

General Education Course Information Sheet

Please submit this sheet for each proposed course

<i>Department & Course Number</i>	<u>Statistics 98T</u>
<i>Course Title</i>	<u>Six Degrees of Separation: Studying the World Through Social Networks</u>
<i>Indicate if Seminar and/or Writing II course</i>	<u>Seminar</u>

1 Check the recommended GE foundation area(s) and subgroups(s) for this course

Foundations of the Arts and Humanities

- Literary and Cultural Analysis _____
- Philosophic and Linguistic Analysis _____
- Visual and Performance Arts Analysis and Practice _____

Foundations of Society and Culture

- Historical Analysis _____
- Social Analysis X

Foundations of Scientific Inquiry

- Physical Science X
With Laboratory or Demonstration Component must be 5 units (or more) _____
- Life Science _____
With Laboratory or Demonstration Component must be 5 units (or more) _____

2. Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) chosen.

This class provides an introduction to social network analysis – how people are connected to each other, and how this affects various social phenomena in the world around us. Students will have to think critically about the scientific principles of network and graph theory and apply it to social events. For example, students will consider how degree distribution, connectedness, and the existence of bottlenecks will affect the spread of a disease. Students will consider models of social networks and how they can be used to better understand social interactions, integrating knowledge of mathematical properties of networks into

3. List faculty member(s) who will serve as instructor (give academic rank):

Brian Kim, Teaching Fellow; Professor Mark Handcock, Faculty Mentor

Do you intend to use graduate student instructors (TAs) in this course? Yes ___ No X

If yes, please indicate the number of TAs _____

4. Indicate when do you anticipate teaching this course:

2016-2017	Fall	Winter	Spring
	Enrollment _____	Enrollment <u> X </u>	Enrollment _____

5. GE Course Units

Is this an ***existing*** course that has been modified for inclusion in the new GE? Yes ___ No X

If yes, provide a brief explanation of what has changed. _____

Present Number of Units: _____ Proposed Number of Units: 5

6. Please present concise arguments for the GE principles applicable to this course.

- General Knowledge

Students will learn how to look at social phenomena using networks, as well as how to think scientifically about the underlying network structure.
- Integrative Learning

Students will apply social network theory to problems and situations they have likely already encountered, such Facebook friendships, to help them think about what guides these interactions.
- Ethical Implications

Ethical issues regarding privacy and information spread will be covered in the course.
- Cultural Diversity

Students may consider how different cultures may form connections with each other in different ways.
- Critical Thinking

Students must analyze the social network structures of various groups of people and determine how this affects them.
- Rhetorical Effectiveness

Students will have to submit a final paper, as well as give a presentation at the end of the class.
- Problem-solving

A final paper and presentation will be required in which students apply social network analysis to
- Library & Information Literacy

The final paper will require sources from outside the class.

(A) STUDENT CONTACT PER WEEK (if not applicable write N/A)

-  Lecture: N/A (hours)
-  Discussion Section: 3 (hours)
-  Labs: N/A (hours)
-  Experiential (service learning, internships, other): N/A (hours)
-  Field Trips: N/A (hours)

(A) TOTAL Student Contact Per Week 3 **(HOURS)**

(B) OUT-OF-CLASS HOURS PER WEEK (if not applicable write N/A)

- 1. General Review & Preparation: 3 (hours)
- 2. Reading 2 (hours)
- 3. Group Projects: N/A (hours)
- 4. Preparation for Quizzes & Exams: N/A (hours)
- 5. Information Literacy Exercises: N/A (hours)
- 6. Written Assignments: 5 (hours)
- 7. Research Activity: 2 (hours)

(B) TOTAL Out-of-class time per week 12 **(HOURS)**

GRAND TOTAL (A) + (B) must equal at least 15 hours/week 15 **(HOURS)**

Statistics 98T
Six Degrees of Separation: Studying the World
Through Social Networks

Location: TBA

Time: TBA

Instructor: Brian Kim

Email: kimbrianj@ucla.edu

Office: MS 8983

Office Hours: TBA

With the advent of the Internet, the world has become more connected than ever. Facebook lets us keep in touch with friends across the world, and journalists use Twitter to break news the moment it happens. But even offline, and before all this technology was available, the social connections we make with each other constituted a significant and important part of our lives. Understanding these connections can give us valuable insights into all sorts of real world phenomenon, from the spread of HIV and other diseases to how people interact over social media.

In this course, we will look at aspects of our everyday lives and the world around us that are guided by the principles of social networks. We will explore how looking at networks can enrich our view of the world, and how it can give us a more insightful perspective to situations you might already be familiar with. As a result, you should expect to come away with a newfound appreciation and understanding of the way in which we are all connected.

