4 if you can find the other two at a reasonable price) books that we’ll read so much of that purchase is pretty much required—they’re in the cute floating text box on perhaps this page. The two without exclamation points should be in the University Bookstore. The other two are expensive—see if you can find a used copy; otherwise we’ll have to put it on reserve. All other readings (including all articles) will be passed out, placed on reserve, or available on JSTOR or something like that. For each topic, I give a bunch of readings that are standard in addition to the required (the required has an asterisk by it/them). These are for people who want to explore the topic further or read the original.

Warning: In some sections I may add or substitute readings as we get closer and I get a better sense of where the class is at.

There may also be additional modules for people who are interested in a more mathematical exploration of current techniques. These will be additional meetings at a different class time to be arranged.

The syllabus is organized into major divisions (given as capital Roman numerals), with chunks within (given by capital letters) that usually (but not always) correspond to a week. Within this are topics (Arabic numbers); readings for topics are listed with small letters a, b, c… So to figure out what to read, you 1) find the week; 2) find the topics covered that week; 3) find the readings for the topics; 4) decide what you are going to read.
Note: The main readings are chosen to familiarize you with the topic in question in the most accessible and citable way I am aware (a trade-off between the two); the extended readings are for those who want to read the classic statements of certain problems or methods, or explore a slightly more detailed or sophisticated treatment. They are not intended to represent all the worthy studies in social networks analysis of which I am aware. If wonderful work isn’t here (e.g. yours), don’t be offended. I don’t assign my own materials; however, last time students found my not referencing them somewhat disturbing—perhaps they thought I didn’t actually know anything about social network analysis—and suggested that I at least put them in the syllabus next time which I have done.

Books, the first two of which are Required and Available at the Bookstore:

- Wasserman and Faust, *Social Network Analysis*
- White, *Identity and Control*
- Bearman, *Relations into Rhetorics* !!
- Mizruchi, *The Structure of Corporate Political Action* !!

CLASS OUTLINE

I. BEGINNINGS

Week #1: January 22
A. Notation
   1) Overview
      a) Barry Wellman, introduction to *Social Structures: A Network Approach*.

   2) Representations of networks as graphs, sets and matrices
      a) Wasserman and Faust 1-27, 69-166*
      b) John Scott, *Social Network Analysis*
      c) any introductory text on set theory might help

Week #2: January 29
B. Types of Networks
   We discuss
   1) Ego-Centered Networks

   2) One-Mode Networks
3) Two-Mode (Affiliation) Networks

and ways in which they can be studied.
   → Wasserman and Faust 28-66*

We also discuss the reading that was technically required for last time, and perhaps something more general on social networks.

**Week #3: February 5**

C. From Structure to Networks
   We can deal with the complexity of networks by grouping the *alters* into structurally equivalent blocks, and considering all ties the same. Hence You are tied to your aunt through a “sister” tie appended to a “mother” or “father” tie. While networks are often touted as an alternative perspective to classic role theory, really the most interesting aspects have been an attempt to re-create role theory.

1) The Idea of Social Structure
   a) see the book of this name by George Park
   b) and the classic writings of Herbert Spencer

2) Kinship Structures
   b) Harrison White, *An Anatomy of Kinship*

**ADVANCED MODULE 1 ON ALGEBRA WOULD BE NOW**

**Week #4: February 12**

3) Structure from Networks

4) A New Network Anthropology

*My own contributions for section I would be*


ADVANCED MODULE 2 ON RANDOM GRAPHS WOULD BE NOW

II. NETWORK STRUCTURE

**Week #5: February 19**

A. Properties of Nodes

1) Attractiveness and Expansiveness: popularity and niceness

   a) Wasserman and Faust, 169-219 (this is also the reading for section 2)*
   c) James Coleman, *The Adolescent Society*
   g) other Wasserman, Fienberg, Faust, and Pattison pieces too numerous to include here; the Chapter 15 by Iacobucci in Wasserman and Faust gives this approach to the Holland and Leinhardt model. But it might be easier to first read the Holland and Leinhardt and then see how this makes sense of it.

