

Course Syllabus: Financial Modeling MGT 8813

Instructor Information

Instructor

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General Information

Description

Financial Modeling presents tools necessary to build advanced Excel spreadsheets to analyze business decisions. The course will include topics such as time value of money, stock and bond valuation, firm valuation, financial statements, cost of capital, option pricing models, and portfolio optimization. Students will create spreadsheets using pivot tables, Excel functions, solver, goal seek, and VBA.

Pre- &/or Co-Requisites

- MGT 8803/6754

Course Overview

This course is intended to prepare students to build financial models and make business decisions based on the understanding of finance theory and the utilization of analytical models. Therefore, two broad learning objectives exist for this course:

- Finance-based learning objectives—Where students will be required to understand basic time value of money principles as well as finance theory such as portfolio optimization and firm valuation.
- Excel/modeling based learning objectives— Where students will be required to learn/use Excel functions and tools. Many of these tools and functions will be used to build financial models.

Some weekly lessons will include both “finance-based” and “modeling/Excel-based” objectives and other weekly lessons will focus only on one or the other.

Course Goals and Learning Outcomes

Once completed, the student should have the following capabilities:

- Create cash flow statements
- Describe basic time value of money (TVM) and use Excel to solve any TVM problem
- Build a basic firm valuation model, free cash flow to the firm
- Build an equity valuation model, free cash flow to equity
- Build an adjusted present value model, APV model
- Compute a firm’s weighted average cost of capital
- Build a comparable firm analysis and football field graph
- Build basic VBA models
- Construct a Black-Scholes option pricing model
- Construct stock portfolio analysis

Course Requirements Grading

Homework Assignments	Release Date By 11:59 p.m.	Due Date At 11:59 p.m.	Weight
Homework #1: Financial Statements	May 12	May 25	8%
Homework #2: Time value of money (TVM) and Excel Tricks	May 12	June 1	8%
Homework #3: Bond duration, convexity, and immunization	May 25	June 8	8%
Homework #4: Portfolio optimization	June 29	July 13	8%
Homework #5: Option valuation	July 6	July 22	8%

***For each HW, the Excel portion counts 6%, and Conceptual Questions count 2%**

Case Assignments	Release Date By 11:59 p.m.	Due Date At 11:59 p.m.	Weight
Case #1: Valuation_Capital Budgeting model (FCFF, FCFE, APV)	June 1	June 15	Excel: 11% Concept: 2.5%
<i>Peer evaluation Case #1</i>	June 1	June 16	Peer: 1.5%
Case #2: Three statement model/DCF	June 15	June 29	Excel: 11% Concept: 2.5%
<i>Peer evaluation Case #2</i>	June 15	June 30	Peer: 1.5%
Case #3: Comparable analysis and football field graph	June 29	July 13	Excel: 11% Concept: 2.5%
<i>Peer evaluation Case #3</i>	June 29	July 14	Peer: 1.5%
Case #4a: WACC + Sensitivity analysis Case #4b: VBA Retirement	July 6 July 6	July 22 July 22	Excel WACC: 9% Excel Retire: 2% Concept: 2.5%
<i>Peer evaluation Case #4</i>	July 6	July 22 (same as case due date)	Peer: 1.5%

***For Each Case, the Excel portion counts 11%,
Conceptual Questions or Write-up count 2.5%, and the Peer Evaluation counts 1.5%**

Description of Graded Components

Each homework assignment will require students to complete a model in Excel and also answer some conceptual questions. Cases are group assignments. Each case assignment will require the students to build a more complex model as a group. Each case will receive a “group grade” which will be evaluated along with a peer evaluation in order to obtain an individual student grade.

Learners who complete zero or very minimal work on the group assignment will receive a zero on the assignment (that is, they do not benefit from the group grade). Each case will also require the completion of conceptual questions; while the case conceptual questions are turned in individually, the members of a group (not students outside the group) may consult each other on answers. Evidence of working on **HOMEWORKS** with anyone else will be considered a violation of the Georgia Tech Student Code of Conduct. Students **WITHIN** a group can work together on **CASES**, but students may not share files with non-group members. Peer evaluations are graded; each peer evaluation counts 1.5% of the learner’s total grade.

Note: In this course, you will be provided with template files to use for homework and case assignments. Unless you are specifically instructed to do so, **do not make any adjustments to the formatting of these documents**, such as inserting/deleting rows or tabs in the workbook. Should you make changes to the template, you will earn whatever grade the auto-grader assigns, because there is not a practical way for the TA team to grade your file manually. We will allow one re-submission if this situation occurs, with the template corrected, for a maximum of 85% of the credit.

This re-submission is for a specific situation; in general, re-submissions (for incorrect answers) are not allowed. Further, normal “re-grades” (as a result of a grading error) do not impose any penalty for the learner.