Course Objectives

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

- Identify how social network structure might affect relationships.
- Recognize patterns and trends in social networks.
- Explain why certain aspects of social networks are important.
- Discuss the impact of social network structure on real world phenomenon.

Class policies

Learning philosophy

This is not a typical lecture-based class. You must be an active participant in class discussion, which means coming to class prepared, having read the readings and completed the reading forum response. I expect everyone to participate by not only contributing their own ideas, but also considering their classmates' ideas and thinking critically about what others are saying. In addition, I expect everyone to be respectful and help create an learning environment in which anyone can feel free to share their thoughts. This naturally includes refraining from verbally attacking any of your classmates, but also extends to giving thought to what others are saying even if you don't agree with it.

Academic Integrity

In all the work you do for this class, and especially for the final paper, you must cite all your sources and properly attribute any work that is not your own. If I find work that I believe to be plagiarized, I will take the issue to the Dean of Students. Please refer to the school policy on Academic Dishonesty for more information.

Communication

If you have questions for me, the best way to contact me is by emailing me at kimbrianj@ucla.edu or coming to my weekly office hours. Part of this course involves promoting a collaborative environment where you can discuss your thoughts and ideas with your fellow classmates. To that end, if your question is something that might be of interest to other students, please feel free to post it on the CCLE discussion forum in the “questions” thread. I will monitor and respond to questions on the forum, but if you see a question that you know the answer to, please respond directly to your fellow students.

Late work

Late work will not be accepted unless you have discussed it with me beforehand. If you know you will be unable to complete an assignment on the required schedule, please contact me as soon as possible.

Disability accommodations

Reasonable accommodations are available for students with disabilities. However, it is important that you register with the Office for Students with Disabilities as soon as possible, to arrange accommodations through their office. The OSD phone number is (310) 825-1501 (or (310) 206-6083 TTY) and they are located in the basement of Murphy Hall (A255 Murphy).

Required Materials

1. Course Reader (including excerpts from the books listed in the Reading List, below).

Assignments

Reading Forum Responses (20% of your final grade)

We will have selected readings each week discussing networks and their applications. You will be responsible for submitting a post about the readings in a forum on CCLE, as well as a response to a classmate’s post. You will have a few days between when the reading response is due and when the response to a classmate is due. This format is designed to motivate the discussions we will have in class, and your posts should address questions like, “How does a knowledge of network structure help me understand this better?” or “What other questions does this article bring up?” Guided questions will be posted on CCLE, but you will not be required to answer each of them directly. Instead, they will be designed to help you think about the right mindset to have while you read the papers.

Final Paper (40%)

The main product of this class will be a paper, which you will submit during finals week. This will be a topic in the media which relates to networks, or that you can use the properties of networks to explain. You may use any of the examples we look at, but you must give a much more detailed treatment of it than simply what we discussed in class.

In a 15-page paper (double spaced), you will focus on an issue or phenomenon in which studying the network structure can enrich our understanding. This may include specific instances, such as the HIV outbreak in Austin, Indiana, or broader topics such as the debates on immunization and vaccines. The paper should include at least two sections:

Part 1: Introduce the Topic

You should introduce the topic and talk about why this is of interest. Why is it important that we understand this better? Why do we need to use networks? What is our ultimate goal?

Part 2: Network Structure and Application

This section will explain how it relates to networks, as well as providing any insights networks provide to your topic. Remember to keep your paper focused on the goal that you set yourself in part 1. Why is understanding the network important? What should we be looking for in the network to help us achieve our goal?

Paper Proposal (5%)

In the third week of class, you will turn in a 1-page topic proposal. The proposal consists of

- The subject matter you will be exploring
- Why it is of interest to the general public
- Aspects of its network structure that you can analyze

Also, as part of the proposal, you will meet with me to discuss your topic. This is a chance for me to give you advice on how to research your paper and for you to ask any questions you might have. I will post times that you can sign up for on the CCLE webpage.

Literature Review (15%)

In the sixth week, you will submit a literature review for your final paper. The literature review will be in the form of an annotated bibliography of sources that you expect to cite in your final paper. For each source, provide a short description of the information it contains and the major takeaways. Then, write a few sentences on how it ties into your final paper topic. You may use mostly material that we cover in class, but you must include at least three outside sources.

Your literature review should be about 5 pages long, and much of the material you produce will become part of your final paper.

Peer Review (10%)

In the eighth week, you will participate in a peer review of the first draft of your final papers. You will exchange papers with someone else in the classroom and provide written feedback. This is meant as a way to get a different perspective on your topic and help refine your ideas, but it is also so that you can get practice giving each other constructive criticism. Note that you will be graded on the feedback you provide, so make sure you include thoughtful response!

