

An Introduction to Social Networks*

HNRS-302-007H

Hughes Hall, Room 102

Autumn 2012 T/F 8.55-10.10 am

<http://tinyurl.com/AUHNRS302>**Professor:** jimi adams, PhD**Email:** jadams@american.edu**Office:** Batelle-Tomkins, T22**Office Hours:** T/F 1:30-3pm, or by appointment
(to schedule - <http://tinyurl.com/adams-officehours>)**Course Description**

Networks are everywhere. And more importantly, they matter. Recently, academics, policy makers, entrepreneurs, and the general public have taken notice of the presence and importance of networks in daily life. Often, networks are evoked as a metaphor for explaining the connections observed between events. Less frequently, people attempt to explain how and why networks form, and why they do so in the ways they do.

We will explore a portion of the vast scholarship on social network analysis (SNA), through a series of readings grouped together to describe (a) basic network concepts, (b) methods for studying those concepts and (c) empirical examples. Since networks are used to study a wide-range of phenomena, this course will reflect only some of that diversity. We will cover topics (among others) including popular music, the Internet, infectious diseases, terrorism, and global trade.

By the end of the course you should be able to:

1. explain the primary theoretical perspectives underpinning SNA;
2. use standard language to describe common patterns observed within networks;
3. comprehend some of the basic measures used to describe and analyze networks; and
4. describe several prominent network-related research findings.

Required reading

- Watts, Duncan. 2004. *Six Degrees: The Science of a Connected Age*. New York: W.W. Norton & Co.
- Knoke, David & Song Yang. 2004. *Social Network Analysis*. (2nd Edition) Thousand Oaks, CA: Sage.
- Golding, William. 1954. *Lord of the Flies*. (any edition)
- Additional readings will be available on the course Blackboard.

Course Requirements & Grading

With this course organized as a survey of many different research areas, the central aim is to develop your ability to learn the basics of a single perspective and explore its application to a wide range of questions. As such, the structure of the course will be interactive, and will not rely heavily on instructor lectures. You are expected to read all assigned materials *before* the class they are covered. While participation in the class will be mandatory, you will have many options to determine what form your participation takes. Grading will therefore incorporate the participatory nature of this course directly and indirectly.

* This syllabus benefited greatly from syllabi for similar courses taught by Ryan Light (University of Oregon), James Moody (Duke University) and Matthew Salganik (Princeton University), and helpful conversations with Bernie Hogan (University of Oxford) and David Schaefer (Arizona State University). I would like to acknowledge their important influence in developing this course.

I - Class Participation (up to 100 points):

There will be a great deal of discussion in this class. The first portion of your grade will reflect a variety of options intended to reflect/encourage your participation in this discussion. There are numerous ways to earn participation points, and you can choose *any combination* (within specified limits) of the following to amass *no more than* 100 participation points.

- 1- Discussion Leader (up to 20 points)
Once during the semester, you can introduce the class discussion for a selected assigned reading. This will entail a presentation of approximately ten minutes, in which you should: summarize the basic points of the reading, including a specific description of how the applied network concept(s) are conceptualized, measured and evaluated. You should then provide a brief critical commentary on the reading (which can focus on network operationalization / testing or on other aspects of the reading). Sign up to serve as Discussion Leader can be accessed at (<http://tinyurl.com/adams-officehours>) and is on a first-come, first-served basis. (Not all assigned readings are available for this assignment.)
- 2- Email questions (up to 2 points each)
You should email *application/interpretation* questions pertaining to assigned readings that reflect a basic understanding of the reading(s) addressed. These questions are due **by 5pm the day before** the reading will be covered in class. No more than one question is accepted for credit per student per class day. (*maximum of 30 pts*)
- 3- Class Discussion Board Posts/Responses (up to 6/4 points each)
Using the Discussion Boards available on Blackboard, you will produce original contributions that *apply* in-class concepts to events you encounter outside of class. Beginning with a brief description of current events (from the news, personal observation or other sources), your contributed discussion board posts will then address how those events relate to concepts covered in class. To receive full credit, your posts must demonstrate an understanding of the applied concept(s) and describe how those concepts are represented, help interpret, or otherwise relate to the described event.
Thoughtful reactions to your classmates' discussion posts are encouraged. These may take a variety of forms, including (but not limited to) alternate observations that either support or contradict those presented in the original post, or additional interpretation of the same event applying other concepts introduced in class. Point assignments for posts/responses will be based on how accurately you apply the concepts to the observed event. *You will not receive credit for an event that has been previously described by one of your classmates.* The deadline to receive points via discussion board is November 21st. (*maximum of 40 points*)
- 4- In-Class Writings (up to 5 points each)
Periodically, I will ask you to complete in class writings. These will serve varied purposes and may include (among others): evaluating conceptual understanding, reactions to readings/material/discussion, making informed predictions. While some of these writings will, most will not be evaluated for "correct" answers, but will merely require thoughtful contributions to the question(s) posed. (*no maximum*)
- 5- Perfect attendance (15 points)
If you have perfect attendance in class, you will receive 15 participation points. I will not take class attendance; this will be determined by having turned in (regardless of the grade) *all of* the in-class writings. Near perfect attendance (8 points) is evaluated the same as "perfect attendance," with one missing grade.

