



Course Syllabus: Data Visualization

Dillard College of Business Administration

MIS 5603 Section X20

Spring Semester 2026

Contact Information

Instructor: Jiaxi Luo

Office: Dillard Building 216

Office hours: Mondays & Wednesdays 3:30 – 5:30p Tuesdays 10:00a-11:00a

Office phone: (940) 397-3268

E-mail: jjaxi.luo@msutexas.edu

Course Description

Data Visualization equips students to turn complex data into clear, compelling visual stories that inform decisions. We cover the foundations of graphical perception, color and layout, chart selection, and narrative structure, then move into applied techniques for exploratory analysis, explanatory storytelling, and interactive dashboards. Students gain hands-on experience with industry tools (e.g., Tableau/Power BI) and programmatic workflows (e.g., Python with pandas and visualization libraries) using real-world datasets from business, public policy, and the social web.

The course emphasizes design for insight, integrity, and accessibility: uncertainty and baseline choices, comparisons at scale, annotations and layering, typography, color contrast, and support for screen readers. We also address data ethics and bias, reproducible workflows (versioning, data provenance, and documentation), and responsible use of AI to assist ideation, draft annotations, and code scaffolding while keeping analysis and written commentary in your own words. Through short labs, critiques, and a capstone project, students build a portfolio of static and interactive visuals that demonstrate proficiency in exploration, dashboarding, and persuasive data storytelling. Prerequisites include basic statistics and familiarity with spreadsheets or databases.

Course Specific Learning Goals: After completing this course, students should be able to:

- Understand and apply principles of visual perception, design, and storytelling to create effective data visualizations.
- Select appropriate visualization techniques based on data characteristics, audience, and communication goals.
- Use industry-standard tools to explore, analyze, and visualize complex real-world datasets.
- Design and develop compelling data visualizations that inform, engage, and persuade target audiences.
- Construct cohesive narratives and arguments supported by data-driven insights and visual evidence.
- Critically evaluate and provide constructive feedback on the effectiveness of data visualizations.
- Build a portfolio of data visualization projects demonstrating technical proficiency and creative problem-solving.

Textbook & Instructional Materials

Required: Learning Tableau 2020 – 4th Edition by Joshua N. Milligan, Packt Publishing (www.packt.com) An e-edition works as well as a print version, or Learning Tableau 2022 - Fifth Edition

Software: Tableau is available in Dillard lab 306, 324, and 335.

You must have access to the Internet. The Desire2Learn (D2L) website will be utilized extensively for submitting assignments, posting grades and communicating information about the class.

A PC/laptop/tablet with webcam capability, be able to run Tableau Desktop (Chromebooks won't work due to insufficient computing power)

PyCharm Professional (Free for student account)

Additional readings are posted to D2L.

Student Handbook

Refer to: [Student Handbook](#)

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct.

[Office of Student Conduct](#)

Moffett Library

Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this [Moffett Library webpage](#) to explore these resources and learn how to best utilize the library.

Grading

Points will be allocated using the following scheme. Grades will be based on the recorded points only. Personal reasons (e.g., need a specific grade to graduate, to keep financial aid, to keep a straight A record, etc.) are not considered in the grade calculation.

Table 1: Points allocated to each assignment

Assignments	Points
Midterm Exam	100
Final Exam	100
Team Project	100
Assignments	100
Total	400

Table 2: Total points for final grade.

Grade	Points
A	360-400
B	320-359
C	280-319
D	240-279
F	<240

Homework

Homework consists of Tableau-based data visualization assignments and counts 100 points toward the course grade. Each assignment must be submitted as a packaged Tableau workbook to ensure data consistency.

