

Les enseignants, les crédits et la période des cours sont indiqués sous réserve de modification.

Code	Matières	Enseignants	Sections	Crédits	Période des cours
	Spécialisation A "COMPUTER ENGINEERING"	Responsable : Prof. P. Ienne		56	
CS-420 *	Advanced compiler construction	Schinz	IN	4	P
CS-470	Advanced computer architecture	Ienne	IN	8	P
CS-471	Advanced multiprocessor architecture (pas donné en 2022-23)	Falsafi	IN	6	A
EE-431 *	Advanced VLSI design	Burg	EL	4	P
CS-472	Design technologies for integrated systems	De Micheli	IN	6	A
ENG-466	Distributed intelligent systems (pas donné en 2022-23)	Martinoli	SIE	5	P
CS-473	Embedded systems	Beuchat	IN	4	A
CS-550	Formal verification	Kuncak	IN	6	A
EE-429 *	Fundamentals of VLSI Design	Burg	EL	4	A
EE-490(b) *	Lab in EDA based design	Koukab/Vachoux	EL	4	A
CS-522	Principles of computer systems	Argyrazi/Candea	SC/IN	7	A
CS-476	Real-time embedded systems	Beuchat	IN	4	P
	Spécialisation B "DATA ANALYTICS"	Responsable : Prof. M. Grossglauser/Prof. P. Thiran		105	
CS-450	Advanced algorithms	Chiesa/Kapralov	IN	8	P
COM-417	Advanced probability and applications	Lévêque	SC	8	P
CS-401	Applied data analysis	West	IN	8	A
CS-524	Computational complexity	Göös	IN	4	A
COM-480	Data visualization	Vuillon	SC	4	P
CS-423	Distributed information systems	Aberer	SC	4	A
COM-404	Information theory and coding	Telatar	SC	8	A
COM-402	Information security and privacy	Busch/Larus/Pyrgelis	IN/SC	8	A
COM-308 *	Internet analytics	Grossglauser	SC	5	P
CS-431	Introduction to natural language processing	Chappelier / Rajman	IN	4	A
COM-516	Markov chains and algorithmic applications	Lévêque/Macris	SC	4	A
CS-5xx	Modern natural language processing	Bosselut	IN	6	P
COM-512	Networks out of control (pas donné en 2022-23)	Grossglauser/Thiran	SC	4	P
CS-433	Machine learning	Jaggi/Flammarion	IN	8	A
COM-500	Statistical signal and data processing through	Ridolfi	SC	8	P
MATH-413	Statistics for Data science	Davison	MA	6	A
CS-460	Systems for data management and data science	Ailamaki/Kerमारrec	IN	8	P
CS-455	Topics in theoretical computer science (pas donné en 2022-23)	Kapralov	IN	4	A
	Spécialisation C "FOUNDATIONS OF SOFTWARE"	Responsable : Prof. M. Odersky		50	
CS-450	Advanced algorithms	Chiesa/Kapralov	IN	8	P
CS-420 *	Advanced compiler construction	Schinz	IN	4	P
CS-453	Concurrent algorithms	Guerraoui	SC	5	A
CS-451	Distributed algorithms	Guerraoui	SC	8	A
CS-550	Formal verification	Kuncak	IN	6	A
CS-452 *	Foundations of software	Odersky	IN	4	A
CS-522	Principles of computer systems	Argyrazi/Candea	SC/IN	7	A
CS-4xx	Systems for data management and data science	Ailamaki/Kerमारrec	IN	8	P
	Spécialisation D - CYBER SECURITY - SP	Responsable : C. Troncoso		96	
CS-450	Advanced algorithms	Chiesa/Kapralov	IN	8	P
CS-470	Advanced computer architecture	Ienne	IN	8	P
COM-501	Advanced cryptography	Vaudenay	SC	4	P
CS-523	Advanced topics on privacy enhancing technologies	Troncoso	IN	7	P
EE-431 *	Advanced VLSI design	Burg	EL	4	P
COM-401	Cryptography and security	Vaudenay	SC	8	A
CS-550	Formal verification	Kuncak	IN	6	A
CS-4xx	Foundations of probabilistic proofs	Chiesa	IN	6	A
EE-429 *	Fundamentals of VLSI Design	Burg	EL	4	A
COM-402	Information security and privacy	Busch/Larus/Pyrgelis	IN/SC	8	A
COM-405	Mobile networks	Al Hassanieh	SC	4	P
MATH-489	Number theory in cryptography	Jetchev	MA	5	P
CS-522	Principles of computer systems	Argyrazi/Candea	SC/IN	7	A
CS-412	Software security	Payer	IN	6	P
COM-506	Student seminar : security protocols and applications	Vaudenay	SC	3	P
COM-407	TCP/IP networking	Le Boudec	SC	8	A