2) Centrality

   a) Wasserman and Faust same as above*

3) Embeddedness and Social capital

4) Brokerage

5) Power

ADVANCED MODULE 3 ON PROBABILITY MODELS WOULD BE NOW

**Week #6: February 26**

B. Properties of Networks (especially important in communication and epidemiological networks)
   1) Reaching many people or avoiding some (Connectedness and Span)
      a) Wasserman and Faust, review 109-136*  
      b) Peter Bearman, Katherine Stovel and James Moody, “Chains of Affection.”*  

   2) Balance (especially important in friendship networks)
      d) Wasserman and Faust, 220-247* (skim what you understand from Cartwright and Harary).
3) Transitivity (important in many networks and organizations)
   c) Wasserman and Faust, 564-575, 581-582 (may skim)

6) Trees (important in organizations)

7) Structural Equivalence
My own contributions for section II would be


WE COULD DO AN ADVANCED MODULE ON EQUIVALENCE?

III. EFFECTS OF NETWORKS

Week #7: March 4

A. Diffusion

1) Diseases


   d) Lisa Sattenspiel, “Models of Infectious Diseases,” *Annual Review of Physical Anthropology*, 199 [I’m having trouble finding this…]


2) Ideas and Attitudes


j) Diana Crane, *Invisible Colleges*.

k) Henry Collins, “Tacit Knowledge in the TEA Set.”

l) Friedkin’s many articles with others such as Karen Cook and Eugene Johnsen; these can be found in the bibliography of the book: one classic collaboration is Marsden and Friedkin, “Network Studies of Social Influence,” *Sociological Methods and Research*, 22(1993):127-151

**Week #8: March 11**

**B. Mutual Support**

1) Structure of, Effects of


   c) Charles Kadushin. 1982. Social Density and Mental Health.” Ch 7 in *Social Structure and Network Analysis*, Peter Marsden (Ed.).


2) Change in and production of


**C. Economic Relations**

1) Exchange and competition


2) Information and Advice  
  c) Ezra Zuckerman and Stoyan Sgourev, “Peer Capitalism.”

3) Ownership  

*My own contributions for section III would be*

**ADVANCED MODULE 4 ON NETWORK REgressions would Be now**
IV. ACTION WITHIN AND BUILDING NETWORKS

Week #9: March 18
A. Friendship and Acquaintance: Making Random Graphs and Small Worlds (especially importance for acquaintance and communication networks)

1) How do people make networks?

2) The Idea of Small Worlds
   c) Duncan Watts, Small Worlds

3) The Creation of Small Worlds—Acquaintance and Friendship

4) Problems on Small Worlds
   a) Watts, Small Worlds, last chapters.

5) Acting in networks.

Week #10: April 1
B. Networking

1) Strategic Tie Construction (especially important for business networks)
   b) Ronald Burt, Structural Holes, Intro, Chapter 1.*

2) Retention and Destruction of Ties (especially important for friendship networks)
Week #11: April 8

C. Acting Within Networks

1) Activating Ties


b) David Gibson, “Taking Turns and Talking Ties: Networks and Conversational Interaction.”*

2) Mobilizing Ties (especially important for social movements)


c) Roger V. Gould, *Insurgent Identities*, Chs 1,2,6,7;


My own contributions for section IV would be


V. THEORIES OF NETWORKS

Week #12: April 15

A. Networks and Groups

1) The duality of Persons and Groups


c) King-To Yeung, “The Duality of Persons and Relationships.”*

d) Georg Simmel, *Web of Affiliation*, selections

2) Groups and Networks
   a) Review Bott
   b) J.A. Barnes, "Classes and Committees in A Norwegian Island Parish" in Samuel Leinhardt, ed., *Social Networks: A Developing Paradigm*

**Week #13: April 22**

B. Networks and Identities
   1) Networks and Language
      a) Harrison White, "Switching Talk.”

   2) Networks, Personality and Control
      a) Harrison White, *Identity and Control*, selections
      b) Harrison White, “Social Networks Can Help Resolve Actor Problems.”
      c) Ann Mische and Harrison White, “Between Conversation and Situations.” *Social Research.*

**ADVANCED MODULE 5 ON REPRESENTING NETWORKS AS FIELDS WOULD BE NOW**

**Week #14: April 29**

C. Networks and Culture
   1) Review Diffusion

   2) Culture in Networks—Boundaries and Niches
      c) Michelle, Lamont, *Money, Morals and Manners*

   3) Culture as Internalization of Network
      a) Peter Bearman, *Relations into Rhetorics*, espec. 1-18, 24-25, 42-45, 72-93, 95-111, 131-181
      c) Also see Jason Kaufman, “Endogenous explanation in the sociology of culture.” *Annual Review Of Sociology* 30(2004): 335-357
4) Culture as Externalization or Living of Network  

5) Culture as Distributed Across Networks  
   a) Hutchins, *Cognition in the Wild. Selections*  
   c) Hutchins, another article in *Persepectives on Socially Shared Cognition*, edited by Lauren B Resnick, John M. Levine and Stephanie D. Teasley.  
   d) Salmon, “No Distribution without Individuals’ Cognition,” which appears in his edited volume, *Distributed Cognitions: Psychological And Educational Considerations*.  

