# COMM 4558 SOCIAL MEDIA ANALYTICS SPRING 2025

#### Instructor:

Professor Joseph Bayer, PhD [email: bayer.66@osu.edu]

Office Hours: Thursdays, 4:00pm-5:00pm EST or by appt. [Schedule Link]

# **Course description**

The is an online course. The course represents an introduction to analyzing social media data with an emphasis on the implications and applications for market research, communication strategy, and technology history. How do we know whether a feature on the new iPhone is working? What type of consumers are most likely to buy a given product? How does the perception of a platform change after a crisis? Social media streams can provide valuable insights into users, brands, audiences, and technologies. The course provides an overview of the approaches and challenges associated with collecting, analyzing, and visualizing social media data, including an involved case report using real-world social analytics software.

# Course learning goals and outcomes

The primary objectives of this course are to teach students how to obtain, monitor, and evaluate social media data from major online platforms (e.g., Twitter/X). When we are finished, you will be prepared to approach future industry and scientific problems with an understanding of how social media data can help accomplish your goals. You will learn the advantages/disadvantages of using social media data, how to operate established analytics platforms, and how to engage in market research to study emerging technologies. Altogether, you will acquire the fundamental perspectives and hands-on skills needed to work with social media data.

### **Mode of delivery**

This course is delivered fully online. There are no in-person components required. The course includes a combination of prerecorded tutorials, online activities, and assignments that can be completed at your discretion.

### How this course works

• Each week, a new **module** will become available on the course Carmen site that contains all of the online requirements associated with that week. Each module will specify the required readings, as well as provide links to the lectures, interactive activities, pre-recorded videos, and analytics tools needed for that week.

- This is a 3-credit-hour course. As such, students should expect around 3 hours per week of time spent on direct instruction. Specifically, students should anticipate an average of about 60 minutes of lecture, 30 minutes of prerecorded tutorial videos, 45 minutes of technology installation and/or setup, and 45 minutes of weekly participation, in addition to 6 hours of homework per week (i.e., readings, assignments).
- All assignments are due 11:59pm EST on Mondays. See detailed instructions on Carmen for the specific steps, formatting requirements, and grading rubric.

### Course materials

- You can access all course readings and materials by clicking through the links in the weekly
  course modules on our Carmen site. In addition, the required readings and assignment
  instructions/rubrics will be organized within the Files section of the site.
- Access to Infegy (via <u>this external URL</u>) for data analysis and visualization. More information about accessing the analytics platforms will be provided within the software demonstrations and Carmen modules.
- Access to a computer/laptop, a high-speed Internet connection, current web browser with video-related plugins, speakers/headphones, and Microsoft Office (available to OSU student free of charge via this external URL). Students should not attempt to complete this course using a smartphone. You must be comfortable working more independently than in an in-person classroom and using your computer, web-browser, and navigating Carmen. Additionally, you must ensure that your computer functions properly and that you use some form of data redundancy (e.g., cloud backups or physical duplication). Please see the technology policy below for more details.

### **Grading**

This class has 100 possible points, which are distributed as follows:

Course Checkpoints	8 points
Data-Driven Activities	24 points
Software Comparison	8 points
Infegy Report #I	10 points
Infegy Report #2	10 points
Infegy Report #3	10 points
Case Study Proposal	10 points
Case Study Report	20 points

• Office Hours (Bonus). Office hours attendance is optional. However, you can earn up to 2% extra credit on your course grade by coming to my office hours via Zoom (0.5% is earned for each 15-minute meeting with Prof. Bayer). See Carmen for scheduling link.

