Department of Economics and Finance

ECON*2560.02
Theory of Finance
Winter 2014

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COURSE OUTLINE

In this theory of finance course we will study a set of financial decisions involving risk from two distinct points of view: (i) of an individual investor, and (ii) of a corporation. The first point of view is central to asset pricing, whereas the second point of view is central to corporate finance. Here is a sample of the questions we will address in this course:

From an investor's point of view:

- *How do we value stocks and bonds?*
- *How do we measure risk and return and how is risk related to return?*
- *How can we build optimal portfolios and diversify risk?*
- *Can we consistently time the market to make excess returns?*

From a corporation's point of view:

- *What projects should the firm invest in?* (the capital budgeting decision)
- *How should the firm raise funds to finance its investments?* (the financing decision)

- *What fraction of its profits should the firm pay out to its shareholders?* (the payout policy decision)

The objective of this course is to provide possible answers to these questions using the tools of modern finance theory. We emphasize our use of the term "possible answers." If you expect a "cookbook-style" collection of ready-to-use solutions, you will be disappointed. More often than not, the questions we will encounter do not have a unique correct answer. Depending on the angle from which it is studied, the very same problem may allow for different solutions. It is the aim of this course to provide students with the skills and tools necessary to critically evaluate these different angles, ultimately enabling them to reach their own conclusions based on all information available.

A WORD ABOUT MATHEMATICS

Finance is a quantitative subject. We will not be able to study finance without using some mathematics. However, we will do our best to keep the level of mathematical complexity to a minimum, and explain new concepts from first principles. We will need to use concepts such as:

- Basic calculus (simple computations, fractions, percentages, functions in one variable)
- Basic statistics (mean, variance, covariance, correlation and regression analysis)

Finance is not a "spectator sport" and students are expected to develop the set of quantitative skills that will allow them to solve finance problems. The best way to absorb the ideas explained in the lectures is by "learning-by-doing". Therefore, at the beginning of every topic, we will distribute a problem set. Students are expected to work out the problems on their own before we discuss them in class so they can participate in the class discussion. Students are also encouraged to solve more problems on their own from the end of the assigned chapters.

REQUIRED TEXTBOOK

"Fundamentals of Corporate Finance" by Brealey, Myers, Marcus, Maynes and Mitra.
5th Canadian Edition. McGraw-Hill Ryerson 2012

All other materials, including lecture notes, will be posted on courselink or distributed in class.

ASSESSMENT

Assessment for this course is based on the following components:

- Midterm Test – **Thursday, February 27, 2014**: 25%
- Spreadsheet assignment – **Tuesday, March 4, 2014:** 5%
- Group assignment based on a case study – **Thursday, March 27, 2014**: 20%
- Final examination (comprehensive) – **Tuesday, April 15, 2:30-4:30 pm** 50%

Note: if your grade in the final exam is better than your grade in the midterm test, then the weight on your final exam will be 75% and the weight on the midterm test 0%. For this rule to apply, you must take the midterm test.

The midterm test will cover all material taught up to that date. More details will be provided later.

You must submit an Excel spreadsheet showing your solution to a numerical assignment, which will be distributed later.

The group assignment will be based on a case study, which will be distributed after the first midterm test. You will be asked to form a small number of groups and submit a solution to the case study.

The final exam will cover all the material taught in this course. Details on the format of the exam will be provided later.

LECTURE TIMETABLE

INTRODUCTION

- Course Outline

TOPIC 1

- Financial Calculus
  - Compounding and future value
  - Discounting and present value
  - Annuities and perpetuities
- Valuing Bonds
  - Computing bond prices
  - The effect of the yield, coupon rate and time to maturity
  - Credit risk
- Valuing Stocks
  - Computing stock prices
  - The dividend discount model
  - The cost of equity
  - The present value of growth opportunities
- Problem Set 1

TOPIC 2

- Portfolio Choice and Diversification
  - Measuring risk vs. return
  - Expected return, variance, standard deviation, covariance, correlation
  - Systematic and idiosyncratic risk
- The Capital Asset Pricing Model (CAPM)
- Market Efficiency
  - The efficient market hypothesis and the random walk model
  - Types of market efficiency: weak, strong and semi-strong
  - Empirical evidence and examples on market efficiency
- Problem Set 2

