

FIN 394 17 Advanced Valuation and Financial Modeling

Monday & Wednesday 3:30 – 5:00 Adv Valuation UTC 1.104

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Office Hours: Monday & Wednesday 5:00 – 6:30pm

Description

This is a course about financial modeling. It covers a range of topics in the field of financial economics. Each topic was chosen because it lends itself to financial modeling. Class meetings are 75 minutes. Generally, the first class of each week will be spent presenting models and reviewing the assignment that is due. The second class of each week will be used to introduce new material and modeling techniques that will be needed for the following weeks assignment.

Likely topics covered:

- Loan Amortization Schedules
- Style Analysis
- Optimal Portfolio Selection
- “Waterfall”, tranches, capital tables
- Fixed income derivatives
- Equity derivatives
- Visual Basic / automation of tasks
- Student topics of interest.

The final class will consist of an exam that is MANDATORY for all students. This is a “hands-on” course that requires students to analyze data and participate in class discussions. Course work is based on case studies, academic research, and practitioner research.

Modeling

This course is about financial modeling. The goal is to make financial models that produce useful answers to economic questions. The assignments are designed to be similar to assignments students will encounter in their future jobs. Students may use any software they choose, however only Microsoft Excel is required. All assignments can be completed with Excel. Please see the section on *Software* below.

Pre-Reqs

Students must have a basic knowledge of Excel before starting the course. You should know the difference between absolute and relative references; be able to use common functions such as NPV, IRR, AVERAGE, STDEV, etc., and be able to plot data using Excel's functionality. For those who feel they do not have sufficient Excel experience I strongly recommend completing the Excel tutorials **before** the first class.

As this is a rather advanced course, students must have completed all the pre-requisite courses. In terms of subject matter, students should be comfortable with discounting, portfolio math, financial statement analysis, free cash flow projections, and cost of capital calculations such as WACC.

Readings

This course utilizes case studies, journal articles and handouts. Much of the material is posted to course website on Canvas. Some journal articles are a bit advanced and should be read (skimmed) for their main ideas rather than for details; I will make it clear when this type of article is assigned.

Software

I will work exclusively in Excel – this includes in-class lecture and posted solutions – and will expect you to do so as well.

USB key

Students are required to have one (1) USB “thumb drive” dedicated to this course. The drive must be cleaned of all files and programs not related to this course and guaranteed to be clear of viruses. The goal is to have a quick and easy way to safely transfer files to the instructor’s computer. At the final exam, you will be required to submit a thumb-drive with (only!) files associated with the exam.

Grades

Class grades are based on four areas:

Class Participation	10%
Weekly Assignments	35%
Internal Group Evaluation	5%
Midterm	15%
Final exam	35%

You are responsible for all material covered in class, including assigned readings and exercises. When preparing for the final exam, students should concentrate on the class notes and group projects.

Assignments

Approximately every other week, students will prepare an assignment before class. During the first meeting the class will be divided into groups of approximately four students. During the remaining classes, each group is responsible for bringing a working Excel model capable of answering questions associated with the exercise. The model should be designed to answer any assigned questions, but also *flexible* and capable of answering a host of questions such as: “What if the tax rate changes to 38%?” “What if the loan term is shortened to 10 years?”. A modest amount of group work helps ensure students are effective team members and leaders.

Each group should submit one model/assignment. Each group should also have at least one laptop in class. The laptop should have the model running on it by the start of class.

Each week one or more groups will be chosen at random and their financial model will be uploaded to the instructor’s computer. The group will be responsible for presenting answers to the assignment questions. All members of the group will receive the same grade for the presented work. The presentation requirement helps ensure students effectively communicate ideas. If you are selected to present one assignment it will reduce the probability of being selected in the future, but not reduce the probability to 0.

Exams

As a strict rule there are no “make-up” exams. It is your responsibility to schedule the rest of your activities such that you are able to attend the final exam. I will announce a date, time and place for the final exam and all students should plan to take the exam then and there. At the final exam, students should expect to hand in a thumb drive that contains (only) files associated with the exam.

Cases and Computer Codes

In the past, students have asked for handouts of the “correct” case analysis after a class discussion of the case. I, like other professors at top business schools, will not provide such answers for two reasons. First, the best cases are deliberately written to be ambiguous. While there are no right answers there are good and bad arguments. Handing out my analysis would reduce the ambiguity in the cases and partially defeat the purpose of doing the case in the first place. Second, when case analyses are handed out, these answers will eventually reach future students with probability one. This seriously impedes an open and rewarding case discussion and imposes huge negative externalities both on myself and others teaching these cases in the future.