II – Exams (150 points):

The course will include two in-class exams – each worth 75 points – consisting of a variety of question formats. The exams will cover material from lectures *and* readings. The first exam will be administered in class, and the second during our assigned final exam period.

III - Reading Responses (150 points total; 50 each):

Along with the reading that you do for this course, you will be required to submit three (3) reading responses during the semester, each worth up to 50 points. These 2½ -3 page writings will consist of brief summaries of the essential arguments of a reading and critical analysis of the research. Reading Response requirements are described in further detail on a separate handout, please read and follow this carefully. If you are not satisfied with the grade you earn on your first reading response, I will accept a fourth response, and you can discard the score for the first response, however *this option can only be used to replace the grade for the first response you write*. (NOTE: Only those readings listed on the course outline in [Blue Text](#) can be used to complete this assignment.) *At least one* of your reading responses must be completed *before* the first exam.

IV – Personal Network Project (100 points):

The final component of your grade will require you to describe, summarize and visualize the network of relationships for a population of your choosing. This may be a network you are personally involved in (online or face-to-face), an organizational network, an archival network, a network derived from a novel or other book (other than *LotF*), or networks from other sources. The final paper for this project will (at minimum) include a series of required sections, plus a visualization of the examined network. Further details about this project will be distributed later in the semester. 15% of the grade for this project will be based a preliminary description of the project (**due Tuesday October 9**). This will allow me to provide feedback on the plan of your project, assist you with choosing relevant concepts to examine, and explain any additional expectations for your particular project.

Final Grade Calculation

Your final grade will be determined by summing the number of points earned from each of the above categories. Letter grades will be determined from your point total as follows:

Potential Points:

Exams	150 (30%)	Participation	100 (20%)
PNP	100 (20%)	Reading Responses	150 (30%)
		Total	500 (100%)

<u>Letter Grade</u>	<u>Points Range</u>	<u>Letter Grade</u>	<u>Points Range</u>	<u>Letter Grade</u>	<u>Points Range</u>
A	463+	B	413-437	C	363-387
A-	448-462	B-	398-412	C-	348-362
B+	438-447	C+	388-397	D	300-347

Any student accumulating 299 or fewer points will receive an F for the course.

A Note about Grading – The goal of this course is to introduce you to the field of social networks while giving us the opportunity to learn together. While I attempt to be extremely flexible in the way that grades can be earned, I will not spend my time giving students extra opportunities to gain points beyond what is described in the syllabus. My desire is that grades are of a secondary concern in this class, while I am aware that they are probably your first priority. As a result I have tried (to some degree) to give you the chance to tailor your grade for the course to your desires and expectations. I will make every effort to return all graded materials to you as quickly as possible.

Course and College Policies

A Note on Participation:

The topics of study in this course will at times touch on personal and/or controversial issues. Your thoughts and opinions in discussing these topics will be valued and respected. To foster this, the following ground rules will apply for all in-class *and* online interactions:

- 1- Be respectful of others and their opinions. While healthy debate will be constructive in the learning process, disrespectful or insulting contributions *will not be tolerated*.
- 2- The content of your expressed *opinions* will in no way affect your grade. You are encouraged to share your *thoughtful* opinions, beliefs and values openly. The class will particularly benefit from statements that support and/or challenge both those of other students and the instructor (*as long as it is done in a manner consistent with rule #1*).

