

UHON 351  
Six Degrees of Separation: The  
New Science of Social Networks  
Fall 2010  
T/R 9:35-10:50  
Morris 112

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Office Hours: T 8:30-9:30 (Delytes')  
W 2:00-4:00 (Office)  
By appointment

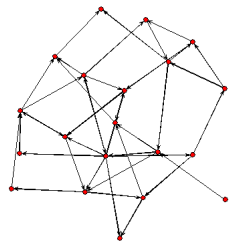


Figure 1: Random Graph

## 1 Course Description

Network science is one of the fastest growing areas of interest in disciplines as diverse as physics,

computer science, and sociology. Though each discipline studies networks with different goals in mind, this new science is unified by a belief in *interdependence* and *connectivity*. For those of us interested in social phenomenon, the rapid ascent of social media like Facebook and Twitter give us ready confirmation of the importance of such dynamics.

But knowing that the world is connected does not mean that we understand those connections or how they drive important social processes. What does it mean to think about politics and society through the lens of interdependence? What are the main tools and concepts for understanding connectivity? How can these be used to understand fundamental questions of interest about human behavior, such as how happy people are, whether or not they are willing to quit smoking, and how the internet is organized? These basic questions are addressed by reading materials written by scientists in many disciplines and putting the techniques of social network analysis into practice. Accordingly, these are the specific goals for this course:

1. Develop an understanding of basic social network concepts and tools.
2. Learn about the ways that social network analysis is applied across disciplines.
3. Learn how to conduct individual research using social network tools.

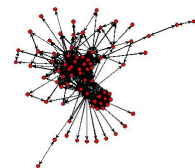


Figure 2: The Weather Underground

## 2 Course Requirements

This will be a hands-on, participatory class. As such, most of the graded assessment is based on your participation in the class research project and discussion. Additionally there will be two exams that focus on students' mastery of the conceptual material.

**Talking Points.** You must turn in one or more talking points related to one reading for *each week* marked by an asterisk on the syllabus. Talking points should raise questions, articulate personal points of view, or highlight confusion about the assigned reading for that day. Each talking point is given five points for completion and up to five additional points based on quality. Your percentage on those will then be multiplied by 300 points to determine this part of your course grade. These must be turned in to the instructor by email by noon the day before we are due to discuss the reading it covers.

**Research Project.** As a class we will gather data on how the social connections of SIUC freshmen influence some set of behaviors that interest you (e.g., study habits or friendship choice). All students will collaborate with the professor for designing, administering, and analyzing the data with the tools of social network analysis. They will additionally be responsible for writing a final paper based on these data. More information will be distributed in class. This part of the grade is worth 400 points.

**Exams.** There will be two exams in this class, each worth 150 points. Exams will last approximately one-and-a-half hours and consist principally of essays that cover reading and class discussions.

Table 1: Grading Scale

|             |   |
|-------------|---|
| 1000 to 900 | A |
| 899 to 800  | B |
| 799 to 700  | C |
| 699 to 600  | D |
| Below 600   | F |

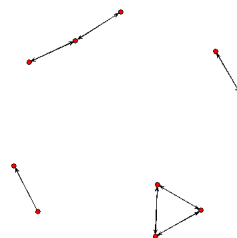


Figure 3: Different Egonets

## 3 Class Policies

### 3.1 Absences

You are expected to attend every lecture and discussion section. If you arrive after attendance is taken, you will be considered absent for the day. If you must miss class for some reason, you can receive an excused absence by contacting me **in advance**. I reserve the right to see documentation for your absence or to decide what constitutes a reasonable excuse. If you must miss class, you are responsible for finding out what you missed.

### 3.2 Missed Assignments

All assignments are due at the start of class on the date assigned unless the instructor indicates otherwise. Any assignment not turned in on time will lose half a letter grade for each day it is late. Any assignment more than 48 hours late will not be accepted. See “Problems and Emergencies” for the only exceptions to this policy.

### 3.3 Makeup Exams

There will be no make-up exams. If you miss an exam, you will receive a zero. If you are late to an exam, you must take it in the time that remains when you arrive. See “Problems and Emergencies” for the only exceptions to this rule.

