MASTER

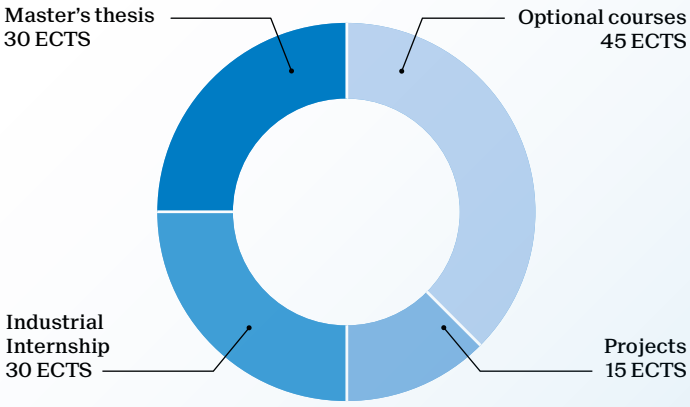
APPLIED MATHEMATICS

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Master of Science in

APPLIED MATHEMATICS

2-year program - 120 ECTS



Students must choose between the following two orientations:

Applied Mathematics
- at least 30 credits in list B

Statistics and Applied probabilities
- at least 30 credits in list C

It is possible to combine this program with a 30 ECTS complementary Minor.

Recommended minors:
- Management, Technology and Entrepreneurship
- Science, Technology and Area Studies

	Orientations			Credits
Optional courses	**A**	**B**	**C**	**45**
Advanced regression		B	C	5
Algebraic curves and cryptography	A	B		5
Analyse fonctionnelle II	A	B		5
Analysis on groups	A			5
Biostatistics		B	C	5
Calcul des variations	A			5
Combinatorial optimization		B	C	5
Commutative algebra	A			5
Computational finance		B		5
Computational linear algebra		B		5
Convexity		B		5
Differential geometry of framed curves	A	B		5
Elliptic partial differential equations	A	B		5
Géométrie hyperbolique et groupes discrets	A			5
Gödel and recursivity	A			5
Harmonic analysis	A	B		5
Introduction à la géométrie riemannienne	A			5
Introduction to algebraic geometry	A			5
Lattice models	A		C	5
Martingales in financial mathematics		B	C	5
Mathematical modelling of behavior		B		5
Mathematical modelling of DNA		B		5
Number theory in cryptography	A	B		5
Numerical approximation of partial differential equations I		B		5
Numerical approximation of partial differential equations II		B		5
Numerical integration of stochastic differential equations		B		5
Numerical methods for conservation laws		B		5
Numerical methods for electromagnetics			C	5
Packing and covering		B	C	5
Parabolic and hyperbolic PDEs	A	B		5
Probabilistic method		B	C	5
Probability theory		B	C	5
Risk, rare events and extremes		B	C	5
Robust and nonparametric statistics		B	C	5
Set theory	A			5
Statistical theory		B	C	5
Statistics for genomics		B	C	5
Statistique multivariée		B	C	5
Théorie du calcul stochastique		B	C	5
Topics in number theory	A			5

Projects				**15**
Project in Mathematics/ Data Analysis				9
Project in human and social science				6

Industrial Internship				**30**
Industrial Internship in Applied Mathematics				30

School of Basic Sciences
master.epfl.ch/applied_maths
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