

**BRANDEIS INTERNATIONAL BUSINESS SCHOOL**

**FIN 201A: FINANCIAL THEORY  
SYLLABUS FALL 2011**

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Fall 2011	Professor Jens Hilscher
S1: Tu, Fr 9:10am-10:30am	Lemberg 252, (781) 736-2261
S2: Tu, Fr 10:40am-12noon	Office hours: Tu 2:00pm-4:00pm
Lemberg Academic Center, Lee Hall	<a href="mailto:hilscher@brandeis.edu">hilscher@brandeis.edu</a>

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**TEACHING STAFF:**

Prof. Jens Hilscher

Office hours: Tuesdays 2:00pm to 4:00pm and by appointment

**INSTRUCTORS:**

Yubing Cui (head TA)	<a href="mailto:yubingcui@gmail.com">yubingcui@gmail.com</a>
Zhuyi Fan	<a href="mailto:zyfan@brandeis.edu">zyfan@brandeis.edu</a>
Carly Greenberg	<a href="mailto:carlymgr@brandeis.edu">carlymgr@brandeis.edu</a>
Min Kim	<a href="mailto:mksquare@brandeis.edu">mksquare@brandeis.edu</a>
Ingvar Sigurjonsson	<a href="mailto:ingvar@brandeis.edu">ingvar@brandeis.edu</a>

**TA OFFICE HOURS:**

There will be office hours twice a week Mondays and Wednesdays from 2:00pm to 3:00pm, in the computer cluster area (lowest level). The TA holding the office hour will be rotating.

**MEETING TIMES AND LOCATION:**

Section 1 (S1): Tuesday, Thursday 9:30am to 10:50am

Section 2 (S2): Tuesday, Thursday 11:00am to 12:20pm

Lemberg Academic Center 180, Lee Hall

You should attend *only* the class in which you are officially enrolled.

**PREREQUISITES OR CO-REQUISITES:**

ECON 210f or statistics (may be taken concurrently). The course may not be taken for credit by students who have previously taken ECON 171a. Students who have taken ECON 171a should enroll in FIN 205a.

**COURSE MATERIAL ONLINE:**

Course material will be posted online on the LATTE/Moodle platform. You will need your UNet username and password to log on to the system at <http://latte.brandeis.edu>. You should check this site for the latest versions of course materials (once updates are posted I will let you know in class).

**COURSE DESCRIPTION:**

The course covers topics related to financial economics, including investors' attitudes toward risk, capital allocation, portfolio selection, asset pricing models (Capital Asset

Pricing Model and Arbitrage Pricing Theory), the efficient market hypothesis, fixed income markets, equity valuation, and options and futures markets.

The course is lecture based. Lectures will consist of covering the theory, examples, and class discussion. Homework assignments will focus on applying the material from lectures. Students should have a basic understanding of microeconomics, statistics, and algebra (see also prerequisites below).

### **LEARNING GOALS:**

- Understand the fundamental principles of investment in financial markets
  - how investors make investment decisions
  - what determines returns and asset valuations
- Gain a quantitative understanding of
  - capital allocation decisions
  - equity valuation, bond markets, and option pricing
- Increase understanding of current events in financial markets

### **READINGS AND PREPARING FOR CLASS:**

I will post copies of the lecture slides on LATTE/Moodle before each class. I recommend that you take a look at the slides before you come to class.

The textbook for the course is:

#### **Bodie, Kane, and Marcus (BKM) “Investments” 9<sup>th</sup> edition**

The 7<sup>th</sup> and 8<sup>th</sup> editions of this book cover very similar material but there are several parts of the book that have changed substantially. I therefore recommend that you use the 9<sup>th</sup> edition and will assume that you are reading the 9<sup>th</sup> edition. Please also be aware that any reference to book chapters or problems will be for the 9<sup>th</sup> edition.

