Course Syllabus: Financial Modeling MGT 8813

Instructor Information

Instructor
Dr. Jacqueline Garner
Scheller College of Business, Georgia Institute of Technology

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 or 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

Description of Graded Components

All homework should be completed individually. Each assignment will require students to complete a model in Excel.
Cases are group assignments. Each 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.

Assignment	Release Date	Due Date	Weight
Homework #1: Financial Statements	**Jan 14**	**January 31**	**8%**
Homework #2: Time value of money (TVM) and Excel Tricks	**January 31**	**February 7**	**8%**
Homework #3: Bond duration, convexity, and immunization	**February 7**	**February 14**	**8%**
Homework #4: Portfolio optimization	**March 28**	**April 11**	**8%**
Homework #5: Option valuation	**April 4**	**April 18**	**8%**
Case #1: Valuation_Capital Budgeting model (FCFF, FCFE, APV)	**February 14**	**February 28**	**15%**
Case #2: Three statement model and DCF	**February 28**	**March 21**	**15%**
Case #3: Comparable analysis and football field graph	**March 21**	**April 4**	**15%**
Case #4: WACC + Sensitivity analysis + VBA Retirement	**April 4**	**April 28**	**15%**

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 there are any questions or concerns, please contact Dr. Garner immediately!**
- All Homework will be turned in on Canvas, as per the due dates

Homework 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, preferably Excel 2016
- 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 to deliver course materials
- Course e-lectures will be hosted in Canvas
- All other course content and martials will also be placed in Canvas

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
- Groups will be formed the first two weeks of class
- A minimum of three students, and a maximum of four students can be in each group
- Students can inform the instructor if there are 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
- Proper documentation for all extenuating circumstances must be provided and documented properly

Communication

- Discussion boards/forums will be done via Piazza
- Virtual Office hours will be conducted weekly via Blue Jeans
- Discussion boards/forums will be done via Piazza
- Virtual Office hours will be conducted weekly via Blue Jeans
- 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.

1. Conner, P. (2006-2014). Ground Rules for Online Discussions, Retrieved 4/21/2014 from: http://teaching.colostate.edu/tips/tip.cfm?tipid=128

Office Hours and Participation

- Office hours will be held every Thursday night from 8 p.m. to 9 p.m. via Blue Jeans
- The office hours are recorded and posted on Canvas
- 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.

Course Schedule

Week/Dates	Topic	Overview	Deliverables
1 **Jan 14 – Jan 17**	**Excel tasks and tools Part I**	Review Excel shortcuts & basic functions	
2 Jan 18 – Jan 24	**Excel tasks and tools Part II**	Review Excel shortcuts & basic functions	
3 Jan 25 – Jan 31	**Balance sheets, income statements, cash flow statements**	Review financial statements, including two types of cash flow statements	**Homework #1, Financial Statements,** **January 31, 2021 11:59 p.m.**
4 Feb 1 – Feb 7	**Time value of money concepts**	Instruction on time value of money concepts and calculation	**Homework #2, Time Value Money and Excel tricks** **February 7, 2021, 11:59 p.m.**
5 Feb 8 – Feb 14	**Bond valuation and stock valuation**	Instruction on bond and stock valuation concepts and calculation	**Homework #3, Bond Duration, Convexity and Immunization** **February 14, 2021, 11:59 p.m.**
6 Feb 15 – Feb 21	**Capital budgeting model and valuation model**	Instruction on two models: Finite capital budgeting and infinite valuation models	
7 Feb 22 – 28	**Sensitivity analysis**	Instruction on changing assumptions in models & evaluating the impact of changes	**Case #1, Valuation_Capital budgeting model (FCFF, FCFE, APV)** **February 28, 2021, 11:59 p.m.**
8 Mar 1 – Mar 7	**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)	
9 Mar 8 – Mar 14	**Comparable analysis and Football field graph**	Instruction on performing comparable analysis and building a "football field" analysis/graph	
10 Mar 15 – 21	**Weighted average cost of capital**	Instruction on computing a firm's weighted average cost of capital (WACC)	**Case #2** **Three Statement model and DCF** **March 21, 2021, 11:59 p.m.**
11 Mar 22 – Mar 28	**Excel tips**	Review of more Excel tips	
12 March 29 – Apr 4	**Portfolio Optimization**	Instruction on computing individual stock mean and standard deviation, putting two stocks in a portfolio, and finding the optimal portfolio	**Case #3, Comparable Analysis and Football Field Graph** **April 4, 2021, 11:59 p.m.**
13 Apr 5 – Apr 11	**Black Scholes Option Pricing Model**	Instruction on Black-Scholes option pricing model	**Homework #4, Portfolio Optimization, April 11, 2021, 11:59 p.m.**
14 Apr 12 – 18	**Visual Basic Application (VBA)**	Instruction on building VBA models and MACROs	**Homework #5, Option valuation,** **April 18, 2021, 11:59 p.m.**
15 Apr 19 – 26	**Visual Basic Application (VBA)**	Instruction on building VBA models which are finance related	
16 **Apr 27 - 28**			**Case #4, WACC + Sensitivity analysis + Retirement VBA Code,** **April 28, 2021 11:59 p.m.**