

SYLLABUS

| Course | |
|---------------|---|
| Name | Venture Capital & Investment Banking |
| Code | DOI-OPT-627 |
| Degree | Máster Universitario en Ingeniería Industrial, Master Universitario en Ingeniería de Telecomunicaciones |
| Year | 2 |
| Semester | Fall |
| ECTS credits | 6 ECTS |
| Character | Optional |
| Department | Operations Management (Organización Industrial) |
| Area | Economics and Business Administration |
| University | Comillas |
| Instructor | Cristóbal Cantos |

| Professor | |
|------------------|---------------------------------------|
| Name | Cristóbal Cantos |
| Department | Organización Industrial |
| Area | Economía y Administración de Empresas |
| Office | Despacho DOI (AA 25 4ª planta) |
| e-mail | ccantos@comillas.edu |

COURSE SPECIFICS

Context of the course

Contribution to the professional profile

This course is a leap in the financial knowledge of students who aspire to executive management, regardless of the technical major 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 in areas of responsibility such as the board of directors or the executive management of the company.

As engineers evolve in the company (either by working for others, or through their own start-up) increasing self-responsibility, they reach a level from which the "language they use becomes financial". At that time, engineers stop being technicians, and become managers and, eventually, top leaders (CEOs, presidents, members of boards of directors, etc.). Your decisions stop being merely functional and become strategic.

At this level of responsibility, making financial decisions is independent of the specific executive position that engineers hold or those to which they aspire. The financial mentality must be identical for a director of human resources, as for the director of investments, the vice president of production or, say, marketing experts.

The objective of this subject is for the student to learn how to run a company, from the very first day of incorporation until it becomes a multinational listed on the stock market. The course will prepare the student to face this level of responsibility. For this reason, the entire spectrum of private equity financing will be covered (starting with seed capital through venture capital, among others) and large corporate operations will be covered by investment banking techniques.

In this course, we will learn to simulate what happens in companies – this is, their real problems – and we will also learn to react to real-life challenges in order to manage them properly. Thus, complex calculation tools will be provided that will contain a series of key variables needed when making those important decisions that affect the company dramatically. The impact of these decisions will also be determined.

Last, but not least, there will be a preferential place for integrity in decision-making as well as awareness of managerial responsibility whenever executing those decisions.

Pre-requisites

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 concepts of corporate finance, such as Time Value of Money, Capital Budgeting (Present Value, NPV, Payback and IRR), Project Cash Flows, Analysis of Financial Statements and Ratios (CCA), CAPM, WACC and the Discounted Cash Flow Method.

Competences – Goals

Generic competences

CG1 Acquire appropriate knowledge of scientific and technological aspects of: mathematical, analytical and numerical methods in engineering , electrical engineering, power engineering , chemical engineering , mechanical engineering, industrial electronics , automation, manufacturing , materials, managerial quantitative methods, industrial computing , urban planning, infrastructure, etc.

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

CG10. Knowing how to communicate, clearly and unambiguously, conclusions and findings - and the knowledge and rationale underpinning these- to specialist and non-specialist audiences.

Basic competences

CB2 Know how to apply and integrate knowledge, understanding, scientific basis and problem-solving abilities in new and imprecisely defined environments, including multidisciplinary contexts, both for researchers and highly specialized professionals.
CB5 Know how to transmit in a clear and unambiguous way to a specialized audience or not, results from scientific and technological research or in the most advanced field of innovation, as well as the most relevant foundations on which they are based.

Module Competences

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 accounting and costs
CMG7 Knowledge and skills for the integrated management of projects

Learning Results¹

RA1. Know and understand the different methods of valuation of companies, and acquire the ability to choose the most appropriate and apply them in making real-life decisions. Apply the Discounted Cash Flow (DCF) and Comparable Company Analysis (CCA) methods in practice
RA2. Know how value can be created (or destroyed) through the capital structure policy and calculate the effect it has on stakeholders' profitability.
RA3. Understand PE funds and Venture Capitalists' transactions and the scope of action of the Investment Banks
RA4. Know how to apply this knowledge to making real decisions in both products and financial markets, valuing 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 focused on the creation of value

¹ Learning results are observable indicators of the competences acquired, which allow assessing the degree of competence of the students.

