

Studies Plan

Cyber security 2023-24

Block "Projects & SHS"

Courses				Master 1	Master 2	Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	on p	I e p			
	HSS : Introduction to project SHS					Win		3	
	HSS : Project SHS					Sum		3	
E	Research project in Cyber security CS-496	IN	Profs divers		12h	12h	Sum Win	During the semester	12

Group 1

Courses				Master 1			Master 2			Exam Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	on p	I	e	p				
E	Advanced computer architecture CS-470	IN	Ienne			3h	2h		Sum	Written	8	
E	Advanced topics on privacy enhancing technologies CS-523	IN	Chiesa Troncoso			3h	1h	2h	Sum	Written	8	
E	Algorithms II CS-450	IN	Svensson	4h	3h				Win	Written	8	
E	Cryptography and security COM-401	SC	Vaudenay	4h	2h				Win	Written	8	
E	Decentralized systems engineering CS-438	IN	Borsò-Tan	2h	2h	2h			Win	Oral	8	
E	Distributed algorithms CS-451	SC	Guerraoui	2h	1h	3h			Win	Written	8	
E	Information security and privacy COM-402	IN	Payer	3h	1h	2h			Win	Written	8	
E	Machine learning CS-433	IN	Flammarion Jaggi	4h	2h				Win	Written	8	
E	Systems for data management and data science CS-460	IN	Ailamaki Kermarrec			2h	2h	2h	Sum	Written	8	
E	TCP/IP networking COM-407	SC	Nikolopoulos	2h	2h	2h			Win	Written	8	

Group 2 : Options

Courses				Master 1		Master 2		Exam Session	Exam	Credit	
Language	Code	Section	Teacher	Specialization	on p	I	e	p			
E	Advanced compiler construction CS-420	IN	Schinz			2h		2h	Sum	During the semester	6
E	Advanced computer graphics CS-440	IN	Jakob			2h		2h	Sum	During the semester	6
E	Advanced cryptography COM-501	SC	Vaudenay			2h		2h	Sum	Written	6
E	Advanced multiprocessor architecture CS-471	IN	Falsafi		4h				Win	During the semester	6
E	Advanced probability and applications COM-417	SC	Shkel			4h		2h	Sum	Written	8
E	AI product management CS-500	IN	Kaboli Zamir		2h	2h		3h	Win	During the semester	6
E	Applied biomedical signal processing EE-512	EL	Lemay		2h			2h	Win	Written	4

E	Applied biostatistics MATH-493 MA		Goldstein	2h	2h	Sum	During the semester	5	
E	Applied data analysis CS-401 SC		West	2h	2h	Win	Written	8	
E	Artificial neural networks/reinforcement learning CS-456 IN		Gerstner	2h	2h	Sum	Written	6	
E	Automatic speech processing EE-554 EL		Magimai Doss	2h	1h	Win	Written	3	
E	Basics of mobile robotics MICRO-452 MT		Mondada	2h	2h	Win	Written	4	
E	Causal inference MGT-416 MTE			2h	1h	Sum	During the semester	4	
E	Causal thinking MATH-352 MA		Stensrud	2h	2h	Win	Written	5	
E	Cellular biology and biochemistry for engineers BIO-105 SV		Zufferey	2h	2h	Win	Written	4	
E	Computational complexity CS-524 IN		Sokolov	2h	2h	Win	During the semester	6	
E	Computational neurosciences: neuronal dynamics NX-465 NX		Gerstner	2h	2h	Sum	Written	5	
E	Computational photography CS-413 SC		Süsstrunk	2h	2h	Sum	During the semester	6	
E	Computer vision CS-442 IN		Fua	2h	1h	Sum	Written	6	
E	Concurrent computing CS-453 SC		Guerraoui	2h	1h	2h	Win	Written	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 semester	4	
E	Design technologies for integrated systems CS-472 IN		De Micheli	3h	2h	Win	During the semester	6	
E	Digital education CS-411 IN		Dillenbourg Jermann	2h	2h	Win	Written	6	
E	Distributed information systems CS-423 SC		Aberer	2h	1h	Win	Written	6	
E	Distributed intelligent systems ENG-466 SIE			2h	3h	Sum	Oral	5	
E	Dynamical system theory for engineers COM-502 SC			2h	1h	Sum	Written	6	
E	Embedded system design CS-476 IN		Kluter	2h	2h	Sum	During the semester	6	
E	Ethics and law of AI DH-415 DH		Rochel	2h	1h	Win	Written	4	
E	Experience design CS-489 IN		Huang	2h	4h	Win	During the semester	6	
E	Formal verification CS-550 IN		Kuncak	2h	2h	2h	Win	During the semester	6
E	Foundations of Data Science COM-406 IN		Gastpar Urbanke	4h	2h	Win	Written	8	
E	Foundations of probabilistic proofs CS-459 IN		Chiesa	4h	1h	Win	During the semester	6	
E	Foundations of software CS-452 IN		Doeraene	2h	2h	Win	Written	6	
E	Gödel and recursivity MATH-483 MA			2h	2h	Win	Written	5	

