

Computer Security and Technologies Department

Computer Security - Semester 5 - year 2020-2021

EDUCATIONAL MODULES	COMPONENTS	ELEMENTS CONSTITUTIFS	Modalities			Duration	Classes	Tutorial classes		Practical classes	Project	Total	ECTS	Coef.
			E	CC	P									
Programming principles							68h00		90h00	0h00	30h00	188h00	12	
P1	C Programming	Programmation C	X	X		1h20	4	5h20	10	13h20			18h40	1
P1	Algorithmics and Complexity	Algorithmique et Complexité		X		1h20	7	9h20	8,5	11h20			20h40	1
P2	Object-oriented programming	Programmation Orientée Objet	X	X		1h20	6	8h00	9	12h00			20h00	1
P2	Introduction to software engineering	Initiation au Génie Logiciel		X		1h20	4	5h20	7	9h20			14h40	0,5
P2	Software modeling	Modélisation du logiciel	X			1h20	8	10h40	8	10h40			21h20	1
P1/P2	Logic in computer science	Logique		X		1h20	6	8h00	9	12h00			20h00	1
P1/P2	Programming project	Projet en programmation			X						30h00		30h00	2,5
P2	Automata theory	Théorie des Langages	X			1h20	8	10h40	8	10h40			21h20	1
P2	Statistics	Statistiques	X			1h20	8	10h40	8	10h40			21h20	1
System Introduction							56h00		68h00	0h00	0h00	124h00	8	
P1	Python programming language	Programmation Python	X	X		1h20	2	2h40	11	14h40			17h20	1
P1	Computer architecture	Architecture des ordinateurs	X			1h20	8	10h40	8	10h40			21h20	1
P2	Microprocessors and assemblers	Micro-processeurs/assembleurs	X			1h20	8	10h40	8	10h40			21h20	1
P1/P2	Networks	Réseaux		X		1h20	16	21h20	16	21h20			42h40	2
P1/P2	System programming 1	Programmation système 1		X		1h20	8	10h40	8	10h40			21h20	1
Humanities 5							32h00		84h40	0h00	0h00	116h40	10	
P1/P2	English 5	Anglais 5				1h20			23	30h40			30h40	1,5
P1	Communication	Communication	X			1h20	8	10h40	8	10h40			21h20	1
P2	Contemporary economy	Economie contemporaine	X			1h20	8	10h40	8	10h40			21h20	1
P1/P2 / deb P2	Finance, Management control	Finance, Contrôle de gestion		X		1h20	8	10h40	8	10h40			21h20	1
P1/P2	Sport 5	EPS 5		X		2h00			11	22h00			22h00	1
Semester 5 total							156h00		242h40	0h00	30h00	428h40	30	

Computer Security and Technologies Department (STI)

Computer Security - Semester 6 - year 2020-2021

EDUCATIONAL MODULES	COMPONENTS	ÉLÉMENTS CONSTITUTIFS	Modalities			Duration	Classes	Tutorial classes	Practical classes	Project	Total	ECTS	Coef.		
			E	CC	P										
Development and mathematics for the engineer							53h20		53h20	0h00	34h00	140h40	11		
P3	Modelling and graph theory	Modélisation et Théorie des graphes	X			1h20	8	10h40	8	10h40			21h20		1
P4	Compiling	Compilation	X	X		1h20	8	10h40	8	10h40			21h20		1
P3	Artificial intelligence	Intelligence artificielle	X			1h20	8	10h40	8	10h40			21h20		1
P3	Database theoretical foundations	Fondements théoriques des bases de données	X			1h20	8	10h40	8	10h40			21h20		1
P3/P4	Error-correcting code	Codes correcteurs d'erreur		X		1h20	8	10h40	8	10h40			21h20		1
P4	Implementation project	Projet d'application			X							34h00	34h00		3
Network and system programming								42h40	48h00	0h00	34h00	124h40	9		
P3	System programming 2	Programmation système 2		X		1h20	8	10h40	8	10h40			21h20		1
P4	Windows system administration	Administration Système Windows		X		1h20	8	10h40	8	10h40			21h20		1
P3	Web programming	Ingénierie du Web	X	X		1h20	12	16h00	12	16h00			32h00		1,5
P4	Computer security 1	Sécurité Informatique 1	X	X		1h20	4	5h20	8	10h40			16h00		1
P3/P4	Networks and systems programming project	Projet en programmation réseau et système			X							34h00	34h00		3
Humanities 6								21h20	82h00	0h00	34h00	137h20	10		
P3/P4	English 6	Anglais 6		X		1h20			29	38h40			38h40		1,5
P3/P4	Humanities project 6	Projet SHS			X							24h00	24h00		1,67
P4	English Project	Projet Anglais			X							4h00	4h00		0,33
P4	Marketing and internet	Marketing et Internet	X			1h20	8	10h40	8	10h40			21h20		1
P3	Responsibility and contract law	Droit des contrats et responsabilités	X			1h20	8	10h40	8	10h40			21h20		1
P4	DPP project	Projet DPP			X							6h00	6h00		1
P3/P4	Sport 6	EPS 6		X		2h00			11	22h00			22h00		1
Semester 6 total								117h20	183h20	0h00	102h00	402h40	30		

