

## INTRODUCTION TO FINANCE

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### PRESENTATION - PRÉSENTATION

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This is a core class that offers the basic concepts and tools necessary to understand how financial markets work, and how financial instruments are used for sound investment decisions. Topics covered include the following: models of risk and return; time value of money and net present value; market efficiency, anomalies, and behavioral finance; asset allocation and modern portfolio theory; bonds and interest rates, forwards and futures, options; the structure and performance of the money management industry: pension funds, mutual funds, hedge funds. Effort will be made to relate the course material to current financial issues and problems relevant to practitioners.

### INTENDED LEARNING OBJECTIVES - OBJECTIFS PÉDAGOGIQUES

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When you complete this course, you should be able to understand:

- The basic tradeoff between risk and (expected) return, and how it applies to various types of financial instruments: stocks, bonds, futures, options.
- The time value of money (TVM) and net present value (NPV), and their connection to the discount rate (cost of capital), and the risk premium of a financial asset.
- The two main models of asset pricing: the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT). How do we compute the cost of capital/risk premium?
- Market efficiency and arbitrage. Are markets efficient, or are they dominated by irrational investors? Are prices predictable?
- Diversification: how to select a portfolio of securities that maximizes return while minimizing risk. How does diversification work in practice?
- Financial instruments: bonds, stocks, currencies, and derivatives (futures, options, swaps). How are these related to interest rates, risk hedging, speculation, or volatility?
- The money management industry and its key players: pension funds, mutual funds, and hedge funds. Do they have any superior investment skills?

### KEY TOPICS - THÈMES PRINCIPAUX

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Part 1: Finance Fundamentals

- Risk and Return
- Time Value of Money and Net Present Value
- Asset Pricing Models: CAPM and APT
- Market Efficiency and Arbitrage
- Modern Portfolio Theory and Diversification

Part 2: Applications to Financial Markets

- Practical Asset Allocation
- Bonds and Interest Rates
- Derivatives: Futures and Options
- Money Management Industry: Structure and Performance

SCHEDULE – DÉROULÉ

COURSE CONTENT – CONTENU

This an approximate schedule of topics that will be covered. You should read the corresponding material prior to the lecture. "BKM" refers to the textbook of Bodie, Kane and Marcus. Required readings are denoted by "R", optional readings by "O". Reading should be only done in enough detail so that you get a general idea.			
<u>Class</u>	<u>Topic</u>	<u>Readings</u>	<u>Assignments</u>
Mon, Sep 16 8:00-11:00	1: The Financial System; Risk and Return	BKM: chapters 1,2,3,5 (R), 18 (O) <i>Case:</i> The Historical Risk of T-Bills, T-Bonds and Equities in the U.S.	
Mon, Sep 23 8:00-11:00	2: Time Value of Money; Net Present Value		
Wed, Sep 25 8:00-11:00	3: Capital Asset Pricing Model; Arbitrage Pricing Theory	BKM: chapters 9,10 (R), 8,13 (O) <i>Case:</i> The Cost of Capital for Apple and K-Mart	<b>Assignment #1 Due (Sat, Sep 28, 8:00)</b>
Mon, Sep 30 8:00-11:00	4: Market Efficiency and Arbitrage - Part 1: Predictability, Event Studies, Anomalies	BKM: chapter 11 (R)	
Thu, Oct 3 8:00-11:00	4: Market Efficiency and Arbitrage - Part 2: Limits of Arbitrage, Behavioral Finance	BKM: chapter 3.8, 3.9 (R), 12 (O) <i>Cases:</i> (1) The Red Dollar versus the Blue Dollar; (2) The Porsche and Volkswagen Short Squeeze	<b>Assignment #2 Due (Sat, Oct 5, 8:00)</b>
<b>Midterm Exam (Topics 1-4): Mon, Oct 7, 14:40-16:10</b>			
Mon, Oct 7 16:20-17:40 Wed, Oct 9 8:00-11:00	5: Modern Portfolio Theory; Practical Asset Allocation	BKM: chapters 6,7 (R), 25, 27.3 (O) <i>Case:</i> Harvard Management Company	
Mon, Oct 14 14:40-16:10	6: Bonds and Interest Rates	BKM: chapters 14,15 (R), 16 (O) <i>Case:</i> Interpreting the Yield Curve	
Mon, Oct 14 16:20-17:40	7: Derivatives: Forwards and Futures	BKM: chapter 22 (R), 23.1-3 (O) <i>Case:</i> Hedging Gold Price Risk	
Wed, Oct 16 8:00-11:00	8: Derivatives: Options	BKM: chapters 20 (R), 21 (O) <i>Case:</i> Speculating with IBM Options	<b>Assignment #3 Due (Sat, Oct 19, 8:00)</b>
Tue, Oct 22 8:00-11:00	9: Money Management Industry	BKM: chapters 4,26 (R), 24,27 (O) <i>Case:</i> Long-Term Capital Mgmt.	
Wed, Oct 23 13:00-14:30	Class Review		<b>Assignment #4 Optional</b>
<b>Final Exam (Topics 1-9): Tue, Oct 29, 14:00-17:00</b>			