Légende :

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Code	Matières	Enseignants	Sections	Crédits	Période des cours	
	Spécialisation E. "NETWORKING AND MOBILITY"	Responsable : Prof. J.-Y. Le Boudec		56		
CS.450	Advanced algorithms	Chiesa/Kapralov	IN	8		P
COM-401	Cryptography and security	Vaudenay	SC	8	A	
CS-451	Distributed algorithms	Guerraoui	SC	8	A	
CS-423	Distributed information systems	Aberer	SC	4	A	
COM-402	Information security and privacy	Busch/Larus/Pyrgelis	IN/SC	8	A	
COM-405	Mobile networks	Al Hassanieh	SC	4		P
COM-430	Modern digital communication : A hands-on approach	Chiurtu	SC	8	A	
COM-512	Networks out of control (pas donné en 2022-23)	Thiran P./Grossglauser	SC	4		P
COM-407	TCP/IP networking	Le Boudec	SC	8	A	
	Spécialisation F. "SIGNALS, IMAGES, AND INTERFACES"	Responsables : Prof. M. Pauly		114		
CS-440	Advanced computer graphics	Jakob	IN	6		P
EE-554	Automatic speech processing	Magimai Doss	EL	3	A	
BIO-410	Bioimage informatics	Sage/Seitz	SV	4		P
EE-512	Biomedical signal processing	Vesin	EL	6	A	
CS-413	Computational photography	Süsstrunk	SC	5		P
CS-442	Computer vision	Fua	IN	4		P
COM-418	Computers and music (pas donné en 2022-2023)	Prandoni	SC	4		P
EE-559	Deep learning (pas donné en 2022-2023)	vacat	EL	4		P
CS-489	Experience design	Huang	IN	6	A	
CS-457	Geometric computing	Pauly	IN	6	A	
MICRO-511	Image processing I	Unser/Van De Ville	MT	3	A	
MICRO-512	Image processing II	Unser/Van de Ville/Liebling/Sage	MT	3		P
CS-341 *	Introduction to computer graphics	Pauly	IN	6		P
COM-514	Mathematical foundations of signal processing	Simeoni/Fageat	SC	6	A	
COM-430	Modern digital communication : A hands-on approach	Chiurtu	SC	8	A	
COM-433	Machine learning	Jaggi/Flammarion	IN	8	A	
EE-511	Sensors in medical instrumentation	Aminian	EL	3		P
COM-303 *	Signal processing for communications	Prandoni	SC	6		P
COM-500	Statistical signal and data processing through applications	Ridolfi	SC	8		P
CS-458	The GC Maket Project	Pauly	IN	6		P
CS-444	Virtual reality	Boulic	IN	4		P
CS-503	Visual intelligence : machines and minds	Zamir	IN	5		P
	Spécialisation G "SOFTWARE SYSTEMS"	Responsable : Prof. G. Candea		72		
CS-420 *	Advanced compiler construction	Schinz	IN	4		P
CS-470	Advanced computer architecture	Ienne	IN	8		P
CS-471	Advanced multiprocessor architecture (pas donné en 2022-23)	Falsafi	IN	6	A	
CS-453	Concurrent algorithms	Guerraoui	SC	5	A	
CS-438	Decentralized systems engineering	Ford	IN	8	A	
CS-451	Distributed algorithms	Guerraoui	SC	8	A	
CS-452 *	Foundations of software	Odersky	IN	4	A	
COM-402	Information security and privacy	Busch/Larus/Pyrgelis	IN/SC	8	A	
COM-405	Mobile networks	Al Hassanieh	SC	4		P
CS-522	Principles of computer systems	Argyrazi/Candea	SC/IN	7	A	
CS-4xx	Systems for data management and data science	Ailamaki/Kermarrec	IN	8		P
COM-407	TCP/IP networking	Le Boudec	SC	8	A	
	Spécialisation H. "WIRELESS COMMUNICATIONS"	Responsable : Prof. E. Telatar		47		
COM-417	Advanced probability and applications	Lévêque	SC	8		P
COM-404	Information theory and coding	Telatar	SC	8	A	
COM-405	Mobile networks	Al Hassanieh	SC	4		P
COM-430	Modern digital communication : A hands-on approach	Chiurtu	SC	8	A	
COM-512	Networks out of control (pas donné en 2022-23)	Thiran P./Grossglauser	SC	4		P
EE-345 *	Rayonnement et antennes	Skrivervik	EL	3	A	
COM-500	Statistical signal and data processing through applications	Ridolfi	SC	8		P
COM-407	TCP/IP networking	Le Boudec	SC	8	A	

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	Spécialisation I. "COMPUTER SCIENCE THEORY"	Responsable : Prof. O. Svensson		94	
CS-450	Advanced algorithms	Chiesa/Kapralov	IN	8	P
COM-417	Advanced probability and applications	Lévêque	SC	8	P
MAT-460 *	Combinatorial optimization	Eisenbrand	MA	5	A
CS-524	Computational complexity	Göös	IN	4	A
MATH-472 *	Computational finance	Glau/Pulido	MA	5	A
CS-453	Concurrent algorithms	Guerraoui	SC	5	A
MATH-461 *	Convexity	Eisenbrand	MA	5	A
CS-451	Distributed algorithms	Guerraoui	SC	8	A
CS-4xx	Foundations of probabilistic proofs	Chiesa	IN	6	A
MATH-483	Gödel and recursivity	Fournier	MA	5	A
COM-404	Information theory and coding	Telatar	SC	8	A
COM-300 *	Modèles stochastiques pour les communications	Thiran	SC	6	A
CS-433	Machine learning	Jaggi/Flammarion	IN	8	A
MATH-467	Probabilistic method in combinatorics	Pach	MA	5	A
COM-516	Markov chains and algorithmic applications	Lévêque/Macris	SC	4	A
CS-448	Sublinear algorithms for big data analysis (pas donné en 2022-23)	Kapralov	IN	4	A
CS-455	Topics in theoretical computer science (pas donné en 2022-23)	Kapralov	IN	4	A
	Spécialisation J. "INTERNET INFORMATION SYSTEMS"	Responsable : Prof. B. Faltings et Prof. K. Aberer		64	
COM-401	Cryptography and security	Vaudenay	SC	8	A
CS-451	Distributed algorithms	Guerraoui	SC	8	A
CS-423	Distributed information systems	Aberer	SC	4	A
CS-491	Enterprise and service-oriented architecture (pas donné en 2022-23)	Regev	SC	6	P
CS-486	Interaction design	Pu	IN	4	P
CS-430	Intelligent agents	Faltings	IN	6	A
CS-431	Introduction to natural language processing	Chappelier/Rajman	IN	4	A
CS-5xx	Modern natural language processing	Bosselut	IN	6	P
COM-512	Networks out of control (pas donné en 2022-23)	Thiran P./Grossglauser	SC	4	P
CS-433	Machine learning	Jaggi/Flammarion	IN	8	A
EE-593	Social Media	Gillet/Vonèche	EL	2	P
CS-4xx	Systems for data management and data science	Ailamaki/Kermarrec	IN	8	P

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