- Course Checkpoints (8pts). In online courses, there are fewer opportunities for professors to interact with their students directly. As such, there is a tendency for students to avoid asking for help when they need it, especially for questions that they perceive as "too small" or "too stupid." Professors can also do a poor job of checking if things are making sense and linking the course objectives to the personal goals of their students. The "checkpoint" slots are meant to address these issues and make sure you are on track in 4558. Each checkpoint consists of a brief survey via Carmen quizzes. You will earn 2 points for completing each Checkpoint.
- Data-Driven Activities (24pts). Hands-on activities related to understanding and working social media data will occur on weeks that do include another assignment deadline (6 weeks total). Each activity is worth 4 points and submitted on Carmen.
- **Software Comparison (8pts).** There are many sources of social media data out there, including software companies offering to provide social "listening", "managing", and/or "analytics". You are tasked with providing a recommendation to an employer of your choice about which tool to purchase. To do so, you must identify two tools that provide capabilities to conduct social media analyses (cannot be Infegy), compare them, and come to a recommendation. You must use G2.com to identify your software choices. Use 12-point font and 1-inch margins, with each text section should be no more than a short paragraph (5-6 sentences max). Make your document single-spaced (max of one single-spaced page). Follow the general header formatting shown in the example on Carmen.
- Infegy Reports (10pts x3). You will report the results of visualized analytics related to market research of a modern technology using Infegy. You are tasked with (I) demonstrating your efficacy in using Infegy to select, filter, and report datasets and (2) showing your ability to present data in an accurate, informative, and efficient manner. Importantly, you must complete your report using Infegy. Note you will need to sign-in your OSU.# email address and course password. Use I2-point font and I-inch margins. Include your name in the header. Each figure should include no more than 3-4 sentences of text. Make your text single-spaced. For each report, you can either export your Infegy Report page as a PDF or export the images and create your PDF in another program (e.g., Microsoft Word). Max of one page (including figures).
- Case Study Proposal (12pts). In the Case Study Proposal, you will outline a market research project in which you use social analytics to learn about a technology, type of technologies, or tech trend of your choice. Note that your proposal must focus on using Infegy as your social listening tool (i.e., not other analytics tools). You and a partner will design the data collection and analytics plan, including how exactly you would employ Infegy to learn about and report on the topic of your choice. Use 12-point font and include both partner names in the header. Each bullet should include no more than 2-3 sentences of text. Make your text single-spaced. Max of one page (including figures).
- Case Study Report (20pts). In the Case Study Report, you will generate figures and findings related to the market research topic of your choice. Note that your report

must focus on using Infegy as your social listening tool (i.e., not other analytics tools), and you must use one of the final queries available in our shared class dashboard. Altogether, you and a partner will work together to compile and complete a professional analytics report using what you have learned across the semester. For each figure, as a brief paragraph, provide a brief explanation and any takeaway insights (~3-4 sentences max). In addition, as a brief outline, specify the subtopic you selected, all filters applied, and the size of your active corpus (i.e., number of mentions). Use 12-point font and include both partner names in the header. For this report, you must export the images and create your PDF in another program (e.g., Word). Max of two pages (including figures), but you are allowed to use narrow margins (i.e., 0.5in).

# Late assignments

Assume that all deadlines are in Eastern Time (ET). Students may submit all assessments late with a penalty. Penalties for late work increase cumulatively (within one day = -2.5%; within one week = -5%; within one month = -25%; over one month = -50%).

# **Grading scale**

Please note that Carmen Canvas, OSU's grading and class management software, does not round fractions up. The official grading scale is as follows:

93-100: A 90-92.9: A-87-89.9: B+ 83-86.9: B 80-82.9: B-77-79.9: C+ 73-76.9: C 70 -72.9: C-67 -69.9: D+ 60 -66.9: D Below 60: E

# **Credit hour and work expectation**

This represents a 3-credit-hour course. According to Ohio State policy, students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average. ASC Honors provides an excellent guide to scheduling and study expectations.

# Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

### **Grading and feedback**

For large weekly assignments, you can generally expect feedback within 7-14 days.

#### E-mail

Prof. Bayer will reply to e-mails within 24-48 hours on school days.

