

**CMGT 564 Methodological Fundamentals of Big
Data in Communication**

Units: 4

Spring 2020–21782D

Wednesday, 3:30 - 6:20 pm

Location: ANN 209

Instructor: Liuning "Matt" Zhou, Ph.D.

Office Hours: Wednesday, 2:30 pm –3:30 pm

Office: ASC 321

Contact Info: liuningz@usc.edu

I. Course Description

This course explores the fundamental concepts and principles behind social media data and the techniques for extracting useful knowledge and insights from such data. The primary goal is to help students view research problems from a data perspective, develop skills to systematically analyze such problems, and solve the problems through social media analytics (SMA). This data-analytic thinking can then be applied in a variety of ways, from data storytelling to customer relationship management and data-driven decision-making.

The course consists of three modules: (i) fundamentals of social media; (ii) social media analytics; and (iii) social media intelligence. The first module provides an overview of different social media platforms, and examines the role of social media in facilitating personal connections, social ties and information diffusion. This module is intended to lay a solid foundation for students to have a good grasp of conceptual and practical issues around social media analytics. The second module takes a hands-on approach to social media analytics. It covers the basics of social media monitoring/listening, as well as more advanced topics such as text analysis and sentiment analysis. Students develop a conceptual understanding of those procedures on the one hand, and learn practical skills to conduct such analyses on the other. The third module looks at the applications of social media analytics in different fields of communication research, such as health communication and political communication. The goal here is to help students see social media analytics at work and understand its importance as a value-adding tool. Students also learn to evaluate the appropriateness and effectiveness of social media analytics in those research settings. Throughout the semester, class meetings are conducted through a combination of lectures, in-class discussions, and group activities.

II. Student Learning Outcomes

By the end of the semester, students are expected to have a good understanding of conceptual issues and a good command of practical skills for social media analytics. Specifically, students will: (i) become familiar with terminologies of social media analytics and be able to have intelligent conversations about related topics; (ii) develop the skills to effectively collect and analyze social media data from different social networks and create knowledge or insights from such data; (iii) become competent in certain analytical tools for

social media analytics; and (iv) learn to evaluate the conceptual foundations, methodologies, analytical approach, validity and limitations of predictive social media analytics in the context of communication-related research.

Recommended Preparation: understanding of quantitative research and social media

III. Course Notes

Copies of lecture slides, reading materials instructions for homework assignments will be posted in Blackboard.

There will be weekly reading assignments (except for the first and final week). Readings come from book chapters, peer-review journals, industry sources such as reports and white papers, and online publications. These materials are either posted in Blackboard under "Weekly Materials" or provided to students in class.

Students are expected to complete assigned readings before class and prepare for in-class discussions of the materials. Participation in discussion and response to instructor's questions are part of the participation score. Assigned readings are not a substitute for the class; nor is the class designed to summarize the readings. You will find a lot of materials in lecture that are not there in your readings (and vice-versa).

IV. Description and Assessment of Assignments

Student performance in this class is evaluated based on quizzes, a group presentation, homework assignments (individual and group), a final project, and class participation.

Quizzes are based on assigned readings. Each group is also expected to present on readings of one particular week. Individual and group assignments involve different aspects of social media analytics, and the instructor will spend time explaining his requirements and expectations when the assignments come up.

There is a final project due at the end of the semester. It requires students to work in groups, identifying a research problem, developing an analytical plan, analyzing data and reporting the findings. Detailed guidelines will be distributed and explained in class later in the semester.

Class participation accounts for 5% of the final grade. It consists of attendance, contributions to class discussions, substantive responses to instructor's questions, interaction with guest speakers, and good efforts in group assignments.

