

Stat 6750: Statistical Consulting and Collaboration

Autumn 2025 (21215), Cockins Hall 218

Course Overview

Instructor Information

Instructor: Thomas Metzger, PhD

Email: metzger.181@osu.edu; **please do not use my Buckeyemail address**, because my Buckeyemail address from my undergraduate time at OSU is not FERPA compliant. Additionally, messages sent through Carmen often go into my spam folder; for fastest communication, use **metzger.181@osu.edu**.

Office hours/Student hours: Virtual or in-person meetings, Tuesdays 11:05 am - 12:05 pm (Pomerene 161) and Wednesdays 9:30 am - 10:30 am (Cockins 340E). Preference will be given to students attending in person.

Grader/TA: Ms. Jiwon Hong, hong.1069@buckeyemail.osu.edu

Course Delivery

This course meets Mondays and Wednesdays in Cockins 218 from 8:00 am - 8:55 am. If it is safe and healthy for you to do so, attendance is mandatory. Attendance will be taken daily. Each class will be labeled with a week number and a letter, “A” (Monday class) or “B” (Wednesday class). For example, the Wednesday class of week 3 will be Class 3B. This course is 2 credit hours and the course is graded S/U.

The purpose of office hours/student hours is to provide supplemental time for questions, discussion, or assistance that you may need. Any topics related to the course, college life, professional and career development, or personal issues are welcome. A Zoom link can be found on Carmen for virtual meetings. Attendance of office/student hours is always optional but you are welcome and encouraged to attend as frequently as you would like.

Course Description

Role of the statistician as both consultant and collaborator; enhancement of analytical and communication skills; structuring working engagements; introduction to consulting-specific technical skills; experience working on consulting projects. Prereq: 6450 (645) or 6950, or permission of instructor. Not open to students with credit for 600 or 601. This course is graded S/U.

Course Learning Outcomes

By the end of this course, students should successfully be able to:

- Plan, hold, and evaluate effective meetings with clients and domain experts
- Effectively and accurately convey statistical and technical topics in accessible format and language verbally and writing
- Use peer evaluation, feedback, and video analysis to improve communication and collaboration skills
- Work effectively and respectfully as a team across different domains of technical expertise
- Create professional technical reports to convey findings to stakeholders
- Conduct, interpret, and report statistical analyses using software
- Design and create effective visualizations to convey results and findings

Materials

Text

Reading materials will be posted to Carmen.

Software

- Please bring a laptop every day. If you do not have one, please let me know ahead of time so we can find an alternative.
- Required software: students may use the approved statistical software package of their liking to conduct analyses. I recommend JMP (“Jump”), which is available free to students here: <https://www.jmp.com/en/academic/jmp-student-edition>. Whatever platform you choose, you must provide reproducible, technically accurate, scientifically relevant analyses and reports based on the output and your findings.
- Required software: R (<https://www.r-project.org/>) and the graphical user interface R Studio (<https://posit.co/download/rstudio-desktop/>) will be used for case studies. Both are free for students.
- Required software: Microsoft Office 365 ProPlus. All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft’s Student Advantage program. Each student can install Office on five PCs or Macs, five tablets (Windows, iPad® and Android™) and five phones. Students are able to access Word, Excel, PowerPoint, Outlook and other programs, depending on platform. Users will also receive 1 TB of OneDrive for Business storage. Office 365 is installed within your BuckeyeMail account. Full instructions for downloading and installation can be found <https://ocio.osu.edu/kb04733>.

Grades and Assignments

Stat 6750 is graded as Satisfactory/Unsatisfactory (S/U). To receive a Satisfactory grade for the course overall, you must earn an S in all of the following grade categories: 1) Attendance and Participation; 2) Readings, Reading Quizzes, and Reflections; 3) Case Studies; and 4) Consulting Project.

1) Attendance and Participation

8:00 am is nobody’s first choice, but this is the reality in which we find ourselves. Strict attendance will be taken daily. To be counted as present, you must be in your seat and ready to learn when class begins at 8:00 am. Absences will be considered as excused on a case-by-case basis. Documentation such as doctor’s notes or a note from your advisor may strengthen your case. Students with two or more unexcused absences will receive a grade of U. Absences should be communicated in advance when reasonable. All absences must be communicated to any team members as well.

Two unexcused tardies will be counted as an unexcused absence. All students will receive one free tardy, for emergencies. All students will also receive one free absence, for emergencies.

Participation grades will be given weekly. To receive a grade of S, students should be actively engaged in the course discussions and activities. Students who are physically present but not mentally present, such as by sleeping, working on their laptop, or browsing their phones, will receive a U. Phones should be kept away. Laptops should only be used during coding or presentation activities. Similarly, students who are not respectful during others’ presentations, such as by being inattentive or distracted, will receive a U. Regular engagement and participation in discussion is expected.

Students should be respectful to all others at all times with their undivided attention and consideration. Please keep phones and unrelated work away.

2) Readings, Reading Quizzes, and Discussions

Reading assignments will be frequently posted to Carmen. Often, class discussions will center around these readings, so it is imperative that you have read the assignment before class, and are present and prepared to contribute during class.

Reading quizzes are written reflections should represent the individual experiences and perspectives of your field and your work, as well as the content of the reading text. For each individual reading quiz, a grade of S will require the following:

- A professional, thorough written reflection that adheres to the provided guidelines on length, content, and timeliness.
- Prepared, coherent, respectful contribution in class discussions as necessary.