The first draft does not have to be the full 15 pages, but it should be at least 8 pages for the purpose of this exercise.

Final Presentation (10%)

During the final week, you will do a 10 minute presentation on your final paper topic. This will be an opportunity to present your work to your classmates and even use visual tools that may not have been possible in the paper. I expect most people will use slides (Powerpoint or otherwise), but you may choose to use other visual aids if you wish. In order to make sure everything flows smoothly on presentation days, I will ask you to send me your presentations the night before.

Preliminary Schedule

	Topic	Readings
Week 1	What are “social networks” and how should we think about them?	How do social networks affect our health? [17]; Barabasi, Linked: Chapters 1-3 [3]
Week 2	Why are my friends more popular? Centrality and the Erdős-Bacon Number	Why are friends more popular? [8]; The Erdős Number Project [22]; The Oracle of Bacon [1]; Barabasi, Linked: Chapter 5 [3]
Week 3	Why do we form cliques? Homophily, or why we form ties with people like ourselves. Paper proposal due	Christakis, The hidden influence of social networks [6]; McPherson et al, Birds of a Feather: Homophily in Social Networks [14]
Week 4	How do social networks form and what can we learn from this?	Barabasi, Linked: Chapters 4, 6-7 [3]; Scale-free networks and applications [11]
Week 5	How do terrorists operate and what would be the best way to disrupt them? Literature review due	Ressler, Social network analysis as an approach to combat terrorism [18]; Pedahzur, The changing nature of suicide attacks: A social network perspective [16]
Week 6	How has the Internet changed social networks? Facebook and other social media	Facebook Research, Three and a half degrees of separation [9]; Stokes, Instagram has the highest engagement ratio of all major social networks [20]; The Australian, Lost in the Twitterverse [2]; Bronwen Clune, So Twitter is ruining journalism? Really? [7]
Week 7	How do social networks affect public health?	Luke and Harris, Network Analysis in Public Health [13]; The social network paradigm and applications in pharmacy [12]
Week 8	How do epidemics and outbreaks happen? Peer review of first drafts	Christakis, How social networks predict epidemics [5]; HIV outbreak in Austin, Indiana [10], [21]; Vaccines [4]
Week 9	How do we survey people? Network sampling for hard-to-reach populations	Salganik, Respondent-driven sampling in the Real World [19]; Paz-Bailey et al [15]
Week 10	Final oral presentations	
Finals Week	Final paper due	

Reading List

- [1] The oracle of bacon. <https://oracleofbacon.org/help.php>.
- [2] The Australian. Lost in the twitterverse. *The Australian*, November 2013.
- [3] Albert-Laszlo Barabasi. *Linked: How everything is connected to everything else and what it means for business, science, and everyday life*. Basic Books, 2014.
- [4] Daphne Chen. With more parents choosing not to vaccinate, Utah on brink of losing ‘herd immunity’. *Deseret News*, February 2016.
- [5] Nicholas Christakis. How social networks predict epidemics, June 2010. URL https://www.ted.com/talks/nicholas_christakis_how_social_networks_predict_epidemics.
- [6] Nicholas Christakis. The hidden influence of social networks, February 2010. URL https://www.ted.com/talks/nicholas_christakis_the_hidden_influence_of_social_networks.
- [7] Bronwen Clune. So twitter is ruining journalism? Really? *The Guardian*, November 2013.
- [8] The Economist. Why are your friends more popular than you? *The Economist*, April 2013.
- [9] Sergey Edunov, Carlos Diuk, Ismail Onur Filiz, Smriti Bhagat, and Moira Burke. Three and a half degrees of separation. <https://research.facebook.com/blog/three-and-a-half-degrees-of-separation/>.
- [10] Abby Goodnough. Rural Indiana struggles to contend with H.I.V. outbreak. *New York Times*, May 2015.
- [11] Oliver Hein, Michael Schwind, and Wolfgang König. Scale-free networks: The impact of fat tailed degree distribution on diffusion and communication processes. *Wirtschaftsinformatik*, 48(4):267–275, 2006.
- [12] Andrea Kjos, Marcia Worley, and Jon Schommer. The social network paradigm and applications in pharmacy. *Research in Social & Administrative Pharmacy*, 9:353–369, 2013.
- [13] Douglas A Luke and Jenine K Harris. Network analysis in public health: history, methods, and applications. *Annual Review of Public Health*, 28:69–93, 2007.
- [14] Miller McPherson, Lynn Smith-Lovin, and James M Cook. Birds of a feather: Homophily in social networks. *Annual Reviews in Sociology*, 27:415–444, 2001.
- [15] G Paz-Bailey, JO Jacobson, ME Guardado, et al. How many men who have sex with men and female sex workers live in El Salvador? Using respondent-driven sampling and capture-recapture to estimate population sizes. *Sex Transm Infect*, 87:279–82, 2011.
- [16] Ami Pedahzur. The changing nature of suicide attacks: A social network perspective. *Social Forces*, 84(4):1987–2008, 2006.
- [17] National Public Radio. How do our social networks affect our health? <http://www.npr.org/2016/03/04/468881321/how-do-our-social-networks-affect-our-health>.