## TEACHING METHODS - MÉTHODES PÉDAGOGIQUES

### COURSE MATERIALS - MATÉRIEL PÉDAGOGIQUE

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We combine lectures, classroom discussions, readings, and cases, to strengthen your understanding of basic topics, and to sharpen your analytic and problem solving skills. The course presents a thorough conceptual framework for understanding financial markets, yet at the same time offers much practical knowledge. The course is therefore challenging, and requires a significant amount of work outside of class in order to get most out of it.

#### Required Books

Bodie, Zvi, Alex Kane, and Alan Marcus (2018). Investments. McGraw-Hill/Irwin, 11th Edition.

#### Additional Textbook

Malkiel, Burton (2015). A Random Walk Down Wall Street. Norton, 11th Edition.

#### Required Cases, Assignments and Other Materials

Course materials can be downloaded from the course web page, which will be announced by e-mail before the first week of classes. In lectures, I will follow my lecture notes, which I will make available before each class.

## INDIVIDUAL WORK - TRAVAIL PERSONNEL

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Students will need to complete three assignments throughout the course. The assignments are completed in groups, which enhances learning.

Students will need to pass two exams, a midterm and final. The exams are to be completed individually. The midterm exam is optional - see the "Grading" section below.

## GRADING - ÉVALUATION

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Grades are based on 3 assignments (30%), the midterm exam (20%) and the final exam (50%). If the normalized midterm score is below the normalized final exam score, the midterm score will be dropped, and the weight will be added to the final exam (70%). Weightings on the various components of the final grade are as follows:

Assignments (Team)	30%		
Midterm Exam (Individual)	20%	or	0%
Final Exam (Individual)	50%	or	70%

The assignments should be typed or written legibly, and submitted in hard copy at the beginning of class on the scheduled date. The assignments may be discussed only with the members of your group. Only one solution per group should be handed in. No late submissions will be accepted.

Both exams are closed-book and closed-notes, with a calculator allowed but no other electronic device (e.g., calculator software on a smart phone is not permitted). You are allowed a "cheat sheet" provided by me, with no additional materials written on it.

**Exam Re-grading Policy:** You may request a re-grade on any exam. Each re-grade request must be accompanied by a concise written explanation of the request (e-mail is preferable). The request should be submitted to me within one week after the exams are distributed. The whole exam may be re-graded, so your score can either increase or decrease as a result. For the re-grade request, you should do the following: 1. Choose at most 3 questions from the exam (e.g., 1b, 2a, 4c) for which you think that you deserve more points than were given by the grader; 2. Scan the part of the graded exam in which you answered those questions, and attach the images to the email (or to the written request); 3. Explain briefly why you think the questions were graded unfairly, and why you deserve to get more points; 4. Send the request either by e-mail or by HEC mail to my office address (see above).

Class participation is very important. Many of you have useful professional experience that can undoubtedly benefit our class discussions. Do not hesitate to share your experience with the rest of the class!

## BIOGRAPHY - BIOGRAPHIE / PUBLICATIONS

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Ioanid Rosu has joined HEC Paris as Associate Professor in 2010. A graduate of University of Bucharest, he earned two PhDs from MIT, one in mathematics in 1999 and one in financial economics in 2004. Between 2004 and 2010 he was Assistant Professor of Finance at the University of Chicago, Booth School of Business, where he taught the introductory finance course in the MBA and Executive MBA programs. His work has been published in top finance journals such as the *Journal of Finance* or *Review of Financial Studies*. His research focuses on the liquidity of financial markets and its effect on asset prices and investor decisions. He is also interested in mergers and acquisitions, option pricing, and high frequency trading.