Reading quizzes completed in class will be closed note and written on paper. To receive an overall grade of S in this category requires that no more than one such assignment can receive an Unsatisfactory grade throughout the semester.

We will often discuss the readings and other topics in class. While not every student will necessarily contribute verbally every day to every discussion, it is expected that every student is attentive and engaged in each discussion. Students who frequently contribute and are consistently engaged will earn a grade of S.

3) Case Studies

Case Studies will be short, technical, analytic reports focused on statistical methods that frequently arise in consulting contexts. Reports that are technically accurate, thorough, and professional will earn a grade of S.

4) Consulting Project

The final project will be completed in pairs or in a small group jointly with students enrolled in GRADTDA 5401 with Ohio State's master's program in translational data analytics. This will involve a data analysis summarized in written, visual, and oral formats, as well as consulting meetings with clients. For your final project, a grade of S will require the following:

- Professional respectful work and interactions with your group members and with the clients
- Professional, productive consulting meetings with the clients that adhere to the guidelines and structure discussed in class
- A professional, thorough written reflection that adheres to the provided guidelines on length, content, and timeliness
- Professional, appropriate, relevant data visualizations that contribute to the overall findings of your analysis
- A submitted recording of your initial intake meeting, and a submitted recording of your follow-up discussion meeting

Academic Integrity

I take academic integrity very seriously. There is no place at The Ohio State University for academic misconduct, and I have submitted many students in the past for violations including copying other students' work and receiving unauthorized assistance on exams. In all cases, the work you submit must be your own.

- 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.

- Collaboration and informal peer-review: The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on an exam is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.

AI Usage

May be Permitted/Appropriate:

- Pasting in error messages generated by code you have written yourself
- Asking to be pointed in the right direction for resources
- Paraphrasing a topic you have phrased yourself
- Correcting grammar
- Translating unknown words and phrases
- Organizing or paraphrasing thoughts or ideas you have already created

Not permitted/Inappropriate:

- Pasting in problems that are verbatim or minimally/superficially adjusted
- Asking to have a problem started for you
- Using AI to solve proofs and problems
- Copying or minimally/superficially altering code written by AI
- AI does the thinking for you

The bottom line: if the work you submit represents your own uniquely generated thoughts, it is appropriate. If it represents someone (or something) else's thoughts or work, it is not appropriate. In general, do not submit work you can't defend, because if I have suspicions, I will ask you to defend it.

Given that the learning goals of this class include developing and refining your coding abilities, articulating statistical concepts orally and in writing, and connecting complex statistical concepts with mathematical and computer science tools, the use of generative artificial intelligence tools such as ChatGPT or Copilot is not permitted in this course for purposes including, but not limited to, generating code, finding solutions, or solving problems. Ultimately, any use of GenAI tools for work in this class for labs and homeworks may be scrutinized to ensure it is in adherence with Ohio State's Academic Integrity policy and Code of Student Conduct. If I suspect that you have used GenAI inappropriately on an assignment for this course, I will ask you to explain your process for completing the assignment in question. The unauthorized or inappropriate use of GenAI tools will result in referral to the Committee on 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 3335-5-48.7 (B)). For additional information, see the Code of Student Conduct.

Required Statement on Disability Statement (with Accommodations for Illness)

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If students anticipate or experience academic barriers based on a disability (including mental health and medical conditions, whether chronic or temporary), they should let their instructor know immediately so that they can privately discuss options. Students do not need to disclose specific information about a disability to faculty. To establish reasonable accommodations, students may be asked to register with Student Life Disability Services (see below for campus-specific contact information). After registration,

students should make arrangements with their instructors as soon as possible to discuss your accommodations so that accommodations may be implemented in a timely fashion.

If students are ill and need to miss class, including if they are staying home and away from others while experiencing symptoms of viral infection or fever, they should let their instructor know immediately. In cases where illness interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. Contact slds@osu.edu; <https://slds.osu.edu/>; 098 Baker Hall, 113 W. 12th Ave; 614-292-3307.

Required Statement on Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Civil Rights Compliance Office. (Policy: Religious Holidays, Holy Days and Observances)

Required Statement on Intellectual Diversity

Ohio State is committed to fostering a culture of open inquiry and intellectual diversity within the classroom. This course will cover a range of information and may include discussions or debates about controversial issues, beliefs, or policies. Any such discussions and debates are intended to support understanding of the approved curriculum and relevant course objectives rather than promote any specific point of view. Students will be assessed on principles applicable to the field of study and the content covered in the course. Preparing students for citizenship includes helping them develop critical thinking skills that will allow them to reach their own conclusions regarding complex or controversial matters.

Required Statement on Grievances and Solving Problems

According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary,

take your case to the department chairperson, college dean or associate dean, and to the provost, in that order. Specific procedures are outlined in Faculty Rule 3335-8-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

Required Statement on Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a welcoming community. 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 Civil Rights Compliance Office (CRCO). Online reporting form: <http://civilrights.osu.edu/>; call 614-247-5838 or TTY 614-688-8605; civilrights@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 Civil Rights Compliance Office 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: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

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.

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change due dates or the methods of grading and/or assessment if necessary. Any changes will be communicated to you through official course announcements.