**Computer Security and Technology Department (STI)
Computer Security - Semester 8 - year 2020-2021**

EDUCATIONAL MODULES	COMPONENTS	ÉLÉMENTS CONSTITUTIFS	Modalities			Duration	Classes	Tutorial classes	Practical classes	Project	Total	ECTS	Coef.
			E	CC	P								
Common core educational modules													
Scientific and technical open-mindedness													
	Practical classes	Travaux pratiques	X			1h20	4	5h20		16h00		21h20	2
	Bibliographic study	Etude bibliographique		X		1h20	4	5h20		9h00		14h20	1
Humanities 8													
	English 8	Anglais 8	X	X						20h00		20h00	1
	Business intelligence and crisis management	Intelligence économique et Gestion de crise	X			1h20	8	10h40	8	10h40		21h20	1
	DPP Project	Projet DPP		X		1h20			2	2h40		4h40	1
	Sport 8	EPS 8		X		2h00			6	12h00		12h00	1
Elective education modules (EA)													
EA Electronic commerce													
	Advanced web	Web Avancé	X			1h20	8	10h40	8	10h40		21h20	1
	UX Design and web and mobile interfaces ergonomics	UX Design et Ergonomie des interfaces Web et mobiles	X			1h20	4	5h20	4	5h20		10h40	0,5
	Secure transactions	Transactions sécurisées	X			1h20	4	5h20	4	5h20		10h40	0,5
	Web services	Services web	X			1h20	8	10h40	8	10h40		21h20	1
	XML applications for electronic commerce	Applications XML pour le commerce Electronique	X			1h20	8	10h40	8	10h40		21h20	1
EA Big Data													
	Advanced AI	IA Avancée	X	X		1h20	8	10h40	8	10h40		21h20	1
	Data protection & privacy policy	Protection des données & respect de la vie privée	X	X		1h20	8	10h40	8	10h40		21h20	1
	High-performance computing	Calcul Haute Performance	X	X		1h20	8	10h40	8	10h40		21h20	1
	Unstructured data processing (No SQL)	Traitement des données non structurées (No SQL)	X	X		1h20	8	10h40	8	10h40		21h20	1
EA Mobility													
	Embedded OS	OS embarqués	X			1h20	5	6h40	6	8h00		14h40	0,66
	Wireless internet network	Réseaux informatiques sans fil	X			1h20	5	6h40	6	8h00		14h40	0,67
	Mobile networks	Réseaux mobiles	X			1h20	5	6h40	5	6h40		13h20	0,67
	Application Specifications and testing	Spécification et test des applications	X			1h20	8	10h40	8	10h40		21h20	1
	Embedded applications optimisation	Optimisation d'applications embarquées	X			1h20	8	10h40	8	10h40		21h20	1
Semester 8 total							64h00	68h00	36h00	11h00	179h00	16	
Semester 8 internship 4-month internship													
		Stage 4 mois											14
	Internship smooth running	Déroulement du stage											2
	Internship viva voce	Soutenance de stage											1
	Internship report	Rapport de stage											1
Optional components													
	Second language	LV2 8								21h20		21h20	1
	Contribution to INSA Centre Val de Loire's development	Participation au rayonnement de l'institut										1	
	Plastic arts studies	Arts Plastiques Etude								37h30		37h30	1

