## **Master Mathematics**



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 <u>AGM Research Center in Mathematics</u> (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

marie.chef@cyu.fr

+33134256561



## **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 <u>Études en France</u>. 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 <u>Études en France</u>. 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.

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Master 1 Program
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Block 1
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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)