Assignment Turn-In

- Each homework and Case must be completed in accordance with their respective description and submitted by the date identified within the course syllabus and course outline
- **If you have any questions or concerns, please contact Dr. Garner immediately!**
- All Homeworks/Cases will be turned in on Canvas, as per the due dates

Assignment Due Dates

- All homework and case studies will be due at the times listed above
- These times are subject to change (due dates could be changed to a later date, but they will never be moved to an earlier date)
- I will communicate any updated due dates

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

Timing Policy

- The Modules follow a logical sequence that includes knowledge-building and experience-building.
- Assignments should be completed by their due dates, in order.
- You will have access to the course content for the scheduled duration of the course.

Course Materials

Course Text

- No required textbook

Additional Materials/Resources

- Excel, with Toolpak and Solver (available to all Tech Students: see Pinned post on Ed Discussion for details)
- Access to Finance.Yahoo.com
- Access to The Securities and Exchange Commission website (www.sec.gov) as well as other websites.

Course Website and Other Classroom Management Tools:

- This class will use Canvas and edX, to deliver course materials

Technology/Software Requirements

Internet connection (DSL, LAN, or cable connection desirable)

Course Expectations & Guidelines

Academic Integrity

Honesty and transparency are important features of good scholarship. On the flip side, plagiarism and cheating are serious academic offenses with serious consequences. If any student is discovered engaging in either behavior in this course, they will earn a failing grade on the assignment in question, and further disciplinary action may be taken.

Additionally, any student suspected of cheating or plagiarizing on an assignment will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations.

If you have questions about my integration of the university's honor code into this course, please do not hesitate to ask via email or discussion post. My aim is to foster an environment where you can learn and grow, while ensuring that the work we all do is honest and fair.

Here at Georgia Tech the aim is to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit <http://www.catalog.gatech.edu/policies/honor-code/> or <http://www.catalog.gatech.edu/rules/18/>.

Plagiarism Policy

Plagiarism is a serious offense. You are not allowed to copy and paste or submit materials created or published by others, as if you created the materials. All materials submitted and posted must be your own.

Student Honor Code

All course participants (myself, teaching assistants, and learners) are expected and required to abide by the letter and the spirit of the honor code. If there is any way I can help you in complying with the honor code, please do not hesitate to ask. I will do the same.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Attendance Policy

- This is a fully online course
- Login on a regular basis to complete your work, so that you do not have to spend a lot of time reviewing and refreshing yourself regarding the content

Collaboration & Group Work

- Homework assignments should be done individually
- Cases should be done in groups (absolutely no exceptions)
- Groups will be formed by the end of the second week of class
- A minimum of three students, and a maximum of four students can be in each group
- Students can inform instructor if they have preferences for group membership

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

- No late work is accepted.
- All assignments are expected to be completed and submitted by the due date
- Late assignments are not accepted unless there are **extenuating circumstances**. **These extenuating circumstances** should be communicated with the professor before an assignment is missed or late
 - Even with “extenuating circumstances” there is no way to make up the group case work (in Excel). No makeups or incompletes will be granted for missing case work
 - If a late assignment has sufficient documentation to warrant acceptance, the work must be completed within a week of the original due date
- Proper documentation for all extenuating circumstances must be provided and documented properly

Communication

- Discussion boards/forums will be done via Ed Discussion board
- Virtual Office hours will be conducted weekly via Zoom
- Questions for technology & support should be directed to:
 - omsanalytics@gatech.edu
 - <http://canvas.gatech.edu>

Online Student Conduct and (N)etiquette

Communicating appropriately in the online classroom can be challenging. In order to minimize this challenge, it is important to remember several points of “internet etiquette” that will smooth communication for both students and instructors.

Netiquette refers to etiquette that is used when communicating on the Internet. Review the Core Rules of Netiquette. When you are communicating via email, discussion forums or synchronously (real-time), please use correct spelling, punctuation and grammar consistent with the academic environment and scholarship.

We expect all participants (learners, faculty, teaching assistants, staff) to interact respectfully. Learners who do not adhere to this guideline may be removed from the course. Conner, P. (2006-2014). Ground Rules for Online Discussions, Retrieved 4/21/2014 from: <http://teaching.colostate.edu/tips/tip.cfm?tipid=128>
Course Expectations & Guidelines, continued

Office Hours and Participation

- Office hours will be held every Thursday night from 8 p.m. to 9 p.m. via Zoom.
- The office hours are recorded and posted on Canvas (if there are questions posed by students). If office hours are students “visiting” with each other/professor/TAs, they will not be posted
- Participation is voluntary
- For the first week of class I would like for you all to participate in Office Hours so I can “meet you”!!!!

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. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of some basic expectation 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.

Agreements between Learner and Instructors (Agreed to by each learner PRIOR to beginning course)

- I have read the syllabus and noted the due times of all the assignments are listed in Eastern Standard Time. Canvas may auto-convert to my time zone.
- I understand that assignments are opened as per the syllabus. I understand this is because many of the assignments build on prior assignments, and I need feedback from some prior assignments before attempting subsequent ones. This is why the assignments are not all opened at once.
- I acknowledge the only official communication channel for contacting the instructor and TAs, is the ED discussion board. The instructor or TAs may occasionally use Canvas inbox or Georgia Tech Email to contact me.