Each class has readings in the book associated with it. For the exact chapter listing you can refer to the detailed course outline (below). I encourage you to read these sections, ideally before class. There will often be parts of the chapter that we do not cover in depth or skip entirely. If you are interested in learning material above and beyond the class, those sections of the book are a good place to start.

### **TA SESSIONS AND PRACTICE QUESTIONS:**

The TAs will be holding review sessions roughly once every two weeks, typically (but not necessarily always) on Fridays from 2:00pm to 3:20pm. Exact times and locations (Lee Hall) for the different sessions are listed in the course outline (below). There are a total of 8 sessions plus one session covering Excel basics at the beginning of the semester.

TA sessions are optional. The sessions are meant to give you a chance to apply and review the material from class. I do not expect everyone to attend these sessions. A couple of days before each TA session I will post TA Session Practice Questions on LATTE/Moodle. The TA in charge of the session will work through the solutions during the session. The Practice Questions are designed to apply and review the material from

class. They are entirely optional. If you plan to attend the TA session I strongly encourage you to attempt the practice questions beforehand. Solutions will be posted after the session.

Apart from going over the practice questions, these sessions will also give you a chance to ask questions about the material in class that you would like to discuss or review further.

### **REQUIREMENTS AND EVALUATION:**

You are required to attend all classes, participate in class discussions, familiarize yourself with (and follow!) the policies on academic integrity (see below). You should also keep up with general financial news. This will form part of the basis for class discussion.

Your grade will be based on class participation, attendance, in class review problems (short quizzes), problem sets, the midterm exam, and the final exam. If you think you may have to miss the midterm, you need to contact me *before* the exam and have a *very* good reason. There will be no make-up midterm. If you miss it, more weight will be put on the other components of your grade. All exams will cover material covered up to the point at which the exam is held.

#### 1. Class participation (10%):

Class is interactive and I expect everyone to participate. I also expect you to attend class. I will record attendance each class. This will be done either through a sign-up sheet or by you completing the review problem (see next item).

#### 2. Review Problems – RP (10%):

We will have 11 short in class closed book review problems (RP). The RPs will cover the material from the last 2 or 3 classes. Studying for them will give you a chance to review the most recent material and to check whether or not you are comfortable with it. The RPs will take about 10 minutes to complete and will always be at the beginning of class, so don't be late! I will remind you about an upcoming RP in the previous class. A tentative schedule with dates and lectures covered is included in the course outline (below). I will post solutions on LATTE/Moodle. There will be no make-up RPs.

#### 3. Problem Sets – PS (20%):

There will be 6 problem sets (PS). The problem sets will be posted on LATTE/Moodle after class (either Tuesday or Friday) and will be due at the beginning of class the following week. A tentative outline of PS topics and due dates is in the course outline (below). If you would like, you may work in small groups of 2-4 people to discuss the problem sets. However, you *must* write up answers individually. This is particularly important since the problem sets will be absolutely *essential* practice for the midterm and final exams. If you do not fully understand your answers you will not be prepared. When you hand in your PS, list the members of your group. Please be aware that I will not be able to accept *any* late submissions. Solutions will be posted on LATTE/Moodle after you have handed in the problem set.

#### 4. Midterm Exam (20%):

The midterm examination will be held on Tuesday October 18<sup>th</sup> in class.

#### 5. Final Exam (40%):

The final examination will be held on Friday December 16 from 9:15am to 12:15pm. The final exam will cover material from the entire course with a slight emphasis on the part of the course after the midterm. There will be a review for the final during the last class on Thursday December 8 as well as two 2-hour sessions of additional office hours (Tuesday 12/13 and Thursday 12/15, both in the Chancellor's Suite).

