

Georgia Institute of Technology
Scheller College of Business
Finance & Investments (MGT 6078)
Fall 2023

Instructor: Daniel Weagley

Office: Management 412

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Class Time: TR 5:00PM - 6:15PM, Room 200 in Scheller

Office Hours: By appointment (email to schedule a time)

TA: Sicheng Li (sichengli@gatech.edu)

TA Office Hours: By appointment (email to schedule a time)

Overview:

This course provides a sound foundation for the fundamental concepts in investments. We will cover the concepts of risk and return, asset allocation, portfolio theory, theories of asset pricing and efficient markets, portfolio strategies and performance evaluation methods. The course is quantitative and relies heavily on analytical tools. Basic knowledge of algebra, calculus, statistics and programming (R or Python) is necessary to complete course assignments.

Prerequisites:

Graduate level probability and statistics.

Course Layout:

The structure of the course is a flipped-version of a traditional course. Lecture will be in the form of short, asynchronous videos uploaded to Canvas and supplemented with in-person lectures. We will spend the majority of class time working on and discussing applications of the course material (in-class assignments, projects and weekly assessments). The amount of time spent each week on course material should not be any different than a traditional course structure. I hope to obtain frequent feedback from students and modify the course in response to student feedback.

I will upload a checklist each week that will inform students of the material that will be covered and due dates for assignments. The Canvas calendar will also be updated with class meeting information and assignment due dates.

Resources:

Course Materials: Materials for this course will be broken into modules and housed on Canvas. I will upload lecture notes, lecture videos, homework, sample exams and additional readings to Canvas. Students will be responsible for purchasing cases.

Textbook: Asset Management by Andrew Ang (ISBN: 978-0199959327)

Optional additional text: Bodie, Kane and Marcus (BKM), Investments, 11th Edition.

Required Software, Hardware and Subscriptions:

Software/Hardware: You will need to a computer with Microsoft Excel to complete most applications. Projects will require Python, R, and Microsoft Excel.

Cases: We will use cases from Harvard Business Publishing. Do not purchase cases until assigned. Sign-up here: [Link](#).¹

StockTrak: One of the course projects requires an account with StockTrak.com. It is a shared account with teammates and costs less than \$10 per person. Do not purchase until we start the assignment.

Student Effort

Students are expected to devote 8 hours per week to complete the course requirements. This guideline encompasses all class activities, including course readings, attending class sessions, watching videos, participating in office hours and forum discussions, completing assignments, and studying for exams. Of course, students can spend as much time as necessary, but it is important to be careful not to fall behind.

Communication:

Instructor Communication: Important communication from your instructor will take place in Canvas or in the classroom. You are expected to check Canvas every day for important course-related information. However, by following the instructions provided in the course, you can also ensure that you do not miss important instructions, announcements, etc. by adjusting your account settings to receive important information directly to your email account or cell phone. For more details, log into the Canvas, enter the course, and see the section entitled “Before You Begin: Instructions for Getting Started.”

Content Questions and Help: Because questions can often be addressed for the good of the group, please do not email your questions directly to the instructor. Instead, course and content questions will be addressed on the Canvas Discussion Board.

¹<https://hbsp.harvard.edu/import/1076827>

Office Hours: Office hours will be by appointment. Zoom is typically the most convenient way to meet. Please email me to set up a time to meet.

Evaluation:

Your course grade depends on your performance on assignments, exams, and class participation. Exams will cover material from lectures, assigned readings, and homework.

Overall grades for the class are based on an absolute scale: A ($\geq 90.000\%$), B ($\geq 80.000\%$), C ($\geq 70.000\%$), D ($\geq 60.000\%$), and F. I will curve course grades if needed to ensure at least 60% of students receive an A. The remainder will receive a B unless their overall grade is $< 80\%$ and their grade is less than two standard deviations below the mean. These students will receive a C. Any students with an overall grade $< 70\%$ that is at least 3 standard deviations below the mean will receive a D.

