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MASTER Economics
Quantitative finance and insurance

Contacts

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Description

Type of degree: Master's degree (120 ECTS)

Domain: Law, Economics, Management

Information

Registration fees: 256 €
(initial training in 2017/2018)

http://formations.univ-amu.fr

Department: Faculty of Economics and Management

AIM

The training provides a comprehensive approach to insurance and financial markets. It gives students both empirical and theoretical skills which allow them to specifically understand market mechanisms. The main goal is to provide the student with a certain number of theoretical and empirical tools to allow him/her to evolve in most jobs of the financial and actuarial sector and to grasp the future stakes. This track is co-organized with Centrale Marseille. The majority of courses specific to this track are common to both schools.

PROFESSIONAL SKILLS

Main professional skills targeted at after graduation :

- To understand how insurance and finance markets work.
- To apprehend and model financial and insurance related settings to build relevant strategies.
- To evaluate a company or project with a view to funding or to deal
- To evaluate a financial asset prior to positioning (buying/selling)
- To compare various investment strategies
- To measure the performance of financial assets
- To modelize behaviour in the face of risk
- To solve complex financial problems

FUNDAMENTAL PREREQUISITES

Solid bases in microeconomics (especially contract theories), as well as probabilities (conditional probabilities among others) and statistics (estimating and testing) are necessary. Notions in economics of uncertainty are recommended.

RECOMMENDED PREREQUISITES

This track is particularly adapted to students who have validated the first year of the Master of economics in the AMSE department of the Faculty of Economics and Management of Aix-Marseille University. Access is possible in second year (M2).

INTERNSHIPS AND SUPERVISED PROJECTS

At the end of the year, the students go through an internship and write a master's internship report . The goal of the report is to prove their ability to apply the conceptual tools they have acquired to issues of the professional world. The student must therefore identify the question, implement the tools and be able to communicate the results to a professional audience as well as an academic one. The project is tutored by a scholar and an internship director (a member of the business). The report is defended in front of a jury comprised of the academic tutor, the internship director and two other people with acknowledged skills (and at least one scholar).

LINKS WITH RESEARCH

This Master's degree is part of the *Ecole Universitaire de Recherche (EUR) AMSE*, which gathers together almost a hundred researchers from AMU, CNRS, EHESS, and ECM.
The teachers are selected according to their expertise within those institutions. The teaching staff is supplemented with practitioners.

TRACK FQA (OPPT)

MASTER 1

- Semester 1 (30 ECTS)
  - Microeconomics I and II (6 ECTS)
    - Microeconomics I
    - Microeconomics II
  - Macroeconomics I and II (6 ECTS)
    - Macroeconomics I
    - Macroeconomics II
  - Econometrics I and II (6 ECTS)
    - Econometrics I: linear model
    - Econometrics II: non linear model
  - Labor economics - Risk and incentives (6 ECTS)
    - Labor economics
    - Risk and incentives
  - Methodology I (6 ECTS)
    - Software for economists I
    - Mathematics for economists
  - Elective course, choose one among two
    - Refresher course in economics
    - Refresher course in mathematics and statistics
- Semester 2 (30 ECTS)
  - Microeconomics III and IV (6 ECTS)
    - Microeconomics III - Game theory
    - Microeconomics IV - Public economics
  - Macroeconomics III and IV (6 ECTS)
    - Macroeconomics III
    - Macroeconomics IV
  - Methodology II (10 ECTS)
    - Time series
    - Software for economists II
    - Mathematics for finance
    - Evaluation by econometric methods
  - Elective teaching unit, choose 2 among 3 (8 ECTS)
    - Project management - Health and environmental economics (4 ECTS)
      - Project management
      - Health and environmental economics
    - Introduction to corporate finance - Financial econometrics (4 ECTS)

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- Introduction to corporate finance
- Financial econometrics
- Software for economists III - International trade (4 ECTS)
  - Software for economists III
  - International trade

