

# FIN 394 17 Advanced Valuation and Financial Modeling (03980)

Tuesday & Thursday 2:00 – 3:30 RRH 3.310

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Office Hours: Tuesday 5:30pm – 7:00pm and Thursday 8:30 – 9:30am via *Zoom* and by appointment

**\*\*\* THIS CLASS WILL BE OFFERED IN HYBRID OR BLENDED FORMAT WITH ROTATING COHORTS AS NEEDED UNLESS UNIVERSITY RULES CHANGE \*\*\***

## *Description*

This is a course about financial modeling and it covers a range of topics in the field of financial economics. Each topic was chosen because it lends itself to financial modeling but there are modeling lessons that can be applied to other financial and non-financial areas of interest.

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.

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. 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. All 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.

### *Grades*

Class grades are based on four areas:

|                               |            |
|-------------------------------|------------|
| Class Participation           | 10%        |
| Homework Assignments          | 60%        |
| Internal Group Evaluation     | 5%         |
| <b>Individual Assignment*</b> | <b>25%</b> |

As a strict rule there are no “make-up” exams or make-up assignments

**\* Each student will select one assignment from a list of approved assignments and submit that assignment by themselves. Each group member can choose a different assignment but let me stress that these are to be done individually. The grader will carefully compare work across the group.**

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

### *Assignments*

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?”. Guidance will be given as to which assignments are the most amenable to “extra effort” to make the model more flexible.

Each group should submit one model/assignment.

### *Solutions*

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 to keep the answers from circulating. I will go over each assignment in detail *in class* and if requested during office hours.

### *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 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:

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at <http://deanofstudents.utexas.edu/ssd/index.php>. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

You must notify the instructor that you will be taking advantage of an opportunity for extra time at least 14 days prior to the exam so that space in the testing center can be scheduled. All extra-time exams *must* be taken in the McCombs Testing Center; no exceptions.

(3) Religious Holidays:

By University policy you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you miss the due date for an assignment due to your observance of a holy day you will be given an opportunity to complete the missed work within a reasonable time after the absence.

### **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)*

*Assignments marked with an "\*" are eligible to be used for the Individual Assignment. You can only choose 1 so be careful. When you submit an assignment as the your "individual" assignment then you should only list your name as a group member.*

**Lecture / Reading Topic**

**Assignment Due**

|                     |        |   |                        |
|---------------------|--------|---|------------------------|
| 1                   | 21-Jan | Cover Syllabus, Modeling, Excel Introduction  |                        |
| 2                   | 23-Jan | Review Material Needed for Assignment #1, Introduce Loan Assignment   |                        |
| 3                   | 28-Jan | Review Notes on Bonds, Discounting, etc.  |                        |
| 4                   | 30-Jan | Loan Review & Examples  | Comparable Worksheet   |
| 5                   | 4-Feb  | Loan Review / Forward Rates   |                        |
| 6                   | 6-Feb  | Arbitrage Free Forward Rates  |                        |
| 7                   | 11-Feb | Yield curves and forward curves   | Loan Amortization      |
| 8                   | 13-Feb | Fixed income derivatives  |                        |
| 9                   | 18-Feb | Fixed income derivatives  |                        |
| 10                  | 20-Feb | Waterfall Models  |                        |
| 11                  | 25-Feb | Waterfall Models  | Fixed Income*          |
| 12                  | 27-Feb | Waterfall Models  |                        |
| 13                  | 3-Mar  | Waterfall Models  |                        |
| 14                  | 5-Mar  | Visual Basic / Student Topic  | Waterfall Models*      |
| <b>Spring Break</b> |        |   |                        |
| 15                  | 24-Mar | Style Analysis<br>( <a href="http://www.stanford.edu/~wfsharpe/art/sa/sa.htm">http://www.stanford.edu/~wfsharpe/art/sa/sa.htm</a> )                                 |                        |
| 16                  | 26-Mar | Regressions in Excel (Data Analysis, LINEST, Solver)  |                        |
| 17                  | 31-Mar | Style Analysis  |                        |
| 18                  | 2-Apr  | Style Analysis  |                        |
| 19                  | 7-Apr  | Global Portfolios, Mean Variance Optimization, Matrix Math  | Style Analysis*        |
| 20                  | 9-Apr  | Using the Solver w/ Macros  |                        |
| 21                  | 14-Apr | Intro to Black Litterman Model<br><a href="http://corporate.morningstar.com/ib/documents/Methodology">http://corporate.morningstar.com/ib/documents/Methodology</a> | Portfolio Optimization |
| 22                  | 16-Apr | Black Litterman Model   |                        |
| 23                  | 21-Apr | Black Litterman Model   |                        |
| 24                  | 23-Apr | Equity Derivatives  | Black Litterman*       |
| 25                  | 28-Apr | Equity Derivatives  |                        |
| 26                  | 30-Apr | Equity Derivatives  |                        |
| 27                  | 5-May  | Equity Derivatives  | Equity Derivatives*    |
| 28                  | 7-May  | Equity Derivatives  |                        |

