International Business School

FIN 288 Corporate Financial Engineering

COURSE SYLLABUS

Fall 2019

Instructor: Hamza Abdurezak, PhD., FRM
Senior Lecturer, Brandeis International Business School

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Regular Office Hours: Wednesday 2pm-3:30pm
Other times, by appointment

Class Meeting Day & Times: Tuesdays 12:30PM - 3:20PM

Class Meets in Room: International Hall
Teaching Assistant: Wenfeng Ruan
Email: royruan@brandeis.edu

TA Office Hours: TBA
Course Description

Course description and learning outcomes

The course focuses on how financial engineering is used by firms to reduce their costs of financing, alter their fundamental risk exposures, make strategic acquisitions financing using hybrid securities, alter corporate risk exposure using derivatives and in a handful of cases, to provide them with new ways to compete. A premise behind the Corporate Financial Engineering course is that financial engineering can be used by corporations to increase shareholder value. Therefore, the course seeks to help corporate managers understand how to use financial engineering to advance the goals and strategies of their firms. To accomplish this goal, the course (1) documents how financial engineering has been used by firms to accomplish various goals; (2) provides students with frameworks to determine when and how firms can apply financial engineering to achieve corporate goals; and (3) provides students with basic technical skills in financial engineering. While the primary educational goal of the course is to study the applications of financial engineering through case studies and final project, an equally important objective is to develop technical skills into derivatives through the lectures and real case applications.

Corporate Financial Engineering course is intended for students who plan to serve in corporate roles (Treasurer, CFO and CEO) or careers in banks that design and use these products for risk management or for students who plan to pursue careers working inside of financial institutions such as investment banking or investment management.

Prerequisites
Prerequisite: Fin 201a or equivalent is required. Previous or concurrent enrollment in corporate finance (Fin 202a) or Advanced Corporate Finance (204a). Fin 270a or equivalent is suggested but not required. You will need your UNet username and password to log on to the system at http://latte.brandeis.edu. You should check this site, and your e-mail regularly for the course materials and announcements

Learning Goals:
Develop skill sets for
- Managing financial risks and position firms to exploit strategic opportunities;
- Lowering firms' financing costs (by tailoring securities for particular investors' needs, or by exploiting tax, regulatory, or other arbitragess);
- Signaling information through the use of structured or hybrid financial instruments
- Structuring incentives for management, employees and shareholders.
- Substituting for or complement product market decisions.
- Asset Liability Management
- Interest rate risk management
- Exchange rate risk management
Course Materials

Textbooks:
Corporate Finance: 11th edition, Corporate Finance, Ross, Westerfield, Jaffe and Jordan *(We use only selected chapters from these books)*

Options, Futures and Other Derivatives, 9th Edition, 2015, by Pearson Education, Inc. *(We use only selected chapters from these books)*

The Course Packet: The course packet contains Harvard Business School cases & notes and some additional readings. Students will purchase the course packet online from Harvard Business School Publishing. You will receive access code during the first class. I may assign additional readings on some of the topics during the semester. Regular reading of the Wall Street Journal, the Economist and Financial Times is strongly recommended.

Course Grade Determination: Grades will be based on the following:

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<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Final project/paper</td>
<td>35%</td>
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<tr>
<td>Final Project Presentation</td>
<td>10%</td>
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<tr>
<td>Case Analysis/Write-ups</td>
<td>25%</td>
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<tr>
<td>Problem Sets</td>
<td>10%</td>
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<tr>
<td>Participation</td>
<td>20%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Final Project (Total of 45% of the final grade with 35% for the paper and 10% for the presentation)

The final project/paper will carry a relatively high weight in the grading for the course. It is intended to give students an opportunity to explore real-world examples of financial engineering. The final project/paper should examine an application of financial engineering in a managerial setting and the topic must be approved in advance. Some examples of potential projects might include a project investigating a firm’s use of derivative-based hedging instruments or risk management program; a project investigating financial institutions’ issuance of hybrid securities; a project investigating of topics or examples of securities similar to case studies. The final report of the project should be something similar to a ‘case study,’ of the sort used during class discussions. I will provide more guidance on the final project topics as the course progresses early in the semester. During the second week of October, students will submit midterm progress report of their project. The final project report should include the feedback you will receive on your midterm progress report. Each student will present their final project to the whole class during the last class of the semester.

Case Analysis/Write-ups (25%)
Students may form a group of two students and discuss the cases before each class and submit their analysis of the case write-up at the beginning of the class. The format of the case write-ups is a brief executive summary of the main issues in the case, followed by a write-up addressing the directed questions for each case with supporting calculations/spreadsheet. (I will provide directed questions for each case in due course)
Problem Sets (10%)
There will be problem sets designed to re-enforce some of the technical skills in the course.

