

CORPORATE FINANCE

IE University

Professor: **JORGE CASTELLANOS**

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Academic year: 22-23

Degree course: FIRST

Semester: 2º

Category: COMPULSORY

Number of credits: 5.0

Language: English

PREREQUISITES

NONE

SUBJECT DESCRIPTION

This is an introductory course in Finance. The course provides an overview of the theories and the practical applications of finance.

OBJECTIVES AND SKILLS

The main objective of this course is to develop a framework and basic tools for financial decision making, and provide a solid grounding in the principles and practice of corporate finance. Starting from basic principles, it aims to attain a thorough understanding of the material and requires substantial effort.

Another objective is to be confident solving practical finance problems using Excel spreadsheets. Applied finance exercises are introduced in a coherent and complementary way with the other subjects that are part of the Business Administration Degree.

In short, the course has the following specific objectives:

- Teach the fundamental methods and skills of finance.
- Prepare you to make sound personal and professional financial decisions.
- Provide the knowledge that enables you to better understand finance in short, real life and management.
- Prepare you to take more advanced courses in finance and other business areas.

METHODOLOGY

This course is divided into 25 sessions. The 25th session will be the final examination. In session 15th you will have the midterm exam.

To follow the classes, the students are expected to be familiar with the contents discussed in class by reading in advance the corresponding chapters. The purpose of learning finance is to apply it to the real life. We will relate the theories in this course to real-life applications. Doing exercises is necessary to understand the concepts and know how to apply them. For that reason, the course requires group and individual assignments which are graded:

The professor encourages the students to ask any questions during the class. Discussions on problem sets are more than welcome. After the class, individual study and content review is required to master the knowledge introduced and discussed in the classes.

Office hours:

I will be available via email and video conference (Zoom) at a time to be defined. You need to make an appointment in advance by email for individual office hours or for group office hours. I will be delighted to answer your questions or help you to understand the subject better in an office hour meeting. I will be also available for face to face meetings.

Please let me know of any difficulties you may be having with the course as soon as possible. These difficulties may arise from the course itself, other courses, or personal issues.

Teaching methodology	Weighting	Estimated time a student should dedicate to prepare for and participate in
Lectures	10.4 %	13 hours
Discussions	8.8 %	11 hours
Exercises	8.8 %	11 hours
Group work	32.0 %	40 hours
Other individual studying	40.0 %	50 hours
TOTAL	100.0 %	125 hours

PROGRAM

CONTENT

The course presents the fundamental principles that guide corporate financial decisions: investment appraisal (capital budgeting) and investment financing (debt vs. equity choice, or capital structure). The first part of the course introduces one critical financial concept: the time value of money, the key tools based on it (NPV and IRR), and applies them to the valuation of fixed income securities. The second part discusses how corporations chose a capital structure to finance their projects. This part starts with the estimation of the cost of equity, using on the Capital Asset Pricing Model (CAPM). The course concludes with the integration of both decisions, investment and financing.

There are two recommended books that you can use to follow the course, see section 4 below. I recommend using BDM to prepare for the sessions, it is an excellent book with clear explanations, real life examples, and interviews. You can access it online through the IE library. There is a good alternative source, BMA, which covers roughly the same materials. See the reference chapters for the sessions in both books. I encourage you to find the one that suits you better, as you will often have to do in your professional practice.

BDM: Jonathan Berk & Peter DeMarzo, Corporate Finance. BMA: Brealey, Myers & Allen, Principles of Corporate Finance.

PART I: INVESTMENT DECISIONS

SESSIONS 1-7: Time value of money (TVM). Investment decisions criteria (NPV, IRR).

- Time value of money
- NPV mechanics
- Compound interest rate and inflation rate
- NPV shortcut applications

Reading Assignment:

- BDM Ch. 3 & 4 / BMA Ch. 1, 2 & 5

SESSIONS 8-11: Introduction to fixed income and bonds.

- Introduction to bonds
- Term structure of interest rates
- Spot and forward interest rates
- Agency default risk & bond ratings
- Bond pricing
- Arbitrage
- Yield to Maturity (YTM)

Reading Assignment:

- BDM – Ch. 5 & 6 / BMA Ch. 3

SESSIONS 12-14: TVM to invest in corporate projects. Forecasting Cash Flows.

