



APPLIES TO ACADEMIC YEAR 2012/2013

## FIN 3621 Options and Futures

### Programme

Bachelor in Finance (3. year)

### Responsible for the course

Costas Xiouros

### Department

Department of Financial Economics

### Term

According to study plan

### ECTS Credits

7,5

### Language of instruction

English

### Introduction

Economic contracts typically contain option-like features, either explicitly or implicitly. Settlement of financial contracts is often said to be contingent, i.e. dependent upon some agreed-upon outcome (return, spot price, etc.) observed for the conditional asset. As such, a basic understanding of pricing and practical use of derivative financial contracts, such as futures and options, is essential to all students of finance, regardless of whether they pursue a career in investment, corporate finance, or commercial banking.

### Learning outcome

#### Acquired knowledge

Upon completion of the course, students are required to comprehend key concepts and the analytics of contingent claims pricing such as;

- option combinations in order to secure a certain pay-off at maturity
- application of binomial trees to map out potential paths followed by a stochastic variable towards a future level (value, rate);
- basic arbitrage strategies to back out equilibrium spot prices, and (4) application of futures contracts for risk management purposes.

#### Acquired skills

Upon completion of the course, student are required to master task such as:

- calculating option prices based on a binomial option pricing model
- calculating option prices based on the Black-Scholes option pricing model
- calculating prices and potential pay-offs emanating from various spread strategies
- calculating option Greeks
- calculating minimum-variance hedge-positions utilizing futures contracts for risk management purposes

#### Reflection

Upon completion of the course, students are expected to demonstrate attitudes compatible with prudence and appreciation of the uncertainty surrounding future outcomes in financial markets. Such attitudes manifest themselves as behaviour characterized by respect and carefulness in utilizing financial futures and options' contracts.

#### Prerequisites

This course is based on skills from other courses from the Bachelor of Finance program, such as

Securities' Law, Corporate Finance and Mathematical Analysis.

#### Compulsory reading

##### Books:

McDonald, Robert L. 2006. Derivatives markets. 2nd ed. Addison Wesley. Latest edition is used in class.

#### Recommended reading

##### Books:

Hull, John C. 2011. Fundamentals of futures and options markets. 7th ed. Pearson

**Course outline**

1. Introduction - Basics of Stock Option Pricing
2. Basic Option Strategies, Combinations and Spreads
3. Option Pricing: The Black-Scholes Option Pricing Model
4. The Option Greeks
5. The Futures Market
6. Stock Index Futures
7. Foreign Exchange Futures
8. Interest Rate Futures

**Computer-based tools**

Excel spreadsheets and basic statistical software.

**Learning process and workload**

The course consists of 36 lecture hours and 9 hours of in-class, instructor-guided problem-solving.

Students are recommended to allocate hours of studying as follows:

Activity	Hours
Attendance during lectures	36
Problem-solving in class	9
Independent reading/preparation for class	120
Mandatory four work assignments	15
Preparation for the final examination	20
<b>Total</b>	<b>200</b>

**Coursework requirements**

In order to take the final exam, students are required to electronically submit four work assignments. A minimum level of performance, defined as a passing number of points obtained, is required on all four assignments. Announcement and distribution of the assignments takes place on the It's Learning platform. More information is provided in class.

**Use of hours**

Total 45 in-class hours.

**Coursework requirements**

To be allowed to sit for the final exam students must have submitted and got approved by lecturer four (4) work assignment. See Learning process and workload.

**Examination**

A five hour individual written examination concludes the course.

**Examination code(s)**

FIN 36211 Written examination counts 100% towards the final grade in FIN 3621 Option and Futures, 7,5 credits.

**Examination support materials**

No support materials allowed except the BI-defined exam calculator TEXAS INSTRUMENTS BA Plus and interest rate tables. For more information, please visit our web-based Student Handbook at <http://bi.edu/studenthandbook/examaids>.

**Re-sit examination**

A re-sit is possible in connection with the next ordinary course. Students not having obtained a passing score on the mandatory work assignments are required to submit a new series of four work assignments during the next scheduled lecture series. Students failing the exam, or wishing to improve previous grades, may retake the examination on the next scheduled examination date conditional upon approval of the work assignments

**Additional information**