

3rd Year Track DDEFi

Data, Decisions in Economics and Finance

(Données, Décisions Economiques et Financières in French)



Graduate Program outlines

The graduate program is designed to offer a wide range of courses into several fields : Mathematical Finance, Insurance or Quantitative Management.

Technology and economy are more and more complex. Mathematics and their applications are the heart of the decision tool needed in this world: they help to model, evaluate and control risks associated to industrial processes, economical phenomena or financial products. The knowledge of mathematical tools associated to a deep understanding of these phenomena is largely appreciated in many areas.

Depending on the status of the student, the student can also attend a Master program in parallel with the track DDEFi :

- Master Aix-Marseille School of Economics (AMSE), track [Finance Quantitative et Assurance](#) (information contact at Centrale Marseille: Renaud Bourlès)
- Master in Applied Mathematics and Statistics, track Data Science (information contact at Centrale Marseille: Christophe Pouet)

Goals

Prepare students to become highly skilled engineers able to recognize and model complex problems in order to develop adequate strategical decisions

The main topics are finance, insurance, probability, statistics, scientific computing, optimization, mathematical modelling for risks in economy and finance, actuarial science, marketing, quantitative management.

Important information for exchange students

EXCHANGE STUDENTS: This section contains VERY IMPORTANT information for preparing your mobility.

Number of accepted students

The 3rd Year scientific tracks such as DDEFi have a limited number of accepted students. Priority is given to Centrale Marseille engineering degree students. Nevertheless, the track DDEFi has always been able to accept exchange students (usually 3 or 4).

Academic calendar

Please note the special duration of Semester 9: the 3rd Year **Fall-Winter semester extends from early September to end of March**. Check with your local coordinator if it fits your mobility window.

Language of instruction

If you intend to come for one year at Ecole centrale de Marseille, please note that depending on the number of credits taken, your proficiency in French must be at least at intermediate level (level B1 or higher recommended).

Please note that the instruction language is English for many course units in the track DDEFi.

Number of credits for a full exchange year

If you intend to come for one year, the Spring semester will necessarily be a research or work placement (equivalent to a Master Thesis, 30 ECTS). We cannot offer courses during the Spring semester to students who attend 3rd year courses. This is due to academic calendar constraints.

Please check the information below about credits.

Availability of courses

- Courses may be cancelled with very short notice (e.g. if not enough students sign up for the course), although that should happen very seldom in the 3rd year track DDEFi.
- Courses may be overbooked (too many students sign up) preventing you from taking the course. Priority is given to degree-seeking students.

Structure of the program

The track DDEFi allows a student to validate 12 ECTS for courses and 5 ECTS for a team project. If as an exchange student you need to validate between 18 and 30 ECTS during a semester, please read CAREFULLY what is written below the table.


Academic Team

Instructors are from Centrale Marseille, from other HEI's (such as Aix-Marseille Université or Kedge BS) or highly skilled practitioners from renowned companies. Full list of instructors available in French [here](#)

List of course units

The DDEFi track offers 12 ECTS credits for the taught courses and 5 ECTS credits for the DDEFi project (team project with a private company).

The structure of the program DDEFi is the following

Team Project : from mid-September to end of March						
English Name	French name	Code	ECTS	Contact hours	Coordinator	
DDEFi project	Projet DDEFi		5	100h		
Period 1 : Common core						
English Name	French name	Code	ECTS	Contact hours	Coordinator	
Data science project	Projet Data		3	60h		
Models and Decisions	Modèles et décisions		3	72h		
Period 2 : major (1 course unit to be chosen)						
English Name	French name	Code	ECTS	Contact hours	Coordinator	
Finance	Finance 		3	72h		
Data and decisions	Données et décisions		3	72h		
Period 3 : specialised course unit (1 course unit to be chosen)						
English Name	French name	Code	ECTS	Contact hours	Coordinator	
Mathematical finance	Mathématiques financières		3	72h		
Corporate finance	Finance d'entreprise		3	72h		
Actuarial science	Actuariat		3	72h		
Data analysis	Analyse et données		3	72h		

If as an exchange student, you need between 18 and 30 ECTS for your exchange semester, then you have to choose courses in the following offer (beware that most courses are in French)

- 3rd Year Common Core in Management (4 ECTS)
- International cultures and foreign languages (3 ECTS) : for example you can attend a course called French as a Foreign Language (the introduction week for international students has also an intensive French language course that can lead to credits).
- Professional track (6 ECTS) : the professional tracks that best suit the track DDEFi are Audit & Counselling (AUC), Entrepreneurship (ENT), Research & Development (R&D), Organisational Management (MO) et Production-Logistics (PRL).

An alternative solution is to attend courses from a Master programme or see if some joint courses between DDEFi track and Master programmes can be recognized as Master courses in your transcript of academic records (you usually get more ECTS credits in a Master programme than in the DDEFi track, even for the same course). **Please contact the DDEFi track coordinator for more information.**

Career prospects and postgraduate studies

- Banks, finance : BP2S, BNP-Paribas, Amundi,...
- Insurance, actuarial science : Axa, Crédit Agricole Assurances,...
- Audit, counselling, services : Mazars, E&Y, Solucom, Orange,...
- Industry : Chanel,...

For a more complete list of companies, please check the webpage (in French) [Employeurs potentiels : du stage au premier emploi](#)

After their graduation at Ecole centrale de Marseille, some students have attended one of the following graduate/postgraduate programmes:

- Mastères spécialisés [HEC](#), [ESSEC](#), [ESCP](#), [EM Lyon](#)
- Mastères spécialisés [ENSAE](#) (Actuariat, Finance de marché)
- Mastère spécialisé [IFP School](#)
- Mastère spécialisé [Mines de Paris](#)
- Master [MASEF](#), [IEF](#) Université Paris Dauphine
- Master [Mathématiques Appliquées à la Finance](#) Ecole Nationale des Ponts et Chaussées et Université Paris-Est Marne-la-Vallée
- Master [M2MO](#) Université Paris Diderot
- Master [London School of Economics](#)
- MBA [Collège des Ingénieurs](#)

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