- Cash flow projections in corporate projects: the concept of incremental cash flows

Reading Assignment:

- BDM – Chapter 8 / BMA ch 5 & 6

SESSION 15: MIDTERM EXAM

SESSION 16: Other investment decision criteria. Limitations and drawbacks of the different criteria.

Other investment decision criteria for corporate projects: Payback Period.

Profitability Index (for projects with different initial investment).

Equivalent Annual Cash Flow based on annuities (for investments with different lives)

Limitations and critiques to investment decision criteria

Reading assignment:

BDM – Ch. 7 / BMA Ch. 5 & 6

PART II: FINANCING DECISIONS

SESSIONS 17-22 Estimating the Weighted Average Cost of Capital (WACC) and making decisions on capital structure.

- Return and risk in stock markets
- Markowitz contribution: Mean Variance Analysis and Mean Variance Frontier
- Computing the cost of equity using the Capital Asset Pricing Model (CAPM)
 - The risk-free asset
 - Systemic vs diversifiable risk.
 - Capital Allocation Line and Capital Market Line.
 - Beta parameter estimation (unlevering betas).
- Computing the cost of debt (before and after taxes)
- Integrating cost of equity and cost of debt to compute in the WACC

Reading Assignment:

- BDM – Ch. 10 & 12 / BMA Ch. 7 & 8

SYLLABUS

SESSION 23: TOPIC IN CORPORATE FINANCE

SESSION 24: REVIEW OF THE COURSE

SESSION 25: FINAL EXAM

SESSION 1 (LIVE IN-PERSON)

Introduction to Corporate Finance.

Book Chapters: Principles of Corporate Finance (Ch. 1, 2 & 5) (See Bibliography)

Book Chapters: Corporate Finance (Ch. 3 & 4) (See Bibliography)

SESSION 2 (LIVE IN-PERSON)

Investment Decisions Criteria: NPV

- Time Value of Money
- NPV & mechanics
- Compound interest rate & inflation rate
- NPV shortcut applications

Book Chapters: Corporate Finance (Chapters 3 & 4) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch 1, 2 & 5) (See Bibliography)

SESSION 3 (LIVE IN-PERSON)

Investment Decisions Criteria: NPV

- Time Value of Money
- NPV & mechanics
- Compound interest rate & inflation rate
- NPV shortcut applications

Book Chapters: Corporate Finance (Chapters 3 & 4) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch 1, 2 & 5) (See Bibliography)

SESSION 4 (LIVE IN-PERSON)

Investment Decisions Criteria: NPV

- Time Value of Money
- NPV & mechanics
- Compound interest rate & inflation rate
- NPV shortcut applications

Book Chapters: Corporate Finance (Chapters 3 & 4) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch 1, 2 & 5) (See Bibliography)

SESSION 5 (LIVE IN-PERSON)

Investment Decisions Criteria: NPV

- Time Value of Money
- NPV & mechanics
- Compound interest rate & inflation rate
- NPV shortcut applications

Book Chapters: Corporate Finance (Chapters 3 & 4) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch 1, 2 & 5) (See Bibliography)

SESSION 6 (ASYNCHRONOUS)

Introduction to Fixed Income

- Introduction to Bonds
- Term Structures of Interest Rates
- Spot & Forward Interest Rates
- Agency Default Risk & Bond Ratings
- Bond Pricing
- Arbitrage
- Yield to Maturity (YTM)

Book Chapters: Corporate Finance (Ch. 5 & 6) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 3) (See Bibliography)

SESSION 7 (LIVE IN-PERSON)

Introduction to Fixed Income

- Introduction to Bonds
- Term Structures of Interest Rates
- Spot & Forward Interest Rates
- Agency Default Risk & Bond Ratings
- Bond Pricing
- Arbitrage
- Yield to Maturity (YTM)

Book Chapters: Corporate Finance (Chapters 5 & 6) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 3) (See Bibliography)

SESSION 8 (LIVE IN-PERSON)

Introduction to Fixed Income

- Introduction to Bonds
- Term Structures of Interest Rates
- Spot & Forward Interest Rates
- Agency Default Risk & Bond Ratings
- Bond Pricing
- Arbitrage
- Yield to Maturity (YTM)

