

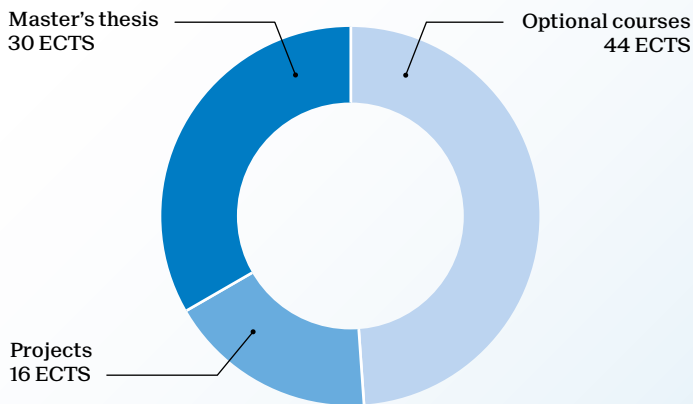
MATHEMATICS

MASTER



Master of Science in MATHEMATICS

1 1/2-year program - 90 ECTS



Students may choose following tracks:

- Algebra and geometry
- Algorithmic and Discrete Mathematics
- Analysis
- Numerical Analysis
- Probability
- Statistics

It is possible to choose an additional 30 ECTS Minor.

	Credits
Optional courses	44
Algebra and Geometry	
Algebraic curves and cryptography	5
Differential geometry of framed curves	5
Gödel and recursivity	5
Homotopical algebra	5
Introduction à la géométrie riemannienne	5
Introduction to algebraic geometry	5
Linear algebraic groups	5
Lie groups	5
Number theory in cryptography	5
Representation theory of semisimple Lie algebras	5
Riemann surfaces	5
Set theory	5
TNT : Automorphic forms and L-functions	5
Algorithmic and Discrete Mathematics	
Combinatorial Geometry	5
Combinatorial optimization	5
Convexity	5
Mathematical modelling of behavior	5
Optimal transport	5
Packing and covering	5
Probabilistic methods	5
Analysis	
Analyse fonctionnelle II	5
Analysis on groups	5
Dispersive PDEs	5
Harmonic analysis	5
Parabolic and hyperbolic PDEs	5
Numerical Analysis	
Computational linear algebra	5
Computational finance	5
Mathematical modelling of DNA	5
Mathematical physiology	5
Numerical approximation of PDEs II	5
Numerical integration of dynamical systems	5
Numerical integration of stochastic differential equations	5
Numerical methods for conservation laws	5
Numerical methods for saddle point problems	5
Probability	
Computational finance	5
Martingales in financial mathematics	5
Probabilistic methods	5
Probability theory	5
Stochastic simulations	5
Théorie du calcul stochastique	5
Statistics	
Bayesian computation	5
Biostatistics	5
Gaussian vectors and processes	5
Lattice models	5
Modern regression methods	5
Multivariate statistics	5
Risk, rare events and extremes	5
Robust and nonparametric statistics	5
Statistical machine learning	5
Statistical inference on graphs	5
Statistical mechanics and Gibbs measure	5
Statistical theory	5
Statistics for genomic data analysis	5
Projects	16
Project in Mathematics	10
Project in human and social science	6