

COURSE DESCRIPTION AND OUTLINE

Subject Information	
Name	Financial Derivatives
Course Code	
Degree	Degree of Business Administration
Year is taught	4º E2
Semester	1º y 2º
ECTS Credits	6
Type of Course	Optional
Department	Financial Management
Area	Finance
University	Universidad Pontificia Comillas
Timetable	Tuesdays and Wednesdays from 17:00h to 19:00h
Professors	Isabel Figuerola Ferretti
Descriptor	

Teaching Staff	
Coordinator	
Name	Isabel Figuerola-Ferretti
Department	Financial Management
Area	Finance
Office Room	O-422Bis
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Tutorials Timetable	To be announced in the class

DETAILED COURSE INFORMATION

Course context and application
Contribution to Degree's professional profile
The course provides a thorough background in the concepts and models underlying the modern analysis and pricing of financial derivatives. The purpose of the course is to first provide the foundations for understanding derivatives markets and then deliver the appropriate tools for pricing and risk management.

Special emphasis will be put on the application of the pricing framework to plain vanilla derivatives and the design of the optimal hedging strategies with derivatives written on different underlying assets including equity, fixed income and commodity products.

Prerequisites

The course will be taken during the last year of the undergraduate degree in business studies. It is a prerequisite that students undertake an introductory course in Finance (*Finance Theory 1*, or Financial Management). The students are expected to have a basic knowledge of financial markets and asset pricing. It is advised that the students take for this purpose the undergraduate course *Financial Markets*.

The students should feel comfortable with statistics and calculus at the intermediate undergraduate level. It is also important that they also have a deep knowledge of excel although visual basic programming is not a prerequisite. The topic is taught in English and most of the material, bibliography, and recommended readings will be in English. All students must be fluent in English to be able to follow the course.

CONTENTS

Program
Part I: Investments
Topic 1: Introduction to financial derivatives
1.1 Futures and Forwards, options, futures options 1.2 Use of financial derivatives 1.3 Future Markets, Exchange trading versus OTC trading 1.4 Functions of Futures Markets
Topic 2: Futures
2.1 Determination of Futures and Forward prices 2.2 Equity Futures, Equity index futures, exchange rate futures, interest rate futures 2.3 Hedging with futures
Topic 3: Equity Options
3.1 Description of option valuation portfolios, put-call parity, and strategies with options 3.2 Options valuation. The Black Scholes analysis 3.3 Hedging with options: the Greeks
Topic 4: Stock index options and other extensions
3.1 Stock index options and exchange rate options. The Black and Merton frameworks 3.2 Interest rate options 3.3 Other valuation methodologies
Topic 5: Introduction to the swap market
5.1 Use of financial interest rate and exchange rate swaps

5.2 Valuation and trading of financial swaps
 5.3 Credit Risk and Credit Default Swaps

TEACHING METHODOLOGY

General methodological aspects of the course	
<p>This course requires the students attend the class sessions. There are regular teaching sessions, case study discussions and practical problems and questions. Active student participation is important. They are expected to read the assigned materials prior to the class, in addition to preparing the problems and case studies when appropriate.</p>	
Classroom methodologies: activities	Skills
<p>Regular teaching sessions make up for slightly over half of the total class sessions.</p> <p>The teacher will define and explain the technical terms and analysis, giving emphasis to real life examples. Excel will be used for valuation and hedging design purposes.</p> <p>The student should listen carefully, trying to understand the rationale and ideas being explained, and making connections with his previous knowledge on the field. He is expected to take notes of the main contents to complement class material. Classroom discussions are encouraged, and students can interrupt the professor asking questions or requesting for further explanations. Preparation prior to the class is essential to take the most of the teaching session.</p> <p>Seminars:</p> <p>Two sessions will be dedicated to talks or presentations from two industry practitioners who are professionals in the field of financial derivatives.. Attending the seminar is mandatory for all students.</p>	<p>Cognitive skills Interpersonal skills Attitude skills</p>
Work out of the classroom: activities	Skills
<p>Students should prepare two case studies that will be discussed during the class and evaluated by the lecturer</p>	<p>Systemic skills Practical and procedure skills Instrumental skills</p>

ASSESSMENT AND EVALUATION CRITERIA

Activities assessed	Evaluation criteria	Weight
Final exam	50% Multiple choice 50% long exercises	50%
Mid-term exam	Multiple choice	15%
Case study to be solved in groups	To be developed in excel and presented in the class	15%
Market Report	To be presented during the class	10%
Class participation and classroom workshops	To be evaluated during the whole course	10%

The students that have a formal exemption to attend class (including those who are on an exchange program abroad), the course grade will be 100% of the final exam grade. In case a student fails, in the second or subsequent attempts, the grade will be 100% the final exam mark.

SUMMARY OF THE STUDENT EXPECTED WORKING HOURS			
Hours in classroom			
Lectures	Problem solving sessions	Workshops and seminars	Work Presentations
38	11	10	2
Hours outside the classroom			
Individual work on theoretical knowledge	Individual work on practical knowledge	Exercise and case resolution	Seminars And workshops
50	20	11	10
CREDITS ECTS:			6

BIBLIOGRAPHY AND ADDITIONAL READING LIST

Bibliography
Textbooks
Main:

Hull, J.C., *Options Futures and Other Derivatives (2015)*, 9th edition, Englewood Cliffs, Prentice-

Alternative:

Hull J.C. *An Introduction to Futures and Option Markets*. Pearson, Prentice Hall, 8^{ed}.

Jarow R. and S. Turnbull. *Derivative Securities*. South Western College Publishing (International Thompson Publishing). 2d Edition

Kolb R. and J.A Overdahl. *Financial Derivatives*. Wiley Finance, 3d Edition.

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