Studies Plan

Systèmes de communication 2024-25

Block "Projects & SHS"

Lang.	Code	Sect.	Teacher	Specialization	M1 C	M1 E	M1 L	M1 T	M1 P	M1 I	M2 C	M2 E	M2 L	M2 T	M2 P	M2 I	Exam Session	Exam	Credit
Research project in communication systems II																			
E	COM-416	SC	Profs divers						2h						2h		Sum Win	During the semester	12
HSS : Introduction to project																			
			SHS														Win		3
HSS : Project																			
			SHS														Sum		3

Group 1

Lang.	Code	Sect.	Teacher	Specialization	M1 C	M1 E	M1 L	M1 T	M1 P	M1 I	M2 C	M2 E	M2 L	M2 T	M2 P	M2 I	Exam Session	Exam	Credit
Advanced probability and applications																			
E	COM-417	SC	Shkel		4h	2h											Win	Written	8
Algorithms II																			
E	CS-450	IN	Kapralov Svensson		4h	3h											Win	Written	8
Cryptography and security																			
E	COM-401	SC	Vaudenay		4h	2h											Win	Written	8
Distributed algorithms																			
E	CS-451	SC	Guerraoui		2h	1h	3h										Win	Written	8
Information security and privacy																			
E	COM-402	IN	Payer		3h	1h			2h								Win	Written	8
Information theory and coding																			
E	COM-404	SC	Telatar		4h	2h											Win	Written	8
Machine learning																			
E	CS-433	IN	Flammarion Jaggi		4h	2h			2h								Win	Written	8
Mobile networks																			
E	COM-405	SC	Al Hassanieh		3h	2h	2h										Win	Written	8
Modern digital communications: a hands-on approach																			
E	COM-430	SC	Chiurtu		2h		2h										Win	During the semester	8
Statistical signal and data processing through applications																			
E	COM-500	SC	Ridolfi								3h	2h					Sum	Written	8
TCP/IP networking																			
E	COM-407	SC	Nikolopoulos		2h	2h	2h										Win	Written	8

Group 2 : Options

Lang.	Code	Sect.	Teacher	Specialization	M1 C	M1 E	M1 L	M1 T	M1 P	M1 I	M2 C	M2 E	M2 L	M2 T	M2 P	M2 I	Exam Session	Exam	Credit
Advanced compiler construction																			
E	CS-420	IN	Schinz								2h				2h		Sum	During the semester	6
Advanced computer architecture																			
E	CS-470	IN	Ienne								3h		2h				Sum	Written	8
Advanced computer graphics																			
E	CS-440	IN									2h	1h			1h	1h	Sum	During the semester	6

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Advanced cryptography									
E	COM-501	SC	Vaudenay		2h 2h		Sum	Written	6
Advanced multiprocessor architecture									
E	CS-471	IN	Falsafi	4h	8h		Win	During the semester	8
Advanced operating systems									
E	CS-477	IN	Kashyap	2h 1h 2h			Win	Written	6
Advanced topics on privacy enhancing technologies									
E	CS-523	IN	Stadler Troncoso		3h 1h	2h	Sum	Written	8
AI product management									
E	CS-500	IN	Kaboli Zamir	2h 2h	3h		Win	During the semester	6
Applied biomedical signal processing									
E	EE-512	EL	Lemay	2h	2h		Win	Written	4
Applied biostatistics									
E	MATH-493	MA	Goldstein		2h 2h		Sum	During the semester	5
Applied data analysis									
E	CS-401	SC	Brbic	2h	2h		Win	Written	8
Automatic speech processing									
E	EE-554	EL	Magimai Doss	2h 2h			Win	Written	4
Basics of mobile robotics									
E	MICRO-452	MT	Mondada	1h	1h 2h		Win	Written	4
Bioimage informatics									
E	BIO-410	SV	Sage Seitz		2h	2h	Sum	Written	4
Causal inference									
E	MGT-416	MTE	Kiyavash		2h 1h		Sum	During the semester	4
Causal thinking									
E	MATH-352	MA	Stensrud	2h 2h			Win	Written	5
Cellular biology and biochemistry for engineers									
E	BIO-105	SV	Zufferey	2h 2h			Win	Written	4
Computational complexity									
E	CS-524	IN	Göös	2h 2h			Win	During the semester	6
Computational neurosciences: neuronal dynamics									
E	NX-465	NX	Gerstner		2h 2h		Sum	Written	5
Computational photography									
E	CS-413	SC	Süsstrunk		2h	2h	Sum	During the semester	6
Computers and music									
E	COM-418	SC			2h 1h		Sum	Oral	6
Computer vision									
E	CS-442	IN	Fua		2h 1h		Sum	Written	6
Concurrent computing									
E	CS-453	SC	Guerraoui	2h 1h 2h			Win	Written	6
Data visualization									
E	COM-480	SC	Vuillon		2h	2h	Sum	During the semester	6
Decentralized systems engineering									
E	CS-438	IN	Borsò-Tan Ford	2h 2h	2h		Win	Written	8
Deep learning									
E	EE-559	EL	Cavallaro		2h 2h		Sum	During the semester	4
Deep learning in biomedicine									
E	CS-502	IN			2h 1h	2h	Sum	During the semester	6
Deep reinforcement learning									
E	CS-456	IN			2h 1h 1h		Sum	Written	6
Design technologies for integrated systems									
E	CS-472	IN	De Micheli	3h 2h			Win	During the semester	6

