Instructor: Professor Mark S. Seasholes
Web: www.seasholes.com
Email: Please try to talk to me before or after class. If email is a must, please use the following address: Mark.Seasholes@mccombs.utexas.edu
Office: 6.228
Office Hours: By appointment

Assistant: Avi Schiff
Please contact via Blackboard
Available for office hours, help, etc.

Homepage: This course uses Blackboard
If you are looking for handouts or files, please check Blackboard

Classroom: UTC 3.102
Tuesdays and Thursdays
9:30am to 11:00am

Overview: 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 1.5 hours long and consist of 80 minutes of instruction time. Some classes are spent introducing, reviewing, and learning about financial modeling topics. Then one class is spent presenting models and reviewing the relevant assignment. This semester, there are seven bigger assignments and two smaller ones. In total, we cover six different topics:

1. Loan amortization schedules
2. Style analysis
3. Optimal portfolio selection
4. Valuation and takeovers
5. Fixed income derivatives
6. Equity derivatives

The final exam 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 cases 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 labeled “Software” below.

This is not a course in computer programming. There is a conscious effort to concentrate on underlying economic issues. Business school graduates can hire computer programmers to help optimize or speed-up numerical calculations.

Pre-Reqs: Students must have a basic knowledge of Microsoft Excel before starting the course. They should know the difference between absolute and relative references. They should be able to use functions such as NPV, IRR, AVERAGE, STDEV, etc. Finally, students should be able to plot data with Excel’s internal functions. For those who feel they do not have sufficient Excel experience, we strongly suggest completing the Excel’s tutorials before the first class meeting.

As this is a rather advanced course, students must have completed all 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 uses case studies, journal articles, and handouts. Much of the material is posted on the course website. Some journal articles are a bit advanced and should be read (skimmed) for their main ideas rather than for details. A course reader should be available before class #03.

Software: The professor and teaching assistant use Microsoft Excel 2010. Students are free to complete assignments using any comparable spreadsheet program. Answers and solutions will only be guaranteed to work with Excel 2010.

Students who would like to complete assignments with more advanced software (C++, Java, Matlab, R, R+, S, S+, SAS, VBA, etc.) are encouraged to do so. However, weekly assignments (described below) are still due in an Excel 2010-compatible format.

USB Key: Students are required to have one (1) USB key that is dedicated to this course. The key must be cleaned of all files and programs. Please make sure to delete all files especially hidden system files and viruses. The goal is to have a quick and easy way to (safely) transport files from your computer to the professor’s computer. At the final exam, students may be required to turn-in a USB key that contains only files associated with the exam.

Grades: Class grades are based on five items: class participation, weekly group assignments, an internal group evaluation, an in-class mid-term (short) exam, and a final exam.

\[
\begin{array}{ll}
\text{i. Class participation} & 5.0 \% \\
\text{ii. Group assignments} & 35.0 \\
\text{iii. Internal group evaluation} & 5.0 \\
\text{iv. Mid-term (short) exam} & 15.0 \\
\text{v. Final exam} & 40.0 \\
\text{Total} & 100.0 \% \\
\end{array}
\]

You are responsible for all material covered in class, including assigned readings and exercises. As mentioned above, we cover six different topics in this class. When preparing for the final exam, students should concentrate on the class notes and group projects.
Assignments: There are nine (9) assignments due during the semester—seven larger ones and two small ones. During the first meeting, the class will be divided into groups of four students (with some flexibility if the class size is not exactly 36, 40, 44, etc.) During the remaining classes, each group is responsible for bringing a working Excel model capable of answering assignment questions. The model should also be flexible and capable of answering a host of additional questions such as: “What if the tax rate changes to 38%?” or “What if the loan term is shortened to 6 years?” A modest amount of group work helps ensure students are effective team members and leaders.

Starting with the loan assignment (due in Class #05), 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. All members of a group receive the same grade for the group work.

When we review assignments, 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. The presentation requirement helps ensure students effectively communicate ideas.

Exams: {Please excuse me, but this policy is not negotiable} As a strict rule, there are no “make-up” exams. It is a student’s responsibility to schedule the rest of his or her activities such that s/he are able to attend the mid-term and final exams. All students should plan to take the exam at the officially scheduled time. At the final exam, students turn-in work to Blackboard.

If a student has a possible conflict, please email the TA or me before Thurs 28-Mar-2013.

Automatic option: The final exam grade can replace the midterm grade if it helps the student.

Cases and computer codes: {The following policy adopted at most top business schools} In the past, students have asked for handouts of the “correct” case analysis after the class has discussed a case. I 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 cases. Second, when case analyses are handed out, these answers will eventually reach future students taking the class with probability one. This seriously impedes an open and rewarding case discussion and imposes huge negative externalities both on myself as well as on other people teaching these cases.

Course reader: Most material for this course will be posted on Blackboard. There is a course reader with four articles/cases/readings that should be available by Monday 21-Jan-2013. These materials are not needed until later in the semester. The reader contains:

   By: Timothy A. Luehrman
   Harvard Business Review Reprint # 97306

2. "Note on CF Valuation Methods: Comparison of WACC, FTE, CCF, and APV Approaches"
   Ivey Case 910N31

3. "Valuation of AirThread Connections"
   HBS Case 4263

4. "A One-Factor Model of Interest Rates and Its Application to Treasure Bond Options"
   By: Fischer Black, Emanuel Derman, and William Toy
McCombs and Undergraduate Rules

**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/](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. **Use of Electronic Devices in Classrooms:** Consistent with the policy of the Department of Finance, the use of computers and other electronic devices in class is generally prohibited. For this course, however, the use of laptop computers may be permitted in class solely for the purposes of note-taking and discussion of the homework problems.

