

## TECHNICAL SHEET OF THE SUBJECT

<b>DATA OF THE SUBJECT</b>	
Name	<b>Venture Capital and Investment Banking</b>
Code	<b>DOI-OPT-628</b>
Titration	<b>Master's Degree in Industrial Engineering, Master's Degree in Telecommunications Engineering</b>
Course	<b>Second</b>
Semester	<b>Second</b>
ECTS credits	<b>6 ECTS</b>
Character	<b>Optional</b>
Department	<b>Industrial Organization</b>
Area	<b>Economy and Business</b>
Center	<b>ICAI</b>

<b>Teacher</b>	
Name	<b>Cristóbal Cantos</b>
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Tutorial Schedule	<b>Prior request by email</b>

## SUBJECT-SPECIFIC DATA

### Contextualization of the subject

#### Contribution to the professional profile of the degree

This course is about taking a leap within the financial knowledge of students who aspire to executive management, regardless of the technical specialty or the area of the company in which they decide to develop their activity. Venture Capital and Investment Banking will be useful for those professionals who, even without dedicating themselves to finance, want to specialize in how and why decisions are made from areas of responsibility such as the board of directors or the executive management of the company.

As the engineer evolves in the company (either in the one he works for others, or in the one he has founded from the beginning) increasing his responsibility, he reaches a level from which the "language he uses becomes financial". At that point, engineers cease to be technicians, and become managers, directors and, ultimately, top leaders (CEOs, presidents, members of boards of directors, etc.). Their decisions cease to be merely functional and become strategic.

At this level of responsibility, having to make decisions based on the company's finances is independent of the specific executive position you hold or aspire to. The financial mindset should be identical for a hiring manager, such as the chief investment officer, vice president of production, or marketing and merchandising manager.

The objective of this subject is that the student learns to manage a company, from its birth, until, where appropriate, it becomes a multinational listed on stock markets. The subject will prepare to face that level of responsibility. For this reason, the entire spectrum of private equity financing will be covered (starting with seed capital, venture capital or venture capital, among others) and large corporate operations with investment banks will be reached.

This course uses simulation techniques on what happens in companies, their real problems, and prepares to know how to react to challenges in order to manage them properly. Thus, complex calculation tools will be provided that will allow a series of variables to be taken into account when making decisions that affect the company. The impact of such decisions will be determined.

Last but not least, integrity will be given priority in decision-making and awareness will be raised about the responsibility of management when executing its decisions.

#### Prerequisites

Basic financial training is required (provided in Financial Accounting and Cost Analysis in the first year of the Master). Students should be familiar with basic corporate finance concepts, such as Time Value of Money, Capital Budgeting (Present Value, NPV, Payback and IRR), Project Cash Flows, Analysis of Financial Statements and ratios, CAPM, WACC and Discounted Cash Flows.

### Competencies – Learning Outcomes

#### Genal Competencies

**CG1.** Have adequate knowledge of the scientific and technological aspects of: mathematical, analytical and numerical methods in engineering, electrical engineering,

energy engineering, chemical engineering, mechanical engineering, mechanics of continuous media, industrial electronics, automation, manufacturing, materials, quantitative management methods, industrial computing, urban planning, infrastructures, etc.

**CG2.** Project, calculate and design products, processes, facilities and plants.

**GC10.** Know how to communicate the conclusions – and the knowledge and ultimate reasons that support them – to specialized and non-specialized audiences in a clear and unambiguous way.

#### Core competencies

**CB2.** Know how to apply and integrate their knowledge, their understanding, their scientific foundation and their problem-solving skills in new and imprecisely defined environments, including multidisciplinary contexts for both researchers and highly specialized professionals.

**CB5.** Know how to transmit in a clear and unambiguous way to a specialized or unambiguous public, results from scientific and technological research or the most advanced field of innovation, as well as the most relevant foundations on which they are based.

#### Competencies of the Management Module

**CMG1.** Knowledge and skills to organize and manage companies.

**CMG2.** Knowledge and skills of strategy and planning applied to different organizational structures.

**CMG4.** Knowledge of financial and cost accounting.

**CMG7.** Knowledge and skills for integrated project management.

#### Learning outcomes

**RA1** Know and understand the various methods of valuation of companies, and acquire the ability to decide the most appropriate to apply them in real decision making. Master and apply discounted cash flow (DCF) and multiples methods in practice

**RA2** Know how value can be created or not through the debt policy and calculate the effect it has on shareholder profitability in projects.

**RA3** Know the operation of investment funds, the operations of Venture Capital and the scope of action of Investment Banking.

**RA4** Know how to apply the knowledge learned to make real decisions in financial products and markets, assessing the profitability, risk and liquidity of the different alternatives at a specific time.

**RA5** Use appropriate tools and design financial processes for M&A operations, asset acquisition, capital increase, debt issuance or start-up financing always in light of value creation.

**RA6** Be able to analyze and interpret the financial statements of a company to make a value judgment on the economic-financial situation of the same (whether it is healthy from the financial point of view, or if it is in crisis), know how to make future projections of these financial statements and apply solutions that improve the profitability of companies.

**RA7** Know how to search for the necessary information on the capital market or the general economic environment for its application to the analysis and valuation of a company.

**RA8** Understand the role of venture capital in the financing and development of business projects

**RA9** Understand the financial activity of private equity, its size, and the role of institutions.

**RA10** Be able to identify the role of investment banking and the impact it has had on the current macroeconomic order.