Book Chapters: Corporate Finance (Chapters 5 & 6) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 3) (See Bibliography)

SESSION 9 (LIVE IN-PERSON)

Introduction to Fixed Income

- Introduction to Bonds
- Term Structures of Interest Rates
- Spot & Forward Interest Rates
- Agency Default Risk & Bond Ratings
- Bond Pricing
- Arbitrage
- Yield to Maturity (YTM)

Book Chapters: Corporate Finance (Chapters 5 & 6) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 3) (See Bibliography)

SESSION 10 (LIVE IN-PERSON)

Introduction to Fixed Income

- Introduction to Bonds
- Term Structures of Interest Rates
- Spot & Forward Interest Rates
- Agency Default Risk & Bond Ratings
- Bond Pricing
- Arbitrage
- Yield to Maturity (YTM)

Book Chapters: Corporate Finance (Chapters 5 & 6) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 3) (See Bibliography)

SESSION 11 (LIVE IN-PERSON)

Introduction to Fixed Income

- Introduction to Bonds
- Term Structures of Interest Rates
- Spot & Forward Interest Rates
- Agency Default Risk & Bond Ratings
- Bond Pricing
- Arbitrage
- Yield to Maturity (YTM)

Book Chapters: Corporate Finance (Chapters 5 & 6) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 3) (See Bibliography)

SESSION 12 (LIVE IN-PERSON)

Other Investment Criteria

- Alternatives to NPV (IRR & Payback Period) & critiques
- Investments with different lives

Book Chapters: Corporate Finance (Ch. 7) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 5) (See Bibliography)

SESSION 13 (ASYNCHRONOUS)

Other Investment Criteria

- Alternatives to NPV (IRR & Payback Period) & critiques
- Investments with different lives

Book Chapters: Corporate Finance (Ch. 7) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 5) (See Bibliography)

SESSION 14 (LIVE IN-PERSON)

Review for the midterm EXAM

Book Chapters: Corporate Finance (Ch. 3, 4, 5, 6 & 7) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 1, 2, 3 & 5) (See Bibliography)

SESSION 15 (LIVE IN-PERSON)

MIDTERM EXAM

SESSION 16 (LIVE IN-PERSON)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 17 (LIVE IN-PERSON)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 18 (LIVE IN-PERSON)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 19 (LIVE IN-PERSON)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 20 (ASYNCHRONOUS)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 21 (LIVE IN-PERSON)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 22 (LIVE IN-PERSON)

Portfolio Theory and CAPM

- Mean Variance Analysis
- Mean Variance Frontier
- Capital Allocation Line
- Capital Market Line
- Capital Asset Pricing Model (CAPM)
- Systemic vs. diversifiable risk
- Arbitrage Asset Pricing Theory
- Beta Estimation Cost of Capital: Unlevering betas and WACC

Book Chapters: Corporate Finance (Ch. 10 & 12) (See Bibliography)

Book Chapters: Principles of Corporate Finance (Ch. 7, 8 & 9) (See Bibliography)

SESSION 23 (LIVE IN-PERSON)

TOPIC IN CORPORATE FINANCE

SESSION 24 (LIVE IN-PERSON)

Review session for the course

SESSION 25 (LIVE IN-PERSON)

FINAL EXAM

BIBLIOGRAPHY

Compulsory

- Jonathan B Berk & Peter M DeMarzo. (2020). *Corporate Finance*. Fifth Edition / eBOOK. Pearson Global Edition. ISBN 9781292304151 (Digital)

It is compulsory to follow one of the two books included in the Bibliography. I recommend this one to prepare the sessions. It is an excellent book that contains clear explanations, very good real examples and interviews. You can use it online through the ie library to prepare the sessions of this course.

- Brealey, Myers & Allen. (2020). *Principles of Corporate Finance*. 14th. McGraw Hill. ISBN 9781265074159 (Digital)

It is compulsory to follow one of the two books in the Bibliography. I prefer the other, but you may use this one.

