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## M2 Data Science : Health, Insurance and Finance

Master's degree

Specialisation Mathematics and applications

Language(s) of instruction

English

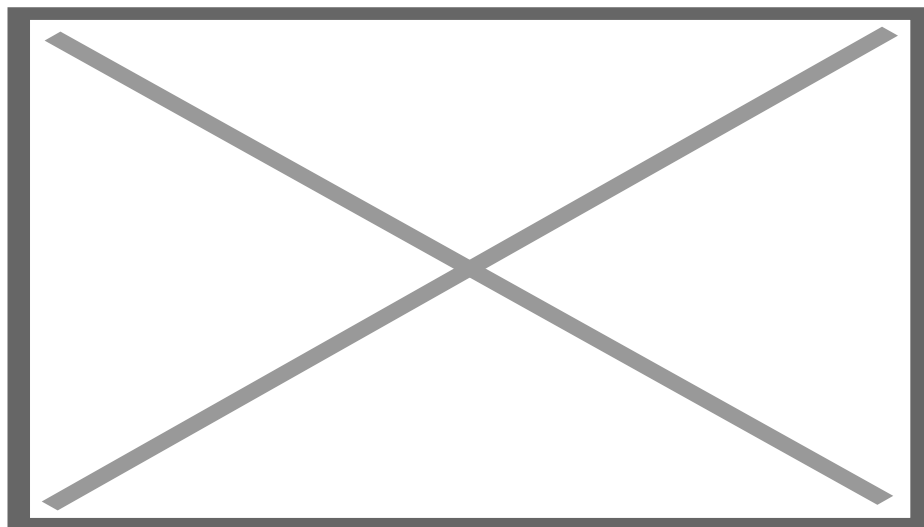
French

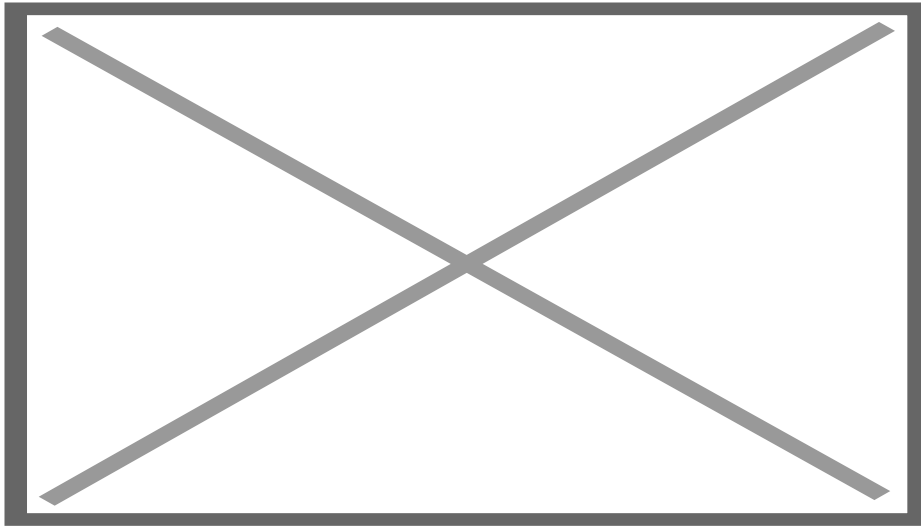
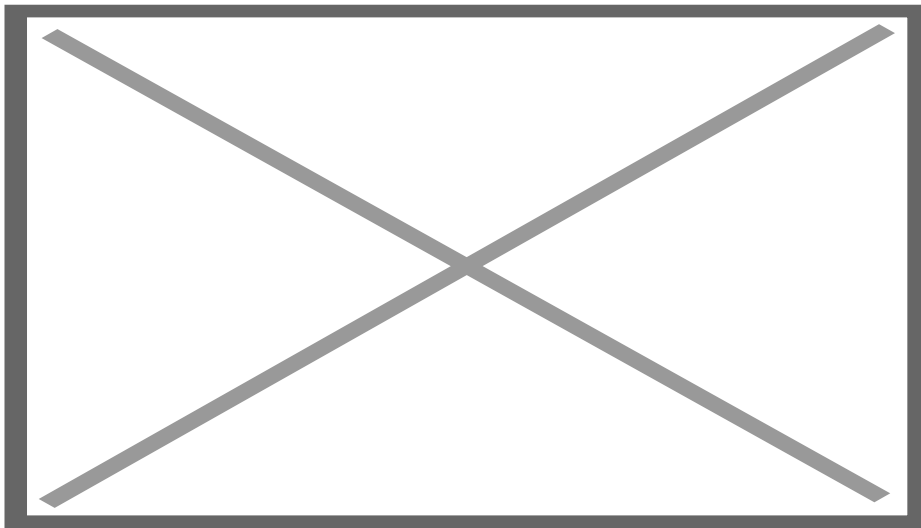
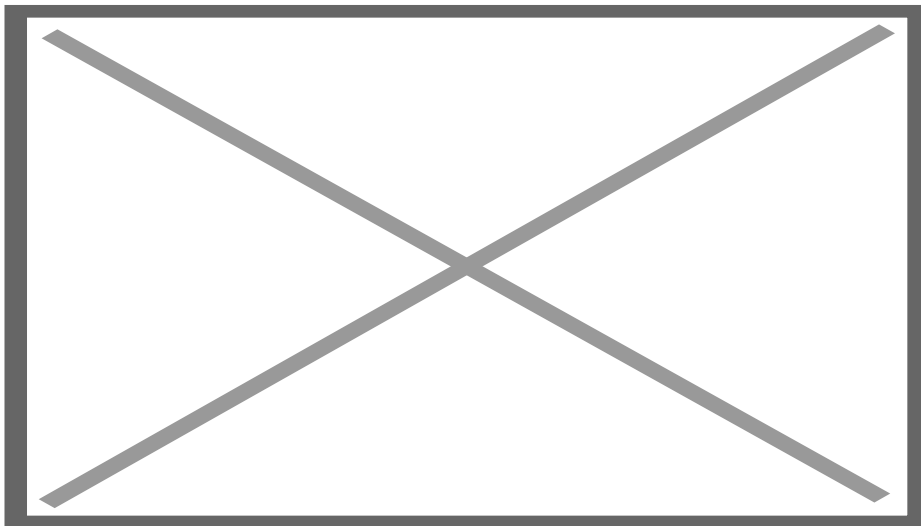
The Master 2, Data Science: Health, Insurance, Finance is a master's degree designed to train students from mathematics and applied mathematics backgrounds in data science (mathematical and computer science aspects) and advanced statistics.

Year organized into 5 blocks that can be compensated for each other, except for the internship

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## Information

- [Overview](#)
- [Application requirements](#)
- [Schedule](#)

Présentation

## **Skills**

- Understand, implement and develop statistical methods (mathematical, digital, statistical learning) for data science, deep learning and high dimensionality \* Manage large databases \* Select machine learning and statistical algorithms adapted to high dimensionality and relevant to application fields \* Develop the computer programmes needed to implement them (python, R, spark) \* Share the results obtained with appropriate visualisation tools.

## **Objectives**

- + Train students from mathematics and applied mathematics programs in data science (mathematical and computer science aspects) and advanced statistics.
- + Understand and know how to use machine learning and deep learning algorithms with a focus on three areas of application (health, insurance, finance).
- + Enable students to acquire in-depth knowledge of complex signals (data) from these fields

## **Calendar**

Start of programme (indicative date)

01/09/2026

End of programme (indicative date)

30/11/2027

Admission

## **Capacity**

### **Available Places**

15

## **Target Audience and Entry Requirements**

2nd year Master's Data Science: Health, Insurance, Finance is aimed in particular at 1st year Master's students in mathematics (or equivalent engineering school curriculum), and includes courses in inferential statistics and linear models, probability and stochastic processes, and programming (R and Python).