   Please do not access the internet, recreational programs, and/or e-mail and messages during class.

3. **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.
### Class Topics and Assignments
All Assignments are Due by the Start Class on the Day Indicated

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<td><strong>Thurs 17-Jan-2013</strong></td>
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<td>***** NO CLASS TODAY**</td>
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<td><strong>Tues 22-Jan-2013</strong></td>
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<td><strong>Thurs 24-Jan-2013</strong></td>
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<td><strong>Tues 29-Jan-2013</strong></td>
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<td><strong>Thurs 31-Jan-2013</strong></td>
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<td><strong>Other:</strong></td>
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**Week 4**

**Tues 05-Feb-2013**
Topics: Regressions and Style Analysis
Minimizing least squares
Constrained regression analysis

Readings: “Asset Allocation: Management Style and Performance Measurement”
By: William F. Sharpe
Available online at:

**Thurs 07-Feb-2013**
Topics: Review assignment on style analysis

*Due: Style analysis questions*
Download assignment from class website
Prepare one (1) model per group

**Week 5**

**Tues 12-Feb-2013**
Topics: Global Portfolios
Overview of world markets
Simple mean-variance optimization

Readings: TBA

**Thurs 14-Feb-2013**
Topics: Matrix Math
Covariance matrices

*Other: Download necessary data*

**Week 6**

**Tues 19-Feb-2013**
Topics: More Matrix Math
Regressions using matrices

*Due: Review matrix math questions*
Download assignment from class website

**Thurs 21-Feb-2013**
Topics: Intro to Black-Litterman Model

Readings: “The Intuition Behind Black-Litterman Model Portfolios”
By Guangliang He and Robert Litterman
Goldman Sachs
Available online at
Week 7

Tues  26-Feb-2013  Topics: Review assignment on optimal portfolio selection  (Class #13)
Readings: A Step-by-Step Guide to the Black Litterman Model
By: Thomas M. Idzorek
Due: Optimal portfolio selection questions
Download assignment from class website
Prepare one (1) model per group

Thurs  28-Feb-2013  Topics: Mid-term exam (in class)  (Class #14)
Items: Each student may bring one (1) letter-sized sheet of paper with handwritten formulas (both sides OK).
There will be no internet connections nor will you have access to other materials.
Please bring a blank and cleaned USB drive as per directions on p.2

Week 8

Tues  05-Mar-2013  Topics: TBA  (Class #15)
Readings: TBA

Thurs  07-Mar-2013  Topics: TBA  (Class #16)
Readings: TBA

Week 9

Tues  19-Mar-2013  Topics: Introduction to valuation  (Class #17)
Readings: TBA

Thurs  21-Mar-2013  Topics: WACC vs. APV  (Class #18)
Readings: Note on Cash Flow Valuation Methods
Ivey Case 910N31
Using APV: A Better Tool for Valuation Operations
HBR Reprint # 97306
### Week 10

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<tr>
<th>Date</th>
<th>Topics</th>
<th>Readings</th>
<th>Due</th>
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<tbody>
<tr>
<td>Tues 26-Mar-2013</td>
<td>Review assignment on Valuation</td>
<td>Valuation of AirThread Connections</td>
<td>Discussion of AirThread case</td>
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<td>HBS Case # 4263</td>
<td>Read and be prepared to discuss the case</td>
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<tr>
<td>Thurs 28-Mar-2013</td>
<td>Continue case discussion</td>
<td>None</td>
<td>Valuation of Air Thread Connections</td>
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<td>Download and answer questions</td>
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<td>Prepare one (1) model per group</td>
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### Week 11

| Date       | Topics                                      | Readings | |
|------------|---------------------------------------------|----------|
| Thurs 02-Apr-2013 | Forward rates                | TBA      |
| Thurs 04-Apr-2013 | Arbitrage free trees       | TBA      |
|               | Yield curves and forward curves          |          |

### Week 12

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<th>Date</th>
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<th>Readings</th>
<th>Due</th>
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<tr>
<td>Tues 09-Apr-2013</td>
<td>Review assignment on Fixed income derivatives</td>
<td>Paper on the Heath, Jarrow, Morton model This paper will be posted online</td>
<td>Fixed income derivative model Download and answer fixed income derivative questions Prepare one (1) model per group</td>
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<tr>
<td>Thurs 11-Apr-2013</td>
<td>Equity derivatives</td>
<td>TBA</td>
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Week 13

Tues 16-Apr-2013  Topics: Equity derivatives (Class #25)
Readings: Review binomial tree valuation

Thurs 18-Apr-2013  Topics: Equity derivatives (Class #26)
Readings: Review Black-Scholes valuation
Handout on Microsoft Excel and Monte Carlo simulations
Download the class MC template

Week 14

Tues 23-Apr-2013  Topics: Review assignment on Equity derivatives (Class #27)
Due: Download and answer equity derivatives questions
Prepare one (1) model per group

Thurs 25-Apr-2013  Topics: Review for final exam (Class #28)
Readings: TBA
Take home portion of the final exam will be distributed at the end of class

Week 15

Tues 30-Apr-2013  Topics: In Class Part A (Class #29)
Due: Take home portion is due
You may have one page of handwritten notes.

Tues 30-Apr-2013  Topics: In Class Part B (Class #30)
Due: Take home portion is due
You may have one page of handwritten notes.