Late Work:

- Personal Network Project – Papers (or outlines) received after the due date will be reduced by 10 points (equivalent of 1 letter grade) for each day after the due date.
- Reading Responses, Email Questions, In-Class Assignments – Under *no* circumstances will late work be accepted for the reading responses or any participation element. Because there are numerous opportunities to meet each of these requirements, these are “hard” due dates. Prepare/adjust accordingly.
- Exams – Students who miss an exam must contact the instructor IMMEDIATELY to make arrangements for a make-up exam. Missing an exam is highly discouraged.

Written Assignments:

All written assignments (with the exception of discussion email questions) should be submitted via Blackboard. For your Reading Responses and PNP, your papers should be submitted as word (.doc or .docx) files that are properly formatted (double-spaced, 1-inch margins, 11 or 12 point New Times Roman font, page numbers). All references must be properly cited with full in-text *and* bibliographic information using **ASA format** (see handout available on Blackboard). Your document should include a cover page for each of these assignments, and should not include your name anywhere else in the paper. All writing should be spell-checked and carefully proofread before submission. When submitting an assignment to Blackboard, please be certain that you have the final version you intend to upload for grading. Re-submissions will not be accepted for any “I forgot to...” reasons, and original submissions are the versions that will be graded.

Communicating with the Instructor:

- The Syllabus has answers to the most common questions pertaining to the course. Please, check the syllabus first, before asking me about due-dates, assignment requirements, etc.
- Blackboard will be used for the majority of communication in this course. You can find a copy of the syllabus, additional assigned readings, and all assignments there. I will also post any lecture notes after each class. I strongly encourage you to make visits to this resource a regular part of your preparation for this course.
- E-mail should be used for quick communications (things that can be responded to in no more than a few sentences); use office hours for anything requiring more depth. You should only use your AU email account for communication related to this course; I will not read/reply to emails from your personal accounts (e.g., Yahoo!, Hotmail, etc). Please consider e-mail as subject to the same standards of communication as you would all other forms written material in this course (i.e., you should use complete sentences, proper punctuation, etc.). I will typically respond to email within two *work* days. I will **not**, under any circumstances discuss grades over email.
- Office Hours are available to add to your experience in this course. Please make use of them. These are meant to supplement required course work and in-class elements. As such, while I am happy to discuss course materials or other aspects of sociology/academia in general with you

during this time, they should not be viewed as an opportunity to ask “What did I miss in class?” (You should find peers in the class with whom you can share notes for that purpose, as well as study for exams, etc.)

Academic Integrity and Conduct:

All students are expected to follow the policies of American University with respect to academic conduct and integrity. For more information on academic integrity at AU, please go to <http://www.american.edu/academics/integrity/code.cfm>. Your registration in this course assumes your familiarity with these standards. Any violations of this policy will be referred to the AIC administrator.

Request for Academic Adjustment or Academic Accommodation:

Please notify the instructor at the beginning of the class if you are a student with a documented disability who may require appropriate interventions in order to be provided the opportunity to compete equitably in this course. If you need university assistance with documentation or with services, please see Disability Support Services (206 Mary Graydon, 885-3315), or visit their website at: <http://www.american.edu/ocl/dss/For-Students-Services-Provided.cfm>

University Services:

Students are encouraged to seek out appropriate university services that support student learning and success. Among those, where appropriate, please consider making use of the Academic Support Center (243 Mary Graydon Center, www.american.edu/ocl/asc/index1.html); the computer services/technology help (<http://www.american.edu/oit/index.cfm>), the Writing Center (228 Battelle-Tompkins Hall, <http://www.american.edu/cas/writing>), and Library Research Help (<http://www.american.edu/library/ask/index.cfm>).

Emergency Preparedness: In the event of a declared pandemic (influenza or other communicable disease), American University will implement a plan for meeting the needs of all members of the university community. Should the university be required to close for a period of time, we are committed to ensuring that all aspects of our educational programs will be delivered to our students. These may include altering and extending the duration of the traditional term schedule to complete essential instruction in the traditional format and/or use of distance instructional methods. Specific strategies will vary from class to class, depending on the format of the course and the timing of the emergency. Faculty will communicate class-specific information to students via AU e-mail and Blackboard, while students must inform their faculty immediately of any absence due to illness. Students are responsible for checking their AU e-mail regularly and keeping themselves informed of emergencies. In the event of a declared pandemic or other emergency, students should refer to the AU Web site (www.prepared.american.edu) and the AU information line at (202) 885-1100 for general university-wide information, as well as contact their faculty and/or respective dean’s office for course and school/ college-specific information.

