Georgia Institute of Technology

Fall 2026 | MGT 6655

Business Data Preparation and Visualization

Delivery: 100% Web-Based, Asynchronous

Instructor Information

Mingfeng Lin, PhD

- Contact the instructor via **private messaging on Ed Discussions** during the semester (mark messages as private).
- Weekly office hours via Zoom. Attendance is optional — this is not a synchronized portion of the class. See Canvas for dates and times.
- **Note:** Office hours will not be automatically recorded. No new content will be introduced during office hours; they are intended only to answer student questions. Useful answers may be posted as Q&As or additional videos on Canvas. You will not be disadvantaged if you do not attend.

General Course Information

Course Description

Visualizing data is an important step in understanding data, exploring relationships, and "making a case." With the abundance and relevance of data in almost any type of work, the ability to understand and interpret data has become an indispensable business skill. Data visualization has become a fascinating industry, but the ease of creating visualizations also means that there are many charts out there that are wrong, ineffective, or misleading.

The goal of this class is to introduce principles and tools of data visualizations, and to help you create visualizations for two different but related purposes:

- **Exploration:** Helping you or other stakeholders understand data and form an opinion by creating simple charts or building a dashboard.
- **Explanation / Presentation:** Using visualizations to convince others of your opinion.

Prerequisites

Students should have basic understanding of undergraduate statistics (statistical distributions, aggregations, and regression analyses) and be familiar with basic operations of Microsoft Excel (data filtering, sorting, and use of formulas).

Course Learning Outcomes

By the end of the course, you will be able to:

1. Identify the proper visualization for different use cases.

2. Prepare, clean, and transform data for visualization purposes.
3. Create visualizations using the tools covered in this class.
4. Use visualization tools effectively to explore data (e.g., creating a dashboard) and interpret what you see.
5. Use visualizations effectively to "make a case" or explain findings.
6. Critique visualizations presented by others (pros, cons, and suggestions for improvement).

Course Materials

Course Texts (Recommended)

1. **The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios** — ISBN-13: 978-1119282716
   GT Library
   Companion site (data and workbooks)
2. **Better Data Visualizations** — ISBN: 978-0231193115
   GT Library

Additional Materials / Optional References

Recommended for students who wish to pursue Tableau beyond this class:

1. **Visualize This!** by Nathan Yau — GT Library
2. **Tableau Your Data!** by Daniel G. Murray — GT Library
3. **Practical Tableau** by Ryan Sleeper — GT Library
4. **Information Dashboard Design** by Stephen Few — GT Library

Course Website

This class uses **Canvas** to deliver all course materials. ALL course materials and activities will take place on Canvas.

Course Requirements, Assignments & Grading

Assignment Weights

Assignment	Weight
Week 1 Quiz	10%
Week 2 Quiz	10%
Week 3 Quiz	10%
Week 4 Quiz	10%

Week 5 Quiz	10%
Week 5 Exercise #1 (visualization)	5%
Week 6 Quiz	10%
Week 6 Exercise #2 (dashboard)	8%
Visualization appreciation/critique	2%
Evidence of class participation	5%
Final Exam (Week 7)	20%
TOTAL	**100%**

Grading Scale

Letter Grade	Percentage
A	90–100%
B	80–89%
C	70–79%
D	60–69%
F	0–59%

Description of Graded Components

Quizzes: Six quizzes, one per week for the first six weeks. Questions are multiple choice or fill-in-the-blank; a time limit may apply. For quizzes involving a dataset, you must save all working files (Excel, Tableau workbook, or Tableau Prep), compress them into a zip file, and submit at the end of the quiz. Failing to submit the zip file, or submitting non-compliant files, will result in loss of credit for related questions.

Exercises: Two exercises to be submitted to the TA for grading. For Tableau work, submit **TWBX files** (not TWB), as TWB does not embed data. Submitting the wrong file format results in a loss of at least one-third of the credit. Partial credit is available.

Final Exam: Similar in format to the quizzes (multiple choice or fill-in-the-blank). Digitally proctored with Honorlock. See Canvas for details.

Class Participation (7% total):

• *Visualization appreciation/critique (2%):* Post at least once to each of two mega-threads on Ed Discussions (one for good charts, one for charts needing improvement) during the first six weeks. Cite sources and apply visualization principles covered in slides and the textbook.

• *Evidence of class participation (5%):* Check Ed Discussions at least twice per week and meaningfully participate. Answer at least half of the instructor-posted participation questions. All responses must be submitted by the end of Week 6 (Saturday) to receive credit. Each participation question has a two-week reply window unless stated otherwise.

Submitting Assignments

Exercises and quizzes must be submitted in Canvas by the stated due date. The final exam must be taken in Canvas during the designated exam window.

Independence & Time Limits

All assignments and tests are open-everything (books, materials, internet) with one important caveat: **you must complete all work independently.** You may not ask any other person (live or AI) to complete tasks for you. You may ask the instructor or TAs for clarifications. Assignments and tests are timed; the limits are generous, but you should review all course materials before starting.

Generative AI Policy

You may use generative AI (e.g., ChatGPT) as a learning aid with these boundaries:

- You are **explicitly forbidden** from sending any course content — including Canvas materials, video transcripts, assignment or quiz questions — to generative AI tools, as these are copyrighted and must not be shared with third parties.
- Attempt all assignments independently before turning to AI for help.
- Be aware that generative AI may not always provide correct answers.

Assignment Due Dates

All deadlines are in the **US Eastern Time Zone**. Check Canvas for specific times, as they are subject to change. Use a time zone converter to translate to your local time.