#### Virtual office hours

Virtual office hours will be held through Ohio State's conferencing platform, Carmen Zoom. Dr. Bayer's digital meeting room can be accessed via the link posted on our Carmen site. Students may use the audio and video functions if a webcam and microphone are available. If not, there is still a chat function within Zoom for the student to live chat with the professor in the virtual office hours room. A guide to accessing Zoom is available online here (Links to an external site.) and students can access support for Carmen Zoom here (Links to an external site.).

### Common issues to avoid...

- **Carmen mail/messenger + submission comments.** Both of these are unreliable and the I will not check them regularly.
- Weekend + evening emails. Under most circumstances, I will respond to messages of this sort on the next business day.
- **Sending emails NOT from your OSU email.** Messages to our OSU accounts from non-OSU email services are regularly marked as spam and since their OSU cannot confirm their delivery, you may not use them as evidence of communication attempts.
- **Unprofessional emails.** Please ensure that your email messages are professional and informative by including your course info in the subject line, a salutation, adequate yet concise body text, closing, and your full name.
- Emails that require immediate attention. I aim to answer emails with 24 hours of receipt on business days. Be proactive and plan ahead.

# **Course Technology**

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <a href="https://ocio.osu.edu/help/hours">https://ocio.osu.edu/help/hours</a>, and support for urgent issues is available 24x7.

#### • Carmen:

- Carmen, Ohio State's Learning Management System, will be used to host materials and activities throughout this course. To access Carmen, visit <a href="Carmen.osu.edu">Carmen.osu.edu</a>. Log in to Carmen using your name.# and password. If you have not setup a name.# and password, visit <a href="may.osu.edu">my.osu.edu</a>.
- Help guides on the use of Carmen can be found at <u>https://resourcecenter.odee.osu.edu/carmen</u>
- This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.
  - Carmen accessibility

#### Carmen Zoom:

- Office hours will be held through Ohio State's conferencing platform, Carmen Zoom. A separate guide to accessing Carmen Zoom and our office hours is posted on the course Carmen page under Files.
- Students may use the audio and video functions if a webcam and microphone are available. If not, there is still a chat function within Carmen Zoom for the student to live chat with the professor or TA in the virtual office hours room.
- o <u>Carmen Zoom</u> help guide

#### • Turnitin:

- Students at The Ohio State University are accountable for the integrity of the work they submit. Therefore, you should be familiar with the guidelines provided by the Committee on Academic Misconduct (COAM) and Section A of OSU's Code of Student Conduct in order to meet the academic expectations concerning appropriate documentation of sources. In addition, OSU has made Turnitin, a learning tool and plagiarism prevention system, available to instructors. For this class, you will submit your papers to Turnitin from Carmen. When grading your work, I will interpret the originality report, following Section A of OSU's Code of Student Conduct as appropriate. For more information about Turnitin, please see the vendor's guide for students. Note that submitted final papers become part of the OSU database.
- Self-Service and Chat support: http://ocio.osu.edu/selfservice
- **Phone:** 614-688-HELP (4357)
- Email: 8help@osu.edu

• **TDD:** 614-688-8743

### Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Carmen

### **Necessary equipment**

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Web cam and microphone

### **Necessary software**

- Word processor with the ability to save files under .doc, .docx, .rtf, or .pdf. Most popular word processing software programs including Microsoft Word and Mac Pages have these abilities.
- OSU students have access to Microsoft Office products <u>free of charge</u>. To install, please visit <a href="https://osuitsm.service-now.com/selfservice/kb">https://osuitsm.service-now.com/selfservice/kb</a> view.do?sysparm article=kb04733
- Access to Infegy (via <u>this external URL</u>) for data analysis and visualization. More information about accessing the analytics platforms will be provided within the software demonstrations and Carmen modules.
  - The privacy policy for Infegy is available via this external URL.
  - Questions concerning the accessibility of the necessary social analytics software (i.e., Infegy) can be addressed to the Office of Student Life Disability Services (SLDS). Please visit this external URL for more information.

