Fox School of Business
TEMPLE UNIVERSITY®

Financial Modeling for Investments and Corporate Finance

FIN 5115-701 Fall 2017

Instructor: Professor Bora Ozkan

Office hours: WebEx Tuesdays 7:00 pm – 8:00 pm or by appointment

Office Location: Alter Hall 438

Class Sessions: Alter 132 (6:00PM – 8:30PM): 9/14, 9/28, 10/12, 11/2, 11/16, 12/7
WebEx (6:05 – 8:35PM): 9/21, 10/5, 10/19, 11/9, 11/30, 12/14

Contact Information: bora.ozkan@temple.edu or office: 215-204-8409

Preferred Method of Contact: Email

WebEx Link: foxsbm.webex.com

Course Description:

Financial modeling is building an abstract representation of the relationships among the variables of financial problems. This course presents the paradigms of finance through the use of state-of-art technology. Emphasis on spreadsheet programming develops an understanding of financial models and the ability to work with those models. The objective of this course is to learn equity valuation methods of a firm from a practical framework. Students should expect the workload for this course to be demanding therefore it is only recommended for those students who are interested in learning valuation techniques in depth. This course will tackle common financial problems -ranging from the simple NPV analysis to the relatively more complex Enterprise Value, and help the students gain the necessary competencies in building appropriate financial models for each case. The course covers a variety of modeling techniques, such as sensitivity and scenario analysis, optimization methods, and regression analysis. Although, students learn to use alternative financial models to analyze various decision-making opportunities, the aim is to get the students to the skill level where they can model and solve most financial problems they will face in the business world.

Required Reading & Materials:

Required: Simon Benninga, Financial Modeling Fourth Edition

Bloomberg Market Concepts - Instructions to register are available on Canvas

Harvard Business Publishing – Spreadsheet Modeling Online Course: Excel 2013

Recommended reading: Joshua Rosenbaum and Joshua Pearl, Investment Banking

Periodical reading of Bloomberg, WSJ or Economist.

Technology Requirements:

- Headphones
- Webcam
- Recommended Internet Speed: 8mbps download & 5mbps upload. You can test your connection at https://www.speedtest.net
- Please note: Hard-wired connections are more consistent than wifi for WebEx sessions

Program Competencies:

P1: Business Reasoning - Apply various research and analytic tools, including financial tools and models, to enhance business judgment in changing environments

P2: Opportunity Realization & Implementation – Create business opportunities given the dynamic business environment. Optimize and manage the systems, processes and people required to execute against business objectives and strategies.

P3: Influential Communication – Understand and utilize the complex variety of communication practices managers need to facilitate effective decision-making and coordinated action in organizational settings.

P4: Leadership – Develop and manage high performing teams and units to produce desirable outcomes in a variety of business settings.

P5: Ethical Management – Develop the ability to discern the needs and interests of the various stakeholders of a business organization and integrate long-term ethical considerations into every business operation.

Course Objectives:

Upon completion of this course, students will be able to…

1. Demonstrate competency in use of Excel to build models for capital budgeting and investment analysis. (P1)
2. Display proficiency in use of advanced Excel functions for sensitivity and what-if analysis. (P2)
3. Develop a financial pro forma model with fully integrated financial statements (P1, P3)
4. Design and prepare complex financial models, understand the critical issues/assumptions, prepare sensitivity analysis (P2)
5. Evaluate alternative financial models to analyze various decision-making opportunities they will face in the business world. (P4, P5)

Canvas:
Canvas is a Learning Management System (LMS) and is one of Blackboard's biggest competitors. The University is currently transitioning from Blackboard to Canvas, with the Online MBA being the first to fully emerge. That being said, if you have any Canvas related questions or issues please contact Laura Gremmel (Laura.Gremmel@temple.edu).

Method of Instruction:

The course is designed to provide you online access to academic as well as industry-wide used financial modeling methods. The only way to master your modeling as well as Microsoft Excel skills is by practicing, practicing and practicing more. The course is comprised of five components: recorded lectures designed and recorded specifically for your class, Bloomberg Market Concepts, FactSet Knowledge Base financial modeling tutorial, reading text book, and finally real-time virtual classes delivered through WebEx for group exercises. The WebEx classes are designed for you to practice everything you read and watched before the session. It is critical that you stay on pace with the material, watch the recorded lectures on-time, come prepared for the virtual classes, do your homework until you understand the concepts and operations.