MASTER 2

- Semester 3 (30 ECTS)
  - Theory of financial markets (6 ECTS)
    - Models of finance
    - Portfolio management
  - Economic and financial analyses (6 ECTS)
    - Corporate finance I
    - Economics of risk and insurance
  - Mathematics and statistics for finance (6 ECTS)
    - Stochastic finance
    - Econometrics of banking and finance
  - Quantitative methods in finance and insurance (6 ECTS)
    - Big data and finance
    - Actuarial science I
  - Economics of finance (6 ECTS)
    - Economics, finance and crises
    - Innovation and finance
- Semester 4 (30 ECTS)
  - End-of-study internship with report and defence (24 ECTS)
  - Elective courses, choose 2 among 4 (6 ECTS)
    - Numerical methods for finance (3 ECTS)
      - Numerical methods for finance
    - Actuarial science II (3 ECTS)
      - Actuarial science II
    - Corporate finance (3 ECTS)
      - Corporate finance II
    - Credit risk (3 ECTS)
      - Credit risk

TRACK FQA MAGISTÈRE OPTION (OPPT)

M1 ECONOMICS (MAGISTÈRE OPTION) (AN)

- S1 M1 Economics magistère option (SE) (36 ECTS)
  - Microeconomics I and II (6 ECTS)
    - Microeconomics I
    - Microeconomics II
  - Macroeconomics I and II (6 ECTS)
    - Macroeconomics I
    - Macroeconomics II
  - Econometrics I and II (6 ECTS)
    - Econometrics I: linear model
    - Econometrics II: non linear model
  - Labor economics - Risk and incentives (6 ECTS)
    - Labor economics
    - Risk and incentives
  - Methodology I (6 ECTS)
    - Software for economists I
    - Mathematics for economists
  - Big Data (6 ECTS)
    - Big data, challenges and opportunities
    - Programming for Big Data, an introduction to Python and SQL
    - Big data softwares
- S2 M1 Economics magistère option (SE) (36 ECTS)
  - Microeconomics III and IV (6 ECTS)
    - Microeconomics III - Game theory
    - Microeconomics IV - Public economics
  - Big Data (6 ECTS)
    - Advanced SAS
    - Introduction to machine learning
  - Macroeconomics III and IV (6 ECTS)
    - Macroeconomics III
    - Macroeconomics IV
  - Méthodologie (6 ECTS)
    - Software for economists II
    - Mathematics for finance
  - Vocational courses (6 ECTS)
    - Quantitative marketing
    - Software: R
    - Economic policy II
    - Insurance mechanisms
    - Oral training on Economics topics
    - Oral training in English
  - Elective courses, choose 2 among 6 (6 ECTS)
    - Introduction to corporate finance (3 ECTS)
      - Introduction to corporate finance
    - Project management (3 ECTS)
      - Project management
    - Health and environmental economics (3 ECTS)
      - Health and environmental economics
    - Evaluation by econometric methods (3 ECTS)
      - Evaluation by econometric methods
    - International trade (3 ECTS)
      - International trade

M2 TRACK FQA : MAGISTÈRE OPTION (AN)

- S3 M2 FQA magistère option (SE) (36 ECTS)
  - Theory of financial markets (6 ECTS)
    - Models of finance
    - Portfolio management
  - Economic and financial analyses (6 ECTS)
    - Corporate finance I
    - Economics of risk and insurance
  - Mathematics and statistics for finance (6 ECTS)
    - Stochastic finance
    - Econometrics of banking and finance
  - Quantitative methods in finance and insurance (6 ECTS)
    - Big data and finance
    - Actuarial science I
  - End-of-study project (6 ECTS)
  - Big Data (6 ECTS)
    - IT tools for Big Data, a deeper view
    - Advanced machine learning
- S4 M2 FQA magistère option (SE) (36 ECTS)
  - End-of-study internship with report and defence (24 ECTS)
  - Big data IV (6 ECTS)
    - Managing Big Data with SAS
    - Hands-on project
  - Elective courses, choose 2 among 4 (6 ECTS)
    - Numerical methods for finance (3 ECTS)
      - Numerical methods for finance
    - Actuarial science II (3 ECTS)
      - Actuarial science II
    - Corporate finance (3 ECTS)
      - Corporate finance II
    - Credit risk (3 ECTS)
      - Credit risk