# **University Policies**

### **Student Academic Services**

Arts and Sciences Advising and Academic Services' website provides support for student academic success. Information on advising issues such as tutoring, transfer credits, academic standing, and contact information for Arts and Sciences advisors can be obtained through this website. The site is: <a href="http://advising.osu.edu/welcome.shtml">http://advising.osu.edu/welcome.shtml</a>

### **Student Services**

The Student Service Center assists with financial aid matters, tuition and fee payments. Please see their site at: <a href="http://ssc.osu.edu">http://ssc.osu.edu</a>

# **Religious Accommodations**

It is Ohio State's policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief. Students planning to use religious beliefs or practices accommodations for course requirements must inform the instructor in writing no later than 14 days after the course begins. The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative accommodations will remain confidential. It is the student's responsibility to ensure that all course assignments are completed.

# **Copyright Disclaimer**

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

# Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

- I. Online reporting form at equity.osu.edu,
- 2. Call 614-247-5838 or TTY 614-688-8605,
- 3. Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual
  misconduct as soon as practicable but at most within five workdays of becoming aware
  of such information: I. Any human resource professional (HRP); 2. Anyone who
  supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty
  member.

### Title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <a href="http://titleix.osu.edu">http://titleix.osu.edu</a> or by contacting the Interim Ohio State Title IX Coordinator, Melissa Mayhan: <a href="mailto:titleIX@osu.edu">titleIX@osu.edu</a> or <a href="mailto:614-247-5838">614-247-5838</a>.

### **Mental Health**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you are or someone you know is suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614--292--5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766. If you are thinking of harming yourself or need a safe, non-judgmental place to talk, or if you are worried about someone else and need advice about what to do, 24-hour emergency help is also available through the Suicide Prevention Hotline (Columbus: 614-221-5445)

# **Illness and Short-Term Closings**

Please note that these policies may be updated to reflect changes in the epidemic, changes in our understanding of diseases, and changing University, local, state, and federal recommendations or mandates. Given the potential high prevalence of COVID and other illnesses, including breakthrough cases among vaccinated individuals, **students should not attend class if they are feeling sick**. It is very important that individuals avoid spreading the virus to others. Most students should be able to complete a successful semester despite illness-

induced absence. If you are absent due to illness, including but not limited to COVID, you will be given a reasonable opportunity to make up missed work. You do not need to provide a physician's document of illness, but you should advise your lab instructor via email as soon as you are safely able to do so. Should in-person classes be canceled, we will meet virtually via CarmenZoom during our regularly scheduled time. I will share any updates via CarmenCanvas. Unless otherwise announced by the university, online or distance-learning classes will occur as scheduled.

# **Academic integrity policy**

### Policies for this online course

- Written assignments: All written assignments, communications, and posts should be your own original work. In formal assignments, you should follow APA style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in but no one else should revise or rewrite your work.
- Reusing past work: In general, you are prohibited in university courses from turning
  in work from a past class to your current class, even if you modify it. If you want to
  build on past research or revisit a topic you've explored in previous courses, please
  discuss the situation with me.
- Falsifying research or results: All research you will conduct in this course is
  intended to be a learning experience; you should never feel tempted to make your
  results or your library research look more successful than it was.

### **Academic Misconduct**

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <a href="http://studentlife.osu.edu/csc/">http://studentlife.osu.edu/csc/</a>

# Accessibility accommodations for students with disabilities

### Requesting accommodations

Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu; slds.osu.edu

# **Course Schedule**[Subject to Change]

### **Unit A: Collecting Social Media Data**

Module Weeks	Week Overview	Assignments
Week I	Introducing the Course	Submission:
Start: Tues. 1/7		Activity #I
End: Mon. I/I3		
		Required Reading: Wiener, A. (2018). What it's like to wallow in your own Facebook data. The Atlantic. [URL]
Week 2	Finding Social Analytics Tools	Submission:
Start: Tues. 1/14		Software Comparison
End: Mon. 1/20		
		Required Reading:
		Report on social media analytics tools. [URL]
Week 3	Obtaining and Cleaning Data	Submission:
Start: Tues. 1/21		Activity #2
End: Mon. 1/27		
		Required Reading:

		Keusch, F., & Keusch, F. (2022). Digital trace data: Modes of data collection, applications, and errors at a glance. Handbook of Computational Social Science (Vol. 1). Routledge.
Week 4	Sampling from Social Media	Submission:
Start: Tues. 1/28		Checkpoint #I
End: Mon. 2/3		
		Required Reading:
		Kim, H., Jang, S. M., Kim, SH., & Wan, A. (2018). Evaluating Sampling Methods for Content Analysis of Twitter Data. Social Media + Society, 4(2).

