

<b>Course Information</b>	
<b>Subject</b>	<b>Financial Risk Management</b>
<b>Degree</b>	<b>Master in Finance</b>
<b>Course</b>	<b>First course</b>
<b>Term</b>	<b>Second Term</b>
<b>ECTS – Credits</b>	<b>3</b>
<b>Type of Course</b>	<b>Mandatory</b>
<b>Department</b>	<b>ICADE Business School</b>
<b>Area</b>	<b>Finance</b>
<b>Professor</b>	
<b>Name</b>	<b>Pedro Manuel Mirete Ferrer</b>
<b>Department</b>	<b>ICADE Business School / Finance Management</b>
<b>Area</b>	<b>Finance</b>
<b>e-mail</b>	<b>pmmirete@icade.comillas.edu</b>
<b>Attendance Hours</b>	<b>Available by e-mail</b>
<b>CV</b>	<b><a href="https://web.comillas.edu/profesor/pmmirete">https://web.comillas.edu/profesor/pmmirete</a></b>

## **COURSE SPECIFICS**

<b>Context of the Course</b>
<b>Contribution to the professional profile of the master degree.</b>
<p>The main purpose of financial institutions is financial risk management and risk-taking that other agents do not want and / or cannot afford.</p> <p>The emergence and development of financial derivatives, and continued financial innovation in this field, are enabling new strategies for risk management in banking; but on the other hand, we must manage the additional risks introduced by the use of such derivative financial instruments (e.g., the current credit crisis has been caused in part by a poor risk management of credit derivatives). In recent years, the development in risk management, both in theory and in practice, has been remarkable.</p> <p>At the theoretical level, the development reaches the point that risk management is beginning to be considered as a science in financial theory and studied, taught, and learned specifically and separately in both the universities and most advanced financial programs. The subject of financial risk management has attracted the intellectual attention not only of specialists in finance, but other disciplines as physicists, mathematicians, engineers ...; due not only to high demand by the market, but also the great challenges from an intellectual point of view. Some professionals compare the climate of expectation which currently generates the world of financial risk, which was present in some of the great eras of science, as the era of quantum physics in the 30s.</p> <p>In the professional practice of risk management, change has not been less spectacular, and today the departments of Global Risk Management in banks have acquired a degree of sophistication and very important specialization, so demand professionals trained in this area is growing unstoppably.</p> <p>In 2014 the European Banking Union began, which meant the emergence of three major players: the Single Supervisory Mechanism, the Single Resolution Mechanism and a regulatory framework derived from the adaptation of the standard Basel III by Regulation (EU ) No 575/2013 and Directive (EU) No 36/2013. The Banking Union is a continuation of a variety of regulatory changes that began following the crisis. Financial institutions face the uncertainty of having to manage the adjustment of business structure, capital, etc. to this new regulatory environment, giving rise, in this sense, to a new risk that some experts call the "regulatory risk". This highlights the need that professionals in risk departments and capital planning must be knowledgeable about the changes in regulation, and in particular those affecting the measurement methodologies, risk management and calculation of capital requirements.</p>

## Class Aims

The objectives of this subject are three:

1. To introduce students in practical risk management in financial institutions and the applicable regulation.
2. To acquaint students with the most relevant software and computing resources on this issue and with the departments of large major banks in this area, both in Spain and globally; that allow them to not only reach the frontier of knowledge on this subject but be constantly updated in this area and to consider possible topics for improvement.
3. To stimulate student interest at the current major challenges in managing financial risks, raising some pointers implementation issues in the departments of Risk Management of large banks, which may be the germ of the TFM for students who wish it.

## CONTENTS

### Contents

#### Lesson 1: Financial crisis and Financial System Reform

#### Lesson 2: Risks Banking Regulation. Basel III

- Regulatory capital
- Pillar 1 Capital Requirements
- Pillar 2 Capital Requirements. Economic capital.

#### Lesson 3: Risks Banking Regulation. European Banking Union

#### Lesson 4: Market Risk and VaR: Conceptual approach and Calculation methods

- VaR parameters.
- Marginal VaR, Incremental VaR and VaR by components.

#### Lesson 5: VaR models: Historical simulation

- Historical simulation with weightings
- Volatilities
- Extreme Value Theory

#### Lesson 6: VaR models: Model Building approach

- One asset
- Two assets: correlations and covariances matrix
- Linear models
- Quadratic models
- Applications

#### Lesson 7: VaR models: Monte Carlo simulation

- General approach
- Stochastic processes for risk modeling
- Applications

#### Lesson 8: Credit Risk models

- Riskmetrics.
- Parameters estimation: Probability of default and severity.
- Scoring and Rating
- Regulatory model (IRB)
- Creditmetrics.