Your course grade will be weighted as follows:

Assignment	Due Date	% of Grade
<u>Exams (50%)</u>		
Exam 1	Thursday, September 21	20%
Exam 2	Thursday, November 16	30%
<u>Projects (40%)</u>		
Equity Valuation	Saturday, September 16	7%
Black-Litterman	Tuesday, October 24	4%
Momentum Assignment	Tuesday, October 31	5%
Testing Factor Models	Thursday, November 9	5%
Trading Simulation	Thursday, October 12	15%
	Tuesday, November 28	
Return Predictability	Thursday, December 14	4%
<u>Other (10%)</u>		
Weekly Assessments	Tuesdays	5%
Participation & Applications	-	5%

Exams:

There will be two exams. The second exam is not cumulative. There is no final exam. You must have prior permission to make up an exam. Students will be allowed to see their exam during a meeting with the TA or myself during a coordinated time within two weeks after the exam grade is posted. After two weeks, students will no longer have access to the exam and there will be no modification to the exam grade. Exams will be administered in person.

Online Lectures:

Online lecture videos will be uploaded before class with a link on Canvas. Students will be responsible for watching the online lectures and completing the accompanying assessments.

Projects:

Below I briefly summarize the main projects in the course. More details will be provided when the assignment is assigned.

Equity Valuation Project: Team members will work together to value the equity of a company and its peer firms using techniques learned in class. Team members will create a 5-minute video “pitch” of the investment based on their analysis. Students will evaluate their peers investment pitches and “make an investment decision.” The team with the most willing investors will receive extra credit worth 0.5% of your overall grade.

Black-Litterman Project: This assignment requires students to create a program that implements the Black-Litterman model.

Momentum Project: This assignment requires students to test a trading strategy based on momentum in stock returns.

Testing Factor Models: This assignment requires students to assess the performance of multi-factor models for asset returns.

Trading Simulation: Team members will work together to invest \$1M of virtual capital over a multi-week period. We will start trading after the first exam. The top team in terms of Sharpe ratio as of the start of class on the due date will get extra credit worth 0.5% of their overall grade.

Return Predictability: This assignment requires students to implement statistical and machine learning techniques to predict stock returns.

Weekly Assessments, Applications and Participation:

Weekly Assessments: Short assessments of your knowledge of the week's lecture and reading material will be due **Tuesday at 4:59 p.m.**

Applications: These assignments are applications of the material that we will typically complete during class time.

Participation: Participation will be based on course engagement. Students should ask and provide thoughtful questions and answers benefiting all students in discussions.

Honor Code

It is your responsibility to familiarize yourself with the Georgia Tech Honor Code. Students are expected to follow the Honor Code. Violations of Honor Code will result to an F grade in this course. Any violation of the code will be further reported to the university.

AI Policy:

AI tools like large language models (e.g., ChatGPT) can significantly increase our productivity and enhance the learning experience. Reliance on LLMs can also hinder knowledge acquisition if used to complete assignments without critically thinking about their output. In this class, you are not allowed to use LLMs to complete the homework assignments or produce write-ups unless specified in the assignment. I will permit the use of LLMs only when I believe it will improve your understanding of the material. You are always allowed to use LLMs to learn about class concepts and test your ideas. If you feel there are other potentially valuable use cases, please let me know.

Recording Class Sessions:

I do not plan to record or stream the in-person class meetings this semester, although the situation is dynamic and this may change. In this case, our class sessions may be audio visually recorded for use by enrolled students. Class recordings, lectures, and other classroom presentations presented through video conferencing and other materials posted on Canvas are for the sole purpose of educating the students enrolled in the course. Students may not record or share recordings, including screen capturing, unless the instructor states so or individual permission is obtained. Exams and tests may require students to engage the video camera, but those recordings will not be shared with or disclosed to others without consent unless legally permitted. Additional information may be found **here**.

- For classes where participation is voluntary, students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded.
- For classes requiring class participation, if students are identifiable by their names,

facial images, voices, and/ or comments, written consent must be obtained before sharing the recording with persons outside of students in the class.

