Plan d'études

Mineur : Science et ing. computationnelles 2024-25

Mineur : Science et ingénierie computationnelles

	Cours			Session Examen	Examen	Crédits
lang ens.	Code	Sections	Enseignants			
	Advanced multiprocessor architecture					
E	CS-471	IN	Falsafi	Hiv	Pendant le semestre	8
	Advanced numerical analysis II					
E	MATH-351	MA	Picasso	Hiv	Ecrit	5
	Algorithms I					
E	CS-250	IN	Chiesa Svensson	Eté	Ecrit	8
	Algorithms II					
E	CS-450	IN	Kapralov Svensson	Hiv	Ecrit	8
	Applied data analysis					
E	CS-401	SC	Brbic	Hiv	Ecrit	8
	Atomistic and quantum simulations of materials					
E	MSE-468	MX	Pizzi	Eté	Pendant le semestre	4
	Computational linear algebra					
E	MATH-453	MA	Kressner	Eté	Ecrit	5
	Computational methods in molecular quantum mechanics					
E	CH-452	CGC	Bonella	Hiv	Oral	4
	Computational neurosciences: neuronal dynamics					
E	NX-465	NX	Gerstner	Eté	Ecrit	5
	Computer simulation of physical systems I					
E	PHYS-403	PH	Pasquarello	Hiv	Oral	4
	Deep learning					
E	EE-559	EL	Cavallaro	Eté	Pendant le semestre	4
	Deep learning in biomedicine					
E	CS-502	IN		Eté	Pendant le semestre	6
	Deep reinforcement learning					
E	CS-456	IN	Gulcehre	Eté	Ecrit	6
	Distributed intelligent systems					
E	ENG-466	SIE	Martinoli	Hiv	Oral	5
	Dynamical system theory for engineers					
E	COM-502	SC	Thiran	Eté	Ecrit	6
	Environmental transport phenomena					
E	ENG-420	SIE	Crouzy Porté-Agel	Hiv	Ecrit	5
	Foundations of Data Science					
E	COM-406	IN	Gastpar Urbanke	Hiv	Ecrit	8
	Geometric computing					
E	CS-457	IN	Pauly	Hiv	Ecrit	6
	HPC for numerical methods and data analysis					
E	MATH-505	MA	Grigori	Hiv	Oral	5
	Hydrodynamics					
E	ME-444	GM	Gallaire	Eté	Ecrit	5
	Image processing I					
E	MICRO-511	MT	Unser Van De Ville	Hiv	Ecrit	3
	Image processing II					
E	MICRO-512	MT	Liebling Sage Unser Van De Ville	Eté	Ecrit	3
	Information security and privacy					
E	COM-402	IN	Payer	Hiv	Ecrit	8

	Instability					
E	*ME-466*	*GM*	*Gallaire*	*Hiv*	*Ecrit*	*3*
	Introduction to electronic structure methods					
E	*CH-353*	*CGC*	*Röthlisberger*	*Hiv*	*Pendant le semestre*	*4*
	Machine learning					
E	*CS-433*	*IN*	*Flammarion Jaggi*	*Hiv*	*Ecrit*	*8*
	Mathematical modelling of behavior					
E	*MATH-463*	*MA*	*Bierlaire*	*Hiv*	*Ecrit*	*5*
	Mathematics of data: from theory to computation					
E	*EE-556*	*EL*	*Cevher*	*Hiv*	*Ecrit*	*6*
	Molecular dynamics and Monte-Carlo simulation					
E	*CH-351*	*CGC*	*Röthlisberger*	*Eté*	*Pendant le semestre*	*2*
	Molecular quantum dynamics					
E	*CH-453*	*CGC*	*Vanicek*	*Eté*	*Oral*	*3*
	Numerical analysis and computational mathematics					
E	*MATH-456*	*MA*	*Grigori*	*Hiv*	*Ecrit*	*4*
	Numerical approximation of PDEs					
E	*MATH-451*	*MA*	*Buffa*	*Eté*	*Ecrit*	*5*
	Numerical flow simulation					
E	*ME-474*	*GM*	*Boujo*	*Hiv*	*Pendant le semestre*	*5*
	Numerical integration of dynamical systems					
E	*MATH-452*	*MA*	*Blumenthal*	*Eté*	*Ecrit*	*5*
	Numerical integration of stochastic differential equations					
E	*MATH-450*	*MA*	*Nobile*	*Hiv*	*Ecrit*	*5*
	Numerical methods for conservation laws					
E	*MATH-459*	*MA*	*Licht*	*Hiv*	*Oral*	*5*
	Numerics for fluids, structures & electromagnetics					
E	*MATH-468*	*MA*		*Hiv*	*Oral*	*5*
	Optimization for machine learning					
E	*CS-439*	*IN*	*Flammarion Jaggi*	*Eté*	*Ecrit*	*8*
	Parallel and high-performance computing					
E	*MATH-454*	*MA*	*Antolin Sanchez*	*Eté*	*Oral*	*4*
	Principles and applications of systems biology					
E	*ChE-411*	*CGC*	*Hatzimanikatis*	*Hiv*	*Pendant le semestre*	*3*
	Programming concepts in scientific computing					
E	*MATH-458*	*MA*	*Anciaux*	*Hiv*	*Pendant le semestre*	*4*
	Projet CSE I					
F	*MATH-591*	*MA*	*Profs divers*	*Eté Hiv*	*Pendant le semestre*	*8*
	Projet CSE II					
F	*MATH-592*	*MA*	*Profs divers*	*Eté Hiv*	*Pendant le semestre*	*8*
	Randomized matrix computations					
E	*MATH-403*	*MA*	*Kressner*	*Hiv*	*Oral*	*5*
	Statistics for data science					
E	*MATH-413*	*MA*	*Chandak Limnios*	*Eté*	*Ecrit*	*8*
	Stochastic simulation					
E	*MATH-414*	*MA*	*Nobile*	*Hiv*	*Ecrit*	*5*
	Structural biology					
E	*BIO-315*	*SV*	*Dal Peraro*	*Eté*	*Pendant le semestre*	*4*
	Systems for data management and data science					
E	*CS-460*	*IN*	*Ailamaki Kermarrec*	*Eté*	*Ecrit*	*8*
	Turbulence					
E	*ME-467*	*GM*	*Schneider*	*Eté*	*Pendant le semestre*	*5*
	Understanding advanced molecular					

	simulation				
E	*CH-420*	*CGC*	*Smit*	*Eté*	*Pendant le 4 semestre*