#### Lesson 9: Liquidity Risk

## Competences

### General competences

<b>CG01</b>	Capacity for analysis and synthesis	
	<b>RA1</b>	Describe, relate and interpret situations and theoretical and practical approaches in different contexts
	<b>RA2</b>	Select and analyze the most significant elements and their relationships in different contexts and identify the lack of information and its relevance, establishing relationships with elements external to the situation.
	<b>RA3</b>	Perform analysis with the depth and coherence necessary to support business decision making with impact.
<b>CG02</b>	Problem solving and decision making	
	<b>RA1</b>	Know the scope and practical utility of the theoretical notions learned. Study theoretical and practical cases and see the application to real future situations
	<b>RA2</b>	Resolve and make decisions in case studies based on real situations autonomously between alternatives and specific situations
<b>CG04</b>	Ability to manage information from different sources	
	<b>RA1</b>	Know, use and discriminate the different sources of information on the subject (registered information of the markets, diffusers of information, web pages, specialized magazines, analyst reports and others) showing depth in the base of their analysis and precision in the data used
	<b>RA2</b>	Identify the suitability of each source and study based on the purpose of the same, giving rigor to the opinions and conclusions taken
<b>CG05</b>	Advanced computer skills related to field of study	
	<b>RA1</b>	Use computer tools to generate documents (graphs, tables, etc.) that illustrate and clarify arguments
	<b>RA2</b>	Use audiovisual media to support oral presentations
	<b>RA3</b>	Use Internet and online financial databases (Reuters, Bloomberg, etc.) to look for information and documentation related to study area

<b>CG08</b>	Critical and self-criticism capacity	
	<b>RA1</b>	Identify, establish, and contrast the hypotheses, variables and results in a logical and critical way
	<b>RA2</b>	Review the options and alternatives with a critical reasoning that allows you to discuss and argue contrary opinions
<b>CG09</b>	Ethical commitment	
	<b>RA1</b>	Identify, in the exercises and practical cases, the professional actions which can be considered as ethical
<b>CG14</b>	Ability to process and transmit ideas, projects, reports, problems and solutions	
	<b>RA1</b>	Determine the scope and practical utility of theoretical notions, preparing documents that translate diagnosis of complex real situations, identifying and justifying the models that can propose a solution.
	<b>RA2</b>	Generate ideas and solutions correctly identifying the knowledge applicable to each situation

### Specific competences

<b>CE12</b>	To know how to apply and integrate the major risks that any company faces, especially financial institutions, the measures and strategies for their control and management	
	<b>RA1</b>	Know and understand that one of the main objectives of financial institutions is the management of financial risks and the assumption of risks that other market agents do not want and / or cannot assume. Be are familiar with new financial and risk management strategies
	<b>RA2</b>	Know how to use derivatives (futures, options, swaps and structured) to hedge the different risks in practice
	<b>RA3</b>	Control the concept of Value-at-Risk (VaR) and its application as a measure of the market risk of an asset, portfolio or entity, as well as the methodological alternatives most used for their calculation in the practice
	<b>RA4</b>	Understand the different approaches that exist today for measuring operational risk in financial institutions and be familiar with the measurement, management and control processes, even with those based on computer applications

		<b>RA5</b>	Stimulate interest in the main current challenges in the practice of financial risk management	
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## TEACHING AND LEARNING

General methodology characteristics of the course	
<b>Classroom methodology: Activities</b>	<b>Competences</b>
<p>It combines lectures with case presentations and readings by students. During the course of each session will review basic concepts contained in the documentation that students have available before each class, and that they must read in depth to ask the arising doubts during the class session. These concepts should be applied by resolving case studies by the students. During the class session the case studies solutions will be debated, allowing delve into the nature of the problem. It is mandatory active participation of students in both the normal development of the class, and in the discussion of the case study, or the exercises if there to be. The driver shaft of the methodology to be used is the practicality of the concepts and skills covered in the sessions. The usual methodological sequence is as follows:</p> <ol style="list-style-type: none"> <li>1. Statement of the general framework of the subject by the monitor / teacher.</li> <li>2. Discussion of the conceptual doubts that students have about the subject, and resolving them</li> <li>3. Practical use of concepts through the analysis of real or fictitious case studies, and / or exercises.</li> <li>4. Summary of worked concepts and summary of the main conclusions</li> </ol>	
<b>Methodology - Not in the class: Activities</b>	<b>Competences</b>
<p>The previous study of the documentation for each session, which will be made available to students with sufficient time is required. Analysis and resolution of practical cases, when assigned, which allow the student to make a decision-making exercise like a professional at a financial department of a company. The resolution of the case studies is mandatory and prior to the corresponding session and must be delivered in writing. The resolution of the exercises proposed by the teacher shall be delivered in writing.</p>	