## **Période(s) de candidature**

## Supporting documents

### Compulsory supporting documents

Letter of recommendation or internship evaluation.

Detailed description and hourly volume of courses taken since the beginning of the university program.

### Additional supporting documents

Document indicating the list of local M2 choices available here : <https://urlz.fr/i3Lo>.

Programme

| Subjects                                                 | ECTS | Semester   | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | distance learning courses |
|----------------------------------------------------------|------|------------|---------|----------------|-----------------|------------------------|-------------------------|--------------------------------|---------------------------|
| <a href="#">English semester 2</a>                       | 2    | Semester 2 |         | 10             |                 |                        |                         |                                |                           |
| <a href="#">Charger le détail</a>                        |      |            |         |                |                 |                        |                         |                                |                           |
| <a href="#">English Semester 1</a>                       | 2    | Semester 1 |         | 10             |                 |                        |                         |                                |                           |
| <a href="#">Charger le détail</a>                        |      |            |         |                |                 |                        |                         |                                |                           |
| <a href="#">Statistics</a>                               | 6    | Semester 1 | 27      | 27             |                 |                        |                         |                                |                           |
| <a href="#">Charger le détail</a>                        |      |            |         |                |                 |                        |                         |                                |                           |
| <a href="#">Advanced Statistics and Machine Learning</a> | 6    | Semester 2 | 24      | 27             |                 |                        |                         |                                |                           |
| <a href="#">Charger le détail</a>                        |      |            |         |                |                 |                        |                         |                                |                           |
| <a href="#">Deep Learning</a>                            | 4    | Semester 2 | 15      | 15             |                 |                        |                         |                                |                           |

| Subjects                                                         | ECTS | Semester   | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | distance learning |
|------------------------------------------------------------------|------|------------|---------|----------------|-----------------|------------------------|-------------------------|--------------------------------|-------------------|
| <a href="#">Bayesian statistic and discrete latent variables</a> | 2.5  | Semester 1 | 12      | 15             |                 |                        |                         |                                |                   |
| <a href="#">Machine Learning/ IA fiable</a>                      | 2.5  | Semester 1 | 10.5    | 10.5           |                 |                        |                         |                                |                   |
| <a href="#">Dimension reduction (FA+FI)</a>                      | 2.5  | Semester 1 | 9       | 9              |                 |                        |                         |                                |                   |

| Subjects                                                             | ECTS | Semester   | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | distance learning |
|----------------------------------------------------------------------|------|------------|---------|----------------|-----------------|------------------------|-------------------------|--------------------------------|-------------------|
| <a href="#">Numerical finance and models calibration</a>             | 6    | Semester 1 | 42      |                |                 |                        |                         |                                |                   |
| <a href="#">Financial econometrics</a>                               | 3    | Semester 1 | 15      | 10             |                 |                        |                         |                                |                   |
| <a href="#">Statistics for genetics and genomics (Health option)</a> | 2.5  | Semester 2 | 9       | 9              |                 |                        |                         |                                |                   |
| <a href="#">Introduction to genetics (health option)</a>             | 2.5  | Semester 1 | 9       | 9              |                 |                        |                         |                                |                   |

| Subjects                                                                                  | ECTS | Semester   | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | distance learning |
|-------------------------------------------------------------------------------------------|------|------------|---------|----------------|-----------------|------------------------|-------------------------|--------------------------------|-------------------|
| <a href="#">Survival and longitudinal data analysis (options health and insurance)</a>    | 5    | Semester 1 | 10.5    | 10.5           |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a>                                                         |      |            |         |                |                 |                        |                         |                                |                   |
| <a href="#">Bioinformatics (Health option)</a>                                            | 2.5  | Semester 2 | 9       | 9              |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a>                                                         |      |            |         |                |                 |                        |                         |                                |                   |
| <a href="#">Machine Learning for insurance and finance (option insurance and finance)</a> | 5    | Semester 2 | 18      | 18             |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a>                                                         |      |            |         |                |                 |                        |                         |                                |                   |

| Subjects                          | ECTS | Semester   | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | distance learning |
|-----------------------------------|------|------------|---------|----------------|-----------------|------------------------|-------------------------|--------------------------------|-------------------|
| <a href="#">Stage</a>             | 15   | Semestre 2 |         |                |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a> |      |            |         |                |                 |                        |                         |                                |                   |

