

Corporate finance speciality



ECTS credits
8 credits



Semester
Fall

In brief

> **Course language:** English

Presentation

Prerequisites

The Finance unit of DDEFi and its own requirements.

Learning objectives

- * Know how to build a financial model and challenge its assumptions
- * Know how to produce and use financial information
- * Understand how bankers can manage risks using structured finance
- * Understanding the specificities of start-up financing and advising
- * Know the basic data science models and their usage

Description of the programme

This unit is composed of three courses (of 24 hours each): **Structured finance**, **Project finance**, and **Workshop in corporate finance**; and is complemented by the third part of the data project (9 hours course and 12 hours project) devoted to models and their validation.

Structured finance

1. Main market players and rationale for using structured finance
2. Promoters Credits
 - i. Understanding the Promoter's logic

- ii. Understanding Credit Risk
- iii. Assessing the risks for the banker
3. Investor Credit
 - i. Conceptualization
 - ii. Leverage and Loan to Value (LTV)
 - iii. Debt Service Cover Ratio (DSCR) and Interest Cover Ratio (ICR)
 - iv. Slicing of Debt
4. Due diligence and points of vigilance of the banker
 - i. Leases and Rental Conditions
 - ii. Valuation Report
5. Other operations
6. Perspectives on Market Finance (Securitization)

Project finance

1. The main steps of project finance
 - i. Tender
 - ii. Structuring
 - iii. Optimization
2. Financial modelling
 - i. The issue of circularity
 - ii. Internal rate of return and gearing ratio
 - iii. Case study
3. The case of renewable energy projects
 - i. Prices and costs of renewables
 - ii. Bank vs funds
 - iii. How to set the price of a project?

Workshop in corporate finance

1. Financial modelling using Excel
2. The specificities of Transaction Services Advisory
3. Advising start-ups (on their business model and in making them viable)
4. Projects with real start-ups

Data science projects. Part 3: Models and validation

1. Projects and models
 - i. The Bias-Variance tradeoff
 - ii. Feature Selection
 - iii. Feature Engineering
 - iv. Defining a metric
2. Models and applications
 - i. Regressions (linear, polynomial, penalized et logistic)
 - ii. Decision trees (random forest and gradient boosting)

3. Focus on Natural Language Processing (NLP)

Generic central skills and knowledge targeted in the discipline

- * Know the advantages and drawbacks of structured operations
 - * Understand how these operations can allow for financing large industrial projects, in particular on renewables.
 - * Know the advantage and drawbacks of PPPs
 - * Know how to use start-ups business plans and discussions with the creators to help them for in the fundraising process.
 - * Know how to use data science models (Natural Language Processing in particular) in business projects.
-

How knowledge is tested

- * Group project and presentation (Structured finance): 25%
 - * Project (Project finance): 25%
 - * Group project and presentation (Workshop): 25%
 - * Group project and presentation (Data science projects): 25%
-

Bibliography

Corporate finance

- * Vernimmen, P. (2021). Finance d'entreprise. Dalloz

Data science projects

- * Zeng, A and Casari, A. Feature Engineering for Machine Learning. O'Reilly Media.
 - * Müller, A. and Guido, S. Introduction to Machine Learning with Python. O'Reilly Media.
-

Teaching team

- * Structured finance: Amaury Schoenauer (Caisse d'épargne CEPAC)
 - * Project finance: Mehdi El Alaoui (International Finance Corporation),
Benoît Forgues (Amiral gestion), Olivier Vandooren (Sigée Finance)
 - * Workshop in corporate finance: Julien Belon (Arx Corporate Finance),
Hugues Chabalier (2CFinance), Mathieu Rebbi (Eight advisory)
 - * Data science projects: Alexandre Chirié (Mantiks), Maxilimilen Défourné (Mantiks)
-

Sustainable Development Goal



Partnerships for the goals



Responsible consumption and production



Affordable and clean energy



Building Resilient Infrastructure

Total des heures

CM	Master class	100h
CM	Master class	70h
		30h