

MGT 6213 Syllabus

Business Analytics for Managers (MGT 6213), 3 Credits

Online – Asynchronous

Fall 2026

Instructor Information

Instructor: Dr. Zhaohu (Jonathan) Fan

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Office Hours: Mondays 9:00–10:00 PM ET and by appointment (Please note: Due to the Labor Day holiday, the Week 3 office hour will be held on **Wednesday, September 9, from 9:00–10:00 PM ET** instead.)

Office: Scheller 4144

Course Modality: Online – Asynchronous

General Course Information

Description

Businesses today generate large volumes of data through their operations, interactions, and decision processes. Leading organizations increasingly rely on analytics to replace guesswork with evidence-based decision-making.

This course introduces students to the process of transforming data into actionable insights for managerial decision-making. The course covers core business analytics methods, the practical issues that arise when working with business data, and the interpretation of analytical results in organizational settings. Through business-oriented examples and applied work in R, students will learn how analytics can be used to frame problems, evaluate alternatives, and support better decisions.

Course Learning Outcomes

Upon successful completion of this course, students should be able to:

- Assess whether and how business analytics can improve organizational performance and managerial decision-making.
- Develop, interpret, and evaluate appropriate analytics models for common business problems.
- Use R and RStudio to analyze business data and generate evidence-based insights.
- Translate analytical findings into clear, actionable business recommendations for a managerial audience.

Required Course Materials

Required textbook: James, G., Witten, D., Hastie, T., and Tibshirani, R. An Introduction to Statistical Learning (2nd ed.). This text is freely available at statlearning.com.

Optional textbook: Shmueli, G., Bruce, P., Gedeck, P., and Patel, N. Machine Learning for Business Analytics: Concepts, Techniques, and Applications in R (2nd ed.).

Software: Students will use R and RStudio throughout the course. Installation guidance will be provided on Canvas. Students should also have access to a current web browser and software for viewing and submitting PDF documents.

Suggested R learning resources: LinkedIn Learning resources available through Georgia Tech, Winston Chang's Cookbook for R, and R for Data Science (2e).

Grading Policy

Final grades are determined using the following weighted components.

Assignment	Weight
Discussion Boards	10%
Individual Assignment 1	25%
Individual Assignment 2	25%
Individual Assignment 3	25%
Final Project	15%

Rounding. Final percentage points will be rounded to the nearest whole number. For example, 89.6% rounds to 90%, while 89.4% rounds to 89%.

Letter grade scale. A = 90–100, B = 80–89, C = 70–79, D = 60–69, and F = below 60, based on the rounded course percentage. Georgia Tech awards final letter grades on an A–F scale without plus/minus grades.

Pass/fail enrollment. Students enrolled on a pass/fail basis will receive an S only if their work would earn a C or higher on the standard letter-grade scale.

Assignments

Discussion Boards (7 total): Discussion boards account for 10% of the course grade and are designed to foster engagement, dialogue, and the exchange of ideas in our asynchronous learning environment. Your first post will be a brief self-introduction to the class. Each of the remaining boards will then ask you to write a short reflection on a real-world application of artificial intelligence, with the specific focus varying from week to week.

Beyond sharing your own perspective, you are expected to engage thoughtfully with your classmates: in any week that you post, you must also provide substantive comments on at least one classmate's post. Unless otherwise noted, all discussion board submissions are due by Sunday at 11:59 PM Eastern Time at the end of each week.

- Detailed prompts and posting requirements will be provided on the course website.
- All posts must be submitted on Canvas by the stated deadlines to receive full credit.

Individual Assignments (3 total): Each assignment is worth 25% of the final grade. Detailed instructions will be posted on Canvas.

Final Project: The final project is worth 15% of the final grade and asks students to develop a hypothetical AI- or data-driven business framework addressing either an internal process improvement opportunity or an external market opportunity.

Description of Graded Components

Individual Assignments. The three individual assignments assess students' ability to apply course concepts, work with data in R, interpret analytical output, and communicate managerial implications.

Final Project. The final project emphasizes business value, implementation strategy, and risk considerations rather than technical model development alone. Projects should be framed using non-confidential, generalized, or hypothetical business contexts so they can be openly shared in the course environment.

Successful completion expectations. All graded work must be submitted through Canvas by the stated deadline. Students are responsible for verifying that their submission is complete and accessible.