- RA6. Be able to analyze and interpret the financial statements of a company and come with a value judgment on the economic-financial situation of the company (whether it is healthy from the financial point of view, or going through a crisis), know how to make future projections of these financial statements and apply solutions that improve the profitability of companies.
- RA7. Know how to look for the necessary information in capital markets or the general economic indicators and apply them 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 private equity financial activity 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

CONTENTS AND MODULES

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| Contents |
| MODULE 1: Basic concepts |
| 1 Cost Analysis and Management Control |
| 1. Introduction: Costs 2. Break-even 3. Activity Based Costing System |
| 2 Business Modeling Tools |
| 1. Financing Feedback 2. Forecasting Tool 3. Management techniques |
| 1 Start-Ups and Expansion |
| 1. Cash Flows 2. Operational and Financial Leverage 3. Entrepreneurship modeling: financial considerations 4. Capital Structure |
| 4 LBO and MBO |
| 1. Leveraged Buy-Outs 2. Management Buy-Outs |
| 5 Private Equity and Venture Capital |
| 1. L/T Financing: Raise Capital 2. Entrepreneurship, founders, and angels' profile 3. How does PE work? 4. Negotiating with the PE investor |
| 6 Business Plan and Due Diligence |
| 1. Due Diligence 2. The Business Plan 3. Founders' lessons 4. Management profile |
| 7 Distress, Bankruptcy and Restructure |
| 1. Crisis 2. Distressed Debt 3. Bankruptcy and liquidation 4. Saving the business: restructure |
| 8 Investment Banking |
| 1. 101 Investment Banking 2. Dealers and Brokers. Best Effort and Underwriting 3. Investment Banking and Crisis Subprime 4. IPOs |
| 9 Managerial Decisions |
| 1. Integrity in decision making 2. Assertivity in executives 3. How decisions affect financial models |
| 10 Stock and Bond Markets |
| 1. Stock markets 2. Bond markets 3. Derivative, options, futures and hedging |
| 11 Other financial topics |
| 1. The effect of macroeconomics 2. Corporate Governance |

TEACHING METHODOLOGY

General methodological aspects

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

To do this, tools and spreadsheets will be used in class, designed to help the student make profitable decisions with agility, and will be combined with multimedia content, as well as staging real situations experienced in companies.

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

| SUMMARY OF THE STUDENT WORKING HOURS | | |
|--------------------------------------|----------------------|------------------|
| CLASSROOM ACTIVITIES | | |
| Lectures | Problem/case solving | Tests |
| 58 | 34 | 8 |
| NON-CLASSROOM ACTIVITIES | | |
| Autonomous work – theory | Project | Test preparation |
| 40 | 20 | 20 |
| CRÉDITOS ECTS: 6 (180 hours) | | |

EVALUATION AND GRADING CRITERIA

| Evaluation activities | Grading criteria | Weight |
|---|---|--------------------------------------|
| <ul style="list-style-type: none"> Midterm presentations Final exam | <ul style="list-style-type: none"> Understanding of concepts. Application of concepts to problem solving. | 55% (15% midterm, 40% final exam) |
| Project | - Handing them in before the Final Exam | 25% |
| Homeworks | - Early hand-ins will be graded | 20% |

Grading

The final grade of the course will result from adding the following elements:

- **55%** from the grade in the mid-season presentation and final exam. The mid-season test grade will represent 15% and the final exam will represent 40% of the overall grade.
- **25%** from handing in the individual project.
- **20%** from the grade corresponding to home-works (early handed-in).

REFERENCES AND RESOURCES

Basic references

- 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 references

- 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 Nofsinger, 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