

Studies Plan

Ingénierie financière 2024-25

Block 1

Courses			Master 1	Master 2	Exam Session	Exam	Credit		
Language	Code	Section	Teacher	Specialization	p	l	e	p	
E	Accounting for finance FIN-411 IF		Cauvin	2h		Win	During the semester	2	
E	Convex optimization MGT-418 MTE		Kuhn	2h	2h	Win	Written	5	
E	Introduction to econometrics MGT-581 MTE		Aklin	2h	2h	Win	Written	4	
E	Introduction to finance FIN-401 IF		Morellec	2h	2h	1h	Win	Written	6
E	Probability and stochastic calculus FIN-415 IF		Perazzi	3h	2h		Win	Written	6
	HSS : Introduction to project SHS						Win		3
	HSS : Project SHS						Sum		3

Block 2

Courses			Master 1	Master 2	Exam Session	Exam	Credit		
Language	Code	Section	Teacher	Specialization	p	l	e	p	
E	Advanced derivatives FIN-503 IF		Perazzi	2h	1h		Win	During the semester	4
E	Derivatives FIN-404 IF		Hugonnier		3h	2h	Sum	Written	6
E	Ethical behavior in the financial industry FIN-419 IF		Nahas	2h			Win	During the semester	2
E	Interest rate and credit risk models FIN-416 IF		Filipovic	3h	2h		Win	Written	6
E	Investments FIN-405 IF		Collin Dufresne		3h	2h	Sum	During the semester	6
E	Machine learning in finance FIN-407 IF		Malamud		3h	2h	Sum	Written	6
E	Macroeconomics and monetary policy FIN-424 IF		Fuster		2h	1h	Sum	Written	4
E	Quantitative risk management FIN-417 IF		Filipovic	2h	2h		Win	Written	4

Group 1

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Language	Code	Section	Teacher	Specialization	p	l	e	p	
E	Advanced numerical analysis II MATH-351 MA		Picasso	2h	2h		Win	Written	5
E	Applied data analysis CS-401 SC		Brbic	2h	2h		Win	Written	8
E	Causal inference MGT-416 MTE		Kiyavash		2h	1h	Sum	During the semester	4
E	Cryptography and security COM-401 SC		Vaudenay	4h	2h		Win	Written	8
E	Data science for business MGT-432 MTE		Dunbar	3h	1h		Win	During the semester	6
E	Data visualization COM-480 SC		Vuillon		2h	2h	Sum	During the semester	6

E	Deep learning EE-559	EL	Cavallaro	2h 2h	Sum	During the 4 semester
E	Deep reinforcement learning CS-456	IN	Gulcehre	2h 1h 1h	Sum	Written 6
E	Financial applications of blockchains and distributed ledgers FIN-413	IF	Karyampas	2h 1h	Sum	During the 3 semester
E	Financial big data FIN-525	IF	Challet	3h	Win	During the 3 semester
E	Financial intermediation FIN-420	IF	Fuster	3h	Sum	During the 4 semester
F	Fundamentals of machine learning EE-311	EL	Liebling	2h 2h	Sum	Written 4
E	Information: strategy & economics MGT-431	MTE	Weber	3h	Win	During the 4 semester
E	Information security and privacy COM-402	IN	Payer	3h 1h 2h	Win	Written 8
E	Intelligent agents CS-430	IN	Faltings	3h 3h	Win	During the 6 semester
E	Introduction to stochastic PDEs MATH-485	MA	Hairer	3h 2h	Sum	Oral 5
E	Machine learning CS-433	IN	Flammarion Jaggi	4h 2h 2h	Win	Written 8
E	Machine learning I MICRO-455	MT	Billard	4h	Win	Written 4
E	Machine learning II MICRO-570	MT	Billard	3h 1h 1h	Sum	Oral 4
E	Machine learning programming MICRO-401	MT	Billard	2h	Win	During the 2 semester
E	Mathematical modelling of behavior MATH-463	MA	Bierlaire	2h 2h	Win	Written 5
E	Multivariate statistics MATH-444	MA	Panaretos	2h 2h	Sum	Written 5
E	Nature finance MGT-541	MTE	Coutu	2h 1h	Win	During the 3 semester
E	Numerical analysis and computational mathematics MATH-456	MA	Grigori	2h 2h	Win	Written 4
E	Numerical approximation of PDEs MATH-451	MA	Buffa	2h 2h	Sum	Written 5
E	Numerical integration of stochastic differential equations MATH-450	MA	Nobile	2h 2h	Win	Written 5
E	Principles of microeconomics MGT-454	MTE	Mack	3h 1h	Win	Written 4
E	Regression methods MATH-408	MA	Davison	2h 2h	Win	Written 5
E	Statistical analysis of network data MATH-448	MA	Olhede	2h 2h	Win	Written 5
E	Statistical machine learning MATH-412	MA	Obozinski Zemel	2h 2h	Win	Written 5
E	Stochastic simulation MATH-414	MA	Nobile	2h 2h	Win	Written 5
E	Time series MATH-342	MA	Olhede	2h 2h	Sum	Written 5
E	Venture capital FIN-522	IF	Fahlenbrach	3h	Win	Written 4

Master project

Courses			Master 1	Master 2	MP Autumn	MP Spring	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	ø p	l e p	l e p	l e p		
Engineering internship credited with master project (master in Financial Engineering)										
E	FIN-598	IF	Profs divers		320h	320h	320h	320h	Sum Win	During the 0 semester
Master project in Financial Engineering										
E	FIN-599	IF	Profs divers				900h	900h	Sum Win	Oral 30