How and when to turn it in:

- **Format:** Submit a single Tableau Packaged Workbook (.twbx) per assignment. **.twb files are not accepted.** For subjective interpretation, submit a separate Word document (.docx) with your explanations (e.g., insights, design rationale, accessibility/ethics notes).
- **Where:** Upload to the D2L Dropbox for the corresponding assignment.
- **When** (due time): Midnight (11:59 PM) on the due date; D2L timestamp is official.
- **Late work:** Accepted up to one week (7 calendar days) after the deadline with a grade penalty (see assignment page for details).
- **Verify the file opens correctly.**

Exams

There will be two online exams. On each posted exam date, you may begin any time within the availability window; once you start, you have **3 hours** to complete the exam plus a **5-minute** grace period to save and submit. Each exam runs in D2L Quizzes and is open-book and open-notes, limited to course materials and the textbook; work is strictly individual. Academic-integrity violations will be referred to the Office of Student Conduct and may result in a failing grade for the course and additional disciplinary actions, in accordance with university policy.

For **multiple-choice questions**, answer directly in D2L Quizzes. For written-response items, create the required visualizations and type your answers in the space provided under each question; name each Tableau worksheet "Q1", "Q2", ... to match the question numbers. When finished, submit both your Tableau Packaged Workbook (.twbx) and your Word document (.docx) to the exam's D2L Dropbox Folder. Both your written responses and the Tableau worksheets will be graded. The submission window closes **3 hours 5 minutes** after you start; you must submit on time.

If the instructor has questions or concerns about the originality of a student's responses, the student may be required to meet with the instructor during office hours to provide a verbal explanation of their answers. The outcome of this meeting may be used to determine or adjust the exam's final score.

Projects Required

Teams of 3–4 students will deliver a professional, 10–15-minute recorded presentation, along with a completed Tableau packaged workbook (.**twbx**) and a written report that states the questions asked and demonstrates how data visualization answers them. Choose a dataset from a public source (e.g., Kaggle, UCI ML Repository, Tableau Public sample sets, Wikidata, Google Dataset Search, Makeover Monday, or another legitimate source). Your report should succinctly cover: dataset summary (origin, topic, size, key fields), data cleaning/relabeling/re-structuring steps (see Tableau Prep cleaning guidance), descriptive statistics and key findings, core charts (bar/line/pie as appropriate), at least one map, at least one dashboard, and at least one story, plus an overall takeaway explaining recommended actions/decisions. In the presentation, focus on dashboards and storytelling—why the dataset matters, what you found, and what should be done. Submit the **recording**, the **.twbx**, and the report (**.docx**) to the project D2L Dropbox by the posted deadline (see D2L for any format details and due time).

Late Work

Late homework, less than one week after the deadline, may be accepted; certain points will be deducted.

Make Up Work/Tests

Students with excused absences may make up missed examinations and in-class activities, but supporting documents are required. Arrangements must be made in advance if possible. In all cases, the instructor must be contacted no later than the day of the scheduled exam, or no make-up will be allowed. At the instructor's discretion, a deduction may be assessed for a late exam.

Excused absences include active military/police/firefighter assignment, jury duty, university-authorized absences (for example, athletic events or study-abroad programs), and medical emergency for yourself or your immediate family member. For more information about university-authorized absences, please refer to the Midwestern State University Undergraduate Catalog:

<https://catalog.msutexas.edu>

Important Dates

- Last day for term schedule changes: 01/20/2026 – 01/23/2026.
- Deadline to file for graduation: 02/16/2026
- Last Day to drop with a grade of "W:" 04/29/2026
- Check the date on the [Academic Calendar](#)
- Refer to: [Drops, Withdrawals & Void](#)

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program, as it serves as the primary source of communication for assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the program's technicians or your instructor.