## THEMATIC BLOCKS AND CONTENTS

<b>Contents – Thematic Blocks</b>
<b>1 Management Control and Costs for Executives</b>
1. Introduction: Costs 2. Break-even point 3. ABC System
<b>2 Business modeling tools</b>
1. Modeling with Financing Feedback 2. Financial Statement Forecasting Tool 3. Management techniques of the investees of the investment fund
<b>3 The finances of the Start-up and the consolidated company</b>
1. Cash Flows 2. Operating and Financial Leverage 3. Modeling Entrepreneurship: Financial Considerations 4. The Structure of Capital
<b>4 Leveraged trades: LBO and MBO</b>
1. LBO: Leveraged buyout operations 2. MBO: The value of the fund management's involvement in the management of the company
<b>5 Private Equity and Venture Capital</b>
1. L/P Financing: Capital Raising 2. The profile of PE founders, entrepreneurs and investors 3. Operation of fund managers 4. Trading with PE investors
<b>6 The Business Plan and Due Diligence</b>
1. La Due Diligence 2. The Business Plan 3. Lessons from founders 4. The profile of the company manager
<b>7 Liquidations, dissolutions, crisis and refloating</b>
1. Crisis situation 2. Distressed debt 3. Bankruptcy proceedings and liquidation 4. Search for value to save the company. Refloating techniques
<b>8 Investment Banking</b>
1. Operation of investment banking and scope of action 2. Dealers and brokers. Best Effort and Underwriters 3. Investment banking and the crisis 4. Public offers of sale and acquisition (IPO and OPA)
<b>9 Executive decisions</b>
1. Integrity in front of top management. David vs. Goliath 2. Assertiveness in executive decisions 3. How decisions affect financial models
<b>10 Capital Markets and Debt</b>
1. Stock markets. Operation 2. The capital market. Equity. The debt market. Bonuses. Fixed income. 3. Derivatives and futures, options and hedge funds
<b>11 Other financial disciplines</b>
1. Introduction to the effect of Macroeconomics on the company 2. Corporate Governance and Conclusions

## TEACHING METHODOLOGY

### General methodological aspects of the subject

Since the objective of this subject is that students know and even master many of the possible realities that they will find, not only in the financial department, but in any area of responsibility of the company, both an SME and a large multinational, numerous simulations of real cases will be carried out. With this type of simulations it is intended that the student is prepared to contribute to decision-making at these levels.

To do this, tools and spreadsheets made in class will be used, which will allow profitable decisions to be made with agility, and will be combined with multimedia content, as well as staging of real situations experienced in companies.

This will allow to break down, evaluate, analyze and decide on any situation or challenge that is in the workplace, from a rational and qualified financial point of view. Financial management, crisis and refloating of companies, bank negotiation, etc. are some of the scenarios for which the student will be prepared.

SUMMARY OF STUDENT WORK HOURS		
WORKING HOURS		
Lesson	Case Resolution	Examination
58	34	8
NON-CLASSROOM ACTIVITIES		
Autonomous work on theoretical content	Project	Exam Preparation
40	20	20
<b>ECTS: 6 (180 hours)</b>		

<b>PRE-ESSENTIAL ACTIVITIES</b>		
<b>Week</b>	<b>h/w</b>	<b>Tuition</b>
1	4	Management Control and Costs for executives
2	4	Operational and financial leverage
3	4	The finances of the Start-up
4	4	Leveraged trades: LBO and MBO
5	4	Private Equity - Mergers & Acquisitions (M&A)
6	4	Venture Capital
7	4	Due Diligence
8	4	Liquidations, dissolutions, crisis and refloating
9	4	Investment Banking
10	4	Executive decision-making
11	4	Capital markets and debt markets
12	4	Real Options
13	4	Risk Analysis in the Company
14	4	Other financial disciplines
<b>TOTAL</b>	<b>58</b>	

## EVALUATION AND QUALIFICATION CRITERIA

Evaluation activities	Evaluation Cristeries	Weight
Final examination	- Troubleshooting - Theoretical concepts	45%
Final project	- Applying the concepts to a real project	25%
Tasks and cases	- Delivery before the indicated dates (prompt delivery score) - Class participation	30%

### Grading

The final grade will be the result of weighting:

- 45% of the final exam
- 25% of the final project
- 30% of case, assignment and class participation

Class attendance is compulsory according to article 93 of the General Regulations of the Universidad Pontificia Comillas and article 6 of the Academic Regulations of the ICAI School of Engineering. Failure to comply with this requirement may have the following consequences:

- Students who do not attend more than 15% of the classes may be denied the right to take the final exam during the ordinary evaluation period.

Students who commit an irregularity in a graded activity will receive a grade of zero in the activity and a disciplinary procedure will be followed (cf. article 168 of the General Regulations of the Universidad Pontificia de Comillas).

## BIBLIOGRAPHY AND RESOURCES

### Basic bibliography

- S. A. Ross, R. W. Westerfield, J. F. Jaffe and B. D. Jordan (2023) Essentials of Corporate Finance, 11th Edition - McGrawHill.
- Z. Bodie, A. Kane and A.J. Marcus (2024). Essential of Investments. International Student Edition - McGrawHill.

### Further reading

- 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) 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