V. Grading

A. Breakdown of Grade

Assignment	Points	% of Grade
Quiz 1/Week 3	100	5%
Quiz 2/Week 9	100	5%
Group presentation of weekly materials	100	5%

Assignment	Points	% of Grade
Week 3: Individual Assignment 1/Social media strategy	100	10%
Week 5: Individual Assignment 2/Social listening	100	10%
Week 6: Individual Assignment 3/SM competitive analysis	100	10%
Week 9: Group Assignment 1/Sentiment analysis	100	5%
Week 10: Group Assignment 2/Influencer analysis	100	5%
Week 11: Group Assignment 3/Final Project plan	100	5%
Final Project	100	35%
Participation	100	5%
TOTAL	1100	100%

B. Grading Scale

Each assignment will be worth 100 points and will be converted to a percentage score depending upon the weight assigned to each. Your percentage scores on the assignments will be totaled and translated to a letter grade per the scale shown below:

94% to 100%: A	80% to 83%: B-	67% to 69%: D+
90% to 93%: A-	77% to 79%: C+	64% to 66%: D
87% to 89%: B+	74% to 76%: C	60% to 63%: D-
84% to 86%: B	70% to 73%: C-	0% to 59%: F

C. Grading Standards

- A/A-: outstanding, thoughtful and enthusiastic work
- B+/B: above average work, demonstrating good insight into assignment
- B-/C+: needs improvement on ideas, argument and follow through
- C and below: fulfilling the bare minimum and showing little understanding of the material

D. Grading Timeline

The instructor will strive to return graded assignments with feedback within a week of receiving the assignment.

If you have concerns regarding a grade on a given assignment, you must appeal it in writing, stating the reasons why you feel the grade is inaccurate, within one week of receiving the graded assignment. No late appeals will be accepted for review.

VI. Assignment Submission Policy

You will receive details about each assignment separately. All assignments need to be completed and handed in on time (sent to instructor's mailbox or submitted through Blackboard by 3:30 pm of the due date) to avoid a grade reduction (10% reduction from

the original point). If you are unable to turn in an assignment due to illness or a personal emergency, you must provide written documentation that will allow you to be excused, or discuss your situation with the instructor in a timely manner. Do not wait until the end of the semester to sort things out.

VII. Required Readings and Supplementary Materials

There are weekly reading assignments (except for the first and final week). Readings come from book chapters, peer-review journals, industry sources such as reports and white papers, and online publications. These materials are either posted in Blackboard under "Weekly Materials" or provided to students in class.

Students are expected to complete assigned readings before class and prepare for in-class discussions of the materials. Participation in discussion and response to instructor's questions are part of the participation score. Assigned readings are not a substitute for the class; nor is the class designed to summarize the readings. You will find a lot of materials in lecture that are not there in your readings (and vice-versa).

VIII. Laptop Policy

All undergraduate and graduate Annenberg majors and minors are required to have a PC or Apple laptop that can be used in Annenberg classes. Please refer to the [Annenberg Digital Lounge](#) for more information. To connect to USC's Secure Wireless network, please visit USC's [Information Technology Services](#) website.

IX. Add/Drop Dates for Session 001 (15 weeks: 1/13/20 – 5/1/20)

Friday, January 31: Last day to register and add classes for Session 001

Friday, January 31: Last day to drop a class without a mark of "W," except for Monday-only classes, and receive a refund for Session 001

Tuesday, February 4: Last day to drop a Monday-only class without a mark of "W" and receive a refund for Session 001

Friday, February 28: Last day to drop a course without a mark of "W" on the transcript for Session 001. [Please drop any course by the end of week three (or the 20 percent mark of the session) to avoid tuition charges.]

Friday, February 28: Last day to change pass/no pass to letter grade for Session 001. [All major and minor courses must be taken for a letter grade.]

Friday, April 3: Last day to drop a class with a mark of "W" for Session 001

Course Schedule: A Weekly Breakdown

Important note to students: Be advised that this syllabus is subject to change - and probably will change - based on the progress of the class, news events, and/or guest speaker availability.

<p>Week 1 January 15</p> <p>Module I: Fundamentals of Social Media (1)</p>	<p><u>Topics</u> Review of course syllabus; social media and social networks</p> <p><u>Lesson Activity</u> Form groups for group presentation, group assignments and final project</p>
<p>Week 2 January 22</p> <p>Module I: Fundamentals of Social Media (2)</p>	<p><u>Topics</u> Personal connections, social ties and social influence</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p>
<p>Week 3 January 29</p> <p>Module I: Fundamentals of Social Media (3)</p>	<p><u>Topics</u> Information diffusion, social media data and social media strategy</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p><u>Individual Assignment 1</u>: Social media strategy</p> <p>Note: Quiz 1</p>
<p>Week 4 February 5</p> <p>Module II: Social Media Analytics (1)</p>	<p><u>Topics</u> Social media analytics; measurement and metrics</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p><u>Guest Speaker 1</u>: Social media strategy and analytics</p> <p>Note: Individual Assignment 1 <u>DUE</u> by 3:30 pm</p>
<p>Week 5 February 12</p>	<p><u>Topics</u> Social media monitoring/listening</p>

