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 **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

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 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 15th, 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 15th, 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)