Class Participation (20%)
The teaching methodology of this course is largely case based. In order for this method to work, you must prepare and analyze the case and readings thoroughly before coming to the class. This allows us to conduct analytical, rather than descriptive, discussions. I will expect three P’s from you in every class:
1. Presence: attendance is required.
2. Preparation: The case analysis and write ups should be done and submitted on time.
3. Participation: Actively participate in class discussions and analysis.
Use name cards to facilitate discussion (and grading) and please sit in the same seat each class.

Workload expectation
Please note as FIN 288a is a four-credit course, you are expected by Brandeis University to spend a minimum of 9 hours of study time per week in preparation for class (readings, problem sets, discussion sections, preparation for exams, case studies, final project etc.). The workload in this course is designed in line with this University wide expectations.

Academic Honesty
You are expected to be honest in all of your academic work. Please consult Brandeis University Rights and Responsibilities for all policies and procedures related to academic integrity. Students may be required to submit work to TurnItIn.com software to verify originality. Allegations of alleged academic dishonesty will be forwarded to the Director of Academic Integrity. Sanctions for academic dishonesty can include failing grades and/or suspension from the university. Citation and research assistance can be found at LTS - Library guides.

ACCOMMODATION FOR DISABILITIES:
If you are a student with a documented disability on record at Brandeis University and wish to have a reasonable accommodation made for you in this class, please see me immediately. For more information go to: http://www.brandeis.edu/disability

Office Hours
You may see me during my regular office hours or by appointment (which you should request by email).
# Course Outline

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<tr>
<th>Class</th>
<th>Topics</th>
<th>Reading Assignment/Pre-Class Readings</th>
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<td>Case write-up (Submitted at the beginning of each class, when due)</td>
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| 1     | Introduction to Corporate Financial Engineering Options and Corporate Finance • Lecture | Pre-class Reading:  
By Peter Tufano: Published by Harvard Business Review, 1996  
(in course packet from HBS Publishing)  
Corporate Finance: 11th edition, Corporate Finance, Ross, Westerfield, Jaffe and Jordan  
Chapters 22 and 23 |
| 2     | Privatizing a company—Case Analysis | The Privatization of Rhone-Poulenc (HBS case 295049) |
| 3     | Issuing a hybrid security Case Analysis | Times Mirror Company PEPS Proposal (HBS case 296089) |
| 4     | Issuing a Hybrid Security Case Analysis | Cox Communications, Inc., 1999 (HBS case 201003) |
| 5     | Warrants, Convertibles and Derivatives • Lecture | Corporate Finance: 11th edition, Corporate Finance, Ross, Westerfield, Jaffe and Jordan  
Chapter 24 and 25 |
| 6     | Issuing Structured Financing Products | “Molycorp: Financing the Production of Rare Earth Minerals (A) 9-214-054” |
| 7     | Issuing “Happy Meal” Securities and Reverse Convertible Notes Convertible Bonds | “Molycorp: Issuing “Happy Meal” Securities (B)” 9-215-014  
“Molycorp: Morgan Brothers Reverse Convertible Notes”(C) 9-215-002 Convertible Bonds of Countrywide Financial Corporation |
| 8     | Financing an acquisition Case Analysis | AXA/MONY (HBS case 208062) |
| 9     | Risk management: Case Analysis | Liability Management at GM |
| 10    | Interest rate risk management Case Analysis | Banc One Corporation: Asset and Liability Management  
(HBS case 294-079)  
HBS Note on Interest Rate Derivatives |
| 11    | Two Cases Analysis for this Class First Half of the class: • Student Educational Loan Fund Second Half • Equity Derivatives: Porsche, Volkswagen and CSX: Cars, Trains and Derivatives | Student Educational Loan Fund, Inc. (Abridged)  
Porsche, Volkswagen, CSX: Cars, Trains and derivatives |
| 12 | Currency Risk Management:  
• Translation and Transaction  
• Exposures and Competitive Exposures | Foreign Exchanging Strategies at General Motors:  
Transactional and Translational Exposures  
(HBS Case 9-205-095)  
Competitive Exposures (HBS Case 9-205-096) |
| 13 | Final paper/Project Presentations | Final Project paper/project is due one before the final class  
Final paper/project Presentations during the last class |

I reserve the right to add and remove readings from the course and to alter or modify the lecture schedule as required. I will give you advance notice of any such changes or modifications.