Tentative Course Schedule

Please Note, this schedule is subject to change – all changes will be announced in class.

Reading Abbreviations: 6°-Watts, KY-Knoke & Yang, *LotF*-Golding, BB-Blackboard

Day	Topic	Readings Due	Assignments Due
<i>Part 1 – Background</i>			
Week 1			
T, 28 Aug	Introductions	None	
F, 31 Aug	Terms and Definitions	6° (preface) KY 4.1	

Day	Topic	Readings Due	Assignments Due
Week 2			
T, 4 Sept	Kevin Bacon, Paul Erdős & HIV	6° (ch 1-2)	
F, 7 Sept	What are “Small Worlds”?	BB Milgram 1967 6° (ch3)	
Part 2 – Approaches to Studying Networks			
Week 3			
T, 11 Sept	Gathering Network Data	KY 2-3 (focus on 2.1, 3.1, 3.2, 3.4)	
F, 14 Sept	Difficulties with Data	BB Bearman 2004b BB Killworth 2006	
Week 4			
T, 18 Sept	Affiliation Networks	KY 5.3 6° (p. 118-129)	
F, 21 Sept	Overlapping Directorates	BB Burris 2005	
Part 3 – Network Measurement			
Week 5			
T, 25 Sept	Density & Holes – Gaining an Upper Hand	KY 4.3 BB Burt 2001	
F, 28 Sept	Establishing a Political Dynasty	BB Padgett 1993	
Week 6			
T, 2 Oct	Centrality – Who is “important”?	KY 4.4	
F, 5 Oct	Who Wins/Is Nominated for Academy Awards	BB Rossman 2008	
Week 7			
T, 9 Oct	Homophily, Transitivity, etc. – Segregation in Adolescent Friendships	BB Moody 2001 BB Lewis 2008	RR #1 (last day)
F, 12 Oct	Fall Break – No Class Meeting		
Week 8			
T, 16 Oct	Review	BB Borgatti 2009	
F, 19 Oct	Exam 1 – In Class		
Week 9			
T, 23 Oct	Counting Friends, Unknowns and Unknowables	BB Feld 1991 – <i>and</i> – BB Zheng 2006 – <i>or</i> – BB Heckathorn 2001	
F, 26 Oct	How does Music Become Popular?	BB Salganik 2006 & 2008	PNP Outline Due
Part 5 – Observed Network Patterns			
Week 10			
T, 30 Oct	Clustering & Search in Networks - Terrorism	6° (ch 5) KY 4.5 BB Krebs 2002	
F, 2 Nov	The Strength of Weak Ties	BB Granovetter 1973	
Week 11			
T, 6 Nov	Degree Patterns	6° (p.101-118) BB Barabasi 1999	
F, 9 Nov	Project Work Day – No Class Meeting		
Week 12			
T, 13 Nov	Sexual Networks	BB Bearman 2004a	

Day	Topic	Readings Due	Assignments Due
F, 16 Nov	Epidemics & Failures	6° (ch 6) BB Liljeros 2001 BB Moody 2007	
Week 13 T, 20 Nov	Equivalence; How is the World City System Organized?	KY 4.6 & 5.1 BB Alderson 2004	PNP
F, 23 Nov	Thanksgiving – No Class Meeting		
Week 14 T, 27 Nov	Innovation, Adaptation & Recovery	6° (ch 9)	
F, 30 Nov	The Financial Collapse of 2008	BB Haldane 2009 –or– BB Harmon 2010	RR #2 (last day)
Part 6 – Putting it All Back Together			
Week 15 T, 4 Dec	<i>Lord of the Flies</i>	<i>LotF</i> - all	RR #3 (last day)
F, 7 Dec	<i>Lord of the Flies</i> , cont'd	none	
T, 11 Dec	Final Exam – 8:55-11:25am		

Additional Assigned Readings List:

