

Plan d'études

Mathématiques 2023-24

Projet de Master

Cours		PDM Automne	PDM Printemps	Session Examen	Examen	Crédits
lang. ens.	Code	Sections	Enseignants	Spécialisation		
	Projet de master en mathématiques					
	MATH-599	MA	Profs divers		900h	900h
				Eté Hiv	Oral	30

Groupe 1

Cours		Master 1	Master 2	Session Examen	Examen	Crédits
lang. ens.	Code	Sections	Enseignants	Spécialisation		
	Projet de Mathématiques (master)					
F	MATH-498	MA	Profs divers		10h	10h
				Eté Hiv	Pendant le	10 semestre

Bloc 1

Cours		Session Examen	Examen	Crédits
lang. ens.	Code	Sections	Enseignants	Spécialisation
	SHS : Introduction au projet			
		SHS		Hiv
	SHS : Projet			
		SHS		Eté
				3
				3

Groupe 2

Cours		Master 1	Master 2	Session Examen	Examen	Crédits
lang. ens.	Code	Sections	Enseignants	Spécialisation		
	Abstract analysis on groups					
E	MATH-416	MA	Monod		2h 2h	Hiv
						Oral
						5
	Advanced analytic number theory					
E	MATH-521	MA	Michel		2h 2h	Eté
						Oral
						5
	Algebraic geometry III - selected topics					
E	MATH-535	MA	Chen		2h 2h	Eté
						Oral
						5
	Algebraic geometry II - Schemes and sheaves					
E	MATH-510	MA	Filipazzi Mukhopadhyay		4h 4h	Hiv
						Ecrit
						10
	Algebraic K-theory					
E	MATH-488	MA			2h 2h	Eté
						Ecrit
						5
	Applied biostatistics					
E	MATH-493	MA	Goldstein		2h 2h	Eté
						Pendant le
						5 semestre
	Applied statistics					
E	MATH-516	MA	Mhalla Ep Marchand		1h 3h	Eté
						Pendant le
						5 semestre
	Biostatistics					
E	MATH-449	MA	Stensrud		2h 2h	Eté
						Ecrit
						5
	Calculus of variations					
E	MATH-437	MA	Ruf		2h 2h	Hiv
						Oral
						5
	Complex manifolds					
E	MATH-473	MA	Vacat		2h 2h	Eté
						Ecrit
						5
	Computational linear algebra					
E	MATH-453	MA	Kressner		2h 2h	Eté
						Ecrit
						5
	Concentration of measures					
E	MATH-496	MA			2h 2h	Eté
						Oral
						5
	Differential geometry IV - General relativity					
E	MATH-530	MA	Moschidis		2h 2h	Eté
						Oral
						5
	Diophantine Approximation					
E	MATH-540	MA	Eisenbrand		2h 2h	Hiv
						Ecrit
						5
	Dispersive PDEs					
E	MATH-478	MA			2h 2h	Eté
						Oral
						5

