

Studies Plan

Ingénierie financière 2023-24

Block 1

Courses				Master 1	Master 2	Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	on p	I	e p	
E	Accounting for finance FIN-411	IF	Cauvin	2h		Win	Written	2
E	Econometrics FIN-403	IF	Fuster	2h	2h	Win	Written	4
E	Global business environment FIN-523	IF	Felli	2h	1h	Win	During the semester	4
E	Introduction to finance FIN-401	IF	Isakov	2h	2h	Win	Written	6
E	Optimization methods FIN-414	IF	Perazzi	1h	1h	Win	During the semester	2
E	Probability and stochastic calculus FIN-415	IF	Filipovic 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	on p	I	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	Gourier			3h	2h	Sum	Written	6
E	Quantitative risk management FIN-417	IF	Malamud	2h	2h		Win	Written	4	

Group 1

Courses				Master 1	Master 2	Exam Session	Exam	Credit		
Language	Code	Section	Teacher	Specialization	on p	I	e p			
E	Advanced machine learning MICRO-570 MT				3h	1h	1h	Sum	Oral	4
E	Advanced numerical analysis MATH-351 MA		Picasso	2h	2h			Win	Written	5
E	Advanced risk management topics FIN-474 IF		Acerbi	2h				Win	Written	2
E	Applied data analysis CS-401 SC		West	2h	2h			Win	Written	8
E	Applied machine learning MICRO-455 MT		Billard	4h				Win	Written	4
E	Artificial neural networks/reinforcement learning CS-456 IN		Gerstner		2h	2h		Sum	Written	6

E	Causal inference MGT-416	MTE		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	Deep learning EE-559	EL	Cavallaro	2h	2h	Sum	During the semester	4
E	Financial applications of blockchains and distributed ledgers FIN-413	IF	Karyampas	2h	1h	Sum	During the semester	3
E	Financial big data FIN-525	IF	Challet	3h		Win	During the semester	3
E	Financial intermediation FIN-420	IF	Fuster	3h		Sum	During the semester	4
E	Financial machine learning projects FIN-423	IF	Ackerer	2h	1h	Win	During the semester	3
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 semester	4
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 semester	6
E	Machine learning CS-433	IN	Flammarion Jaggi	4h	2h	Win	Written	8
E	Machine learning programming MICRO-401	MT	Billard	2h		Win	During the semester	2
E	Macrofinance FIN-406	IF	Felli	2h	1h	Win	Written	4
E	Mathematical modelling of behavior MATH-463	MA	Bierlaire	2h	2h	Win	Written	5
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	Blumenthal	2h	2h	Sum	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	Risk, rare events and extremes MATH-447	MA		2h	2h	Sum	Written	5
E	Statistical inference and machine learning MGT-448	MTE	Kiyavash	2h	2h	Win	Written	4
E	Statistical machine learning MATH-412	MA	Obozinski	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	on 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
Master project in Financial Engineering									
E	FIN-599	IF	Profs divers				900h	900h	Sum Win
								Oral	30