

Bachelor's degree in Mathematics

SCHOOL OF MATHEMATICS AND STATISTICS (FME)

The **bachelor's degree in Mathematics**, accredited with excellence by AQU Catalunya, you will acquire a solid, full and rigorous education in all the basic mathematical subjects and their multiple applications. If you are interested in research, you will have all the tools you need to successfully join leading research groups working in mathematics, engineering and technology, natural and health sciences or social sciences. You will also be able to pursue a professional career in the world of business and industry and in sectors such as banking and finance, consulting, health or services, in which mathematicians are increasingly valued for their rigorous training and their capacity for analysis and learning. If teaching is your vocation, once you have completed the master's degree in teacher training you can teach mathematics in secondary schools.

GENERAL DETAILS

Duration

4 academic years

Study load

240 ECTS credits (including the bachelor's thesis). One credit is equivalent to a study load of 25-30 hours.

Delivery

Face-to-face

Admission mark 2025-2026 academic year

12,644

Timetables

Mornings

Language of instruction

Check the language of instruction for each subject (and timetable) in the course sheet in the curriculum.

Information on [language use in the classroom and students' language rights](#).

Fees and grants

Approximate fees per academic year: €1,061 (€1,800 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

Location

[School of Mathematics and Statistics \(FME\)](#)

Official degree

[Recorded in the Ministry of Science, Innovation and Universities](#)

ADMISSION

Places

75

Pre-enrolment code

31040

Places via a change of degree

6

Admission mark 2025-2026 academic year

12,644. [Admission mark](#)

Weighting. University entrance examinations (PAU)

Registration and enrolment

[What are the requirements to enrol in a bachelor's degree course?](#)

CFGS credit transfer

[Consult the university studies search engine of the Universities Channel of the Generalitat de Catalunya](#)

Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Fundamentals of Mathematics	7.5	Compulsory
Informatics	7.5	Compulsory
Linear Algebra	7.5	Compulsory
Single Variable Calculus	7.5	Compulsory
SECOND SEMESTER		
Affine and Euclidean Geometry	7.5	Compulsory
Differential Calculus	7.5	Compulsory
Discrete Mathematics	7.5	Compulsory
Numerical Linear Algebra	7.5	Compulsory
THIRD SEMESTER		
Algorithmics	7.5	Compulsory
Integral Calculus	7.5	Compulsory
Mathematical Programming	7.5	Compulsory
Multilinear Algebra and Geometry	7.5	Compulsory
FOURTH SEMESTER		
Complex Variable Functions	7.5	Compulsory
Physics	7.5	Compulsory
Real Analysis	7.5	Compulsory
Topology	7.5	Compulsory
FIFTH SEMESTER		
Algebraic Structures	7.5	Compulsory
Numerical Calculus	7.5	Compulsory
Ordinary Differential Equations	7.5	Compulsory
Probability Theory	7.5	Compulsory
SIXTH SEMESTER		
Differential Geometry	7.5	Compulsory
Mathematical Models in Physics	7.5	Compulsory
Partial Differential Equations	7.5	Compulsory
Statistics	7.5	Compulsory

Subjects	ECTS credits	Type
SEVENTH SEMESTER		
Mathematical Models in Technology	9	Compulsory
Abstract Algebra	3	Optional
Algorithmics and Complexity	6	Optional
Bayesian Methods	6	Optional
Combinatorics and Graph Theory	6	Optional
Cryptology	6	Optional
Data Engineering and Blockchain	3	Optional
Data Science for Finance	3	Optional
Differentiable Manifolds	6	Optional
Dynamical Systems	6	Optional
Experimental Design	6	Optional
Files and Databases	6	Optional
Galois Theory	6	Optional
Generalised Linear Models	6	Optional
Industrial Statistics	6	Optional
Linear Models	6	Optional
Mathematics Applied to Music	3	Optional
Mathematics for Education and Dissemination	6	Optional
Mathematics of Digital Technologies	3	Optional
Numerical Methods for Differential Equations	6	Optional
Statistical Methods for Finance and Insurance	6	Optional
Statistical Methods in Data Mining	6	Optional
Time Series Analysis	6	Optional
EIGHTH SEMESTER		
Algebraic Geometry	6	Optional
Algebraic Topology	6	Optional
Computational Modelling	6	Optional
Control Theory	6	Optional
Demography	6	Optional
Econometrics	6	Optional
Engineering Optimisation	6	Optional
Financial Mathematics	6	Optional
Financial Optimisation	6	Optional
Functional Analysis	6	Optional
History of Mathematics	6	Optional
Multivariate Analysis	6	Optional
Music and Mathematics	3	Optional

Subjects	ECTS credits	Type
Non-Linear Time Series Analysis	6	Optional
Non-Parametric and Resampling Methods	6	Optional
Quantum Computing	6	Optional
Queueing Theory and Simulation	6	Optional
Statistics for Biosciences	6	Optional
Survival Analysis	6	Optional
Bachelor's Thesis	15	Project

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Data analysis for the financial sector, insurance companies and administrations that work with large volumes of information.
- Data analysis, programming and software engineering for companies in the industrial, service and technology sectors, as well as in market research, planning and team management.
- Banking, finance and insurance: risk analysis and control, portfolio and fund management, investments, design and valuation of financial products, cryptography and security.
- Strategic and technological consulting, project management and studies.
- Secondary school teaching in public or private schools, as well as in publishing houses and companies in the education sector.
- Research in other sciences, engineering and technology: research centres and laboratories in the public and private sectors in areas such as computing, communications, robotics, mechanics, biology or medicine.
- Research in mathematics: teaching and research staff at universities and research centres.

DOUBLE-DEGREE AGREEMENTS

With Escola Superior de Música de Catalunya (ESMUC)

- Bachelor's degree in Mathematics + Higher Music degree

Within the framework of the courses offered by the Interdisciplinary Higher Education Centre (CFIS)

You can also take an interdisciplinary double degree coordinated by the CFIS at two UPC schools.

Further information on the [CFIS website](#)

QUALITY ACCREDITATION

Check the degree's main quality indicators in the University Studies in Catalonia portal of the Catalan University Quality Assurance Agency. Find information on topics such as degree evaluation results, student satisfaction and graduate employment data.

[Further information](#)

ACADEMIC ORGANISATION

Academic calendar

[General academic calendar for bachelor's, master's and doctoral degrees courses](#)

Academic regulations

[Academic regulations for bachelor's degree courses at the Universitat Politècnica de Catalunya \(UPC\).](#)

Language certification and credit recognition

Queries about [language courses and certification](#)