Grade Breakdown:

Item	Course Objective	Weight
Homework Assignments	LO1, LO2, LO3	10%
In-class Participation and case discussion	LO1, LO2, LO3, LO4	20%
Bloomberg Market Concepts	LO5	5%
HBS Spreadsheet Modeling	LO4, LO5	10%
FactSet end of chapter quizzes	LO3, LO4, LO5	25%
Final Group Project	LO3, LO4, LO5	30%

Grading Scale:

100 – 93 A	92 – 90 A–	
89 – 87 B+	86 – 83 B	82 – 80 B–
79 – 77 C+	76 – 73 C	72 – 70 C–
69 – 67 D+	66 – 63 D	62 – 60 D–
59 – 0 F		

All final course grades will be rounded to the nearest whole number (i.e. 69.5 would be rounded to a 70, but a 69.49 would be a 69).

Assignment Descriptions:

Homework Assignments: I will assign after-class assignments which will allow you to practice what we have done in class and/or come prepared to next class.

FactSet Quizzes: You will also be assigned 19 end-of-chapter quizzes from FactSet. Expect an email from FactSet giving you instructions as to how to create an online user account. Search for **"Knowledge Base"** and register for it. Instructions to Knowledge Base will also be posted to Blackboard. Knowledge Base is a 19 chapter, ~ 40 hour content which is a very thorough and detailed Financial Modeling teaching tool. Each chapter contains somewhere between 1 to 2 hour long reading materials followed by a quiz. I will assign the chapters and expect you to take the quiz before the deadline. Minimum passing grade is 70% and you will be allowed multiple attempts however only 1st attempt counts as your grade. I will drop lowest 2 grades if you successfully finish all 19 chapters. If you complete all 19 modules and pass the exams with a grade of 70% or higher, you can notate "Factset Knowledge Base Certified" on your resume.

Bloomberg Certificate of Completion – BMC: BMC is an approximately 6 hour video on 4 sections followed by a quiz after each section. You can pause and continue watching the videos at any time. **You need to achieve 70% or above as your total score to get credit full credit. If you get between 50 and 70, you will get half credit.**

Final group Project: Group project is important and necessary for your presentation as well as financial skills. You will be working with groups of 3 and I will allow you to pick your own group members. There is no such thing as free lunch therefore I expect full commitment from every member of the team. The group project involves valuing a publicly listed company using several techniques we cover in class as well as implementing what you learned at FactSet Knowledge Base.

The format of the report should be as follows:

> Executive summary:(1) a brief introduction of the firm; (2) what method(s) you use to value the firm; (3) what implied stock price you get, and whether the stock is currently undervalued or overvalued.
>
> Industry analysis: you can start with an overview of the industry and do some industrial analysis (such as "Five Force Analysis").
>
> Company analysis: more detailed introduction of the firm, such as its history, competitors, financial situation, strategic developments, future expectations, etc.
>
> Financial forecasts and valuation (most important part): this contains relevant exhibits and calculations that support your analysis. Use the valuation method we discuss in class, such as discounted cash flow (DCF) method, and Multiples method.
>
> Conclusions: Draw a conclusions on your previous analysis: don't forget to answer whether the company is overvalued / undervalued!

Important date: Your report + Excel file are to be uploaded on Canvas by 5:00 PM Tuesday, Dec. 19. Late submission will not be accepted. Strive for perfection: try your best to produce professional looking report and tables!

WebEx Virtual Classes:

We will meet every other class using WebEx. WebEx installs on your computer the first time you use it, and then does not need to install again; please check this to make sure it installs successfully before the course begins. Make sure you enter your first name and last name correctly when signing on to the session; this will help with grading your in-class participation. If your name isn't entered correctly then you may not receive credit for participation. **While there are ways to join a webex session through mobile devices this should only be used in an emergency. You cannot fully participate in a session unless you join using a computer with a full operating system.** Please log into the virtual classes before the scheduled class time, as we will begin promptly. You can access the virtual classes in Blackboard.

Attendance:

It is critical that you attend each class on Thursdays, both online and in person. If for some reason you have to miss class due to a death in the family, the birth of child, or some other emergency, you will forgo the classwork points for that evening. If a student misses three classes for whatever reason, they will receive an F for the class.

