[MGT4050] Syllabus (SUBJECT TO CHANGE)

[Business Analytics, Section A, 3 Credits]

[Summer 2026]

[9:30AM to 11:40AM Tuesdays and Thursdays]

[Room 221 Scheller College of Business]

Instructor Information

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Office: 4309 Scheller College of Business

Office Hour: 11:40AM to 1:00PM Tuesdays

General Course Information

Description

Today, businesses, consumers, and societies leave behind massive amounts of data as a by-product of their activities. Leading-edge companies in every industry are using analytics to replace intuition and guesswork in their decision-making. As a result, managers are collecting and analyzing enormous data sets to discover new patterns and insights and running controlled experiments to test hypotheses.

This course prepares students to understand business analytics and become leaders in their areas in business organizations. This course teaches the scientific process of transforming data into insights for making better business decisions. It covers the methodologies, issues, and challenges related to analyzing business data. It will illustrate

the processes of analytics by allowing students to apply business analytics algorithms and methodologies to business problems. The use of examples places business analytics techniques in context and teaches students how to avoid the common pitfalls, emphasizing the importance of applying proper business analytics techniques.

Course Learning Outcomes

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

1. Apply data analytics to business problems. Students should be able to assess whether and how data and business analytics can improve business performance.
2. Develop business analytics ideas, build and interpret appropriate models, analyze data and generate business insights.
3. Have a decent command of R.

Required Course Materials

Required Textbook:

(ISLR) Introduction to Statistical Learning, 2nd Edition. Gareth James, Daniela Witten, Trevor Hastie, and Robert Tibshirani. It is available for download at statlearning.com

The primary reading assignments are mentioned in the course schedule. Other reading assignments, if any, will be posted on the course website on Canvas, or distributed in class. You are responsible for checking the course website before every class for announcements, assignments, and schedule changes. You should finish the assigned readings prior to class.

Required Software:

Please ensure that you have up-to-date versions of the operating systems (Windows, Linux, or macOS). Please see http://sco.gatech.edu/ for more information.

Ensure that you have administrator rights on your laptop, as you may occasionally need

to install R, RStudio, and R packages, etc.

We will learn business analytics using open-source software. Please follow the instructions provided on their respective websites and install the following software on your personal computer:

1. R and RStudio: RStudio Desktop - Posit (note: first install R and then install RStudio).

2. Complete Microsoft Office Suite or comparable, and the ability to use Adobe PDF software (install, download, open, and convert)

3. Mozilla Firefox, Chrome, and/or Safari browsers

Here are some resources on how to learn R:

• There are several R courses in LinkedIn Learning. Home | LinkedIn Learning (gatech.edu) After logging in to LinkedIn Learning using your GT credentials, you have access to a lot of materials.

• http://www.cookbook-r.com/ This is a cookbook for R developed by Winston Chang.

• R for Data Science, R for Data Science (2e) (hadley.nz). You can view it online or buy a hard copy.

Grading Policy:

Grades will be assigned on the following basis:

Class Attendance and Participation	10%
Weekly Recap	10%
In-class Labs (5; worth 8% each)	40%
Final Project Proposal	5%
Final Project Presentation	15%
Final Project Report	20%

The conversion of Percentage Scores to Letter Grades is expected to be as follows:

Rounding: Final percentage points will be rounded to the nearest integer. For example,

89.6% = 90% while 89.4% = 89%.

A = 89.5% – 100.0% (above 90% with rounding)

B = 79.5% – 89.4% (80-89% with rounding)

C = 69.5% – 79.4% (70-79% with rounding)

D = 59.5% – 69.4% (60-69% with rounding)

F = 0% – 59.4% (0-59% with rounding)

Students are anticipated to participate in the course survey to help future students. We will do the CIOS course survey during the last class of this course. Mid-course student feedback may be surveyed and used to help further improve this course for the second half of the course. The instructor welcomes suggestions and feedback anytime. Please feel free to email me.

Description of Graded Components

Class Attendance and Participation (10%):

Attendance at every class is expected. Please manage your schedule to avoid conflicts with our meeting times, arrive promptly, and stay for the full duration of the class. Attendance will be tracked each session via the distribution of name cards. If you must miss a class, it is your responsibility to review the covered topics and request notes from a classmate. Participation will be recorded based on your participation of class discussions. Please see the Course Policies section of absences.

