

# MIS 373 04070 Social Media Analytics

**Schedule:** MW 12:30-2:00 pm in CBA 5.328

**Instructor:** Deepayan Chakrabarti

**Office:** CBA 6.462

**Email:** deepayan.chakrabarti@mcombs.utexas.edu

**Teaching Assistant:** Rohit Arora (arorarohit@utexas.edu)

**Instructor office hours:** By appointment (CBA 6.462)

**TA office hours:** Monday 3:15-4:30 pm or by appointment (CBA 3.332L)

**Pre-requisites:** None

## Course Overview

*“Some 73% of online adults now use a social networking site of some kind... [and] 42% of online adults now use multiple social networking sites,”* according to a recent Pew Research survey [1]. If a business needs to be where its customers are, then it clearly needs to establish a strong presence on social media, but how does one develop an online reputation or develop their brand online? How does one maintain a strong user community on social networking sites? How can one craft a potent social advertising strategy? What are the potential pitfalls?

To answer these, we must synthesize knowledge from a variety of disciplines. While sociologists have researched such concepts as homophily and social capital, which point to the underlying motivations in the relationships of individuals in a network, computer scientists have uncovered surprising patterns in real-world social networks, and marketing experts have studied viral marketing and social advertising. This course will combine such foundational material with actual case studies of businesses in the social world.

The course is split into five main parts:

- (1) **Network Patterns**, which describes and seeks to explain several common patterns found in real-world social networks,
- (2) **Branding and Community**, which explores the best methods for maintaining a strong brand online and managing the user community,
- (3) **Importance and Influence**, which discusses an individual’s place in the network, and how memes, early adoption, and such “cascades” propagate,
- (4) **Advertising and Marketing**, which focuses on viral marketing and social advertising techniques, and
- (5) **Advanced Analytics**, which describes the latest methods for inferring user interests and recommending items to them, and related topics.

# Course Materials

We will combine material from two books and several recent papers. All books are optional.

**Books.** This course will use chapters from two books:

- *Networks, Crowds, and Markets: Reasoning About a Highly Connected World*, by David Easley and Jon Kleinberg (see [here](#)), and
- *Networks: An Introduction*, by Mark Newman.

**Case studies.** These will be provided as an online coursepack [here](#).

- Managing Online Reviews on TripAdvisor
- TopCoder(A): Developing Software through Crowdsourcing,
- HubSpot: Inbound Marketing and Web 2.0

**Papers.** Online references to the papers are provided in the schedule, presented later.

**Software.** We will use [Gephi](#).

# Grading Policy

The course grade will be calculated as follows.

Work item	Weight
Group Assignment 1	10
Group Assignment 2	20
Midterm	20
Group Project	20
Final exam	30

**Group formation.** This course has two assignments and one project, all of which must be done in groups. Students will be randomly assigned to groups before the first assignment is released. Each group will consist of 5 students.

**Homework assignments.** There will be 2 group assignments. For the second assignment (where you will advertise for a client on Facebook), funds will be provided but you must find the business whose Facebook page you will promote. The finished reports must be handed in electronically via Canvas before the beginning of the class.

**Project.** Your group must develop a project on any topic related to social media analytics that interests you. The project should have the following characteristics:

- There should be a clear motivation. You should be trying to solve a question that matters, either to society or business.
- You should do a thorough survey of the relevant literature. This includes articles from the popular press as well as from scholarly sources such as academic journals.
- Your report and presentation should organize this literature survey appropriately, and summarize your main insights and findings.

**Exams.** There will be midterm and a final exam. They will be open-laptop and open-notes.

## Statement on Students with Disabilities

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>.

