Risk Management

Academic Year: (2017 / 2018) **Review date: 12-05-2017**

Department assigned to the subject:

Coordinating teacher: MAYORAL BLAYA, SILVIA

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Students should have passed Derivatives, Financial Markets and Fixed Income courses.

Professor:
Alberto Caballero (Santander Bank, Risk Management Department)

OBJECTIVES

-Student will learn how to manage market risks though a portfolio simulation in which each team will work as a market maker, quoting trades to the rest of the market and managing their own market risks.
-Students will develop their own market risk system (excel) to provide market risk sensitivities, Value at Risk, daily Profit and Loss report, P&L attribution, backtesting, stress testing, regulatory capital (Internal Model Approach) and RORWA (Return On Risk Weighted Assets).
-Student will learn about the market risk function applying the different metrics and reports to their own portfolio on a daily basis.

COURSE DESCRIPTION:
This course provides a detailed set of tools and techniques to identify, assess, control and manage market risk trough a portfolio simulation. The students will learn about the traditional measures used in the Industry to manage market risk (sensitivities and VaR), and also they will work with different reports that complement them in a comprehensive market risk management (P&L, backtest and stress test...). Finally the course treats the actual banking regulation as a critical factor for the Industry, focusing in the market risk framework.

DESCRIPTION OF CONTENTS: PROGRAMME

1 Introduction to Financial Risks
- Market Risk Management
- Identifying Market Risk
- Market Risk on derivatives

2 Market Risk Sensitivities ¿ Greeks and P&L attribution
- Sensitivities (Delta, Gamma, Vega, Theta, Rho)
- Profit and Loss and P&L Attribution

3 Value At Risk (VaR)
- Definition
- Methodologies (Parametric, Historical Simulation, Monte-Carlo Simulation)
- Advantages and Disadvantages

4. Backtesting

5. Stress Testing

6. Market Risk Regulatory Capital (CRDIV)
- Internal Model Approach (VaR, SVaR & IRC)
- Fundamental Review of the Trading Book

LEARNING ACTIVITIES AND METHODOLOGY

The methodology of the course is based on a portfolio simulation exercise in which students will have the opportunity to apply the main theoretical concepts in market risk management, presented by the professor in the Power Point presentations.

Students will develop a portfolio simulation working in teams, learning how to collaborate and organize the different roles in the team. Each team will work as a market maker, quoting trades to the rest of the ¿market¿ (other teams) and managing the market risks derived from the trades closed with the counterparties.

The portfolio simulation exercise is based on real data coming from financial markets in a daily basis. In the last session students must present a report with the results of the portfolio simulation exercise (VaR, Cummulative P&L, backtesting, stress testing, capital, profitability).

ASSESSMENT SYSTEM

The grade will be based on a closed book final exam (40%) and on coursework (60%). You need to do the coursework to pass de course and a minimum grade of 4 out of 10 is needed in the Final Exam to pass the course. Final Exam will have duration of 2 hours.

% end-of-term-examination:	40
% of continuous assessment (assigments, laboratory, practicals…):	60

BASIC BIBLIOGRAPHY

- John C. Hull Options, futures, and other derivatives, Prentice Hall , 2012

- Philippe Jorion Financial Risk Manager Handbook, Wiley Finance, 2009

ADDITIONAL BIBLIOGRAPHY

- Philippe Jorion Value at Risk. The New Benchmark for Managing Financial Risk, McGraw-Hill, 2007