Academic Honesty:

Learning is both an individual and a cooperative undertaking. Asking for and giving help freely in all *appropriate* settings helps you to learn. **You should represent only your own work as your own.** *Personal integrity* is the basis for intellectual and academic integrity. Academic integrity is the basis for academic freedom and the University's position of influence and trust in our society. University and school rules and standards define and prohibit "academic misconduct" by all members of the academic community including students. You are asked and expected to be familiar with these standards and to abide by them. A link to Temple's Policy on Academic Dishonesty can be found at the following link: http://bulletin.temple.edu/undergraduate/about-temple-university/student-responsibilities/#academichonesty

Disability Statement:

Any student who has need of accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Temple University's Disability Resources and Services (DRS) office at (215)204-1280 at 100 Ritter Annex to coordinate accommodations for students with documented disabilities. Please contact your instructor and the DRS within the first week of class, at the beginning of the semester. DRS will establish your needs, and make necessary arrangements with faculty. If you choose not to contact DRS, and have difficulty, you will be unable to receive accommodations retroactively, once exams are completed and/or course grades are submitted. Such decisions are made jointly between the DRS office and the instructor, at their discretion based on circumstances. Accommodation letters must be received by the instructor during the first two weeks of the semester.

Course Schedule

**Subject to change at the discretion of the Professors*

Session	Topics	Assignment	Assignment Due
Week #1 **9/11 – 9/17**	**Excel Exercises – HBP Spreadsheet Modeling** • Practice working with data, shortcuts and increasing spreadsheet readability • Applying and manipulating Excel formulas • Generate data table, goal seek and outline model limitations	**Register:** Bloomberg Market Concepts (BMC), FactSet Knowledge Base, and Harvard Business Publishing (HBP) online course; Spreadsheet modeling: Excel 2013 (Introductory as well as Advanced sections)	**Due:** Thursday, 9/14 by 5:59pm
		Attend: Class	**On:** Thursday, 9/14 at 6:00pm – 8:30pm
		Complete: • HBP Spreadsheet modeling - Introductory Excel • FactSet Knowledge Base Chapters 1-2	**Due:** Sunday, 9/17 by 11:59pm
Week #2 **9/18 – 9/24** **(Online)**	**Time Value of Money** • Formulate basic financial calculations like present value, IRR, amortization • Illustrate a pension problem	**Read:** Textbook • Excel functions: 33.1, 33.2, 33.3, 33.4, 33.5, 33.6 • Time value of money: 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.9 **Watch**: • Basic Financial calculations Part 1 • Basic Financial calculations Part 2	**Due:** Thursday, 9/21 by 5:59pm
		Attend: WebEx Session	**On:** Thursday, 9/21 by 6:05pm – 8:35pm
		Complete: FactSet Knowledge Base Chapters 3-4	**Due:** Sunday, 9/24 by 11:59pm
Week #3 **9/25 – 10/1**	**Corporate Valuation Overview**	**Read:** Textbook • Corporate valuation: 2.1,2.2,2.3, 2.4, 2.5, 2.6, 2.7, 2.8	**Due:** Thursday, 9/28 by 5:59pm

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<tr><td rowspan="5"></td><td rowspan="5">Outline Enterprise Value in four different ways
Estimate free cash flows and calculate Discounted Cash Flow (DCF)</td><td>Watch:
Corporate Valuation Overview</td><td rowspan="2"></td></tr>
<tr><td>Complete:
HBP Spreadsheet modeling - Advanced Excel</td></tr>
<tr><td>Attend: Class</td><td>On: Thursday, 9/28 at 6:00pm – 8:30pm</td></tr>
<tr><td>Submit: Assignment 1</td><td rowspan="2">Due: Sunday, 10/1 by 11:59pm</td></tr>
<tr><td>Complete: FactSet Knowledge Base Chapters 5-6</td></tr>
<tr><td rowspan="6">Week #4
10/2 – 10/8
(Online)</td><td rowspan="6">Bloomberg Market Concepts (BMC)
(BMC) is a self-paced e-learning course that provides a visual introduction to the financial markets. BMC consists of 4 modules – Economic Indicators, Currencies, Fixed Income and Equities
Calculating Cost of Equity
Computing the value of firm’s equity, E using dividend discount model
Computing the value of firm’s equity, E using capital asset pricing mode;</td><td>Read: Textbook
Calculating the Weighted Average Cost of Capital (WACC): 3.6, 3.7, 3.8, 3.9, 3.10, 3.11</td><td rowspan="3">Due: Thursday, 10/5 by 5:59pm</td></tr>
<tr><td>Watch:
Calculating Cost of Equity using Dividend Discount Model
Calculating Cost of Equity using Capital Asset Pricing Model</td></tr>
<tr><td>Complete: BMC Introduction and Economic Indicators</td></tr>
<tr><td>Attend: WebEx Session</td><td>On: Thursday, 10/5 at 6:05pm – 8:35pm</td></tr>
<tr><td>Submit: Assignment 2</td><td rowspan="2">Due: Sunday, 10/8 by 11:59pm</td></tr>
<tr><td>Complete: FactSet Knowledge Base Chapters 7-8</td></tr>
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Session	Topics	Assignment	Assignment Due
Week #5 **10/9 – 10/15** **(Online)**	**Valuing Bonds** • Valuation • Duration • Term structure	**Read:** Textbook • Duration: 20.1, 20.2, 20.3, 20.4	**Due:** Thursday 10/12 by 5:59pm
		Complete: BMC Currencies	
		Attend: WebEx	**On:** Thursday, 10/12 at 6:05pm – 8:35PM
		Submit: Assignment 3	**Due:** Sunday, 10/15 by 11:59PM
		Complete: FactSet Knowledge Base Chapters 9-10	
Week #6 **10/16 – 10/22**	**Calculating the Weighted Average Cost of Capital, WACC** • Computing the value of firm's equity, E • Computing the value of firm's debt, D • Computing the firm's tax rate, T • Computing the firm's cost of debt, r_d • Computing WACC	**Read:** Textbook • Calculating the Weighted Average Cost of Capital (WACC): 3.1, 3.2, 3.3, 3.4, 3.5, 3.12, 3.13, 3.15	**Due:** Thursday, 10/19 by 5:59pm
		Watch: • Calculating WACC	
		Complete: BMC Fixed Income	
		Attend: WebEx	**On:** Thursday, 10/19 by 6:05pm – 8:35pm
		Submit: Assignment 4	**Due:** Sunday, 10/22 by 11:59PM
		Complete: FactSet Knowledge Base Chapters 11-12	
Week #7 **10/23 – 10/29**	**BREAK** - No Classes		