	Distribution and interpolation spaces							
E	MATH-502	MA	Michelat	2h	2h	Hiv	Ecrit	5
	Ergodic theory							
E	MATH-518	MA	Richter	2h	2h	Hiv	Oral	5
	Error control in scientific modelling							
E	MATH-500	MA	Herbst	2h	2h	Hiv	Pendant le 5 semestre	
	Foundations of probabilistic proofs							
E	CS-459	IN	Chiesa	4h	1h	Hiv	Pendant le 6 semestre	
	Gaussian processes							
E	MATH-426	MA		2h	2h	Eté	Oral	5
	Gödel and recursivity							
E	MATH-483	MA		2h	2h	Hiv	Ecrit	5
	Harmonic analysis							
E	MATH-405	MA	Krieger	2h	2h	Eté	Oral	5
	Homotopical algebra							
E	MATH-436	MA	Hess Bellwald	2h	2h	Eté	Oral	5
	Homotopy theory							
E	MATH-497	MA		2h	2h	Hiv	Ecrit	5
	HPC for numerical methods and data analysis							
E	MATH-505	MA	Grigori	2h	2h	Hiv	Pendant le 5 semestre	
	Integer optimisation							
E	MATH-504	MA	Eisenbrand	2h	2h	Eté	Ecrit	5
	Introduction à la géométrie riemannienne							
F	MATH-422	MA		2h	2h	Eté	Oral	5
	Introduction to stochastic PDEs							
E	MATH-485	MA	Hairer	3h	2h	Eté	Oral	5
	Lattice models							
E	MATH-434	MA		2h	2h	Hiv	Ecrit	5
	Lie groups							
E	MATH-429	MA	Michel	2h	2h	Eté	Oral	5
	Linear algebraic groups							
E	MATH-479	MA	Vacat	2h	2h	Eté	Oral	5
	Low-rank approximation techniques							
E	MATH-403	MA		2h	2h	Hiv	Oral	5
	Martingales in financial mathematics							
E	MATH-470	MA	Schmutz	2h	2h	Eté	Oral	5
	Mathematical modelling of behavior							
E	MATH-463	MA	Bierlaire	2h	2h	Hiv	Ecrit	5
	Metric embeddings							
E	MATH-513	MA		2h	2h	Hiv	Ecrit	5
	Multivariate statistics							
E	MATH-444	MA	Panaretos	2h	2h	Eté	Ecrit	5
	Nonlinear Schrödinger equations							
E	MATH-514	MA	Genoud	2h	2h	Hiv	Oral	5
	Number theory II.a - Modular forms							
E	MATH-511	MA	Viazovska	2h	2h	Eté	Oral	5
	Number theory II.b - selected topics							
E	MATH-417	MA		2h	2h	Eté	Oral	5
	Number theory II.c - Cryptography							
E	MATH-489	MA	Jetchev	2h	2h	Eté	Ecrit	5
	Numerical integration of stochastic differential equations							
E	MATH-450	MA	Blumenthal	2h	2h	Eté	Ecrit	5
	Numerical methods for conservation laws							
E	MATH-459	MA	Licht	2h	2h	Hiv	Oral	5
	Numerics for fluids, structures & electromagnetics							
E	MATH-468	MA		2h	2h	Hiv	Oral	5
	Optimal transport							
E	MATH-476	MA	Vacat	2h	2h	Eté	Oral	5
	Optimization on manifolds							
E	MATH-512	MA		2h	2h	Eté	Pendant le 5 semestre	
	Regression methods							
E	MATH-408	MA	Davison	2h	2h	Hiv	Ecrit	5
	Representation theory of semisimple lie algebras							
E	MATH-492	MA		2h	2h	Eté	Ecrit	5
	Riemann surfaces							
E	MATH-410	MA	Mornev	2h	2h	Hiv	Ecrit	5

	Risk, rare events and extremes					
E	MATH-447	MA		2h 2h	Eté	Ecrit 5
	Set theory					
E	MATH-318	MA	Duparc	2h 2h	Eté	Ecrit 5
	Spectral theory					
E	MATH-561	MA		2h 2h	Hiv	Oral 5
	Statistical analysis of network data					
E	MATH-448	MA	Olhede	2h 2h	Hiv	Ecrit 5
	Statistical computation and visualisation					
E	MATH-517	MA	Mhalla Ep Marchand	2h 2h	Hiv	Pendant le 5 semestre
	Statistical genetics					
E	MATH-438	MA	Goldstein	2h 2h	Eté	Pendant le 5 semestre
	Statistical inference					
E	MATH-562	MA	Davison	2h 2h	Hiv	Ecrit 5
	Statistical machine learning					
E	MATH-412	MA	Obozinski	2h 2h	Hiv	Ecrit 5
	Statistical mechanics and Gibbs measures					
E	MATH-486	MA	Friedli	2h 2h	Eté	Oral 5
	Statistical theory					
E	MATH-442	MA		2h 2h	Hiv	Ecrit 5
	Statistics for genomic data analysis					
E	MATH-474	MA		2h 2h	Eté	Pendant le 5 semestre
	Stochastic epidemic models					
E	MATH-560	MA	Ged	2h 2h	Hiv	Ecrit 5
	Stochastic simulation					
E	MATH-414	MA	Nobile	2h 2h	Hiv	Oral 5
	Student seminar in pure mathematics					
E	MATH-563	MA	Wyss	2h 2h	Hiv	Pendant le 5 semestre
	Theory of stochastic calculus					
E	MATH-431	MA	Dalang	2h 2h	Eté	Ecrit 5
	Topics in arithmetic geometry					
E	MATH-494	MA		2h 2h	Eté	Oral 5
	Topics in calculus of variations					
E	MATH-515	MA		2h 2h	Hiv	Oral 5
	Topics in machine learning					
E	MATH-520	MA	Chizat	2h 2h	Hiv	Pendant le 5 semestre
	Topics in probability					
E	MATH-519	MA		2h 2h	Eté	Oral 5
	Topics in stochastic analysis					
E	MATH-487	MA	Hairer	3h 2h	Eté	Oral 6
	Topology IV.b - Cohomology rings					
E	MATH-506	MA	Scherer	2h 2h	Hiv	Ecrit 5