COMILLAS
UNIVERSIDAD PONTIFICIA
ICAI ICADE CIHS

Syllabus
2025 - 2026

TECHNICAL SHEET OF THE SUBJECT

Data of the subject

Subject name	Finance and Investment in Industry and Technology
Subject code	DOI-MBA-612
Mainprogram	Official Master's Degree in Business Administration - MBA
Involved programs	Máster Universitario en Ingeniería Industrial y Máster Universitario en Administración de Empresas [Second year] Máster Universitario en Ingeniería de Telecomunicación y Mást. Univ. en Administración de Empresas [Second year]
Level	Postgrado Oficial Master
Quarter	Semestral
Credits	3,0 ECTS
Type	Optativa
Department	Escuela Técnica Superior de Ingeniería (ICAI)
Coordinator	Cristobal Cantos
Office hours	Contactar por email
Course overview	Financing of industrial and technological assets: investments and costs; cost structure (operating costs, capital costs, fixed costs, diversification costs, and supply security costs); financing of industrial activities (financial objectives and policies); cost of resources; optimal financing structure; financial rating; financing needs and working capital management; financing alternatives; project financing; valuations and analysis of the industrial and technological sector by financial markets.

Teacher Information

Teacher

Name	Cristóbal Cantos Sánchez de Ibargüen
Department	Department of Industrial Organization
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SPECIFIC DATA OF THE SUBJECT

Contextualization of the subject

Contribution to the professional profile of the degree

This course introduces the fundamental concepts of valuation and financing of large-scale, capital-intensive projects, integrating skills and techniques previously acquired in the undergraduate program.

The infrastructure sector is one of the most significant for engineers as well as for various industrial and financial stakeholders who require expertise in financial engineering, including sponsors, financial institutions, infrastructure funds, contractors, and others.

By the end of the course, students will have developed practical knowledge of project finance in real-world contexts, enabling them to effectively apply concepts and make informed decisions in such projects.

Specifically, the contributions of this course to the students' professional profile include:

- Understanding the different sources of financing available in the market for large-scale, capital-intensive projects, along with their costs and main characteristics.
- Understanding project finance structures as a tool for value creation, as well as the modeling techniques used in this type of financing.
- Gaining an overview of the infrastructure industry from multiple perspectives: sponsor, lender, infrastructure fund, asset manager, and others.

Developing the ability to compare not only one project with another, but also to evaluate all business proposals based on their cost of capital, thereby assessing whether they create value or, conversely, destroy value.

Prerequisites

Students are expected to have prior coursework or foundational knowledge in corporate finance. While these concepts are assumed as background, the course will include a review and reinforcement of the most relevant topics to ensure all students are adequately prepared to engage with the material.

Competencies - Objectives

Competences

GENERALES

CG01	Analytic and synthesis cognitive capacities applied to business situations and managing and organisation problems.
CG02	Management of data and information as key elements for decision-making and for identification, formulation and resolution of business problems.
CG03	Problem-solving and decision-making skills at a strategic, tactic and operational level with regard to a business, considering the interrelationship between the different functional and business areas.
CG04	Application of concepts and theories on business organizations in order to discover new business opportunities and acquire long-term competitive advantages.
CG05	Ethical commitment with a behaviour based in moral principles and those principles of the organisation when facing moral dilemmas and corporate social responsibility issues.
CG06	Time management capacity with the purpose of improving personal and team efficiency within business organizations, its environment and its management.
CG07	Critical reasoning and argumentation according with the understanding of knowledge and know-how on business administrations, their external context and their administration and management processes.
CG08	Initiative, creativity and entrepreneurship when applying management techniques and related knowledge to management and development of business organizations.

CG09	Knowledge, understanding and handling of tools for diagnosis of the competitive position of a company, and designing and executing the company's strategic plan.

THEMATIC BLOCKS AND CONTENTS

Contents - Thematic Blocks

Contents - Theme Blocks

1 Introduction

1.1 Financing of a Capital Project

1.2 Funding of Projects

1.3 Evaluating a Project

2 Cost Analysis

2.1. Traditional Cost Model

2.2. Activity Based Cost System

2.3. Key elements

3 Investment tools

3.1 Project modeling

3.2 Management Techniques

3.3 Financial and Operational Leverage

3.4 Balance Scorecard

4 Project Finance

4.1. Project Cash Flow

4.2. Decision making process in Project Finance

4.3. The impact of uncertainty in Project Finance

4.4. Leveraged Invetments

4.5. Leveraged Elasticity

5 Industrial and Technology Leveraged Transactions

5.1 Valuation and Creating value for the investor

5.2 LBO and MBO in industrial and technological projects

5.3 Tools and techniques

6 Financing of Capital Projects

6.1 Sources of Finance

6.2 Business Plan & Due Diligence
6.3 Long Term Financing
7 Start Up Financing
7.1 Overview
7.2 Main concepts

TEACHING METHODOLOGY

General methodological aspects of the subject

Teaching Methods

To achieve the learning objectives outlined above, the course will emphasize **active learning and student engagement**. The instructional approach is designed to foster a participatory role for students both in and outside the classroom.