TOPIC 3

- Capital Budgeting
  - Net present value (NPV)
  - Internal rate of return (IRR)
  - Other project evaluation methods (e.g., payback method)

- NPV in action: a detailed example

- Problem Set 3

TOPIC 4

- Financing and Capital Structure
  - Irrelevance proposition in perfect capital markets
  - The role of corporate taxes
  - The role of personal taxes
  - The role of bankruptcy and costs of financial distress
  - The role of asymmetric information
  - Empirical evidence

- Problem Set 4

TOPIC 5

- Payout Policy
  - Dividends vs. share repurchases
  - Irrelevance proposition in perfect capital markets
  - The role of personal taxes
  - The role of asymmetric information
  - Empirical evidence

- Problem Set 5

TOPIC 6

- Initial Public Offerings
  - Initial public offerings
  - Seasoned equity offerings
  - Empirical evidence

- Mergers and Acquisitions
  - Vertical/horizontal; Friendly/hostile
  - Synergies and valuation of mergers
  - Empirical evidence

- Problem Set 6

FINAL REVIEW

- Final exam review and additional problems

- Open floor for any questions

YOUR RESPONSIBILITIES

It is your responsibility as a student to be aware of and to abide by the University's policies regarding academic misconduct, email communication, maintaining copies of out-of-class assignments, what to do when you cannot meet a course requirement and the drop date for this semester. To better understand these policies, visit:

https://dev.web.uoguelph.ca/economics_d7/important-notice-about-students-responsibilities-and-university-policies

You will be asked to complete an evaluation of this course at some time during the last two weeks of the semester. **This will be done in class.** The Department of Economics and Finance policy regarding the conduct and use of these evaluations will be found at:

https://www.uoguelph.ca/economics/course-evaluation

As your teachers, we will do our best to deliver a course of the highest standard, and to create an enjoyable and productive learning experience. We are professionals, and we expect nothing less from you. Below are a few points to lay down the ground rules:

- **Be on time** for class. If you arrive late, take a seat in the back of the lecture theatre and try to minimize the distraction to your classmates.

- **Do not leave half-way through a lecture**. If you know in advance that you will have to leave before the end of the session, let your teacher know at the start of the session, take a seat in the back, and leave quietly when you have to.

- **Stay quiet** during classes.

- **Switch off your cell phone** before you come to class.

We hope you will enjoy the course and have a productive learning experience!

LEARNING OUTCOMES

The Department of Economics and Finance *Learning Outcomes* for this course are:

Skills:

1. ***Written Communication***: The case study will provide an opportunity for students to provide a written evaluation of a particular real-world case that relates to a major decision taken by a company.

2. ***Numerical Problem Solving***: Students will learn how to value stocks and bonds, how to measure risk and return, how to design optimal portfolios, and how to solve other numerical problems in asset pricing and corporate finance.

3. ***Analytical Problem Solving***: Much of the course is about interpreting the theory of asset pricing and corporate finance and making recommendations for individual investors and companies.

4. ***Problem solving in a Real World Context***: All finance topics taught in this course relate to how investors and companies act in the real world.

5. ***Group Work***: The case study may be done in groups of students.

6. ***Computer Skills***: The spreadsheet assignment will involve doing simple calculations on asset allocation using an Excel spreadsheet.

Knowledge:

1. ***Mathematical methodology*:** We will be using simple mathematical techniques to value stocks and bonds, measure risk and return and build portfolios.

2. ***Statistical and Econometric Methodology*:** We will be using simple distributions and will be computing descriptive statistics to help us understand the probability of certain future outcomes occurring. Distributions are central to assessing the risk-return tradeoff.

3. ***Understanding of Specific Markets*:** This course is devoted to understanding financial markets and in particular the markets for stocks and bonds, although other markets may be considered as well.

4. ***Historical and Global context*:** We will investigate the historical performance of global financial markets.

5. ***Financial Asset Pricing, Corporate Finance, and Risk Analysis*:** This is just a summary of what this course is about.