Foundations of Data Analysis

Last Updated: Fri, 12/19/2025

Course prefix: MGT

Course number: 6500

Section: EMA, EMO

CRN (you may add up to five):
24559 34165

Instructor First Name: Ravi

Instructor Last Name: Subramanian

Semester: Spring

Academic year: 2026

Course description:

To introduce participants to a problem-driven approach to assembling, analyzing, and taking action on data. With the Problem-Plan-Data-Analysis-Conclusions (PPDAC) Cycle and Gartner's Analytics Maturity Model (Descriptive → Diagnostic → Predictive → Prescriptive Analytics) as frameworks, fundamental concepts for the analysis of data will be covered, including descriptive statistics, visualizations, probability and distributions, confidence intervals, hypothesis testing, and regression analysis/predictive analytics. Knowledge of the "whys" behind these tools facilitates rigorous data-driven decision-making.

Course learning outcomes:

The learning objectives of this course are:

1. To understand and execute the process of decision-making based on data;
2. To assemble, summarize, visualize, and analyze data arising in decision making; and,
3. To conceptualize and interpret models for diagnostic, predictive, and prescriptive analytics.

Required course materials:

- Course material, organized by session, on Canvas → Modules (https://canvas.gatech.edu).
- R, RStudio, and Radiant (open source). Please carefully follow the **text and video instructions** for installation at: https://radiant-rstats.github.io/docs/install.html
- *The Art of Statistics: How to Learn from Data* by Sir David Spiegelhalter (ISBN-13: 978-1541675704; ISBN-10: 1541675703). https://www.amazon.com/dp/1541675703

Grading policy:

Evaluation Components

Components (Individual)	Weight	Notes
6 Quizzes (**see schedule below**)	40%	Online, via Canvas; Best 5 Quizzes count (each 8% weight; Open book, Open notes, Internet resources allowed) **Collaboration allowed but no pasting questions into LLMs or copying/giving away answers.**
Personal Reflection	20%	500-750 words **Due by 2:00 pm on Wed, March 4 via Canvas**
Final Exam (Online)	40%	Open book, Open notes, **New internet resources not allowed** (previously downloaded/bookmarked resources allowed) **Opens 2:00 pm on Sat, Feb 28, via Canvas** **Due by 2:00 pm on Sun, March 8, via Canvas** **Strictly Individual; No collaboration allowed**

Quiz Schedule

Quiz #	Quiz opens at 2:00 pm on	Quiz due by 2:00 pm on	Answers/Scores released by 2:00 pm on
1	Fri, Jan 16	Wed, Jan 21	Sun, Jan 25
2	Fri, Jan 23	Wed, Jan 28	Sun, Feb 1
3	Fri, Jan 30	Wed, Feb 4	Sun, Feb 8
4	Fri, Feb 6	Wed, Feb 11	Sun, Feb 15
5	Fri, Feb 13	Wed, Feb 18	Sun, Feb 22
6	Fri, Feb 20	Wed, Feb 25	Sun, Mar 1

Attendance policy:

Class attendance will not be monitored or graded. Students in the online section may also attend the in-person section.

Academic honesty/integrity statement:

Students are expected to act and **must also expect their peers to act** according to the highest ethical standards, as outlined in the honor code at http://www.policylibrary.gatech.edu/student-affairs/academic-honor-code.

- **You are not allowed to seek or receive previous class material** (including class notes, readings, quizzes, exams, class recordings, etc.).

- While collaboration is allowed for the Quizzes (submissions are individual), **simply pasting questions into LLMs or copying/giving away answers is not allowed**.
- Note that **collaboration is not allowed for the Personal Reflection and the Final Exam**.
- **Sharing/posting or offering to share/post any course material or recordings** (except sharing your class notes with your classmates) – whether during or after the end of the course – will violate the honor code and is not allowed.