### **Special COVID-19 Issues**

#### **Safety and Class Participation**

(Dean's Note: To report a COVID-19 violation, please go to [Health and Safety Rule Requirements and Violations for Students.](#))

We will all need to make some adjustments in order to benefit from in-person classroom interactions in a safe and healthy manner. Our best protections against spreading COVID-19 on campus are masks (defined as cloth

face coverings) and staying home if you are showing symptoms. Therefore, for the benefit of everyone, this means that all students are required to follow two important rules.

- **Every student must wear a cloth face covering properly in class and in all campus buildings at all times.**
- **Every student must engage in documented daily symptom screening.** This means that each class day in which on campus activities occur, students must upload certification from the symptom tracking app and confirm that they completed their symptom screening for that day to Canvas. Students should not upload the results of that screening, just the certificate that they completed it. If the symptom tracking app recommends that the student isolate rather than coming to class, then students must not return to class until cleared by a medical professional.

If a student is not wearing a cloth face covering properly in the classroom (or any UT building), that student must leave the classroom (and building). If the student refuses to wear a cloth face covering, class will be dismissed for the remainder of the period, and the student will be subject to disciplinary action as set forth in the university's Institutional Rules/General Conduct 11-404(a)(3). Students who have a condition that precludes the wearing of a cloth face covering must follow the procedures for obtaining an accommodation working with Services for Students with Disabilities.

Other guidelines include:

1. Students in A/B cohort classes should attend their in-person section only on the day and at the time that they are scheduled to attend.
2. Students should not alter the layout of a classroom under any circumstances from its original configuration that is designed to maintain social distancing guidelines.
3. Students should remain outside the building until the passing time prior to their designated class time. Use designated campus study areas as needed.
4. Consumption of food and drink is not allowed in classrooms or public areas of university buildings except for designated break areas.
5. Enter the building at the designated entrances. Use the hand sanitizer as provided or your own personal hand sanitizer after entering the building.
6. Follow the corridor and stairway directional signage where applicable, maintain proper social distancing and noted paths of travel.
7. All physically-able students should use stairs whenever possible. If an elevator is required there should be no more than the number of occupants noted on the elevator signage in the elevator at a time, maintaining social distancing.
8. All classrooms doors should remain propped open before, during, and after class if it is not disruptive. This decision is at the discretion of the instructor using the classroom.
9. Students should enter the classroom at the designated entrance and fill the room by row from the first row to the last row and from the seat furthest from the entrance to the seat closest.
10. Only specific seats in classrooms will be available due to social distancing requirements.
11. Students should carry their own personal sanitizing wipes to ensure that they can clean surface areas including classroom stations as needed. Wipes should be disposed of after class in the nearest trash receptacle.
12. Students should exit the building immediately after the class completes at the designated exit. Each

student should exit the room by row from the last row to the first row and from the seat nearest the exit to the seat furthest from the exit. Students who wish to speak with the instructor after class should do so at the location that will be designated by the instructor outside the building so that the next class can get set up and social distancing can be maintained.

13. Dispose of any waste after class in the nearest trash receptacle.
14. Exit the building at the nearest designated exit. Use the hand sanitizer as provided or your own personal hand sanitizer after exiting the building.

### **Zoom Professionalism and Etiquette.**

Following are some best practices for making sure we are working together to create an efficient, effective, respectful, and ultimately enjoyable classroom when accessing remotely:

- Keep your video on at all times.
- Be mindful of your surroundings when on camera to minimize distractions.
- Avoid display of inappropriate materials or expressions, either visual, textual, or otherwise. Such displays may be subject to disciplinary action.
- Turn your camera off when leaving the meeting temporarily and use the away feedback icon.
- Include a professional photo of yourself for your Zoom profile picture. This photo will be visible during class sessions, if you keep your video off.
- Mute yourself unless you are speaking. This will reduce background or feedback noise and limit distractions.
- Pose questions or comments by using the “raise” your hand feature or typing in the chat window. Try to keep questions and comments brief, especially in large classes.
- Turn off your video if the video or audio is choppy. After the class or meeting, try these Internet Connection Tips.
- Use the most reliable WIFI you can access. If you are experiencing problems with your internet connection, here are some Internet Connection Tips.

For more information, please see [Zoom Etiquette](#)