## Religious Holy Days

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

## Policy on Scholastic Dishonesty

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the BBA Program's Statement on Scholastic Dishonesty at <http://www.mcombs.utexas.edu/BBA/Code-of-Ethics.aspx>. By teaching this course, I have agreed to observe all faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all student responsibilities described in that document. If the application of the Statement on Scholastic Dishonesty to this class or its assignments is unclear in any way, it is your responsibility to ask me for clarification. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, the integrity of the University, and the value of our academic brand, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> to access the official University policies

and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

## Campus Safety

Please note the following recommendations regarding emergency evacuation, provided by the Office of Campus Safety and Security, 512-471-5767, <http://www.utexas.edu/safety>:

- Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.
- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
- Students requiring assistance in evacuation should inform the instructor in writing during the first week of class.
- In the event of an evacuation, follow the instruction of faculty or class instructors.
- Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
- Behavior Concerns Advice Line (BCAL): 512-232-5050
- Further information regarding emergency evacuation routes and emergency procedures can be found at: <http://www.utexas.edu/emergency>.

Table 1: *Tentative schedule*

Date	Topic	Readings
01/22	Introduction	Newman chapters 2 and 3
<b>Network Patterns</b>		
01/27	Strong and Weak Ties	Easley chapter 3 <a href="#">Differential benefits of strong and weak ties</a>
01/29	Small World	Easley chapter 20
02/03	Homophily	Easley chapter 4 <a href="#">Origins of Homophily in an Evolving Social Network</a> <a href="#">Birds of a Feather: Homophily in Social Networks</a>
02/05	The Long Tail	Easley chapter 18, Newman chapter 14
02/10	Hands-on session I with Gephi	
02/12	Hands-on session II with Gephi	
<b>Branding and Community</b>		
02/17	Online reputation	Easley chapter 22 <b>Group assignment 1 released:</b> uses the Case Study titled <i>Managing Online Reviews on TripAdvisor</i>
02/19	Community structure I	Newman chapters 10 and 11 <a href="#">Mapping Twitter Topic Networks</a>
02/24	Community structure II	Newman chapters 10 and 11
02/26	Crowdsourcing	CASE: TopCoder <b>Project Proposals Due</b>

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Table 1 – continued from previous page

Date	Topic	Readings
<b>Importance and Influence</b>		
03/02	Measures of importance	Newman chapter 7 <b>Group assignment 1 due</b>
03/04	Epidemics, gossip, word of mouth	Newman chapter 17, Easley chapter 19 <a href="#">Rumor Cascades</a> <a href="#">The spreading of misinformation online</a> <a href="#">Social influence and the diffusion of user-created content</a>
<b>(midterms)</b>		
03/09	Review session	
03/11	<b>Midterm</b>	
03/16-21	<i>Spring break</i>	
<b>Social Advertising and Marketing</b>		
03/23	Internet Marketing I	
03/25	Internet Marketing II	CASE: HubSpot
03/30	Viral Marketing I	<a href="#">Influence or homophily?</a> <a href="#">Creating Social Contagion through Viral Product Design</a> <a href="#">The Role of Social Networks in Information Diffusion</a>
04/01	Viral Marketing II	<a href="#">The Dynamics of Viral Marketing</a> <a href="#">Selection Effects in Online Sharing: Consequences for Peer Adoption</a>
04/06	<b>Group Assignment 2 Presentation</b>	Student groups will submit a written report and present in class about promoting a Facebook page of a business of their choice
04/08	<b>Group Assignment 2 Presentation</b>	(as above)

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Date	Topic	Readings
04/13	Social Advertising	<a href="#">The Value of Social Media Impressions</a> <a href="#">Social Influence in Social Advertising</a> <a href="#">Identifying Likely Adopters via Consumer Networks</a> <a href="#">Social Advertising</a>
<b>Advanced Analytics</b>		
04/15	Network Analytics	
04/20	Recommendation I	
04/22	Recommendations II	
<b>(finals)</b>		
04/27	<b>Project Presentations</b>	
04/29	<b>Project Presentations</b>	
05/04	Finals review	
05/06	No class	
05/16	<b>Final exam: 2:00-5:00</b>	
	<b>pm</b>	

## References

- [1] Pew Research. Social media update 2013, December 2013.