- [18] Steve Ressler. Social network analysis as an approach to combat terrorism: Past, present, and future research. *Homeland Security Affairs*, 2(8), 2006.
- [19] Matthew Salganik. Respondent-driven sampling in the real world. *Epidemiology*, 23(1), 2012.
- [20] John Stokes. Instagram has the highest engagement ratio of all major social networks. <http://trackmaven.com/blog/2014/12/little-known-instagram-tips-to-boost-engagement/>, December 2014.
- [21] Laura Ungar and Chris Kenning. Indiana community's HIV outbreak a warning to rural America. *USA Today*, May 2015.
- [22] Oakland University. The Erdos number project. URL <http://www.oakland.edu/enp/>.



New Course Proposal

	Statistics 98T	
	Six Degrees of Separation: Studying the World Through Social Networks	
Course Number	Statistics 98T	
Title	Six Degrees of Separation: Studying the World Through Social Networks	
Short Title	SOCIAL NETWORKS	
Units	Fixed: 5	
Grading Basis	Letter grade only	
Instructional Format	Seminar - 3 hours per week	
TIE Code	SEMT - Seminar (Topical) [T]	
GE Requirement	Yes	
Major or Minor Requirement	No	
Requisites	Enforced: Satisfaction of entry-level Writing requirement. Freshman and sophomores preferred.	
Course Description	Studying interpersonal relationships and how they affect the world by applying principles of network and graph theory. Analyzing various phenomena through the lens of social networks.	
Justification	Part of the series of seminars offered through the Collegium of University Teaching Fellows	
Syllabus	File STATS 98T Syllabus.pdf was previously uploaded. You may view the file by clicking on the file name.	
Supplemental Information	Professor Mark Handcock is the faculty mentor for this course.	
Grading Structure	Reading Forum Responses - 20% Final Paper - 40% Paper Proposal - 5% Literature Review - 15% Peer Review - 10% Final Presentation - 10%	
Effective Date	Winter 2017	
Discontinue Date	Summer 1 2017	
Instructor	Name Brian Kim	Title Teaching Fellow
Quarters Taught	<input type="checkbox"/> Fall <input checked="" type="checkbox"/> Winter <input type="checkbox"/> Spring <input type="checkbox"/> Summer	
Department	Statistics	
Contact	Name MICHELLE CHEN	E-mail mchen@oid.ucla.edu
Routing Help		

ROUTING STATUS

Role: Registrar's Publications Office

Status: Pending Action

Role: Registrar's Scheduling Office - Thomson, Douglas N (DTHOMSON@REGISTRAR.UCLA.EDU) - 51441

Status: Added to SRS on 8/12/2016 12:32:59 PM

Short Title

Changes:**Comments:** No Comments**Role:** FEC School Coordinator - Kikuchi, Myrna Dee Castillo (MKIKUCHI@COLLEGE.UCLA.EDU) - 45040**Status:** Approved on 8/11/2016 3:47:43 PM**Changes:** No Changes Made**Comments:** Routing to Doug Thomson in the Registrar's Office.**Role:** FEC Chair or Designee - Bristow, Joseph E (JBRISTOW@HUMNET.UCLA.EDU) - 54173**Status:** Approved on 7/28/2016 9:10:54 AM**Changes:** No Changes Made**Comments:** No Comments**Role:** FEC Chair or Designee - Kikuchi, Myrna Dee Castillo (MKIKUCHI@COLLEGE.UCLA.EDU) - 45040**Status:** Returned for Additional Info on 7/27/2016 4:05:57 PM**Changes:** No Changes Made**Comments:** Routing to Joe Bristow for FEC approval.**Role:** CUTF Coordinator - Chen, Michelle L. (MCHEN@OID.UCLA.EDU) - 53042**Status:** Approved on 7/13/2016 4:03:59 PM**Changes:** No Changes Made**Comments:** on behalf of Professor Kathleen L. Komar, Chair, CUTF Faculty Advisory Committee**Role:** Initiator/Submitter - Chen, Michelle L. (MCHEN@OID.UCLA.EDU) - 53042**Status:** Submitted on 7/13/2016 3:56:23 PM**Comments:** Initiated a New Course Proposal[Back to Course List](#)

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cims@registrar.ucla.edu or (310) 206-7045