# Unit B: Collecting Data via Infegy

Week 5	Introduction to Infegy	Submission:
Start: Tues. 2/4		Activity #3
End: Mon. 2/10		
		Required Reading: Lewis, K. (2016). Three fallacies of digital footprints. Big Data & Society, 1-4.

Week 6	Querying on Infegy [Basic]	Submission:
Start: Tues. 2/11		Activity #4
End: Mon. 2/17		
		Required Reading: Felt, M. (2016). Social media and the social sciences: How researchers employ Big Data analytics. Big Data & Society, 1-15.
Week 7	Querying on Infegy [Advanced]	Submission:
Start: Tues. 2/18	, 5 G, L	Case Study Proposal
End: Mon. 2/24		, ,
		Required Reading: Brooker, P., Barnett, J., & Cribbin, T. (2016). Doing social media analytics. Big Data & Society, 1-12.

Week 8	Filtering Data on Infegy	Submission:
Start: Tues. 2/25		Checkpoint #2
End: Mon. 3/3		
		Required Reading:
		Park, M., & Macy, M. (2015). The paradox of active users. Big Data & Society, 1-4.

# Unit C: Analyzing Data via Infegy

Week 9	Building Reports on Infegy	Submission:
Start: Tues. 3/4		Infegy Report #I
End: Mon. 3/10		
		Required Reading:
		Infegy Data Brief [URL]
Week I0	Taking a Real Break	Submission:
Start: Tues. 3/11	None!	Activity #5
End: Mon. 3/17		
		Required Reading:
Spring Break		None!

Week I I	Analyzing Segments on Infegy	Submission:
Start: Tues. 3/18		Activity #6
End: Mon. 3/24		
		Required Reading: Centola, D. (2016). Influential Networks. Nature Human Behaviour, 1-2.
Week I2	Analyzing Sentiment on Infegy	Submission:
Start: Tues. 3/25	, , ,	Infegy Report #2
End: Mon. 3/31		
		Required Reading:
		Saha, K., & De Choudhury, M. (2021). Assessing the mental health of college students by leveraging social media data. XRDS: Crossroads, The ACM Magazine for Students, 28(1), 54-58.
Week 13	Analyzing Themes on Infegy	Submission:
Start: Tues. 4/1		Checkpoint #3
End: Mon. 4/7		
		Required Reading:
		Hallinan, B., Kim, B., Scharlach, R., Trillò, T., Mizoroki, S., & Shifman, L. (2021). Mapping the transnational imaginary of social media genres. New Media & Society.

# **Unit D: Storytelling with Social Traces**

Week I4	Finding Narratives on Infegy	Submission:
Start: Tues. 4/8		Infegy Report #3
End: Mon. 4/14		
		Required Reading:
		Hogan, B., & Quan-Haase, A. (2010). Persistence and change in social media. Bulletin of science, technology & society, 30(5), 309-315.
Week I5	Storytelling on Infegy	Submission:
Start: Tues. 4/15		Checkpoint #4
End: Mon. 4/21		
		Required Reading:
		Boyd, D., & Crawford, K. (2012). Critical questions for big data: Provocations for a cultural, technological, and scholarly phenomenon. Information, communication & society, 15(5), 662-679.
Week I6	Concluding the Course	Submission:
Start: Tues. 4/22		Case Study Report
End: Mon. 4/28		
		Required Reading:
Final Week		None!