EVALUATION CRITERIA

Your final grade in the course will be based on both individual and group work of different characteristics that will be weighted in the following way:

Criteria	Percentage	Comments
Class Participation & Individual Assignments	10 %	
Grade obtained in the problem sets	20 %	Problem sets
Grade obtained in the Midterm	25 %	
Grade obtained in the Final Exam	45 %	

A. CLASS PARTICIPATION (it represents 10% of the overall grade)

The students are expected to come prepared and participate actively (and voluntarily) during lectures. In addition, the professor can cold-call on students, particularly on those who have not participated in a while. The students are required to obey the "IE UNIVERSITY'S CODE OF CONDUCT IN CLASS" (see Section 8). Three main criteria will be used in reaching judgment about your class participation:

- Depth and Quality of Contribution: The most important dimension of participation concerns what it is that you are saying. A high quality comment reveals depth of insight, rigorous use of

case evidence, consistency of argument, and realism.

- Moving Your Peers' Understanding Forward: Great ideas can be lost through poor presentation. A high-quality presentation of ideas must consider the relevance and timing of comments, and the flow and content of the ensuing class discussion. It demands comments that are concise and clear, and that are conveyed with a spirit of involvement in the discussion at hand.
- Frequency: Frequency refers to the attainment of a threshold quantity of contributions that is sufficient for making a reliable assessment of comment quality. The logic is simple: if contributions are too few, one cannot reliably assess the quality of your remarks. However, once threshold quantity has been achieved, simply increasing the number of times you talk does not automatically improve your evaluation. Beyond the threshold, it is the quality of your comments that must improve. In particular, one must be especially careful that, in claiming more than a fair share of "airtime", quality is not sacrificed for quantity. Finally, your attempts at participation should not be such that the instructor has to "go looking for you". You should be attempting to get into the debate on a regular basis.

B. PROBLEM SETS (the sets represent a total of 20% of the overall grade)

The problem sets contribute to a total of 20% of your grade, you are recommended to work in groups no larger than 5 students and hand in 1 copy of the assignment promptly at the deadline (start of the session). Late assignments will not be graded. These problem sets will serve as guidance toward the midterm and the final exam. Please pay attention to the presentation of your solutions, it will be taken into account for the marks.

C. MIDTERM EXAM

The midterm exam is a mandatory and individual computer-based assessment. It counts 25% of the final mark. The content of the midterm will be based on the material covered until the date.

D. FINAL EXAM

The final exam is a mandatory and cumulative computer-based exam. A minimum grade of 4/10 is required for this exam in order to pass the subject, even if the aggregate mark of the course including all the assessments is greater than 5. The retake policy will follow the university rule (see below).

RE-SIT / RE-TAKE POLICY

Each student has four (4) chances to pass any given course distributed over two (2) consecutive academic years. Each academic year consists of two calls: one (1) ordinary call (during the semester when the course is taking place); and one (1) extraordinary call (or "re-sit") in June/July.

Students who do not comply with the 70% attendance requirement in each subject during the semester will automatically fail both calls (ordinary and extraordinary) for that Academic Year and have to re-take the course (i.e., re-enroll) during the next Academic Year.

The Extraordinary Call Evaluation criteria will be subject to the following rules:

- Students failing the course in the ordinary call (during the semester) will have to re-sit evaluation for the course in June / July (except those students who do not comply with the attendance rule, and therefore will not have that opportunity, since they will fail both calls and must directly re-enroll in the course during the next Academic Year).
- It is not permitted to change the format nor the date of the extraordinary call exams or deadlines under any circumstance. All extraordinary call evaluation dates will be announced in advance and must be taken into consideration before planning the summer (e.g. internships, trips, holidays, etc.)
- The June/July re-sit will consist of a comprehensive evaluation of the course. Your final grade

for the course will depend on the performance in this exam or evaluation only. I.e., continuous evaluation over the semester (e.g. participation, quizzes, projects and/or other grade components over the semester) will not be taken into consideration on the extraordinary call. Students will have to achieve the minimum passing grade of 5 and the maximum grade will be capped at 8.0 (out of 10.0) – i.e., “notable” in the extraordinary call.