Weekly Recap (10%)

To reinforce what we learn, you will write and submit three original quiz questions via Canvas each week.

- **Format:** Questions can be multiple-choice or fill-in-the-blank.
- **Requirements:** Along with the questions, you must provide the correct answers, and a brief explanation of *why* the answer is correct (or why distractors are wrong).

- **Topics:** Questions should be directly based on the material covered in class that week.

- **Grading:** This assignment is graded strictly on completion and effort. You will not be penalized for technical mistakes in your questions or answers.

We will hold a recap session each week. While I will bring my own review questions, I will also select some of your submitted questions to share and discuss with the class!

In-class Labs (40%)

For many of you, this course may be your first time working with a programming language like R. To support you, we will hold five in-class labs where I will walk you through the practice code and concepts.

- **Expectations:** You are expected to actively participate in these instructor-led discussions. Following the class session, you will submit your completed code and answers via Canvas by the specified deadline.

- **Grading:** There are five lab assignments in total. Each lab is equally weighted and accounts for 8% of your final course grade.

- **Academic Integrity:** Although these labs are collaborative during class time, the final code and answers you submit to Canvas must be your own independent work.

- **Late Policy:** Late submissions are accepted up to exactly 48 hours after the deadline but will incur a 30% penalty (e.g., your earned score will be multiplied by 0.7). **Submissions will not be accepted after the 48-hour window.**

Final Project (40%)

This project provides an opportunity to creatively apply the analytics tools you have learned to a real-world business problem. You will work in teams of up to four students. A detailed explanation of the project will be posted on Canvas.

The project consists of three main components:

- Project Proposal

- Final Project Report

- Final Presentation: Every group is required to present to the class. Presentations will be evaluated based on completeness, substance, depth of analysis, presentation style, and how well you handle questions from the audience. Both the presentation slides and the final report must be submitted electronically via Canvas.

Unlike the in-class labs, there is NO GRACE PERIOD for the submission of team project deliverables. All materials must be submitted on Canvas *no later than the specified deadline*. All team members share the responsibility of ensuring the project is submitted on time.

Every student is expected to contribute equally across all phases of the project; "free riders" will not receive credit. At the end of the term, each team member will submit a peer evaluation assessing the contributions of their groupmates. These evaluations will be heavily considered when calculating individual final grades for the project.

Extra Credits:

Extra credits may be announced during the semester.

Course Policies

Attendance and/or Participation

Excused Absences & Illness If you are sick, please prioritize your health and do not come to class. You may request an excused absence for sudden illness or accidents by emailing me as soon as possible.

You may also request excused absences for Institute-approved activities. Per the Georgia Tech Registrar, this includes presenting a paper at a conference, attending a study-related seminar, participating in a leadership group conference as an officer, or representing the university officially.

The "Life Clause" Things happen. Because of this, you are allowed **ONE** unexcused absence this semester, no questions asked. To use it, simply send me an email stating that you would like to use your "Life Clause" for that day. Prior communication is preferred, but you can use this for any reason.

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. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Generative AI Policy

The use of generative AI tools, such as ChatGPT, is permitted to use. You should treat generative AI as a collaborative peer, not an infallible expert. Just as you would with a classmate's advice, you must rigorously evaluate the logic and accuracy of the AI's suggestions.

You are ultimately responsible for all work you submit. Do not blindly copy and paste generated output. If you utilize an AI tool to assist in writing your code or structuring your final project, please **include a brief note in your submission indicating which tool was used and how it assisted you.**

Accommodations for Students with Disabilities

If you have established accommodations with the Offices of Disability Services, please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. Any accommodations granted will begin after you present the documentation. Accommodations for a specific event will be considered after the request, but before the event. No retroactive accommodations will be made.

If you have a need but have not yet established accommodations through Disability Services, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Disability Services offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s), and Disability Services.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can

have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Student Use of Mobile Devices in the Classroom

You are required to bring a laptop with every class as this course is designed to give students a lot of hands-on experience. You are also welcome to use laptops and tablets for notetaking. Use of mobile phones is generally not permitted during class time. Please treat our classroom as a professional workplace. Ensure your device usage is strictly related to the course material so that it does not distract you or your classmates.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being.