

## Social Networks

ECB 212 – Block 3  
West Science 306

12noon - 3 MTuW and  
9-11 & 1-2 Th and  
9:30-12:30 F – *except where noted*

Instructor: Santhi Hejeebu  
Office Hours: 10:00 - 11:00am TuTh or by appointment  
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### Course Overview:

In a tech savvy society, personal and economic relationships often originate and develop on-line. The people in our on-line social networks influence the votes we cast, the jobs we obtain, the things we buy, and even the viruses we catch. This course explores the structure of networks and the processes that operate upon them. Students will learn to define networks and measure their features. Students will also examine the sentiment embedded in text shared between members of a network. We aim to answer the following: How do networked relationships affect behavior, especially business behavior? How does an agent's position in a social network advantage or disadvantage that agent? The class will apply concepts to social media data collected from networks such as Facebook, Twitter, and YouTube. Students will initiate their own social media projects and present their findings to the class.

### What will you learn?

Over the many courses you take at Cornell College, you will strive toward several important educational goals. In ECB212, students will

- *Integrate and apply ideas* emerging from multiple disciplines, including economics, sociology, statistics, and computer science.
- *Communicate effectively* through class dialogue, through the paper assignment, and through the final presentation.
- *Investigate* networks of social and economic relationships using information technology tools. You will identify a unique research problem and locate the appropriate data for addressing it.
- *Evaluate* graph metrics and visualizations in order to answer the question you raised.

### Required Readings:

*Social Analytics*. [SA] Miranda, Shaila. Prospect Press. 2019. Available from the College Bookstore.

*Analyzing Social Media Networks with NodeXL, Insights from a Connected World*. 2<sup>nd</sup> edition, [NXL] Hansen, Derek L., Shneiderman, Ben, Smith, Marc A., and Himelboim, Itai. Morgan Kaufmann. 2019. Available from instructor.

*Networks, Crowds, and Markets, Reasoning about a Highly-Connected World*, [EK] Easley, David and Kleinberger, Jon. Cambridge University Press. 2010. A complete electronic pre-print is available here: <http://www.cs.cornell.edu/home/kleinber/networks-book/networks-book.pdf>

### **Professional Conduct**

A significant portion of your grade depends on your behavior. As part of your preparation for the business world, this class explicitly rewards professional conduct. This covers conduct in three areas: **1)** proper grooming, **2)** time management, and **3)** attention management. For the first, business casual attire is required on days we have guests or presentations. For time management, the following **Attendance Policy** will also prepare you for the world of professional work.

I expect you to attend class on time, every single day. Lateness or an absence will only be excused in the event of illness, family emergencies, or participation in College-sponsored activities. These events require proper documentation. Unexcused absences will reduce your grade by **20** points with each occurrence.

Beyond full attendance and respectable attire, professional conduct requires managing your attention. You are expected to be prepared and ready for the day's agenda: Be mentally present and ready to participate actively in class discussion. "Deep work" or "focused work" can definitely emerge from Cornell's Block Plan coupled with good study habits and small, engaging classes. The following **Digital Policy** helps you develop strong study habits while in class.

**Digital Content** – Students are strongly encouraged to discontinue consuming all personal digital content 15 minutes prior to class and during the 3 hours of class time, including during breaks. **10 points will be awarded each day you Flip Off your device prior to and during class.**

**Digital Tools** – The classroom is equipped with laptops. You may use your own laptop, provided you have access to the required software tools and all pop-up notifications are disabled. The necessary software tools expected in the course include: a) **NodeXL** is required throughout the course. It is available from the [Social Media Research Foundation](#) for download to your personal machine; b) [Linguistic Inquiry and Word Count \(LIWC\)](#) is available for both Windows or Mac operating systems; c) our digital wellness app, **Flipd** is to be downloaded on your cell phone and is available [here](#); d) **Moodle** will be necessary for all HW submissions unless otherwise indicated. Homework and other assignments are not to be submitted via email.

### **Help is Here:**

If Excel, graphing, or other quantitative aspects of this class challenge you, **Ms. Jessica Johanningmeir** ([JJohanningmeier@cornellcollege.edu](mailto:JJohanningmeier@cornellcollege.edu)), Quantitative Reasoning Consultant, would be happy to help you improve your skills.

## Grading:

Your grades will be based on the following:

Course Component	Points
Homework	50
Social Network Project 1	100
Text Analysis Project 2	100
Final Project 3	100
Professional conduct (Flipd Off only)	170
<b>Total Points</b>	<b>520</b>

Typically, total points will approximate a normal distribution and the class average will be assigned a letter grade of B-/C+. In borderline cases only, class participation will be taken into consideration in formulating the final grade.

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## Equality of Opportunity:

Cornell College is committed to providing equal educational opportunities to all students. If you have a documented learning disability and will need any accommodation in this course, you **must** request the accommodation(s) from me as early as possible and no later than the third day of the term. Additional information about the policies and procedures for accommodation of learning disabilities is available on [this](#) Cornell College web site.

## Academic Honesty:

Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgement of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear [here](#) in the College Catalogue.

## Social Networks – ECB212-3 – Schedule of topics

Day	Topic	Readings	Tonight's HW
<b>Network Analysis</b>			
1	M	What is social analytics? Groundwork – syllabus, textbook, software installation, digital wellness norms.	SA1 <b>Read:</b> SA2-3
2	T	Some uses of social analytics Intro to SNA: Graph concepts Getting started in NodeXL	SA2 SA3 NXL 4-5 <b>HW1:</b> tutorial 3.1
3	W	Graph metrics More practice with NodeXL Data preparation, clustering, and groups <b>9:30-12:30 **</b>	NXL 6-7 <b>HW2:</b> tutorial 3.2, 3.3 <b>Read:</b> SA5
4	Th	Advanced SNA Subgroup and group metrics	SA5 <b>HW3:</b> tutorial 5.1, 5.2
5	F	Importing data: Twitter, Facebook, YouTube	NXL 11-13 <b>Paper 1</b>
6	M	<b>Paper 1</b> 13 presentations	<b>Browse EK3-4</b>
7	T	Changes in network structure Triadic closure & homophily Network structure impacts Information flows - simulation activity	EK3-4 <b>Read:</b> SA7
<b>Text Analysis</b>			
8	W	Introduction to Text Analysis Basic vocabulary and concepts Word clouds from Wordart.com	SA7 <b>HW4:</b> tutorial 7.1
9	Th	Text analysis using NodeXL	NXL8 <b>Paper 2</b>
10	F	<b>Guest Speaker: Mr. Bahador Jamshidi, Hanapin Social Marketing noon – 3pm **</b>	<b>Paper 2</b>
11	M	<b>Paper 2</b> 13 presentations	<b>SA7</b> <b>HW5:</b> tutorial 7.2, 7.3;
12	T	Text analysis using LIWC	<b>Listen:</b> <a href="#">Hidden Brain podcast 10/7/19.</a>
13	W	Text analysis case study	<b>Do:</b> Paper 3 Part 1
14	Th	Final project conferences	Paper 3

15 F Final project conferences

Paper 3

**Final Projects**

16 M 10 individual presentations, *9-12 and 1-3*

17 T 10 individual presentations, *9-11 and 1-3*

18 W 6 individual presentations, *9-12*