

University of Illinois at Urbana-Champaign
Department of Finance

Finance Bootcamp
Syllabus: Summer 2017

This fourteen session course is available for Masters in Financial Engineering students. It is highly recommended for students with a limited background in Finance or who wish to refresh their skills. As the class is designed for Financial Engineering students, the class will be mathematical in nature and introduce fundamental ideas in Finance:

- Financial Statement Analysis;
- Interest rates, US Treasuries, and LIBOR;
- Equities, valuation and analysis;
- Corporate Finance - Modigliani-Miller, Capital Budgeting and corporate valuation.

The material in this Bootcamp was initially part of the Fall Class: FIN500, and is designed to complement the first weeks of that class. The Bootcamp Professor previously taught and designed the materials for FIN500.

1. Objectives

To provide students with an introduction of four fundamental areas of financial theory:

1. Financial Statements Analysis: An introduction to financial statements and financial ratios – the accounting required to understand a firm’s finances. They should also understand how to perform basic analysis and valuation.
2. Fixed Income: Fixed income products, Present and future values, Interest rates, the time value of money. US Treasuries, constructing discount curves, zero curves and forward curves. LIBOR, floating rate notes, and a brief introduction to interest rate derivatives.
3. Equity analysis: Types of equity products, simple models of equity valuation, limitations of the simple models, growth stocks.
4. Corporate finance: how to model corporate decisions, corporate objectives, capital structure, and capital budgeting and project valuation.

2. Learning Outcomes

After successful completion of the course students will be able to:

- Understand the financial statement produced by a firm and how to interpret them.
- Have a basic knowledge of the major financial assets.
- Be able to calculate present and future values.

- Be able to value government bonds, and understand the principles of interbank rates.
- Be able to construct a zero rate curve.
- Understand forward rates, calculate forward rates.
- Understand basic equity products and perform simple equity analysis and valuation.
- Understand the fundamentals of corporate finance, such as capital structure and budgeting decisions and project/firm valuation.

3. Reading

The recommended textbook for the course is also the recommended text for FIN500: “Introduction to Finance” in the Fall. This is typically referred to as ‘Luenberger’ is

Luenberger, David G., Investment Science, Oxford University Press, 1997.

Other recommended reading is listed below. These are core MBA textbooks in finance, so should be easily available from the usual sources.

Brigham & Houston (BH), Fundamentals of Financial Management (12th Edition), 2009. The 10th or 11th editions are perfectly acceptable substitutes, and used copies can be obtained inexpensively online, although the examples will be different.

Z. Bodie, A. Kane, A. Marcus (BKM), Investments, McGraw-Hill/Irwin (9th edition), 2011. The 7th or 8th editions are perfectly acceptable substitutes, and used copies can be obtained inexpensively online.

4. Administration

There are 10 lectures: **9am – 10:30am and 10:30 – 12:00pm.** In lectures, we will work through theory and do calculations together as a group.

There are also 4 examples classes on **Tuesday – Friday from 1pm – 2:30pm also in BIF 3003.** In the examples classes, we will discuss practical issues from the homework and I will work through specific problems that you should have attempted before class.

The course lecturer is Dr. Martin Widdicks, office 330E Wohlers Hall.

Office hours will take place after each class, Monday 12 - 1 and Tuesday - Friday, 2:30 – 3:30. You can email me at widdicks@illinois.edu but be sure to put ‘Bootcamp’ in the heading.

There will be **FIVE assessed questions**, one from each day, due in at 9am the following day. Each will be worth 20% of the final grade. *Note: the ‘grade’ is just an informal assessment of your performance in the class and will not appear on your transcript or be made public.*

5. Syllabus

<u>Class</u>	<u>Session</u>	<u>Subject</u>	<u>Description</u>	<u>Reading</u>
1	Mon 9 – 10:30	Financial Statements I	Income statement and balance sheet; cash flows and accruals, free cash flow valuation.	BH Chapter 3
2	Mon 10:30 – 12	Financial statements II	Detailed examination of a set of financial statements and short Case Study	BH Chapter 3
3	Tue 9 – 10:30	Financial ratios	Commonly used financial ratios, financial statement analysis and a short case study	BH Chapter 4
4	Tue 10:30 – 12	Interest rates and compounding	Interest rate mechanics: compounding, present value, future value, annuity formulas. Fundamentals	Luenberger, Chapters 1 & 2
<i>E1</i>	<i>Tue 1 – 2:30</i>	<i>Financial Statements Examples</i>	<i>Worked examples from Homework 1 and introduction to Homework 2.</i>	<i>BH Chapter 3</i>
5	Wed 9 – 10:30	Fixed income Securities	Introduction to types of fixed income securities, Analysis of the US treasuries market. Market conventions: bills, notes, bonds, and STRIPS. Constructing a yield curve, determining discount rates, arbitrage opportunities. Basics of bond calculations.	Luenberger, Sections 3.1-3.4; BKM, Section 2.2, Chapter 14; BMA, Chapter 25
6	Wed 10:30 – 12	LIBOR and Floating rate notes	Introduction to the interbank market (LIBOR), commercial paper); compounding and quotation conventions in this market. Floating rate note description and valuation.	BKM, Chapters 2-3
<i>E2</i>	<i>Wed 1 – 2:30</i>	<i>Interest rates</i>	<i>Worked examples from Homeworks 2 and possibly 3 if time.</i>	<i>Luenberger, Chapters 1 & 2</i>
7	Thu 9 – 10:20	Forward rates, simple interest rate derivatives.	Forward rates and forward rate calculations. Example of a simple interest rate derivatives: forward rate agreements and caps.	
8	Thu 10:30 – 12	Equity valuation models	Fundamentals of Equity valuation (dividend discount models, including the Gordon growth model) and some introductory equity analysis.	Luenberger, Section 5.6; BKM, Sections 18.1-18.5; BMA, Chapters 5, 10.
<i>E3</i>	<i>Thu 1 – 2:30</i>	<i>Treasuries/LIBOR /Forward rates</i>	<i>Worked examples from Homeworks 3 and help on Homework 4 if time.</i>	<i>Luenberger, 3.1-3.4; BKM, Ch 2-3, 14; BMA, Chapter 25.</i>
9	Fri 9 – 10:20	Modigliani-Miller Theory of Capital Structure	Modigliani-Miller theory and the weighted-average cost of capital	BMA, Sections 18.1-18.2
10	Fri 10:30 - 12	Capital Budgeting and valuation	Project valuation, discount factors link with financial statements analysis.	Luenberger, 5.1-5.4; BMA Chapters 6-7
<i>E4</i>	<i>Fri 1 – 2:30</i>	<i>Corporate Finance</i>	<i>Worked examples from Homeworks 4 and 5.</i>	<i>As for session 7 - 10</i>