Session	Topics	Assignment	Assignment Due
Week #8 **10/30 – 11/5**	**Valuation based on the Consolidated Statement of Cash Flows** • Calculating free cash flows (FCF)	**Read:** Textbook • Valuation Based on the Consolidated Statement of Cash Flows: 4.1, 4.2, 4.3, 4.4, 4.5	**Due:** Thursday, 11/2 by 5:59pm
		• **Complete:** BMC Fixed Income	
		Attend: Class	**On:** Thursday, 11/2 at 6:00pm – 8:30pm
		Submit: Assignment 4	**Due:** Sunday, 11/5 by 7:59pm
		Complete: FactSet Knowledge Base Chapters 13-14-15	
Week #9 **11/6 – 11/12** **(Online)**	**Pro forma financial statement modeling** • Using FCF to value the firm	**Read**: Textbook • Pro Forma Financial Statement Modeling: 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12	**Due:** Thursday, 11/9 by 5:59pm
		Watch: • Pro Forma Financial Statement Modeling • Valuing the Firm using Pro Forma Financial Statement	
		Complete: BMC Equities	
		Attend: WebEx Session	**On:** Thursday, 11/9 at 6:05pm – 8:35pm
		Submit: Assignment 5	**Due:** Sunday, 11/12 by 7:59pm
		Complete: FactSet Knowledge Base Chapters 16-17	
Week #10 **11/13 – 11/19**	**Building a Pro Forma Model: The Case of Caterpillar**	**Read:** Textbook • Building a Pro Forma Model The Case of Caterpillar: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6	**Due:** Thursday, 11/16 by 5:59pm

	• Caterpillar's Financial Statements 2012-2016 • Analyzing financial statements • Model for Caterpillar • Using the model to value Caterpillar	**Attend:** Class	**On:** Thursday, 11/16 at 6:05pm – 8:35pm
		Submit: Assignment 6	**Due:** Sunday, 11/19 by 11:59pm
		Complete: FactSet Knowledge Base Chapters 18-19	
Week #11 **11/20 – 11/26**	**FALL BREAK** – No Classes		
Week #12 **11/27 – 12/3** **(Online)**	**Harvard Business School Case Discussion** • TBA	**Read:** Harvard Case TBA	**Due:** Thursday, 11/30 by 5:59pm
		Attend: WebEx Session	**On:** Thursday, 11/30 at 6:05pm – 8:35pm
Week #13 **12/4 – 12/10**	**Portfolio Models** • Finding efficient portfolios • Optimization	**Read:** Textbook • Portfolio models: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6	**Due:** Thursday, 12/7 by 5:59pm
		Attend: Class	**On:** Thursday, 12/7 at 6:00pm – 8:30pm
		Submit: Assignment 7	**Due:** Sunday, 12/10 by 11:59pm
Week #14 **12/11 – 12/17** **(Online)**	**Portfolio Models (Continued)** • Using @Risk for optimization	**Attend:** WebEx Session	**On:** Thursday, 12/14 at 6:05pm – 8:35pm
		Complete: Final group project: Value a Company	**Due:** Sunday, 12/17 by 11:59pm