- **Lectures:** The instructor will present the fundamental concepts of each session, supported by recommendations and illustrative examples to clarify key ideas and guide students in addressing related problems.
- **Practice Exercises:** Students will reinforce course concepts through short, application-oriented exercises.
- **Problem-Solving and Case Discussions:** Assignments (problem sets and case studies) will be analyzed and discussed in class. Active participation is strongly encouraged.

Independent Work

Out-of-class activities are intended to reinforce the concepts and methodologies introduced during lectures and to apply them to practical problems or case studies. Students are expected to:

- Engage in independent study of course materials and complete assigned exercises.
- Prepare assignments in advance to maximize learning outcomes during class discussions.

SUMMARY STUDENT WORKING HOURS

CLASSROOM HOURS		
Lectures of an expository nature	Analysis and resolution of cases and exercises, individually or collectively	Debates
15.00	10.00	5.00
NON-PRESENTIAL HOURS		
Analysis and resolution of cases and exercises, individually or collectively	Collaborative learning	Individual study and organized reading
20.00	15.00	10.00
ECTS CREDITS: 3,0 (75,00 hours)		

EVALUATION AND CRITERIA

The use of AI to produce full assignments or substantial parts thereof, without proper citation of the source or tool used, or without explicit permission in the assignment instructions, will be considered plagiarism and therefore subject to the University's General Regulations.

Evaluation activities	Evaluation criteria	Weight
Final Exam	• Problems • Theory	40 %
Final Project	Application of concepts through an individual project	25 %
Homework	Early submission will have a positive impact on the final grade. Class participation	25 %
Class participation	It will be evaluated together with the assignments	10 %

Ratings

Assessment and Academic Policies

Students will have two opportunities to successfully complete the course: one during the regular instructional period and another during a designated make-up or retake examination period.

To pass the course during the regular term, students must achieve a minimum grade of 5 (on a 10-point scale). Students who do not meet this requirement will have the opportunity to retake the individual exam and/or the project/assignments designated by the instructor during the make-up period in June/July. Grades earned on the remaining components of the evaluation — with their corresponding weights toward the final grade — will be carried over to this second evaluation.

Students who have been granted an exemption from class attendance will be graded solely on the basis of the final exam.

Attendance Policy

Class attendance is mandatory in accordance with Article 93 of the General Regulations of Comillas Pontifical University and its Academic Norms. Failure to comply with this requirement may result in the following consequences:

Students who miss more than 15% of scheduled lectures may be denied the right to sit for the final exam during the regular evaluation period.

Students who commit any form of academic misconduct in an assessed activity will receive a grade of zero for that activity and will be subject to disciplinary proceedings (see Article 168 of the General Regulations of Comillas Pontifical University).

Use of AI

Collaboration with AI

AI can be used to help complete the task, including idea generation, drafting, feedback, and refinement. Students must critically evaluate and modify the suggestions provided by AI, thereby demonstrating their understanding.

You may use AI to assist with specific tasks, such as drafting text, refining, and evaluating your work. You must critically assess and modify any AI-generated content you use.

BIBLIOGRAPHY AND RESOURCES

Basic Bibliography

- S. A. Ross, R. W. Westerfield, J. F. Jaffe and B. D. Jordan (2019) Corporate Finance, 12th Edition. International Student Edition - McGrawHill.
- Eugene F. Brigham and Michael C. Ehrhardt (2005) Financial Management - Theory and Practice (11th edition) (Thomson South-Western)

Complementary Bibliography

- S. A. Ross, R. W. Westerfield, J. F. Jaffe and B. D. Jordan (2018) Corporate Finance – "Core Principles & Applications", 5th Edition. International Student Edition - McGrawHill.
- Cornett, M. Adair, T. and Nosfinger, J. (2014) Finance, 2nd Edition, McGrawHill.
- Dyson J.R. (2010) Accounting for Non-accounting Students (8th Edition) Pearso
- Brealey, R., Myers, S. and Marcus, A. (2012) Fundamentals of Corporate Finance, 7th Edition. McGrawHill.
- Crundwell, F.K. (2008). Finance for Engineers. Evaluation and Funding of Capital Projects. Springer.
- Higgins, R.C. (2011) Analysis for Financial Management, 10th Edition. McGrawHill.
- Valdez, S. and Molyneux, P. (2010) An Introduction to Global Financial Markets, Palgrave MacMillan