## EVALUATION AND GRADING CRITERIA

Types of Evaluation	Criteria	Weight
<b>Exam, public defence, practical cases and Final Presentation (SE1). FINAL EXAM</b>	<b><u>To pass the subject, the final exam mark must be at least 4,90.</u></b> Right answers; Organization of information; Synthesis.	30%
<b>Individual Test (SE2). TWO INDIVIDUAL MIDTERM EXAMS</b>	Right answers	15%
<b>Public, individual or group presentations (SE3) FINAL CASE PRESENTATION</b>	Apply instructions and criteria.; Organization of information; Clarity in presentation; Means of support used; Synthesis.	15%
<b>Individual Assignments/Practices/Works (SE4) INDIVIDUAL ASSIGNMENTS/PRACTICES/WORKS, SAME WEIGHT EACH</b>	Apply instructions and criteria; Appropriateness in the statement of the questions; Right answers; Organization of information; Clarity in presentation; Means of support used; Synthesis.	10%
<b>Group Assignments/Practices/Works (SE5) GROUP</b>	Apply instructions and criteria; Appropriateness to the statement of the questions; Right answers; Organization of	15%

ASSIGNMENTS/PRACTICES/WORKS SAME WEIGHT PER EACH	information; Clarity in presentation; Means of support used; Synthesis <b>Distribution and organization of work.</b> <b>Everyone must participate</b>	
<b>Participation (SE6)</b> PARTICIPATION, ACHIEVEMENT OF OBJECTIVES, AND COMMITMENT THROUGHOUT THE CLASSES	To achieve the pass mark, the student is required to help/push into the dynamics of the classes, provide evidence of achievement of objectives, predisposition, commitment and initiative.	15%

**Notes to the evaluation criteria:**

1. All students must meet a minimum of 75% attendance in the whole subject.
2. For the exercises, to be taken into account, they must be delivered through Moodle in time and format.
3. If, when combining the criteria, the final grade is equal to or higher than 5, but the minimum grade for the exams or final tests has not been achieved, the final grade will be reduced to a maximum of 4,0 points.
4. In case a student does not obtain a grade of 5,0, the student may take an extraordinary exam. In that case if the student pass the retake exam, his/her final grade in the subject must be a 5,00.
5. If the student does not comply with 70% of the evaluation activities, the weightings of the evaluation system table will not be applied, and the maximum final grade will be 4,0.

**Evaluation criteria to apply at second enrolment:**

Types	Criteria	Weight
<b>Individual assignments</b>	To pass the course, the student must deliver all the tasks assigned by the teacher	15%
<b>Taking written exams, multiple choice tests, concept tests and solving practical cases as an exam</b>	At least 5,00 points on the final exam, or at least an average of 5,00 on all examination activities.	70%
<b>Participation</b>	To achieve the pass mark, the student is required to help/push into the dynamics of the classes, provide evidence of the achievement of objectives, predisposition, commitment and initiative.	15%

**Evaluation criteria to be applied in the case of school waiver/exemption:**

In cases of exemption/dispensing from schooling, provided that the student duly justifies it, the grading criteria will be 70% for the exam (if the subject allows it, two exams will be taken, 35% each) and 30% for individual works. The individual works will serve to control the evolution of the student's learning. Only in cases in which the student is not able to answer in writing, and provide evidence that justifies it, the exam may be oral and the content of the student's answers will be transcribed.

**Criteria in health alert:**

The student must be permanently identified, with an identification in the classroom and with their full name remotely. Students should not change the spaces they occupy in the classroom, unless directed by a teacher or the program management.

Failure to comply with any of the health recommendations during the class sessions may imply failure in the subject.

SUMMARY OF STUDENT WORK HOURS							
ATTENDANCE HOURS							
Lectures (AF1)	Content presentation (AF2)	Homework presentation (AF3)	Exercises and assessment (AF4)	Class discussion (AF5)	Seminars, workshops, case studies (AF6)	Interdisciplinary activities (AF7)	Simulations (AF8)
9.0	8.0	0.0	3.0	5.0	2.0	1.0	2.0
NON-ATTENDANCE HOURS							
Study and analysis of documentation (AF9)		Performing assignment and case studies (AF10)		Tutorial sessions (AF11)		Conducting collaborative work (AF12)	
35.0		15.0		3.0		6.0	
<b>ECTS CREDITS: 3 ECTS</b>							

## BIBLIOGRAPHY

Recommended Bibliography
<b>Textbooks</b>
GARP (2019) Financial Risk Manager (FRM) Part I. Financial Markets and Products. Boston, MA: Pearson
GARP (2019) Financial Risk Manager (FRM) Part I. Valuation and risk models. Boston, MA: Pearson
GARP (2019) Financial Risk Manager (FRM) Part II. Market Risk Measurement and Management. Boston, MA: Pearson
Hull, J. C. (2018) Risk management and financial institutions. John Wiley & Sons. 5th Edition
Hull, J. C. (2017) Options, Futures, and Other Derivatives. New York: Pearson Prentice Hall. 9th Edition
<b>Additional Readings</b>
Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms. (CRR).
Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms. (CRD IV)