# COMM 4558
# SOCIAL MEDIA ANALYTICS
# SPRING 2026

**Instructor:**

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

**Office Hours:** Tuesdays/Wednesdays, 3:00pm-4:00pm EST 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 online activities, pre-recorded videos, and analytics tools needed for that week.

- 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 NotebookLM (via this external URL) for LLM-driven summaries and support directly tied to course readings, activities, and assignments. Note that you will need to log-in via your official OSU Google account (not personal Google/Gmail).

- Access to Infegy (via this external URL) 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:

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|---|---|
| Course Checkpoints | 8 points |
| Data-Driven Activities | 24 points |
| Software Comparison | 8 points |
| Infegy Report #1 | 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 virtual office hours (0.5% is earned for each 15-minute "speed meeting"). 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 (1) 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 12-point font and 1-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 (10pts).** 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 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.

- **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). Altogether, you will compile and complete a professional analytics report using what you have learned across the semester.

# 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 = -5%; within one week = -10%; 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**

# Work expectations

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.

# 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 an official Ohio State conferencing platform (Teams or Zoom). Dr. Bayer's digital meeting room can be accessed via the link posted on Carmen. Students may use the audio and video functions if a webcam and microphone are available. If not, there is

still a chat function for the student to live chat with the professor in the virtual office hours room.

### 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 within 24-48 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 https://slts.osu.edu/resnet/help-and-support, 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 Carmen.osu.edu. Log in to Carmen using your name.# and password. If you have not setup a name.# and password, visit my.osu.edu.
    - Help guides on the use of Carmen can be found at https://resourcecenter.odee.osu.edu/carmen
    - **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
- **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:** https://slts.osu.edu/resnet/help-and-support
- **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 free of charge. To install, please visit https://osuitsm.service-now.com/selfservice/kb_view.do?sysparm_article=kb04733
- Access to Infegy (via this external URL) 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

This course is subject to the standard classroom and course policies of all OSU classes. To learn more, please visit: **https://ugeducation.osu.edu/academics/syllabus-policies-statements/standard-syllabus-statements**

# Course Schedule

***Please note that the full information concerning weekly course requirements is available on the weekly Carmen modules.***

## Unit A: Collecting Social Media Data

| Module Weeks | Week Overview | Assignments |
|---|---|---|
| **Week 1**<br>Start: Tues. 1/13<br>End: Mon. 1/19 | **Introducing Social Media Data** | **Submission:**<br>Activity #1<br><br>**Key Reading:**<br>Wiener, A. (2018). What it's like to wallow in your own Facebook data. *The Atlantic.* |
| **Week 2**<br>Start: Tues. 1/20<br>End: Mon. 1/26 | **Searching (for) Social Media Data** | **Submission:**<br>Software Comparison<br><br>**Key Reading:**<br>Salganik, M. J. (2019). *Bit by bit: Social research in the digital age*. Princeton University Press. [Ch. 2, 6] |
| **Week 3**<br>Start: Tues. 1/27<br>End: Mon. 2/2 | **Cleaning Social Media Data** | **Submission:**<br>Activity #2<br><br>**Key Reading:**<br>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**<br>Start: Tues. 2/3<br>End: Mon. 2/9 | **Generalizing Social Media Data** | **Submission:**<br>Checkpoint #1<br><br>**Key Reading:**<br>Kim, H., Jang, S. M., Kim, S.-H., & Wan, A. (2018). Evaluating Sampling Methods for Content Analysis of Twitter Data. *Social Media + Society*, 4(2). |

## Unit B: Collecting Data via Infegy

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| **Week 5**<br>Start: Tues. 2/10<br>End: Mon. 2/16 | **Introducing Infegy Atlas** | **Submission:**<br>Activity #3<br><br>**Key Reading:**<br>Lewis, K. (2016). Three fallacies of digital footprints. *Big Data & Society*, 1-4. |
| **Week 6**<br>Start: Tues. 2/17<br>End: Mon. 2/23 | **Filtering Infegy Atlas** | **Submission:**<br>Activity #4<br><br>**Key Reading:**<br>Felt, M. (2016). Social media and the social sciences: How researchers employ Big Data analytics. *Big Data & Society*, 1-15. |
| **Week 7**<br>Start: Tues. 2/24<br>End: Mon. 3/2 | **Querying Infegy Atlas [Basic]** | **Submission:**<br>Checkpoint #2<br><br>**Key Reading:**<br>Brooker, P., Barnett, J., & Cribbin, T. (2016). Doing social media analytics. *Big Data & Society*, 1-12. |
| **Week 8**<br>Start: Tues. 3/3<br>End: Mon. 3/9 | **Filtering Infegy Atlas** | **Submission:**<br>Case Study Proposal<br><br>**Key Reading:**<br>Park, M., & Macy, M. (2015). The paradox of active users. *Big Data & Society*, 1-4. |

# Unit C: Analyzing Data via Infegy

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| **Week 9**<br>Start: Tues. 3/10<br>End: Mon. 3/16 | **Analyzing Infegy Segments** | **Submission:**<br>Activity #5<br><br>**Key Reading:**<br>Centola, D. (2016). Influential Networks. *Nature Human Behaviour*, 1-2. |
| **Week 10**<br>Start: Tues. 3/17<br>End: Mon. 3/23<br><br>**Spring Break** | **Building Infegy Report #1** | **Submission:**<br>Activity #6<br><br>**Key Reading:**<br>None; enjoy the break! |
| **Week 11**<br>Start: Tues. 3/24<br>End: Mon. 3/30 | **Analyzing Infegy Emotions** | **Submission:**<br>Infegy Report #1<br><br>**Key Reading:**<br>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 12**<br>Start: Tues. 3/31<br>End: Mon. 4/6 | **Building Infegy Report #2** | **Submission:**<br>Infegy Report #2<br><br>**Key Reading:**<br>Hogan, B., & Quan-Haase, A. (2010). Persistence and change in social media. *Bulletin of Science, Technology & Society*, 30(5), 309-315. |

## Unit D: Storytelling with Social Traces

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|---|---|---|
| **Week 14**<br>Start: Tues. 4/7<br>End: Mon. 4/13 | **Analyzing Infegy Topics** | **Submission:**<br>Checkpoint #3<br><br>**Key Reading:**<br>Hallinan, B., Kim, B., Scharlach, R., Trillò, T., Mizoroki, S., & Shifman, L. (2023). Mapping the transnational imaginary of social media genres. *New Media & Society*, *25*(3), 559-583. |
| **Week 14**<br>Start: Tues. 4/14<br>End: Mon. 4/20 | **Building Infegy Report #3** | **Submission:**<br>Infegy Report #3<br><br>**Key Reading:**<br>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 15**<br>Start: Tues. 4/21<br>End: Mon. 4/27 | **Infegy Atlas Benchmarks** | **Submission:**<br>Checkpoint #4<br><br>**Key Reading:**<br>Minor, K., Moro, E., & Obradovich, N. (2025). Worse Weather Amplifies Social Media Activity. *Psychological Science*, *36*(1), 35-54. |
| **Week 16**<br>Start: Tues. 4/28<br>End: Mon. 5/4<br><br>**Final Week**<br>***Senior Grade Deadline is Tues. 5/5 at 5pm.*** | **Social Media Stories** | **Submission:**<br>Case Study Report |