### 3.4 Cheating and Academic Misconduct

Any student engaging in academic misconduct will receive an F in the course and reported to the Dean of Liberal Arts for further disciplinary action outlined in the *University Code of Student Conduct*. If you have any questions about constitutes cheating, academic misconduct, or plagiarism, examine the university policy and/or ask the instructor **prior** to turning in any assignment. It is *your* responsibility to familiarize yourself with university policy.

### 3.5 Problems and Emergencies

If a problem or emergency arises that prevents you from attending an exam, turning in a paper, or coming to class, you should contact Professor McClurg as soon as possible. The best way to contact me is via email (mcclurg@siu.edu). If you do not hear back from me within a reasonable amount of time you may call me. Students contacting me **prior** to missing an assignment will receive greater leniency. Examples of excuses that do **not** qualify as problems and emergencies include, but are not limited to, the following: oversleeping, taking too much medication, being incarcerated, or having a cold. You are welcome to clarify what I consider to be an acceptable excuse to me at any point in the semester.

### 3.6 Grading Policies and Standards

Graded material is returned as promptly as possible. When students receive an exam or assignment back and are dissatisfied with their grade, they must wait at least two days before asking

for a review. To request such a review, the student must submit a single-spaced, one paragraph note explaining why the original grade is inappropriate. All assignments submitted for review can be graded up or down by the Professor.

### 3.7 Disability Policy

It is the policy of this university and professor to help disabled students succeed in the classroom. The student is responsible for notifying the professor and university of any special problems or needs as soon as possible. The professor and university is responsible for doing whatever they can within university policy to accommodate that student’s needs. It is in your best interest to notify the professor and university **immediately** so that arrangements can be made as soon as possible. More information is available from Kathleen Plesko at Disable Student Services or at the DSS homepage.

## 4 Reading Assignments

Most of reading material will come from the following assigned books, although we will also examine a handful of research articles and excerpts from other books.

- Buchanan, Mark. *The Social Atom: Why the Rich Get Richer, Cheaters Get Caught, and Your Neighbor Usually Looks Like You*. New York: Bloomsbury, 2007.
- Scott, John. *Social Network Analysis: A Handbook*. Beverly Hills, CA: Sage Press, 2000.
- Christakis, Nicholas and James Fowler. *Connected: The Surprising Power of Our Social Networks*. Little Brown, 2009.

## 5 Topic Outline

### 5.1 A Connected World

**Week 1. August 24-26** Six Degrees of Kevin Bacon?\*

- Introduction
- Buchanan, pp. 1-64

**Week 2. August 31** Its a Small World After All\*

- Milgram
- *No Class*

### 5.2 We're Connected, So What?

**Week 3. September 7-9** Happiness\*

- Christakis & Fowler, pp. 3-32
- Christakis & Fowler, pp. 33-94

**Weeks 4. September 14-16** Health & Politics\*

- Christakis & Fowler, pp. 95-134
- Christakis & Fowler, pp. 172-209

**Week 5. September 21-23.** Wealth\*

- Buchanan, pp. 65-89
- Christakis & Fowler, pp. 135-172

**Week 6. September 28-30.** Project Week

- *Planning Session*
- *Library Session*

### 5.3 Doing Social Network Analysis

**Week 7. October 5-7.** Egonets & Sociomatrixes

- Scott, pp. 1-37
- Scott, pp. 38-62

**Week 8. October 12-14.** Project Week

- *Planning Session*

- *Questionnaire Design*

**Week 9. October 19-21** Dependence, Density, and Visualization

- Scott, pp. 36-81
- *Lab Session*

**Week 10. October 26-28.** Centrality and Centralization

- Scott, pp. 82-99
- *Lab Session*

**Week 11. November 2-4.** Project Week

- *Pre-Testing, Questionnaire Design*
- *Planning Session*

**Week 12. November 9-11.** Cliques, Groups, and Components

- Scott, pp. 100-146
- **Veterans Day**

### 5.4 New Ideas in Social Network Analysis.

**Week 14. November 16-18.** Project Week

- Midterm Exam
- *Lab Session*

**Week 15. November 23-25.** Thanksgiving Break

**Week 16. November 30-December 2.** Birds of a Feather\*

- Buchanan, pp. 90-111
- McPherson and Smith-Lovin

**Week 17. December 7-9 \***

- Buchanan, pp. 112-139
- Christakis & Fowler, pp. 210-252

**Final Exam. December 16, 10:10 - 12:10.**