WELCOME

The Master in Advanced Mathematics and Mathematical Engineering (MAMME) has a dual orientation. It provides:

- The skills and techniques needed in mathematical research.
- An advanced background to work in interdisciplinary teams.

It benefits both from the leading mathematical research level and the technological environment of UPC–BarcelonaTech.

ESSENTIAL INFORMATION

60 ECTS credit master program (one academic year).

45 ECTS credits in courses and a 15 ECTS credit master thesis.

Face-to-face teaching.

Official teaching language: English.

VENUE AND SCHEDULE

Venue: School of Mathematics and Statistics of the UPC-BarcelonaTech (www.fme.upc.edu), Barcelona.

The program starts yearly in September.

- First term: September to January
- Second term: February to June

All classes are taught in the afternoon (2 to 6 pm).

Check mamme.masters.upc.edu/program/courses for detailed timetables.

PRE-ENROLMENT

See mamme.masters.upc.edu/info-general for pre-enrolment information.

ADMISSION CRITERIA

Admission based on: academic record, CV, statement of purpose and, if deemed necessary, personal interview and recommendation letters.

STUDY PROGRAM

Courses are offered in five broad fields:

- Algebra and Geometry
- Discrete Mathematics and Algorithmics
- Modelling in Engineering and Biomedical Sciences
- Differential Equations
- Scientific Computing

Check mamme.masters.upc.edu/program/courses for the complete list of courses.

Up to 22.5 ECTS credits may be taken from other master's degrees at UPC-BarcelonaTech and other selected universities or research centres. This allows specialisation in a given field.

MASTER THESIS

All students are required to write and defend a master thesis during the second term (research-oriented or application-oriented).

DOCTORAL PROGRAM IN APPLIED MATHEMATICS

This master program gives access to the PhD Program in Applied Mathematics.

The UPC-Barcelona Tech is very active in mathematical research:

- Ranked in the top 5 in Europe by the CHE Excellence Ranking 2010.
- 13 PhD theses defended in 2009/2010.

RESEARCH FIELDS

Algebra

Algebraic geometry

Algorithmics and complexity

Biomathematics

Combinatorics

Computational geometry

Control theory

Cryptography

Differential geometry

Dynamical systems

Game theory

Graph theory

Mathematical modelling

Number theory

Numerical methods

Partial differential equations

Optimisation

Scientific computing

PROFESSIONAL OPPORTUNITIES

Lluís Vena

I started the Master because I was not sure what I would do after finishing my degree. The options I had in mind were, either do some research,or work. However, I wanted both to be related with math. The Master allowed me to do a research project, which I enjoyed a lot, while it strengthened my mathematical knowledge with various courses. Currently, I am a Ph.D. student at the University of Toronto.

Elisa Lorenzo

After finishing my Bachelor of Mathematics in Madrid, I moved to Barcelona to attend the master's program at the UPC. I chose this program because of the prestige of UPC as well and its program, very aligned to my academic interest. I enjoyed very much my time in the program as I was very successful in it. Furthermore I'm joining the UPC PhD program the following year and I am very happy about that.

Gerard Tarragó

I studied the Master in Mathematical Engineering (Artificial Vision speciality). It was very useful for me as I am working in a Computer Vision company. I collaborated with VISIO, in a R+D project undertaken by researchers from UPC and from my company. After it, I presented the master thesis "Parallel Belief Propagation Algorithms for Stereo Vision", summarizing the results obtained in the project and affording solutions "to produce a stereo algorithm capable of being implemented in FPGA and working in real-time".

Inma Tur

I was graduated in Mathematics in 2008. Then, I studied the Biomedical Sciences branch of the Master in Mathematical Engineering at FME. This course was a valuable experience for my further studies as it covered many of the mathematical applications in biomedical fields such as genetics or neuroscience. I did my final thesis at the Department of Clinical Psychology of UIB. I am currently a PhD student at PRBB (Barcelona Biomedical Research Park).

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