Tentative Class Schedule (subject to change):

Week	Class Topic	Homework and Exams
1	Syllabus and Basics of Finance	
2	Financial Statement Analysis	
3	Equity Valuation	
4	Trading Securities	Equity Valuation Project Due
5	Exam 1	Exam 1
6	Basics of Portfolio optimization	
7	Mean-Variance Investing	
8	Factor Theory	Initial Trading Sim. Report Due
9	Advanced Portfolio Optimization No Class Tuesday (Fall Break)	
10	Factors	Black-Litterman Project Due
11	Arbitrage Pricing Theory	Momentum Project Due
12	Performance Evaluation/Alpha	Testing Factor Models Project Due
13	Exam 2	Exam 2
14	Machine Learning No In-Person Class (Thanksgiving)	
15	Presentations	Trading Sim. Report Due
16	Presentations	
17	-	Return Predictability Assignment Due

Support Services and Resources:

In your time at Georgia Tech, you may find yourself in need of support. Below you will find some resources to support you both as a student and as a person.

Academic Support:

- Center for Academic Success
 - 1-to-1 tutoring: <http://success.gatech.edu/1-1-tutoring>
 - Peer-Led Undergraduate Study (PLUS): <http://success.gatech.edu/tutoring/plus>
 - Academic coaching: <http://success.gatech.edu/coaching>
 - <http://success.gatech.edu>
- Residence Life’s Learning Assistance Program
 - Drop-in tutoring for many 1000 level courses

- <https://housing.gatech.edu/learning-assistance-program>
- OMED: Educational Services
 - Group study sessions and tutoring programs
 - <http://omed.gatech.edu/programs/academic-support>
- Communication Center
 - Individualized help with writing and multimedia projects
 - <http://www.communicationcenter.gatech.edu>
- Academic advisors for your major
 - <http://advising.gatech.edu/>

Personal Support:

- The Office of the Dean of Students:
 - URL: <http://studentlife.gatech.edu/content/services>
 - Phone: 404-894-6367
 - Location: Smithgall Student Services Building 2nd floor
 - You also may request assistance at:
https://gatech-advocate.symplicity.com/care_report/index.php/pid383662?
- Counseling Center:
 - URL: <http://counseling.gatech.edu>
 - Phone: 404-894-2575
 - Location: Smithgall Student Services Building 2nd floor
 - Services include short-term individual counseling, group counseling, couples counseling, testing and assessment, referral services, and crisis intervention. Their website also includes links to state and national resources.
 - Students in crisis may walk in during business hours (8am-5pm, Monday through Friday) or contact the counselor on call after hours at 404-894-2204.
- Students' Temporary Assistance and Resources (STAR):
 - URL: <http://studentlife.gatech.edu/content/need-help>
 - Can assist with interview, clothing, food, and housing needs
- Stamps Health Services:
 - URL: <https://health.gatech.edu>
 - Phone: 404-894-1420
 - Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition

- OMED: Educational Services:
 - URL: <http://www.omed.gatech.edu>
- Women’s Resource Center:
 - URL: <http://www.womenscenter.gatech.edu>
 - Phone: 404-385-0230
- LGBTQIA Resource Center:
 - URL: <http://lgbtqia.gatech.edu/>
 - Phone: 404-385-2679
- Veteran’s Resource Center::
 - URL: <http://veterans.gatech.edu/>
 - Phone: 404-385-2067
- Georgia Tech Police: 404-894-2500

National Resources:

- The National Suicide Prevention Lifeline
 - Provides free and confidential support 24/7 to those in suicidal or emotional distress
 - Phone: 1-800-273-8255
- The Trevor Project
 - Provides crisis intervention and suicide prevention support to members of the LGBTQ+ community and their friends.
 - Phone: 1-866-488-7386; available 24/7
 - Chat: <http://www.thetrevorproject.org>; 3-10pm Eastern, 7 days a week
 - Text: Text “Trevor” to 1-202-304-1200; available 3-10pm, M-F.

Statement of Intent for Classroom Inclusivity

As a member of the Georgia Tech community, I am committed to creating a learning environment in which all of my students feel safe and included. Because we are individuals with varying needs, I am reliant on your feedback to achieve this goal. To that end, I invite you to enter into dialogue with me about the things I can stop, start, and continue doing to make my classroom an environment in which every student feels valued and can engage actively in our learning community.