Course Policies

Attendance and/or Participation

Because this course is offered online and asynchronously, regular engagement is essential. Students are expected to keep up with weekly course materials, readings, demonstrations, announcements, and assignment deadlines.

Students are responsible for checking Canvas regularly for updates, accessing posted materials in a timely manner, and completing course activities by the stated deadlines. When software demonstrations or applied exercises are assigned, students should have their computing environment ready to participate effectively.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. All submitted work must represent the student's own effort and must appropriately acknowledge outside sources. Any student suspected of cheating or plagiarism on an assignment, quiz, exam, or project may be reported to the Office of Student Integrity for review under the Georgia Tech Honor Code and the student Code of Conduct.

Collaboration, Group Work, and Use of Generative AI

Coursework expectations. Unless otherwise specified, graded work in this course is individual work. Students may discuss course concepts at a high level with classmates, but each student must independently prepare and submit their own analyses, code, writing, and final deliverables.

Use of generative AI tools. Generative AI tools may be used for brainstorming, outlining, debugging support, or improving clarity of writing, unless a particular assignment states otherwise. Students remain fully responsible for the accuracy, originality, and appropriateness of anything they submit. Any substantial use of generative AI should be acknowledged briefly in the submitted work.

Extensions, Late Assignments, and Missed Work

Late assignments. Late assignments are penalized by 25% of the assignment grade per day unless an alternative arrangement has been approved in advance or required through an approved accommodation.

Extenuating circumstances. Students experiencing illness, emergencies, or Institute-approved conflicts should communicate as early as possible so that appropriate next steps can be discussed.

Communication and Course Expectations

Professional communication. Students are expected to communicate respectfully and professionally in all course interactions.

Student responsibility. Students should review assigned readings, follow course announcements, and come prepared to engage with the weekly content.

Student-Faculty expectations. Georgia Tech’s Student-Faculty Expectations Agreement applies in this course. Mutual respect, responsibility, and constructive participation are expected throughout the semester.

Accommodations for Students with Disabilities

If you have established accommodations with the Office of Disability Services, please share your approved accommodation letter with me as early as possible so we can discuss implementation in this course. If you need accommodations but have not yet connected with Disability Services, contact the office at 404-894-2563 or dsinfo@gatech.edu. Accommodations are determined through an interactive process involving the student, the instructor, and Disability Services.

Campus Resources for Students

- Canvas will serve as the primary source for course materials, announcements, and assignment instructions.
- Georgia Tech Academic Success and Advising offers tutoring and academic support resources for students who would benefit from additional help.
- Georgia Tech also provides wellness, counseling, and other student support resources to support students’ overall well-being.

Schedule

The schedule below reflects the current plan for the Fall 2026 offering.

Week	Date	Topic(s)	Readings	Due / Notes
1	Week of August 24	Course overview; R and RStudio; linear regression; regression diagnostics	ISLR Sections 2 and 3; “How Do I Interpret a Regression Model”	HW 1 posted: August 24, 9:00 AM ET Discussion Board 1 due: August 30, 11:59 PM ET
2	Week of August 31	Logistic regression	ISLR Section 4	HW 1 due: September 6, 11:59 PM ET Discussion Board 2 due: September 6, 11:59 PM ET
3	Week of September 7	Treatment effects and experiments	Program evaluation and the diff-in-diff estimator	HW 2 posted: September 7, 9:00 AM ET Discussion Board 3 due: September 13, 11:59 PM ET
4	Week of September 14	K-means and hierarchical clustering	ISLR Section 12	HW 2 due: September 20, 11:59 PM ET Discussion Board 4 due: September 20, 11:59 PM ET

Week	Date	Topic(s)	Readings	Due / Notes
5	Week of September 21	Prediction models: variable selection and cross-validation	ISLR Section 5	HW 3 posted: September 21, 9:00 AM ET Discussion Board 5 due: September 27, 11:59 PM ET
6	Week of September 28	Classification and regression trees (CART)	ISLR Chapter 8	HW 3 due: October 4, 11:59 PM ET Discussion Board 6 due: October 4, 11:59 PM ET
7	Week of October 5	Contemporary AI, data tools, and trends: Agentic AI in action and workflow automation	Canvas materials	Final project posted: October 5, 9:00 AM ET Discussion Board 7 due: October 11, 11:59 PM ET
8	Week ending October 11	Project completion period		Final project due: October 11, 11:59 PM ET