

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
SCHOOL OF ENGINEERING
DEPARTMENT OF INDUSTRIAL AND SYSTEM ENGINEERING
ABET COURSE SYLLABI

ICS3413 FINANCE

Credits and contact hours: 10 UC Credits /10 hours (2:40 hours lectures; 1:20 hours assistantship and 6 individual work hours per week)

Instructor's name: Cortázar Gonzalo, Reyes Tomás, González Rodrigo, Iratchet Ignacio, Tapia Claudio

Course coordinator's name Cortázar Gonzalo, Reyes Tomás

Textbook: Principios de Finanzas Corporativas, B&M(9e) Brealey,Myers,Allen, 9^a Ed. 2010
Corporate Finance, Berk, DeMarzo, 2^a Ed. 2010.

Course Catalog Description: This course is oriented to present the basic paradigms of the finances modern theory and its applications to corporative finance. Finance theory has experienced an accelerated development in the last decades; there's an accumulation of financial data (prices, volumes, transactions) that allows us to empirically validate each theoretical model proposed, as well as to recognize economic behavior that remained hidden. Given this, the class discussion has its emphasis in the strengths and weaknesses of current models.

Prerequisite Courses: ICS2613 Accounting And Management Control

Co-requisite Courses: None

Status in the Curriculum: Required

Course Learning

Outcomes:

1. Learn how financial markets work.
2. Analyze and evaluate firm's investment decisions.
3. Analyze and evaluate fixed income and interest rate valorization models.
4. Analyze the relation between risk and return and evaluate investment portfolio selection models.
5. Analyze financial market models, asset pricing models and risk management models.
6. Analyze and understand assets pricing models under arbitrage and its applications to derivative pricing.
7. Analyze financing decisions and dividend policies of an organization.

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Relation of Course to ABET Criteria:

- b. Design and conduct experiments: analyze and interpret data
- c. Design a system, component, or process
- e. Identify, formulate, and solve engineering problems
- f. Professional and ethical responsibility

Topics covered:

Investors, Firms and Financial Decision Making

- The Corporation, Cash flows associated with stocks, bonds and certain derivatives.
- How investors make decisions, NPV Rule, Present Value Calculations
- Interest Rates, Inflation: Nominal vs. real interest rates, Carlo an Case
- Alternative Valuation Methods
- Capital Budgeting: Understanding the role of taxes, Determmation of Free Cash Flows

Valuation of Securities

- Introduction to Pricing of Securities, No-Arbitrage, Efficient Markets and Security Prices
- Bond Pricing: Spot rates, forward rates, yield to maturity, Corporate bond ratings
- Simple stock valuation. Dividend Growth Model, Comparable Valuation
- Statistics Overview (Mean, Volatility/ Variance, Covariance, Estimation Error), Application to Stock Portfolios,
- Diversification, Systematic vs. Idiosyncratic risk
The Capital Asset Pricing Model. Portfolio theory and the relationship between risk and return, Implementation of CAPM (Estimating the Cost of Capital)

Capital Structure

- Capital Structure in Perfect Markets, Modigliani-Miller Theorem
Capital Structure with Taxes, Finn Valuation

Derivatives

- Introduction to Futures and Options
- Futures and Options Valuation