Course		Code	Sec	Professor	C	E	TP	C	E	TP	Session	Exam	Credits
Digital education	E	CS-411	IN	Dillenbourg Jermann				2h		2h	Sum	Written	6
Distributed information systems	E	CS-423	SC	Aberer	2h	1h	1h				Win	Written	6
Distributed intelligent systems	E	ENG-466	SIE	Martinoli	2h	2h	1h				Win	Oral	5
Dynamical system theory for engineers	E	COM-502	SC	Thiran				3h	1h		Sum	Written	6
Embedded system design	E	CS-476	IN	Kluter				2h		2h	Sum	During the semester	6
Ethics and law of AI	E	DH-415	DH	Rochel	2h		2h				Win	During the semester	4
Experience design	E	CS-489	IN		2h		4h				Win	During the semester	6
Formal verification	E	CS-550	IN	Kuncak	2h	2h	2h				Win	During the semester	6
Foundations of probabilistic proofs	E	CS-459	IN	Chiesa	4h	1h					Win	During the semester	6
Geometric computing	E	CS-457	IN	Pauly	3h	1h	1h				Win	Written	6
Gödel and recursivity	E	MATH-483	MA	Duparc	2h	2h					Win	Written	5
Image processing I	E	MICRO-511	MT	Unser Van De Ville	3h						Win	Written	3
Image processing II	E	MICRO-512	MT	Sage Unser Van De Ville				3h			Sum	Written	3
Industrial automation	E	CS-487	SC	Sommer Tournier				2h	1h		Sum	Oral	3
Intelligent agents	E	CS-430	IN	Faltings	3h	3h					Win	During the semester	6
Interaction design	E	CS-486	IN	Pu				2h	1h	1h	Sum	During the semester	6
Interactive theorem proving	E	CS-428	IN	Barrière Pit-Claudel				2h	1h	2h	Sum	During the semester	6
Introduction to IT consulting	E	CS-491	IN	Regev				6h			Sum	Oral	6
Introduction to natural language processing	E	CS-431	IN	Bosselut Chappelier Rajman	2h	2h					Win	Written	6
Learning in neural networks	E	CS-479	IN	Gerstner				2h	1h	1h	Sum	Oral	6
Learning theory	E	CS-526	IN	Macris				2h	2h		Sum	Written	6
Machine learning for behavioral data	E	CS-421	IN	Käser				2h		2h	Sum	Written	6
Markov chains and algorithmic applications	E	COM-516	SC		2h	1h	1h				Win	Written	6
Modern natural language processing	E	CS-552	IN	Bosselut				3h	1h	2h	Sum	During the semester	8

	Course	Section	Professor							Credits
Network machine learning										
E	EE-452	EL	Frossard Thanou		2h		2h	Sum	During the semester	4
Networks out of control										
E	COM-512	SC			2h 1h			Sum	Written	6
Number theory II.c - Cryptography										
E	MATH-489	MA	Jetchev		2h 2h			Sum	Written	5
Optimization for machine learning										
E	CS-439	IN	Flammarion		2h 2h 1h			Sum	Written	8
Optional research project in communication Systems										
E	COM-507	SC	Profs divers		2h		2h	Sum Win	During the semester	8
Principles of computer systems										
E	CS-522	IN	Argyraki Candea	4h				Win	During the semester	8
Project management and risk analysis										
F	MGT-427	MTE	Wieser	2h	1h			Win	During the semester	4
Software security										
E	CS-412	IN	Payer		3h 2h 1h			Sum	Written	8
Statistical mechanics and Gibbs measures										
E	MATH-486	MA			2h 2h			Sum	Oral	5
Statistical physics of computation										
E	PHYS-512	PH	Erba	2h 2h				Win	Written	4
Statistics for data science										
E	MATH-413	MA	Chandak Limnios		4h 2h			Sum	Written	8
Student seminar: security protocols and applications										
E	COM-506	SC	Vaudenay		2h			Sum	During the semester	3
Sublinear algorithms for big data analysis										
E	CS-448	IN	Kapralov		2h 1h			Sum	During the semester	6
System programming for Systems-on-chip										
E	CS-473	IN	Kluter	2h 2h				Win	During the semester	6
Systems for data management and data science										
E	CS-460	IN	Ailamaki Kermarrec		2h 2h 2h			Sum	Written	8
Topics in software security										
E	CS-510	IN	Payer	1h 1h				Win	During the semester	3
Topics in theoretical computer science										
E	CS-455	IN		3h 1h				Win	During the semester	6
Virtual reality										
E	CS-444	IN	Boulic		2h		1h	Sum	During the semester	6
Visual intelligence : machines and minds										
E	CS-503	IN	Zamir		2h 1h		1h	Sum	During the semester	6

Master project

Lang.	Code	Sect.	Teacher	Specialization	Master 1 C E L T P I	Master 2 C E L T P I	MP Autumn C E L T P I	MP Spring C E L T P I	Exam Session	Exam	Credit
Engineering internship credited with Master project (master in Communication Systems)											
E	COM-597	SC	Profs divers		320h	320h	320h	320h	Sum Win	During the semester	0
Master project in Communication Systems											
E	COM-599	SC	Profs divers				900h	900h	Sum Win	Oral	30

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