

**Georgia Institute of Technology**  
**Scheller College of Business**  
**Finance & Investments (MGT 6078)**  
**Fall 2020**

Instructor: Daniel Weagley

Office: Management 412

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Class Time: TR 5:00PM - 6:15PM

Office Hours: By Appointment

TAs: Annie Pu (hsuanp@gatech.edu) and Summer Xia (tian.xia@gatech.edu)

TA Office Hours: By appointment

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**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 is necessary to complete course assignments.

**Prerequisites:**

Graduate level probability and statistics.

**Course Layout:**

The course is taught remotely. Lectures will be in the form of short, asynchronous videos. We will use the allotted class time to work on applications of the material and group assignments. I will set up a BlueJeans meeting during class time to allow us to interact and work through problems/issues. We will utilize a number of online tools to engage with one another. I will be clear on whether a class meeting is mandatory or optional. 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:**

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

Optional additional text: Bodie, Kane and Marcus (BKM), Investments, 10th or 11th Edition.

Cases: Cases will need to be purchased from the Harvard Business School Publishing. Do not purchase cases until assigned. (Link)<sup>1</sup>

Course Materials: Lecture notes, homework, sample exams and additional readings will be uploaded to Canvas

**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 (40%)</u>		
Exam 1	Thursday, September 17	20%
Exam 2	Thursday, November 12	20%
<u>Projects (45%)</u>		
Equity Valuation	Friday, September 11	8%
Black-Litterman	Monday, October 19	4%
Momentum Assignment	Tuesday, October 27	6%
Testing Factor Models	Thursday, November 5	6% 7
Trading Simulation	Thursday, October 8	15% 20%
	Tuesday, November 24	
<del>Return Predictability</del>	<del>Thursday, December 3</del>	<del>6%</del>
<u>Other (15%)</u>		
Weekly Quizzes	Thursdays	5%
Applications	-	5%
Participation	-	5%

<sup>1</sup><https://hbsp.harvard.edu/import/748123>

**Exams:**

There will be two exams. The first exam is worth 20% of the course grade. The second exam is worth 20% of the course grade. 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.

This course will use digital proctoring for exams. The following are required of students:

- Students must have a broadband internet connection
- Students must have a webcam and microphone
- Students must have a secure private location to take an exam
- Students will be asked to provide a picture ID and take a picture of themselves via a webcam as part of the exam process
- Honorlock is not compatible with Linux OS, Virtual Machines, tablets, or smartphones
- Honorlock requires the installation of Google Chrome and the Honorlock Chrome extension
- Honorlock technical requirements ([Link](#))

**Projects:**

Equity Valuation Project: Teams of three 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. More details will be distributed when the assignment is assigned.

Black-Litterman Project: This assignment requires students to create a program that implements the Black-Litterman model. More details will be distributed when the assignment is assigned.

Momentum Project: This assignment requires students to test a trading strategy based on momentum in stock returns. More details will be distributed when the assignment is assigned.

Testing Factor Models: This assignment requires students to assess the performance of multi-factor models for asset returns. More details will be distributed when the assignment is assigned.

Trading Simulation: Team members will work together to invest \$1M of virtual capital over a multi-week period. The portfolio will be invested partially based on a professional money management strategy. There will be no constraints on the remainder of the portfolio (i.e., team members can invest however they would like). The assignment will consist of weekly trading, an initial written report, a final written report and a presentation. We will start trading after the first exam. The top team in terms of Sharpe ratio (as of ~~Tuesday, November 24, 2020~~ December 1st, 2020 at the start of class) will get extra credit worth 1% of their overall grade. More details will be distributed when the assignment is assigned.

Return Predictability: This assignment requires students to implement statistical and machine learning techniques to predict stock returns. More details will be distributed when the assignment is assigned.

### **Quizzes, Applications and Participation:**

Weekly “Quizzes”: Short assessments will accompany the online lecture videos. These assessments will be due **Thursday at 4:59 p.m.** I will drop your 2 lowest scores.

Applications: These assignments will be applications of the material that we work through together. These can be completed independently or during class time.

Participation: Participation will be based on course engagement. Students should ask and provide thoughtful questions and answers benefiting all students in online discussions and in discussing market news/events.

### **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.

### **Recording Class Sessions:**

Due to Covid-19 concerns and the increased use of distance learning, 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):**

<b>Week</b>	<b>Class Topic</b>	<b>Homework and Exams</b>
1	Syllabus and Basics of Finance	
2	Financial Statement Analysis	
3	Equity Valuation	
4	Trading Securities	Equity Valuation Project Due (Friday, September 11)
5	Exam 1	Exam 1 (Thursday, September 17)
6	Portfolio optimization: Setting up the problem (ch. 1 & 2)	
7	Mean-Variance Investing (ch. 3)	
8	Factor Theory (ch. 6)	Initial Trading Sim. Report Due (Thursday, October 8)
9	Factor Theory continued	
10	Factors (ch. 7)	Black-Litterman Project Due (Monday, October 19)
11	Alpha (ch. 10)	Momentum Project Due (Tuesday, October 27)
12	Factor Investing (ch. 14)	Testing Factor Models Project Due (Thursday, November 5)
13	Exam 2	Exam 2 (Thursday, November 12)
14	Machine Learning	
15	TBD Thanksgiving Break	Trading Sim. Report Due (Tuesday, November 24)
17	-	Return Predictability Assignment Due (Thursday, December 3)

**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?](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.