E	Image processing I MICRO-511 MT		Unser Van De Ville	3h		Win	Written	3	
E	Image processing II MICRO-512 MT		Sage Unser Van De Ville	3h		Sum	Written	3	
E	Industrial automation CS-487 SC		Sommer Tournier	2h	1h	Sum	Oral	3	
E	Information theory and coding COM-404 SC		Telatar	4h	2h	Win	Written	8	
E	Intelligent agents CS-430 IN		Faltings	3h	3h	Win	During the semester	6	
E	Interaction design CS-486 IN		Pu	2h	1h	1h	Sum	During the semester	6
E	Introduction to IT consulting CS-491 IN		Regev	6h		Win	Oral	6	
E	Introduction to natural language processing CS-431 IN		Bosselut Chappelier Rajman	2h	2h	Win	Written	6	
E	Learning theory CS-526 IN		Macris	2h	2h	Sum	Written	6	
E	Machine learning for behavioral data CS-421 IN			2h	2h	Sum	Written	6	
E	Markov chains and algorithmic applications COM-516 SC		Lévêque Macris	2h	1h	1h	Win	Written	6
E	Mathematical foundations of signal processing COM-514 SC			3h	2h	Win	Written	6	
E	Mobile networks COM-405 SC			3h	2h	Sum	Written	8	
E	Modern digital communications: a hands-on approach COM-430 SC		Chiurtu	2h	2h	Win	During the semester	8	
E	Networks out of control COM-512 SC		Grossglauser Thiran	2h	1h	Sum	Written	6	
E	Number theory II.c - Cryptography MATH-489 MA		Jetchev	2h	2h	Sum	Written	5	
E	Optimization for machine learning CS-439 IN		Flammarion Jaggi	2h	2h	1h	Sum	Written	8
E	Optional research project in computer science II CS-596 IN		Profs divers	8h		8h	Sum Win	During the semester	8
E	Principles of computer systems CS-522 IN		Argyrazi Candea	4h		Win	During the semester	8	
F	Project management and risk analysis MGT-427 MTE		Wieser	2h	1h	Win	During the semester	4	
E	Social media EE-593 EL			1h	1h	Sum	During the semester	2	
E	Software security CS-412 IN		Payer	3h	2h	1h	Sum	During the semester	6
E	Statistical physics of computation PHYS-512 PH		Krzakala Zdeborová	2h	2h	Win	Written	4	
E	Statistical signal and data processing through applications COM-500 SC		Ridolfi	3h	2h	Sum	Written	8	

E	Student seminar: security protocols and applications		COM-506	SC	Vaudenay	2h	Sum	During the 3 semester
E	Sublinear algorithms for big data analysis		CS-448	IN		2h 1h	Win	During the 6 semester
E	System programming for Systems-on-chip		CS-473	IN	Kluter	2h 2h	Win	During the 6 semester
E	Topics in software security		CS-510	IN	Payer	1h 1h	Win	During the 3 semester
E	Topics in theoretical computer science		CS-455	IN		3h 1h	Win	During the 6 semester
E	Virtual reality		CS-444	IN	Boulic	2h 1h	Sum	During the 6 semester

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		
E	Internship credited with Master Project (master in Cybersecurity)				320h	320h	320h	320h	Sum Win	Term paper 0
E	Master project in Cybersecurity						900h	900h	Sum Win	Oral 30