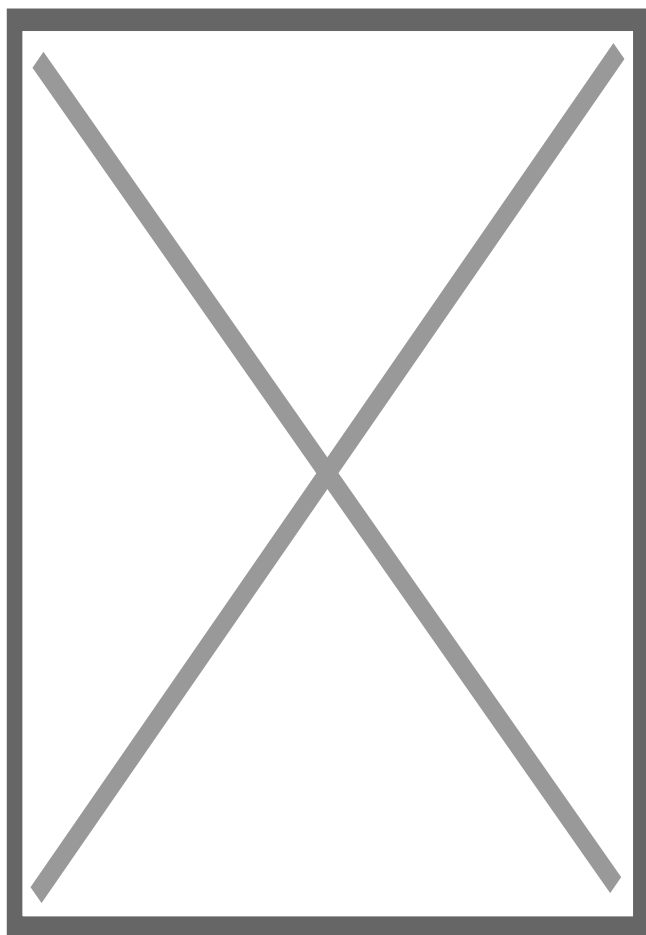
| Subjects                             | ECTS | Semester   | Lecture | directed study | practical class | Lecture/directed study | Lecture/practical class | directed study/practical class | distance learning |
|--------------------------------------|------|------------|---------|----------------|-----------------|------------------------|-------------------------|--------------------------------|-------------------|
| <a href="#">Basic of informatics</a> | 2    | Semester 1 | 9       | 9              |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a>    |      |            |         |                |                 |                        |                         |                                |                   |
| <a href="#">Advanced Informatics</a> | 4    | Semester 2 | 13.5    | 22.5           |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a>    |      |            |         |                |                 |                        |                         |                                |                   |
| <a href="#">Data Camp</a>            | 4    | Semester 2 |         | 9              |                 |                        |                         |                                |                   |
| <a href="#">Charger le détail</a>    |      |            |         |                |                 |                        |                         |                                |                   |

## Teaching Location(s)

EVERY

# Training campus

Javascript est requis pour visualiser cette carte.



## Evry

Evry  
Bus 9105, 4504  
RER D Evry Courcouronnes  
[Voir](#)  
Student restaurant (CROUS)  
Library  
Student residence  
Sports facilities

## Contact

- **Marie-Luce Taupin**

<http://www.universite-paris-saclay.fr/formation/master/mathematiques-et-applications/m2-data-science-sante-assurance-et-finance>