Module II: Social Media Analytics (2)	<u>Readings</u> Relevant materials are posted in Blackboard. <u>Individual Assignment 2</u> : Social listening
Week 6 February 19 Module II: Social Media Analytics (3)	<u>Topics</u> Social media competitive analysis <u>Readings</u> Relevant materials are posted in Blackboard. <u>Individual Assignment 3</u> : Social media competitive analysis Note : Individual Assignment 2 <u>DUE</u> by 3:30 pm
Week 7 February 26 Module II: Social Media Analytics (4)	<u>Topics</u> Working with Python (installation; basics; data types, structures and frames; useful packages); Web scraping and text mining (data extraction, transformation, cleaning and exporting) <u>Readings</u> Relevant materials are posted in Blackboard. Note : Individual Assignment 3 <u>DUE</u> by 3:30 pm
Week 8 March 4 Module II: Social Media Analytics (5)	<u>Topics</u> Text mining lab session <u>Guest Speaker 2</u> : Social media analytics and intelligence
Week 9 March 11 Module II: Social Media Analytics (6)	<u>Topics</u> Sentiment analysis <u>Readings</u> Relevant materials are posted in Blackboard. <u>Group Assignment 1</u> : Sentiment analysis Note : Quiz 2
March 18	Spring Break; no class

<p>Week 10 March 25</p> <p>Module II: Social Media Analytics (7)</p>	<p><u>Topics</u> Influence, influencer and centrality (influence analysis; measurement and analysis of impact of expressed opinions)</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p><u>Group Assignment 2:</u> Influencer analysis</p> <p>Note: Group Assignment 1 <u>DUE</u> by 3:30 pm</p>
<p>Week 11 April 1</p> <p>Module II: Social Media Intelligence (1)</p>	<p><u>Topics</u> Forecasting with SMA: consumer behavior and stock market</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p><u>Group Assignment 3:</u> Final Project plan</p> <p>Note: Group Assignment 2 <u>DUE</u> by 3:30 pm</p>
<p>Week 12 April 8</p> <p>Module III: Social Media Intelligence (2)</p>	<p><u>Topics</u> Forecasting with SMA: political campaigns and elections</p> <p><u>Readings</u> Relevant materials are posted in Blackboard.</p> <p>Note: Group Assignment 3 <u>DUE</u> by 3:30 pm</p>
<p>Week 13 April 15</p> <p>Module III: Social Media Intelligence (3)</p>	<p><u>Topics</u> Forecasting with SMA: personality and health</p> <p><u>Lesson Activity</u> Group meeting with instructor about final project Group meeting to finalize final project</p>
<p>Week 14 April 22</p>	<p><u>Topics</u> Research ethics; wrap-up</p> <p><u>Lesson Activity</u></p>

	<p>Group meeting with instructor about final project</p> <p>Group meeting to finalize final project</p>
<p>Week 15</p> <p>April 29</p>	<p>Presentation of Final Project</p> <p>Final Project <u>DUE</u> by 11:59 pm on MAY 10 in instructor's mailbox (liuningz@usc.edu)</p>

XI. Policies and Procedures

Additional Policies

There is no make-up for missed classes; use of smartphone/social media for non-class related issues should be kept to a minimum.

Communication

You are encouraged to contact the instructor outside of class, and if you cannot come to office hours to arrange a meeting time via email. The instructor will try to reply to emails within 48 hours.

Statement on Academic Conduct and Support Systems

A. Academic Conduct

Plagiarism

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

B. Support Systems

Counseling and Mental Health - (213) 740-9355 – 24/7 on call

studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call

suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call

studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298

equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault,

non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

uscsa.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Annenberg Student Success Fund

<https://annenbergsuccessfund.usc.edu/current-students/resources/additional-funding-resources>

The Annenberg Student Success Fund is a donor-funded financial aid account available to USC Annenberg undergraduate and graduate students for non-tuition expenses related to extra- and co-curricular programs and opportunities.