

**The Master in Mathematics offers a high-level two-year training in pure or applied mathematics for careers in research and teaching.**

## Introduction

The Master in Mathematics is based on a strong mathematical program with the aim of training high-level specialists in fundamental and applied mathematics. It offers a wide range of job prospects in **academic or industrial research**, as well as in **education**.

The master addresses a broad variety of topics, all of which are fascinating, and it also offers a great scientific overview to its students. It relies on a recognized research team, the **AGM Research Center in Mathematics (UMR CNRS 8088)**, which develops many collaborations with academic and industrial labs.

The Master in Mathematics benefits from a program of **excellence scholarships**, which provides a 7 300 euros annual support to the selected second-year applicants.

## Objectives

The Master in Mathematics offers a high-level two-year training in pure or applied mathematics for careers in research and teaching.

## Admission

### Prerequisite

#### Prerequisites training

The first year is open to candidates holding a bachelor's degree in mathematics or applied mathematics. Getting this diploma with honours will be fully appreciate.

The second year is open to candidates holding the first year of a master's degree in mathematics or applied mathematics.

## Places

The lectures are mainly given in the Saint-Martin campus.

## Internship(s)

Yes, Compulsory

## Conditions

- Attending

## Information

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## Application

### Conditions of applications

Application to the first year of the master

The first year of the Master in Mathematics will supervise 10 students during the 2025-2026 academic year. The application has to be made via the platform [Études en France](#). The application forms consist of:

- the diploma and mark transcripts from the bachelor's degree (in mathematics or applied mathematics),
- the diplomas and mark transcripts for the last four years,
- a motivation letter, which describes in particular the professional project.

**Deadline for the application:** December 15<sup>th</sup>, 2024.

Application to the second year of the master

The second year of the Master in Mathematics will supervise 10 students during the 2025-2026 academic year. The application has to be made via the platform [Études en France](#). The application forms consist of:

- the diploma and mark transcripts from the first year of the master's degree (in mathematics or applied mathematics),
- the diplomas and mark transcripts for the last four years,
- a motivation letter, which describes in particular the professional project.

**Deadline for the application:** December 15<sup>th</sup>, 2024.

# Program

The first year program aims at discovering and mastering mathematical objects and tools at the heart of the discipline. The second year is a year of specialization towards research.

## Master 1 Program

### Block 1

- Algebra (4 ECTS)
- Partial Differential Equations (4 ECTS)
- Advanced Optimization (4 ECTS)
- Probability (4 ECTS)
- Stochastic Processes 1 (4 ECTS)
- Python Programming (3 ECTS)
- Reading Group 1 (1 ECTS)
- Project (6 ECTS)

### Block 2

- Advanced Algebra (3 ECTS)
- Advanced Linear Algebra (3 ECTS)
- Differential Geometry (3 ECTS)
- Reading Group 2 (1 ECTS)
- Numerical Methods for Partial Differential Equations (3 ECTS)
- C++ Programming (2 ECTS)
- Advanced Statistics (3 ECTS)

### Block 3

- Advanced Functional Analysis (4 ECTS)
- Advanced Harmonic Analysis (4 ECTS)
- Dynamical Systems (4 ECTS)

## Master 2 Program

### Inset weeks

- Algebra and Geometry
- Analysis and Probability

### Semester 1

- Distributions and Partial Differential Equations (8 ECTS)

Reading Group 3 (2 ECTS)

Stochastic Processes (8 ECTS)

Dynamical Systems (8 ECTS)

## Semester 2

Specialization Lecture: Analysis (6 ECTS)

Doctoral School Lecture (6 ECTS)

Specialization Lecture: Geometry and Dynamical Systems (6 ECTS)

Master Thesis or Work Experience (12 ECTS)