Late Submission Policy

- Submissions within 24 hours of the deadline: 20% penalty.
- Each additional day (up to 72 hours): additional 20% penalty per day.
- Submissions more than 72 hours late: no credit.
- **No late submissions accepted for the Final Exam.**

Timing Policy

- Modules follow a logical sequence of knowledge- and experience-building. It is strongly recommended to follow the course schedule.
- Assignments should be completed by their due dates.
- Course content is accessible for the scheduled duration of the course.

Grading and Feedback

Quiz results will be released the day after the deadline. Exercise results will be released once the TA has finished grading, which may vary based on class size.

Technology Requirements and Skills

Network Connectivity

A high-speed internet connection is required.

Computer Hardware

Students are solely responsible for ensuring their computer meets minimum requirements. Since Tableau is used extensively, your computer must meet Tableau's hardware requirements. Deadlines cannot be extended due to hardware issues.

Chromebooks are not sufficient. Windows PC is strongly preferred; Mac users will need GT's VLAB (mycloud.gatech.edu — log in with GT credentials and click CoB-Labs) for software not available on Mac. Note that VLAB may be slower when many users are logged in simultaneously.

Note: The instructor and TA do not manage VLAB. For VLAB issues, contact Digital Learning Support.

Required Software

1. **Microsoft Excel:** Preferably the Windows version; Mac version also works. Available via Office 365 (all GT students) or VLAB.
2. **Tableau Desktop and Tableau Prep:** Available for Mac and PC. Activation codes provided by the instructor in Week 2. Download from Tableau activation page.
3. **Microsoft Power BI:** Free desktop version. Download from Power BI Desktop.
4. **NodeXL Basic:** PC only. Register at NodeXL registration to receive a download link. Mac users: install on VLAB (not pre-installed; install under your own user profile).
5. **R and RStudio:** R: CRAN mirror site. RStudio: RStudio download page.
6. **Mozilla Firefox, Chrome, and/or Safari:** If you encounter browser issues, clear your cache or use private/incognito mode first.
7. **Microsoft Office (Office 365 recommended):** Available to all GT students.
8. **Adobe Acrobat Reader:** For reading PDF files.

Technology Help Guidelines

30-Minute Rule: When you encounter a technology issue, give yourself 30 minutes to resolve it. If unsuccessful, post to the discussion board or contact the Helpdesk (available 24/7).

When requesting tech help, include:

- A descriptive subject line with the course name and issue.
- Steps or circumstances that preceded the issue, plus the exact error message.
- A screenshot of the error, if possible.

- What you have already tried (e.g., rebooting, switching browsers).

Course Policies, Expectations & Guidelines

Communication Policy

- Do not submit personal posts to the public discussion board. Use private messaging on Ed Discussions.
- Expect a response within 24 hours during regular work days. Announcements will be made for delays.
- Student Forum/Q&A; boards are checked twice daily Monday–Friday, and at least once on weekends. Holidays may delay responses.
- For quiz/test questions that are unclear, make reasonable assumptions and answer your best. Post privately on Ed if needed, but do not expect an immediate reply in an asynchronous class.
- Include a screenshot or complete description when asking about a specific assignment or quiz question.
- For graded items with clear questions, additional hints cannot be provided before the deadline to ensure fairness.
- Questions about assignments due more than 10 days ago may receive slower responses.

Online Conduct and Netiquette

- **Read first, write later.** Read all existing posts before replying to avoid repetition.
- **Be professional.** Avoid language that may be misinterpreted; humor and sarcasm can be easily misconstrued in writing.
- **Follow internet conventions.** Do not write in all capitals (perceived as shouting). Emoticons can help convey tone.
- **Respect privacy.** Ask permission before sharing a classmate's contact information.
- **Keep attachments small** (250 KB or less for images). For large files (>10 MB), share via a link (OneDrive or Dropbox).
- **No inappropriate material.** Do not forward chain letters, jokes, or any offensive content.

Note: The instructor and TAs reserve the right to remove posts that are not collegial or do not meet these guidelines.

University Use of Electronic Email

A university-assigned student email account is the official means of communication at Georgia Tech. Students are responsible for all information sent to their university-assigned email. The university recommends checking electronic communications at least twice per week.

Plagiarism & Academic Integrity

Students are expected to act according to the highest ethical standards. Cheating and plagiarism constitute fraudulent misrepresentation for which no credit can be given and for which sanctions will be applied. See the Georgia Tech Academic Honor Code for details.

Any student suspected of cheating or plagiarism will be reported to the Office of Student Integrity.

Copyright

You are explicitly forbidden from sharing any course materials — including slides, video recordings (or their audio, screenshots, or transcripts), sample files, exam questions and answers, or assignment questions and answers — with anyone not registered in the class, including generative AI tools such as ChatGPT. Uploading these materials to any website, server, or social media requires the explicit prior written consent of the instructor and GTPE.

Accommodations for Students with Disabilities

Contact the Office of Disability Services at (404) 894-2563 as soon as possible to discuss your needs and obtain an accommodations letter. Please also email the instructor promptly.

Deadline Extensions & Missed Exams

Students with approved institute activities (GT Rules §4) may request deadline extensions. Other requests will be considered. Given the compressed schedule, students should make every effort to keep up with the course and catch up on missed work promptly.

Student-Faculty Expectations Agreement

Georgia Tech strives for an atmosphere of mutual respect, acknowledgement, and responsibility. See the Student-Faculty Expectations Agreement for details. Simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek.