

Code	Matières	Enseignants sous réserve de modification	Crédits	Période des cours	
<b>Spécialisation A "COMPUTER ENGINEERING - SP"</b>			<b>86</b>		
CS-420	Advanced compiler construction	Schinz	6		P
CS-470	Advanced computer architecture	Ienne	8		P
CS-471	Advanced multiprocessor architecture	Falsafi	8	A	
CS-477	Advanced operating systems	Kashyap	6	A	
EE-431	* Advanced VLSI design	Burg/Levisse	4		P
CS-320	* Computer language processing	Racordon	6		P
CS-472	Design technologies for integrated systems	De Micheli	6	A	
ENG-466	Distributed intelligent systems	Martinoli	5		P
CS-476	Embedded systems design	Kluter	6		P
CS-550	Formal verification	Kuncak	6	A	
EE-429	* Fundamentals of VLSI Design	Burg	4	A	
EE-390a	* Lab on hardware-software digital systems codesign	Atienza/Peon	3		P
EE-490b	* Lab in EDA based design	Koukab/Levisse	4	A	
CS-522	Principles of computer systems	Argyrazi/Candea	8	A	
CS-473	System programming for Systems-on-Chip	Kluter	6	A	
<b>Spécialisation B "DATA ANALYTICS"</b>			<b>134</b>		
CS-450	Algorithms II	Kapralov/Svensson	8	A	
COM-417	Advanced probability and applications	Shkel	8	A	
CS-401	Applied data analysis	Brbic	8	A	
CS-524	Computational complexity	Göös	6	A	
COM-480	Data visualization	Vuillon	6		P
CS-423	Distributed information systems	Aberer	6	A	
COM-402	Information security and privacy	Payer	8	A	
COM-404	Information theory and coding	Telatar	8	A	
COM-308	* Internet analytics (pas donné en 24-25)	Grossglauser	6		P
CS-431	Introduction to natural language processing	Rajman/Chappelier/Bosselut	6	A	
CS-433	Machine learning	Jaggi/Flammarion	8	A	
COM-516	Markov chains and algorithmic applications (pas donné en 24-25)	Lévêque/Macris	6	A	
CS-552	Modern natural language processing	Bosselut	8		P
COM-512	Networks out of control (pas donné en 24-25)	Thiran P./Grossglauser	6		P
COM-500	Statistical signal and data processing through applications	Ridolfi	8		P
MATH-413	* Statistics for Data science	Chandak/Limnios	8		P
CS-448	Sublinear algorithms for big data analysis	Kapralov	6		P
CS-460	Systems for data management and data science	Ailamaki/Kermarrec	8		P
CS-455	Topics in theoretical computer science (pas donné en 24-25)	Kapralov	6	A	
<b>Spécialisation C "FOUNDATIONS OF SOFTWARE"</b>			<b>84</b>		
CS-450	Algorithms II	Kapralov/Svensson	8	A	
CS-420	Advanced compiler construction	Schinz	6		P
CS-477	Advanced operating systems	Kashyap	6	A	
CS-524	Computational complexity	Göös	6	A	
CS-453	Concurrent computing	Guerraoui	6	A	
CS-451	Distributed algorithms	Guerraoui	8	A	
CS-550	Formal verification	Kuncak	6	A	
CS-452	Foundations of software	Bourgeat	8		P
CS-428	Interactive theorem proving	Barrière/Pit-Claudel	6		P
CS-522	Principles of computer systems	Argyrazi/Candea	8	A	
CS-412	Software security	Payer	8		P
CS-460	Systems for data management and data science	Ailamaki/Kermarrec	8		P
<b>Spécialisation D "CYBER SECURITY - SP"</b>			<b>115</b>		
CS-450	Algorithms II	Kapralov/Svensson	8	A	
CS-470	Advanced computer architecture	Ienne	8		P
COM-501	Advanced cryptography	Vaudenay	6		P
CS-477	Advanced operating systems	Kashyap	6	A	
CS-523	Advanced topics on privacy enhancing technologies	Troncoso	8		P
EE-431	* Advanced VLSI design	Burg/Levisse	4		P
COM-401	Cryptography and security	Vaudenay	8	A	
CS-550	Formal verification	Kuncak	6	A	
CS-459	Foundations of probabilistic proofs	Chiesa	6	A	
EE-429	* Fundamentals of VLSI Design	Burg	4	A	
COM-402	Information security and privacy	Payer	8	A	
COM-405	Mobile networks	Al Hassanieh	8	A	
MATH-489	Number theory II.c - Cryptography	Jetchev	5		P
CS-522	Principles of computer systems	Argyrazi/Candea	8	A	
CS-412	Software security	Payer	8		P
COM-506	Student seminar : security protocols and applications	Vaudenay	3		P
COM-407	TCP/IP Networking	Nikolopoulos	8	A	
CS-510	Topics in software security	Payer	3	A	

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<b>Spécialisation E "NETWORKING AND MOBILITY"</b>			<b>68</b>		
CS-450	Algorithms II	Kapralov/Svensson	8	A	
COM-401	Cryptography and security	Vaudenay	8	A	
CS-451	Distributed algorithms	Guerraoui	8	A	
CS-423	Distributed information systems	Aberer	6	A	
COM-402	Information security and privacy	Payer	8	A	
COM-405	Mobile networks	Al Hassanieh	8	A	
COM-430	Modern digital communications : A hands-on approach	Chiurtu	8	A	
COM-512	Networks out of control (pas donné en 24-25)	Thiran P./Grossglauser	6		P
COM-407	TCP/IP networking	Nikolopoulos	8	A	
<b>Spécialisation F "SIGNAL, IMAGES AND INTERFACES"</b>			<b>125</b>		
CS-440	Advanced computer graphics (pas donné en 24-25)	Jakob	6		P
EE-512	Applied biomedical signal processing	Lemay	4	A	
EE-554	Automatic speech processing	Magimai Doss	4	A	
BIO-410	Bioimage informatics	Sage/Seitz	4		P
CS-413	Computational photography	Süsstrunk	6		P
CS-341 *	Computer graphics	Pauly	6		P
CS-442	Computer vision	Fua	6		P
COM-418	Computers and music (pas donné en 24-25)	Prandoni	6		P
COM-480	Data visualization	Vuillon	6		P
EE-559	Deep learning	Cavallaro	4		P
CS-411	Digital education	Dillenbourg/Jermann	6		E
CS-489	Experience design (pas donné en 24-25)	Huang	6	A	
CS-457	Geometric Computing	Pauly	6	A	
EE-451 *	Image analysis and pattern recognition	Thiran J.-Ph.	4		P
MICRO-511	Image processing I	Unser/Van De Ville	3	A	
MICRO-512	Image processing II	Unser/Van de Ville/Liebling/Sage	3		P
CS-486	Interaction design	Pu	6		P
CS-433	Machine learning	Jaggi/Flammarion	8	A	
COM-430	Modern digital communications : A hands-on approach	Chiurtu	8	A	
EE-511 *	Sensors in medical instrumentation	Aminian	3		P
COM-500	Statistical signal and data processing through applications	Ridolfi	8		P
CS-444	Virtual reality	Boulic	6		P
CS-503	Visual intelligence : machines and minds	Zamir	6		P
<b>Spécialisation G "SOFTWARE SYSTEMS"</b>			<b>106</b>		
CS-420	Advanced compiler construction	Schinz	6		P
CS-470	Advanced computer architecture	Ienne	8		P
CS-471	Advanced multiprocessor architecture	Falsafi	8	A	
CS-477	Advanced operating systems	Kashyap	6	A	
CS-453	Concurrent computing	Guerraoui	6	A	
CS-438	Decentralized systems engineering	Borso/Ford	8	A	
CS-451	Distributed algorithms	Guerraoui	8	A	
CS-452	Foundations of software	Bourgeat	8		P
COM-402	Information security and privacy	Payer	8	A	
COM-405	Mobile networks	Al Hassanieh	8	A	
CS-522	Principles of computer systems	Argyrazi/Candea	8	A	
CS-412	Software security	Payer	8		P
CS-460	Systems for data management and data science	Ailamaki/Kermarrec	8		P
COM-407	TCP/IP networking	Nikolopoulos	8	A	
<b>Spécialisation H "WIRELESS COMMUNICATION"</b>			<b>54</b>		
COM-417	Advanced probability and applications	Shkel	8	A	
COM-404	Information theory and coding	Telatar	8	A	
COM-405	Mobile networks	Al Hassanieh	8	A	
COM-430	Modern digital communications : A hands-on approach	Chiurtu	8	A	
COM-512	Networks out of control (pas donné en 24-25)	Thiran P./Grossglauser	6		P
COM-500	Statistical signal and data processing through applications	Ridolfi	8		P
COM-407	TCP/IP networking	Nikolopoulos	8	A	

Légende :

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<b>Spécialisation I. "COMPUTER SCIENCE THEORY"</b>			<b>111</b>		
CS-450	Algorithms II	Kapralov/Svensson	8	A	
COM-417	Advanced probability and applications	Shkel	8	A	
CS-524	Computational complexity	Göös	6	A	
CS-453	Concurrent computing	Guerraoui	6	A	
CS-451	Distributed algorithms	Guerraoui	8	A	
CS-459	Foundations of probabilistic proofs	Chiesa	6	A	
CS-452	Foundations of software	Bourgeat	8		P
MATH-483	Gödel and recursivity	Duparc	5	A	
COM-404	Information theory and coding	Telatar	8	A	
CS-428	Interactive theorem proving	Barrière/Pit-Claudel	6		P
MATH-381 *	Logique mathématique	Duparc	5	A	
CS-433	Machine learning	Jaggi/Flammarion	8	A	
COM-516	Markov chains and algorithmic applications (pas donné en 24-25)	Lévêque/Macris	6	A	
COM-300 *	Modèles stochastiques pour les communications	Thiran	6	A	
MATH-318 *	Set theory	Duparc	5		P
CS-448	Sublinear algorithms for big data analysis	Kapralov	6		P
CS-455	Topics in theoretical computer science (pas donné en 24-25)	Kapralov	6	A	
<b>Spécialisation J. "INTERNET INFORMATION SYSTEMS"</b>			<b>76</b>		
COM-401	Cryptography and security	Vaudenay	8	A	
CS-451	Distributed algorithms	Guerraoui	8	A	
CS-423	Distributed information systems	Aberer	6	A	
CS-486	Interaction design	Pu	6		P
CS-430	Intelligent agents	Faltings	6	A	
CS-491	Introduction to IT consulting	Regev	6		P
CS-431	Introduction to natural language processing	Rajman/Chappelier/Bosselut	6	A	
CS-433	Machine learning	Jaggi/Flammarion	8	A	
CS-552	Modern natural language processing	Bosselut	8		P
COM-512	Networks out of control (pas donné en 24-25)	Thiran P./Grossglauser	6		P
CS-460	Systems for data management and data science	Ailamaki/Kermarrec	8		P

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