Attendance

We expect students to attend each and every class meeting. A considerable amount of the material is covered in class and not in textbooks. Therefore, consistent attendance is a crucial element in maximizing learning. That said, we also recognize that myriad issues can arise during a semester (e.g., missed buses, oversleeping) that lead to absences. An excessive number of unexcused absences will be interpreted as a sign of neglect and lack of preparation, and can lead to a student being dropped from the course.

Other Policies

(1) **Academic Dishonesty:** Academic dishonesty, as defined by the Policy Statement on Scholastic Dishonesty for the McCombs School of Business, is not tolerated. We request all students to act as if bound by this policy. In particular, we expect that every individual assignment or examination consists entirely of your own work.

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the Policy Statement on Scholastic Dishonesty for the McCombs School of Business.

Professors agree to adhere to the responsibilities described in the policy statement. By enrolling in this class, students agree to observe all student responsibilities described in that document. If the application of the policy statement to this class and its assignments is unclear in any way, it is students’ responsibility to ask for clarification. One can refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> or the General Information Catalog to access the official university policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

(2) **Students with Disabilities:** The Provost’s Office offers the following statement to help inform students of available resources and to fulfill due diligence for Americans with Disabilities Act (ADA):

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY.

If you require extra time for an in class exam, you should let the professor know at least two weeks before the exam.

Tentative Schedule and Class Topics

All Assignments are Due by the Start of Class on the Day Indicated (I will give you at least one week's notice if I have to move an assignment)

Class 1	Jan-13	Topics: Cover Syllabus, Modeling Intro to Interest Rate Conventions and Loans Reading: None
Class 2	Jan-15	Topics: More on Bonds / Loans Introduce Loan Assignment Reading: Review Notes on Bonds, Discounting, etc.
	Jan-20	<i>MLK Holiday</i>
Class 3	Jan-22	Topics: Loan Examples Reading: Review Notes on Bonds, Discounting, etc.
Class 4	Jan-27	Topics: Loan Amortization Questions Due: Assignment on Loan Amortization
Class 5	Jan-29	Topics: Style Analysis Regressions in Excel (Data Analysis, LINEST, Solver) Readings: "Asset Allocation: Management Style and Performance Measurement" (Sharpe) Available online at: http://www.stanford.edu/~wfsarpe/art/sa/sa.htm Data: Download necessary data
Class 6	Feb-3	Topics: Style Analysis Readings: Review Sharpe paper and slides
Class 7	Feb-5	Topics: Style Analysis Due: Assignment on Style Analysis
Class 8	Feb-10	Topics: Global Portfolios Overview of world markets Simple mean-variance optimization Matrix Math / Covariance matrices Data: Download necessary data
Class 9	Feb-12	Topics: Intro to Black Litterman Model Readings: The Intuition Behind Black-Litterman Model Portfolios (He and Litterman) Available online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=334304
Class 10	Feb-17	Topics: Black Litterman Model Readings: A Step-by-Step Guide to the Black Litterman Model (Idzorek) Available online at: http://corporate.morningstar.com/ib/documents/MethodologyDocuments/IBBAssociates/BlackLitterman.pdf

Class 11	Feb-19	Topics: Black Litterman Model Due: Assignment on Optimal Portfolio Selection
Class 12	Feb-24	Topics: Review
Class 13	Feb-26	Topics: Midterm Each student may bring one (1) letter-sized sheet of paper with handwritten formulas (both sides OK). Please bring a blank and cleaned USB drive.
Mar-3 : Mar-12 Spring Break		
Class 14	Mar-17	Topics: Waterfall Models / Tranches / Capital Tables
Class 15	Mar-19	Topics: Waterfall Models / Tranches / Capital Tables
Class 16	Mar-24	Topics: Waterfall Models / Tranches / Capital Tables LBOS / Changing WACC models
Class 17	Mar-26	Topics: Waterfalls and LBOs Due: Assignment on Waterfall Models and Adjustable WACC
Class 18	Mar-31	Topics: Forward rates
Class 19	Apr-2	Topics: Arbitrage free trees Yield curves and forward curves Readings: Readings: Paper on the Heath, Jarrow, Morton model
Class 20	Apr-7	Topics: Fixed income derivatives Due: Assignment on Fixed Income Derivatives
Class 21	Apr-9	Equity derivatives Readings: Review binomial tree valuation
Class 22	Apr-14	Topics: Equity Derivatives Readings: Readings: Review binomial tree valuation
Class 23	Apr-16	Topics: Equity Derivatives Readings: Review Black-Scholes valuation Monte Carlo Simulation
Class 24	Apr-21	Topics: Equity Derivatives Due: Assignment on Equity Derivatives
Class 25	Apr-23	Review for final exam
Class 26	Apr-28	Exam Part #1
Class 27	Apr-30	Exam Part #2