MBAD 516 (30111)
Financial Modeling
Summer 2019

Instructor Mark K. Pyles, Ph.D.
Class 9:30 – 1:00 TR Tate 207
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Office Number 3-7991
Office Hours 1:00 PM - 3:00 PM TR and by appointment

Description This course examines financial modeling and covers a wide range of topics within all fields of Finance. The course will examine modeling in four primary areas: (1) corporate finance models, (2) fixed income securities models, (3) portfolio models, and (4) option pricing models.

Prerequisites Financial Management (MBAD 503)

Objectives Successful completion of this course will ensure the student has a working knowledge of financial modeling in:
  • basic financial calculations
  • cost of capital calculation
  • financial statement analysis
  • duration calculation
  • term structure of interest rates
  • efficient portfolio creation
  • estimating beta and the security market line
  • value at risk
  • the Black-Scholes model
  • option Greeks

Course Overview This course is an Excel-based course and, as such, requires a basic working knowledge of the software. This will be assumed of students beginning the course; however, basic functions will be reviewed in due course of instruction. In addition, while a brief review of various topics, such as bonds or options, will be part of the course, in-depth instruction on the basics of the material will not be presented. Rather, students will be assumed to have a working knowledge of various financial concepts prior to enrolling in this course.

Class meetings will consist of approximately half instruction and half hands-on learning. The first half will involve the instructor demonstrating the specific objectives to be learned that day, and the remainder of the time will be devoted to students actively learning the material just presented. Students will often work in small groups, so the willingness and ability to communicate with
classmates will be crucial. Often, the course will take the form of a question being asked and students working together in their small groups to solve.

**MBA Objectives**

Consistent with the goals of the School of Business and the MBA program, this course includes instruction in:

*Ethical Awareness:* The course requires students understand the ethical responsibilities in all areas of finance, particularly financial market activities.

*Global Awareness:* The course requires an understanding of international implications relative to all concepts of finance taught throughout the course. Students will be instructed in material that is of global importance and will be required to understand the complexities faced in the global finance world. Many models will require the student to effectively incorporate parameters to accommodate numerous geographical regions.

*Innovative Learning:* This course requires students to step outside the traditional box of academic learning by focusing on applied methods of solving financial problems rather than the theoretical foundations of problem solving. As such, students will be free to explore the most practical methods, in their view, of addressing specific financial situations. Thus, while the focus will always be upon achieving the correct conclusion, this course also includes ample emphasis on the path chosen to practically obtain this conclusion and allows students the flexibility to think creatively.

*Professional Leadership:* The course is, by nature, hands-on and exploratory. As such, students will bear the bulk of responsibility for learning the topics presented in class. In addition, the course lends itself nicely to group work, where each group member must contribute in a significant fashion and be capable of effectively leading their peers in discussion and practice. Successful completion of the course will entail the student having grown in several areas that cultivate leadership, including active listening, flexibility in thought processes, and effective communication.

**Textbook**

*Financial Modeling* by Benninga, 3/e, MIT Press.

Suggested supplemental texts:


*Principles of Finance with Excel,* 3/e by Benninga, Oxford Press.

*Fundamentals of Investments,* 7/e by Jordan, Miller, and Dolvin, McGraw-Hill.
Course Policy

Unless you have a physician’s excuse in writing, make-up tests will not be allowed and a zero will be given for the missed work.

The Academic Integrity and Honesty policies of the CofC will be fully and strictly enforced, as well as all other applicable University rules and procedures.

Students with documented disabilities who may need academic accommodations should discuss these with me as soon as possible.

Course Grading

Student grades will be derived from performance in four areas, (1) homework assignments, (2) projects, (3) tests, and (4) course participation. Each are described below:

Homework Assignments
Students will be assigned periodically, which will cover material learned since the previous assignment. Students will complete the homework using Excel and upload the completed spreadsheet to OAKS by the designated due date. There will be approximately six homework assignments, each of which will be worth 25 points.

Projects
Students will also be required to complete 1-2 projects throughout the course. These projects will require the student to obtain and organize individual data sets, incorporate material learned in class, and complete and present their models to the professor. Projects will be graded on accuracy, conciseness, creativity, and depth of complexity. Each project will be worth 100 points.

Tests
The course will have two in-class tests, one at midterm and another at completion of the course. Each test will be worth 100 points.

Course Participation
There will be 50 points available for course participation. Students are expected to attend class, participate in their group discussions, and complete in-class assignments. This is subjective and based upon the instructor’s knowledge and observations of your participation.

Grading

<table>
<thead>
<tr>
<th>Section</th>
<th>Points</th>
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<tbody>
<tr>
<td>Homework</td>
<td>150</td>
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<tr>
<td>Projects</td>
<td>200</td>
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<tr>
<td>Tests</td>
<td>200</td>
</tr>
<tr>
<td>Class Participation</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>600 Points</td>
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Letter grades are assigned as follows:
<table>
<thead>
<tr>
<th>Grade</th>
<th>Meaning</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Superior</td>
<td>4.00</td>
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<tr>
<td>B+</td>
<td>Very Good</td>
<td>3.50</td>
</tr>
<tr>
<td>B</td>
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<tr>
<td>C+</td>
<td>Fair</td>
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<td>C</td>
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<tr>
<td>F</td>
<td>Failure</td>
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<tr>
<td>I</td>
<td>Incomplete</td>
<td>0</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawal</td>
<td>0</td>
</tr>
<tr>
<td>XF</td>
<td>Failure Due to Academic Dishonesty</td>
<td>0</td>
</tr>
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Tentative Class Schedule:

**Class Periods 1-4: Corporate Finance Models**
- Basic Financial Calculations (Chapter 1)
- Calculating the Cost of Capital (Chapter 2)
- Financial Modeling (Chapter 3)
- Building a Financial Model (Chapter 4)

**Class Period 5: Bond Models**
- Bond Pricing and Duration (Chapter 25)
- The Term Structure of Interest Rates (Chapter 27)

**Class Period 6: Mid-Term Exam**

**Class Periods 7-9: Portfolio Models**
- Portfolio Models –Introduction (Chapter 8)
- Calculating Efficient Portfolios (Chapter 9)
- Calculating the Variance-Covariance Matrix (Chapter 10)
- Value at Risk (Chapter 15)

**Class Periods 10-11: Option-Pricing Models**
- An Introduction to Options (Chapter 16)
- The Binomial Option-Pricing Model (Chapter 17)
- The LogNormal Distribution (Chapter 18)
- The Black-Scholes Model (Chapter 19)
- Option Greeks (Chapter 20)

**Class Period 12: Final Exam**

The Dates we will meet:

1. Tuesday, May 14th
2. Thursday, May 16th
3. Monday, May 20th*
4. Tuesday, May 21st
5. Tuesday, May 28th
6. Thursday, May 30th
7. Tuesday, June 4th
8. Thursday, June 6th
9. Tuesday, June 11th
10. Thursday, June 13th
11. Tuesday, June 18th
12. Thursday, June 20th (FINAL)

* Designates a change of schedule where FINC 516 and 517 will switch days.