- **Agreements between Learner and Instructors (Agreed to by each learner PRIOR to beginning course) continued**
- I understand that the weekly office hour schedule and link are posted to Canvas and that this is my weekly opportunity to interact with TAs and the professor in a live format.
- I understand that each of the five individual homework assignments include an Excel portion and a conceptual question/write-up portion.
- I understand that altering the format of the Excel templates will result in severe deductions.
- I understand I am prohibited to work with others on Homework.
- I understand that each of the four group case assignments include both Excel sections and conceptual questions/write-up portion.
- I understand cases are completed by the group, and learners may not request to work on the cases individually.
- I understand group formation will have a due date. I have until the due date to join a group. The due date for group formation will be announced on Ed. After the due date, once groups are formed, no movement of group membership will be allowed.
- I understand that it is my responsibility to contact group members and to reply to others in the group after the group composition is posted. Failure to do this could result in severe grade penalty.
- I understand failure to submit case peer evaluation will delay the case grades for my team.
- I understand that all GT students have access to Microsoft products (including Excel) via this link: https://gatech.service-now.com/home?id=kb_article_view&sysparm_article=KB0027029
- While Georgia Tech allows learners to choose from either Windows and Mac operating systems for the OMSA program, ([https://pe.gatech.edu/degrees/analytics/student-resources#:~:text=%E2%80%AF%E2%80%AFThe%E2%80%AFnewest%E2%80%AFversion%C2%A0of%20Windows%20\(10%20or%20better\)%20or%C2%A0MacOS%C2%A0\(10.15%20or%20better\)](https://pe.gatech.edu/degrees/analytics/student-resources#:~:text=%E2%80%AF%E2%80%AFThe%E2%80%AFnewest%E2%80%AFversion%C2%A0of%20Windows%20(10%20or%20better)%20or%C2%A0MacOS%C2%A0(10.15%20or%20better),)), I understand that the instructor's videos are on Windows. Although it has never prevented a learner from completing an assignment in this course, I accept that it is my responsibility to navigate the nuanced differences between Excel on these two different operating systems, including different keyboard shortcuts, different design or wording of pop-up prompts such as the Solver Add-in, etc.
- I understand that if I have any issues that prevent me from completing an assignment (sickness, emergency, etc.), I must communicate this via a private post on Ed to the instructor and TAs I also understand I may also need to get an excuse via the Dean of Students for late work to be counted toward my grade.
- I understand that the cases, while completed as a group assignment, will require peer evaluations, submitted by each learner. I understand that if other group members indicate that a learner has done little to zero work, that learner will receive a zero on the case work.

Course Schedule

Week/Dates	Topic	Overview	Deliverables
1 May 12– May 18	Excel tasks and tools Part I & II	Review Excel shortcuts & basic functions	
2 May 19 – May 25	Balance sheets, income statements, cash flow statements Time Value of \$	Review financial statements, including two types of cash flow statements Instruction on time value of money concepts and calculation	Homework #1, Financial Statements, May 25, 2025, 11:59 p.m.
3 May 26 – June 1	Bond valuation and stock valuation	Instruction on bond and stock valuation concepts and calculation	Homework #2, Time Value Money and Excel tricks June 1, 2025, 11:59 p.m.
4 June 2 – June 8	Capital budgeting model and valuation model Sensitivity analysis	Instruction on two models: Finite capital budgeting and infinite valuation models Instruction on two models: Finite capital budgeting and infinite valuation models	Homework #3, Bond Duration, Convexity and Immunization June 8, 2025, 11:59 p.m.
5 June 9 – June 15	Three statement model, which flows into a free cash flow model (DCF)	Instruction on how to build a three statement model which will flow into discounted cash flow model (DCF)	Case #1, Valuation & Capital budgeting model (FCFF, FCFE, APV) June 15, 2025, 11:59 p.m Peer Evaluation June 16, 2025, 11:59 p.m.
6 June 16 – June 22	Comparable analysis and Football field graph	Instruction on performing comparable analysis and building a “football field” analysis/graph	
7 June 23 – June 29	Weighted average cost of capital	Instruction on computing a firm's weighted average cost of capital (WACC) Review of more Excel Tips	Case #2 Three Statement model and DCF June 29, 2025, 11:59 p.m. Peer Evaluation June 30, 2025, 11:59 p.m.

Continued on next page

Week/Date	Topic	Overview	Deliverables
8 June 30- July 6	Portfolio Optimization	Instruction on computing individual stock mean and standard deviation, putting two stocks in a portfolio, and finding the optimal portfolio	
9 July 7 – July 13	Black Scholes Option Pricing Model	Instruction on Black-Scholes option pricing model	Case #3 Comparable Analysis and Football Field Graph July 13, 2025, 11:59 p.m. Peer Evaluation July 14, 2025, 11:59 p.m. Homework #4 July 13, 2025, 11:59 p.m.
10 July 14 – July 22	Visual Basic Application (VBA)	Instruction on building VBA models and MACROs Instruction on building VBA models which are finance related	Homework #5, Option valuation, July 22, 2025, 11:59 p.m. Case #4 WACC + Sensitivity Analysis + Retirement Code July 22, 2025, 11:59 p.m. Peer Evaluation July 22, 2025, 11:59 p.m.