Attendance

Students are expected to attend all meetings of the classes they are enrolled in. Although students are generally graded on intellectual effort and performance rather than attendance, absences may lower a student's grade if the faculty member deems attendance and participation essential. In classes where attendance is considered part of the grade, the instructor should inform students of the specifics in writing at the beginning of the semester, in a syllabus or a separate attendance policy statement. An instructor with an attendance policy must keep daily records. The instructor must give the student a verbal or written warning before dropping the student from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college may establish an attendance policy, provided it is in accordance with the General University Policies.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ****Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered a reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.*** Computers are available on campus in various areas of the buildings and in the Academic Success Center. ****Your computer being down is not an excuse for missing a deadline!!*** There are many places to access your class! Our online classes can be accessed from any computer with an internet connection. Contact your instructor immediately if you have computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations; however, they can help you get connected to our online services. For help, log in to [D2L](#).

Instructor Class Policies

- No food or beverage is allowed in the classroom. This is a college policy.
- Please come to class on time. Take care of personal business prior to class. I do not expect you to leave and return to class (unless there was an emergency, and you explain it to me after class).
- Class time is not for surfing the Web, monitoring Facebook, texting, or catching up on email. You will be asked to leave the class if you continually violate this policy. The same thing applies to cell phone usage for messaging during class.
- Turn off or silence your cell phones and any other electronic devices and put them away. Please, no texting. I think we can all go a little over an hour without contact with the outside world! Leaving class to return calls and coming back is not acceptable. If you have an emergency that requires your cell phone to be on, let me know, and we'll work something out.
- Dress appropriately and conduct yourself professionally and with respect toward your peers and the instructor. Please don't talk while the instructor or others are discussing course materials. Participating in class is the best way to avoid disrupting it.
- Follow MSU COVID-19 behavioral policies and procedures

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exist in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make an application for such assistance through Disability Support Services, located in the Student Wellness Center, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

College Policies

Campus Carry Rules/Policies

Refer to: [Campus Carry Rules and Policies](#)

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information from the MSU Police Department on the options and strategies we can all use to stay safe in difficult situations. For more information, visit [MSUReady – Active Shooter](#). Students are encouraged to watch the video entitled “Run. Hide. Fight.” which may be electronically accessed via the University police department’s webpage: ["Run. Hide. Fight."](#)

Weather Procedure

In the event of inclement weather, in-person class meetings will be canceled. Alternative assignments, such as online tasks or video-based activities, will be provided to ensure continued learning.

AI-Tool Policy

We encourage students to harness AI tools, like ChatGPT, within the following guidelines:

- **English Writing:** Use AI for grammar and syntax improvement.
- **Drafting & Structuring:** Employ AI to help generate and structure case study drafts.
- **Summarization:** Use AI tools for concise summaries of lengthy case studies.

However:

- **Original Thought:** While using AI for assistance, students must develop and present their own unique opinions on cases.
- **Academic Integrity:** Understand and support any content from AI tools. Avoid over-reliance and ensure originality. Misrepresentation will face academic consequences.

Leverage AI benefits responsibly and prioritize genuine understanding and original thinking.

Course-specific rules stated in the Exams, Assignments, and Projects sections override the general AI guidelines above.

Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University [MSU Catalog](#)

***Notice:** Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

Please keep this syllabus as a reference! Students are responsible for all information in the syllabus and for any changes, which will be announced in class.

Week	Date	Topic
1	01/19 – 01/26	Course overview
2	01/26 – 02/02	Chapters 1& 2
3	02/02 – 02/09	Chapter 3
4	02/09 – 02/16	Chapter 3
5	02/16 – 02/23	Chapter 4
6	02/23 – 03/02	Chapters 4& 5
7	03/02 – 03/09	Chapter 5
8	03/09 – 03/16	Spring Break
9	03/16 – 03/23	Midterm Exam Chapters 1 to 5
10	03/23 – 03/30	Chapter 6
11	03/30 – 04/06	Chapter 7&8
12	04/06 – 04/13	Chapter 8&9
13	04/13 – 04/20	Chapter 10&11
14	04/20 – 04/27	Chapter 12
15	04/27 – 05/04	Chapter 13
16	05/04 – 05/11	Chapter 14&15&16
17	05/11	Project Presentation Due Final Exam Chapter 6 to 16