Week #15: May 6  
D. Networks and Fields
  1) Theory  
   b) Pierre Bourdieu, *Homo Academicus*  
   c) Pierre Bourdieu, everything else.  
   e) Kurt Lewin, *Field Theory in the Social Sciences*.

  2) Methods  
   b) See Advanced Module.

  3) Findings  

My own contributions for section V would be  

* I have consulted syllabi put together by James Montgomery, James Moody, Mark Mizruchi, Peter Bearman, Ronald Breiger, Peter Marsden, Philip Bonacich, and Duncan Watts; the “advanced module” portion is based on a class co-taught at the University of Wisconsin at Madison with James Montgomery. A shout out to all good people in the social networks world…you know who you are….

Keep going for tentative Advanced Modules…..
I. ADVANCED MODULE 1: ALGEBRAS
   A. Kinship Algebras
      A. How are relations algebras?
      B. Is there a logic to them?
      o Claude Levi-Strauss, The Elementary Structures of Kinship, pp. 12-83, 119-133, 146-220, 232-309. (Chs. 2-6, 9, 11-13, 15-17).*
      o Harrison White, An Anatomy of Kinship
   B. Role Algebras
   C. Galois Algebras
      My own contributions for AMI would be

II. ADVANCED MODULE 2: RANDOM GRAPHS
   A. Random Graphs
      • Bernoulli Graphs
      • Poisson Graphs
   B. Sampling From Random Graphs 1
• Frank, “Network Sampling.” Chapter 3 in Carrington, Scott and Wasserman
  o Rick Grannis, “Sampling The Structure Of Large-Scale Social Networks.”
    45:167-256.
  o Also one may look at the series of articles by Peter Killworth on using the
    structure of networks to estimate sizes of subpopulations.

C. Percolation problems
• P.S. Dodds and D.J. Watts, “A generalized model of social and biological
• Duncan J. Watts, “A simple model of global cascades on random networks.”
  Proceedings of the National Academy of Sciences, vol. 99, no. 9, pp. 5766-5771
  (2002)

III. ADVANCED MODULE 3: PROBABILITY MODELS
A. Models for local structure—Triad Analysis
• Wasserman and Faust, 564-575, 581-582 (may skim)
    Sociometric Data" American Journal of Sociology 76: 492-513.
    Interpersonal Relations in Small Groups.” In Joseph Berger, Morris Zelditch, Jr.,
    and Bo Anderson (eds.), Sociological Theories In Progress Volume 2, Boston:
    Houghton Mifflin, pp. 218-251.
  o Paul Holland and Samuel Leinhardt. 1971. “Transitivity in Structural Models of
    Small Groups.” Comparative Group Studies 2: 107-124,
    Sociological Methodology 1976: 1-45

B. Individual Level Models—$p_1$ Models
• Wasserman and Faust, TBA
  o Paul Holland and Samuel Leinhardt, "An Exponential Family of Probability
    Distributions for Directed Graphs." Journal of the American Statistical
    Association 76(1981):33-50
  o Stanley Wasserman and Dawn Iacobucci. "Statistical Analyses of Discrete
    Relational Data." British Journal of Mathematical and Statistical Psychology 39
    (1986):41-64
  o See Chapter 15 by Iacobucci in Wasserman and Faust for extended $p_1$ models,

o other stochastic models

C. $p^*$ models

- Wasserman and Robins, Chapter 8 in Carrington, Scott and Wasserman.
- Koehyly and Pattison, Chapter 9 in Carrington, Scott and Wasserman.
- Robins and Pattison, Chapter 10 in Carrington, Scott and Wasserman.
- On MCMC methods see Handcock in the dynamic social book,

➢ SPSS for pseudolikelihood
➢ DAMN for multimatrix pseudolikelihood

D. Models for Samples


IV. ADVANCED MODULE 4: NETWORK REGRESSIONS


My own contributions for AM4 would be


V. ADVANCED MODULE 5: REPRESENTING NETWORKS AS FIELDS

A. Matrix Algebra—Singular Value Decomposition

B. RC Models


C. Correspondence Analysis


- Faust, Chapter 7 in Carrington, Scott and Wasserman


4) Multidimensional Scaling
   • Freeman, Chapter 12 in Carrington, Scott and Wasserman.

*My own contributions for AM5 would be*