- Alderson, Arthur S. and Jason Beckfield. 2004. "Power and Position in the World City System." *American Journal of Sociology* 109:811-851.
- Barabasi, Albert-Laszlo and Reka Albert. 1999. "Emergence of Scaling in Random Networks." *Science* 286:509-512.
- Bearman, Peter S., James Moody, and Katherine Stovel. 2004. "Chains of affection: The structure of adolescent romantic and sexual networks." *American Journal of Sociology* 110:44-91.
- Bearman, Peter and Paolo Parigi. 2004. "Cloning Headless Frogs and Other Important Matters: Conversation Topics and Network Structure." *Social Forces* 83:535-557.
- Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. "Network Analysis in the Social Sciences." *Science* 323:892-895.
- Burris, Val. 2005. "Interlocking Directorates and Political Cohesion among Corporate Elites." *American Journal of Sociology* 111(1):249-283.
- Burt, Ronald S. 2001. "Structural Holes versus Network Closure as Social Capital." Pp. 31-56 in in N. Lin, K. Cook and R. S. Burt. *Social Capital: Theory and Research*. Sociology and Economics: Controversy and Integration series. New York: Aldine de Gruyter. Accessed from <http://faculty.chicagobooth.edu/ronald.burt/research/SHNC.pdf> on 27Dec2009.
- Feld, Scott L. 1991. "Why Your Friends have More Friends than you do." *American Journal of Sociology* 96:1464-1477.
- Granovetter, Mark. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 81:1287-1303.
- Haldane, Andrew G. 2009. "Rethinking the Financial Network." Address to the Financial Student Association, Amsterdam. Accessed from <http://www.bankofengland.co.uk/publications/speeches/2009/speech386.pdf> on 10July2009.
- Harmon, Dion, Blake Stacey, Yavni Bar-Yam, and Yaneer Bar-Yam. 2010. "Networks of Economic Market Interdependence and Systemic Risk." arXiv:1011.3707v2.
- Heckathorn, Douglas D. and Joan Jeffri. 2001. "Finding the Beat: Using Respondent-Driven Sampling to Study Jazz Musicians." *Poetics* 28:307-329.
- Killworth, Peter D., Christopher McCarty, H. Russel Bernard, and Mark House. 2006. "The Accuracy of Small World Chains in Social Networks." *Social Networks* 28:85-96.
- Krebs, Valdis E. 2002. "Uncloaking Terrorist Networks." *First Monday* 7(4):1.

- Lewis, Kevin, Jason Kaufman, Marco Gonzalez, Andreas Wimmer and Nicholas Christakis. 2008. Tastes, ties, and time: A new social network dataset using Facebook.com." *Social Networks* 30: 330–342.
- Liljeros, Fredrik, Christofer R. Edling, Luis A. Nunes Amaral, H. Eugene Stanley, and Yvonne Aberg. 2001. "The Web of Human Sexual Contacts." *Nature* 411:907-908.
- Milgram, Stanley. 1967. "The Small World Problem." *Psychology Today* 1:61-67.
- Moody, James. 2001. "Race, school integration, and friendship segregation in America." *American Journal of Sociology* 107:679-716.
- Moody, James, Martina Morris, jimi adams, and Mark Handcock. 2007. "Epidemic Potential in Low Degree Networks." Unpublished manuscript. Duke University.
- Padgett, John F. and Christopher K. Ansell. 1993. "Robust Action and the Rise of the Medici, 1400-1434." *American Journal of Sociology* 98:1259-1319.
- Rossman, Gabriel, Nicole Esparza, and Phillip Bonacich. 2010. "I'd Like to Thank the Academy: Team Spillovers and Network Centrality." *American Sociological Review* 75:31-51.
- Salganik, Matthew J., Peter Sheridan Dodds, and Duncan J. Watts. 2006. "Experimental Study of Inequality and Unpredictability in an Artificial Cultural Market." *Science* 311:854-856.
- Salganik, Matthew J. & Duncan J. Watts. 2008. "Leading the Herd Astray: An Experimental Study of Self-fulfilling Prophecies in an Artificial Cultural Market." *Social Psychology Quarterly* 71:338-355.
- Zheng, Tian, Matthew J. Salganik, and Andrew Gelman. 2006. "How Many People do You Know in Prison?: Using Overdispersion in Count Data to Estimate Social Structure in Networks." *Journal of the American Statistical Association* 101:409-423.

Additional Recommended Reading:

If you would like to explore any of the topics covered in class in more detail, the following books will likely be the most useful starting places for that. Please ask the instructor for specific recommendations for the best source(s) among these for any particular topic(s) of interest.

- Kadushin, Charles. 2011. *Understanding Social Networks: Theories, Concepts, and Findings*. New York: Oxford University Press.
- Scott, John P. & Peter J. Carrington. 2011. *The SAGE Handbook of Social Network Analysis*. London: Sage.
- Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. New York: Cambridge University Press.