#### Grade distribution:

The grade distribution for the class will be close to:

A	30%
A-	15%
B+	15%
B	30%
B- and below	10%

#### **POLICY ON CALCULATORS:**

You can use any calculator you would like when solving problems on the problem sets, including scientific, programmable, graphing, financial, or software (such as Excel). However, on the exams (i.e. midterm, and final) you will *not* be allowed to use financial calculators that are capable of directly calculating bond price, annuity value, yield to maturity, or duration. In order to prepare for this, I strongly advise everyone to make sure that you have a calculator available to you which you can use to solve problems at exam time.

#### **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>

#### **ACADEMIC INTEGRITY:**

You are expected to be familiar with and to follow the University's policies on academic integrity. Instances of alleged dishonesty will be forwarded to the Office of Campus Life for possible referral to the Student Judicial System. Potential sanctions include failure in the course and suspension from the University.

See: "Brandeis University Rights and Responsibilities" chapter 3;

(<http://www.brandeis.edu/studentlife/sdc/rr/>).

Here is the first part: "3.0 Every member of the University community is expected to maintain the highest standards of academic integrity. A student shall not submit work that is falsified or is not the result of the student's own effort. Infringement of academic honesty by a student subjects that student to serious penalties that may include failure on the assignment, failure in the course, suspension from the University or other sanctions (see Section 21). A student who is in doubt regarding standards of academic honesty in a course or assignment should consult the faculty member responsible for that course or assignment before submitting the work. A student's lack of understanding is not a valid

defense to a charge of academic dishonesty.” If you are ever in doubt about any of these rules please contact me immediately.

**OVERVIEW OF TOPICS COVERED:**

- Introduction, risk and return (4 lectures)
- Capital allocation (4 lectures)
- CAPM and APT (3 lectures)
- Market efficiency (2 lectures)
- Bonds (3 lectures)
- Equity valuation (2 lectures)
- Options (3 lectures)
- Credit risk, futures, international markets (3 lectures)

**DETAILED COURSE OUTLINE:**

The course outline (below) lists the topics covered and the readings for each class. I have also listed the dates for the Review Problems (**RP**), Problem Set (**PS**) due dates, **Midterm Examination** date, and tentative **Final Examination** date (TBA), as well as the dates for the 8 optional TA sessions. Please note that dates may change. I will update the syllabus accordingly and post the new version on LATTE/Moodle.

<b><u>Date:</u></b>		<b><u>Reading (BKM):</u></b>	<b><u>RP/PS:</u></b>
9/1 (Th)	<b><u>Lecture 1: Overview of course, Introduction</u></b>	1.2-1.4, 10.2 p. 324	
9/6 (Tu)	<b><u>Lecture 2: Review of statistical concepts</u></b>	5.4-5.6	
9/8 (Th)	<b><u>Lecture 3: Financial securities</u></b>	2, 3.2, 3.5-3.7	<b>RP1</b> (covers lectures 1, 2)
9/9 (F)	TA session 1: Present and future value, statistics review (2:00pm – 3:20pm, Lee Hall)		
9/13 (Tu)	<b><u>Lecture 4: Risk and return</u></b>	5.1, 5.3, 5.5, 5.7, 5.8	
9/15 (Th)	<b><u>Lecture 5: Risk preferences and capital allocation</u></b>	6.1, 6.2, 6.4	<b>RP2</b> (covers lectures 3, 4)
9/16 (F)	Optional TA session: Excel basics (2:00pm – 3:20pm, Lee Hall)		
9/20 (Tu)	<b><u>Lecture 6: Capital allocation (2 assets: CAL, POS)</u></b>	6.4-6.6, 7.2	<b>PS1:</b> Risk and return due
9/22 (Th)	<b><u>Lecture 7: Portfolio selection</u></b> (risk free and 2 risky assets)	7.2, 7.3	<b>RP3</b> (covers lectures 5, 6)
9/23 (F)	TA session 2: Risk and return, risk preferences (2:00pm – 3:20pm, Lee Hall)		
9/27 (Tu)	<b><u>Lecture 8: Markowitz portfolio selection</u></b>	7.1, 7.4, 8.1	