- Re-takers: Students who failed the subject on a previous Academic Year and are now re-enrolled as re-takers in a course will need to check the syllabus of the assigned professor, as well as contact the professor individually, regarding the specific evaluation criteria for them as re-takers in the course during that semester (ordinary call of that Academic Year). The maximum grade that may be obtained as a retaker during the ordinary call (i.e., the 3rd call) is 10.0 (out of 10.0). The evaluation will be realized as follows: Option 1. Two quizzes at the student's choice (40%) and the final comprehensive exam (60%). The student must obtain a 5 out of 10 minimum in the final exam in order to pass the subject. Option 2. The student may also choose to take the final exam as the only assessment (100%). For both options, the passing grade is 5.

After exams and other assessments are graded by the professor (on either the ordinary or extraordinary call), students will have a possibility to attend a review session (whether it be a final exam, a final project, or the final overall grade in a given course). Please be available to attend the session in order to clarify any concerns you might have regarding your grade. Your professor will inform you about the time and place of the review session.

- Students failing more than 18 ECTS credits after the June/July re-sits will be asked to leave the Program. Please, make sure to prepare yourself well for the exams in order to pass your failed subjects.
- In case you decide to skip the opportunity to re-sit for an exam or evaluation during the June/July extraordinary call, you will need to enroll in that course again for the next Academic Year as a re-taker, and pay the corresponding tuition fees. As you know, students have a total of four (4) allowed calls to pass a given subject or course, in order to remain in the program.

PROFESSOR BIO

Professor: **JORGE CASTELLANOS**

E-mail: jcastellanos@faculty.ie.edu

Jorge Castellanos worked in multilateral, commercial and investment banking, private equity, infrastructure, and public service in Colombia and the US. He led diverse institutions: ETB (telecoms), Bancafé (bank), FINTRA (private equity), Correal investment banking, Fogafín (deposit insurance/bank restructuring), Banking Superintendence (regulator of banks/insurers/others), Public Credit (national debt office), and worked at JP Morgan and The World Bank.

He developed solutions to a banking crisis, created the government bond market (TES), enacted financial regulation, restructured, turned around and sold companies, and managed risks, financing, derivatives, and private equity funds. He advised multilaterals, governments, and private clients, served on numerous boards of directors, and has taught graduate finance at U. de Los Andes and IE.

PhD, Business Economics, Columbia University.

OTHER INFORMATION

ETHICS CODE

This course will be conducted according to the rules specified in the IE Ethics Code which demands zero tolerance for academic dishonesty. You are expected to be familiar with the School's Ethics Code and to follow the procedures outlined therein. All work handed in for grading has to be your own or your group's, and all sources of information used have to be accounted for.

CODE OF CONDUCT IN CLASS

1. Be on time: Students arriving more than 5 minutes late will be marked as "Absent". Only students that notify in advance in writing that they will be late for a specific session might be granted an exception (to the discretion of the professor).
2. If applicable, bring your name card and strictly follow the seating chart. It helps faculty members and fellow students learn your names.
3. Don't leave the room during the lecture: Students are not allowed to leave the room during the lecture. If a student leaves the room during the lecture, he/she will not be allowed to re-enter and, therefore, will be marked as "Absent". Only students that notify that they have a special reason to leave the session early will be granted an exception (to the discretion of the professor).
4. Do not engage in side conversation. As a sign of respect toward the person presenting the lecture (the teacher as well as a fellow student), side conversations are not allowed. If you have a question, raise your hand and ask it. If you do not want to ask it during the lecture, feel free to approach your teacher after class. If a student is disrupting the flow of the lecture, he/she will be asked to leave the classroom and, consequently, will be marked as "Absent".
5. Use your laptop for course-related purposes only. The use of laptops during the lectures should be authorized by the professor. The use of Facebook, Twitter, or accessing any type of content not related to the lecture is penalized. The student will be asked to leave the room and, consequently, will be marked as "Absent".
6. No cellular phones: IE University implements a "Phone-free Classroom" policy and, therefore, the use of phones, tablets, etc. is forbidden inside your classroom. Failing to abide by this rule entails expulsion from the room and will be counted as one Absence.
7. Escalation policy: 1/3/5. Items 4, 5, and 6 above entail expulsion from the classroom and the consequent marking of the student as "Absent." IE University implements an "escalation policy": The first time a student is asked to leave the room for disciplinary reasons (as per items 4, 5, and 6 above), the student will incur one absence, the second time it will count as three absences, and from the third time onward, any expulsion from the classroom due to disciplinary issue will entail 5 absences.