

Studies Plan

Mineur : Science et ing. computationnelles 2024-25

Minor : Computational Science and Engineering

Courses			Exam Session	Exam	Credit	
Language	Code	Section	Teacher			
E	Advanced multiprocessor architecture			Win	During the semester	8
	CS-471	IN	Falsafi			
E	Advanced numerical analysis II			Win	Written	5
	MATH-351	MA	Picasso			
E	Algorithms I			Sum	Written	8
	CS-250	IN	Chiesa Svensson			
E	Algorithms II			Win	Written	8
	CS-450	IN	Kapralov Svensson			
E	Applied data analysis			Win	Written	8
	CS-401	SC	Brbic			
E	Atomistic and quantum simulations of materials			Sum	During the semester	4
	MSE-468	MX	Pizzi			
E	Computational linear algebra			Sum	Written	5
	MATH-453	MA	Kressner			
E	Computational methods in molecular quantum mechanics			Win	Oral	4
	CH-452	CGC	Bonella			
E	Computational neurosciences: neuronal dynamics			Sum	Written	5
	NX-465	NX	Gerstner			
E	Computer simulation of physical systems I			Win	Oral	4
	PHYS-403	PH	Pasquarello			
F	CSE project I			Sum Win	During the semester	8
	MATH-591	MA	Profs divers			
F	CSE project II			Sum Win	During the semester	8
	MATH-592	MA	Profs divers			
E	Deep learning			Sum	During the semester	4
	EE-559	EL	Cavallaro			
E	Deep learning in biomedicine			Sum	During the semester	6
	CS-502	IN				
E	Deep reinforcement learning			Sum	Written	6
	CS-456	IN	Gulcehre			
E	Distributed intelligent systems			Win	Oral	5
	ENG-466	SIE	Martinoli			
E	Dynamical system theory for engineers			Sum	Written	6
	COM-502	SC	Thiran			
E	Environmental transport phenomena			Win	Written	5
	ENG-420	SIE	Crouzy Porté-Agel			
E	Foundations of Data Science			Win	Written	8
	COM-406	IN	Gastpar Urbanke			
E	Geometric computing			Win	Written	6
	CS-457	IN	Pauly			
E	HPC for numerical methods and data analysis			Win	Oral	5
	MATH-505	MA	Grigori			
E	Hydrodynamics			Sum	Written	5
	ME-444	GM	Gallaire			
E	Image processing I			Win	Written	3
	MICRO-511	MT	Unser Van De Ville			

E	Image processing II MICRO-512	MT	Liebling Sage Unser Van De Ville	Sum	Written	3
E	Information security and privacy COM-402	IN	Payer	Win	Written	8
E	Instability ME-466	GM	Gallaire	Win	Written	3
E	Introduction to electronic structure methods CH-353	CGC	Röthlisberger	Win	During the semester	4
E	Machine learning CS-433	IN	Flammarion Jaggi	Win	Written	8
E	Mathematical modelling of behavior MATH-463	MA	Bierlaire	Win	Written	5
E	Mathematics of data: from theory to computation EE-556	EL	Cevher	Win	Written	6
E	Molecular dynamics and Monte-Carlo simulation CH-351	CGC	Röthlisberger	Sum	During the semester	2
E	Molecular quantum dynamics CH-453	CGC	Vanicek	Sum	Oral	3
E	Numerical analysis and computational mathematics MATH-456	MA	Grigori	Win	Written	4
E	Numerical approximation of PDEs MATH-451	MA	Buffa	Sum	Written	5
E	Numerical flow simulation ME-474	GM	Boujo	Win	During the semester	5
E	Numerical integration of dynamical systems MATH-452	MA	Blumenthal	Sum	Written	5
E	Numerical integration of stochastic differential equations MATH-450	MA	Nobile	Win	Written	5
E	Numerical methods for conservation laws MATH-459	MA	Licht	Win	Oral	5
E	Numerics for fluids, structures & electromagnetics MATH-468	MA		Win	Oral	5
E	Optimization for machine learning CS-439	IN	Flammarion	Sum	Written	8
E	Parallel and high-performance computing MATH-454	MA	Antolin Sanchez	Sum	Oral	4
E	Principles and applications of systems biology ChE-411	CGC	Hatzimanikatis	Win	During the semester	3
E	Programming concepts in scientific computing MATH-458	MA	Anciaux	Win	During the semester	4
E	Randomized matrix computations MATH-403	MA	Kressner	Win	Oral	5
E	Statistics for data science MATH-413	MA	Chandak Limnios	Sum	Written	8
E	Stochastic simulation MATH-414	MA	Nobile	Win	Written	5
E	Structural biology BIO-315	SV	Dal Peraro	Sum	During the semester	4
E	Systems for data management and data science CS-460	IN	Ailamaki Kermarrec	Sum	Written	8
E	Turbulence ME-467	GM	Schneider	Sum	During the semester	5

Understanding advanced molecular simulation

<i>E</i>	<i>CH-420</i>	<i>CGC</i>	<i>Smit</i>	<i>Sum</i>	<i>During the 4 semester</i>
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