10/4 (Tu)	<u>Lecture 9: Index models</u>	8.2, 8.3, 8.5	<b>PS2:</b> Capital allocation due <b>RP4</b> (covers lectures 7, 8)
10/6 (Th)	<u>Lecture 10: Capital Asset Pricing Model</u>	9.1-9.2	
10/7 (F)	TA session 3: Capital allocation, portfolio selection (2:00pm – 3:20pm, Lemberg 55)		
10/14 (F)	TA session 4: Index models, CAPM, APT Review for Midterm (2:00pm – 3:20pm, Lee Hall)		<b>PS3:</b> Asset pricing due
10/14 (F)	Additional Office Hours (3:30pm – 4:30pm, Chancellor’s Suite)		
10/17 (M)	<u>Lecture 11: Arbitrage Pricing Theory</u> Review for Midterm	10.1-10.3, 9.3, 13.3	<b>RP5</b> (covers lectures 9, 10)
10/17 (M)	Additional Office Hours (2:00pm – 3:00pm, Chancellor’s Suite)		
10/18 (Tu)	<b><u>Midterm Examination</u></b>		
10/25 (Tu)	<u>Lecture 12: Market efficiency, empirical evidence</u>	11.1-11.4, 3.8	
10/27 (Th)	<u>Lecture 13: Market efficiency, interpreting the evidence</u>	11.2, 11.5, 12, 13.1	
10/28 (F)	TA session 5: Market efficiency, Discussion of Midterm solutions (2:00pm – 3:20pm, Lee Hall)		
11/1 (Tu)	<u>Lecture 14: Bond pricing, introduction to fixed income</u>	14.1-14.4	<b>RP6</b> (covers lecture 12, 13)
11/3 (Th)	<u>Lecture 15: Bond pricing, term structure of interest rates</u>	15.1-15.4	
11/4 (F)	<u>Lecture 16: Bond pricing, duration, swaps</u> (2:00 – 3:20 and 3:30pm – 4:50pm, International Hall)	16.1, 23.4	<b>RP7</b> (covers lectures 14, 15)
11/8 (Tu)	<u>Lecture 17: Equity valuation</u>	18.1-18.3	
11/10 (Th)	<u>Lecture 18: Equity valuation, dividend discount model</u>	18.3, 18.4	<b>PS4:</b> Bonds due <b>RP8</b> (covers lectures 16, 17)
11/11 (F)	TA session 6: Bonds, Equities (2:00pm – 3:20pm, Lee Hall)		
11/15 (Tu)	<u>Lecture 19: Options</u>	20.1-20.3	
11/17 (Th)	<u>Lecture 20: Option strategies, option pricing</u>	20.4, 21.1, 21.3	<b>RP9</b> (covers lectures 18, 19)

11/22 (Tu)	<u>Lecture 21: Option pricing</u>	21.3, 21.4	<b>PS5:</b> Equity valuation due
11/29 (Tu)	<u>Lecture 22: Credit risk</u>	14.5, 23.4	
12/1 (Th)	<u>Lecture 23: Futures</u>	22	<b>RP10</b> (covers lectures 20, 21, 22)
12/2 (F)	TA session 7: Options (2:00pm – 3:20pm, Lee Hall)		
12/6 (Tu)	<u>Lecture 24: Investing in international markets</u>	25.1-25.3	<b>PS6:</b> Options due
12/8 (Th)	<b>Review for Final</b>		<b>RP11</b> (covers lectures 23, 24)
12/9 (F)	TA session 8: Credit Risk, Futures, International Markets, Review for Final (2:00pm – 3:20pm, Lee Hall)		
12/13 (Tu)	Office Hours (2pm to 4pm, Chancellor's Suite)		
12/15 (Th)	Additional Office Hours (2pm to 4pm, Chancellor's Suite)		
12/16 (F)	<b><u>Final Examination</u></b> 9:15am to 12:15pm (location TBA)		