**Computer Security and Technologies Department (STI)
Computer Security - Semester 9 & 10 - year 2020-2021**

EDUCATIONAL MODULES	COMPONENTS	ELEMENTS CONSTITUTIFS	Modalities			Duration	Classes	Tutorial classes	Practical classes	Project	Total	ECTS	Coef.	
			E	CC	P									
Common Core educational modules														
Humanities 9														
	English 9	Anglais 9					21h20		41h20	0h00	0h00	62h40	5	
	Organizational studies	Sociologie des organisations	X			1h20	8	10h40				20h00	1	
	Strategic management	Management stratégique	X			1h20	8	10h40	8	10h40		21h20	1	
Projects														
	Entrepreneurial creation project or research project or validation of the educational module by professional contrat	Création entrepreneuriale ou projet de recherche ou Rapport contrat pro			X			9h00			0h00	111h00	120h00	9
	Specialization project	Projet d'option			X						88h00	88h00	5	
Elective Educational Modules (specialization - EO)														
Specialization Architecture Administration Audit and Security Analysis (4A5)														
Administration Audit and Security analysis														
	Architecture and distributed systems analysis	Architecture et analyse de systèmes répartis	X			1h20	8	10h40	8	10h40	0h00	0h00	106h40	8
	Audit and security analysis	Audit et analyse de sécurité	X			1h20	8	10h40	8	10h40			21h20	1
	Advanced network security	Sécurité réseau avancée	X			1h20	8	10h40	8	10h40			21h20	1
	Architecture and Cloud Security	Architecture et Sécurité du Cloud	X			1h20	8	10h40	8	10h40			21h20	1
	Safety and security analysis	Analyse de la sécurité et de la sûreté	X			1h20	8	10h40	8	10h40			21h20	1
Architecture and Computer Security														
	Surveillance and numerical investigation	Surveillance et investigation numérique	X			1h20	8	10h40	8	10h40	0h00	21h20	106h40	8
	Operating system security	Sécurité des systèmes d'exploitation	X			1h20	8	10h40	8	10h40			21h20	1
	Architecture and Windows environment security	Architecture et sécurité en environnement Windows	X			1h20	8	10h40	8	10h40			21h20	1
	Detection and exploitation of web vulnerabilities	Détection et exploitation des vulnérabilités Web	X			1h20	8	10h40	8	10h40			21h20	1
	System and network architecture	Architecture système et réseaux			X						21h20	21h20	1	
Specialization Architecture and Software security (ASL)														
Software engineering														
	Cloud infrastructure and containers	Infrastructure Cloud et Conteneurs	X			1h20	8	10h40	8	10h40	0h00	0h00	106h40	8
	Business Intelligence	Informatique décisionnelle	X			1h20	8	10h40	8	10h40			21h20	1
	Design Patterns	Design Patterns	X			1h20	8	10h40	8	10h40			21h20	1
	AGILE software development	Méthodes AGILE	X			1h20	8	10h40	8	10h40			21h20	1
	Software components	Composants logiciels	X	X		1h20	8	10h40	8	10h40			21h20	1
Software security and safety														
	Applications security	Sécurité des applications	X			1h20	8	10h40	8	10h40	0h00	0h00	106h40	8
	Android development	Développement Android	X			1h20	8	10h40	8	10h40			21h20	1
	Software testing	Tests des logiciels	X			1h20	8	10h40	8	10h40			21h20	1
	Computer virology	Virologie Informatique	X			1h20	8	10h40	8	10h40			21h20	1
	Administration and database security	Administration et Sécurité des Bases de données	X			1h20	8	10h40	8	10h40			21h20	1
Specialization Ubiquitous System Security (2SU)														
Testing and developing embedded systems														
	Smart card	Cartes à puce	X			1h20	8	10h40	8	10h40	0h00	0h00	85h20	8
	Embedded cryptography and Blockchain	Cryptographie pour l'embarqué et Blockchain	X			1h20	8	10h40	8	10h40			21h20	1
	Embedded systems	Systèmes embarqués	X			1h20	8	10h40	8	10h40			21h20	1
	Home automation and connected objects	Domotique et Objets connectés	X			1h20	8	10h40	8	10h40			21h20	1
	Security and embedded systems	Sécurité et systèmes embarqués	X			1h20	8	10h40	8	10h40			21h20	1
System virtualization and security, Embedded networks														
	Virtualization principle and Cloud computing	Principes de la virtualisation et Cloud Computing	X			1h20	8	10h40	8	10h40	0h00	0h00	106h40	8
	Container and Cloud Computing	Conteneur et Cloud Computing	X			1h20	8	10h40	8	10h40			21h20	1
	Virtualization infrastructure security and Cloud Computing	Sécurité des infrastructures de virtualisation et Cloud Computing	X			1h20	8	10h40	8	10h40			21h20	1
	Embedded systems	Réseaux pour l'embarqué	X			1h20	8	10h40	8	10h40			21h20	1
	Advanced network security	Sécurité réseau avancée	X			1h20	8	10h40	8	10h40			21h20	1
Semester 9 total														
								126h20	137h20	0h00	111h00	374h40	30	
Semester 10 internship 6 month-internship		Stage 6 mois											30	
	Internship smooth running	Déroulement du stage											2	
	Internship viva voce	Soutenance de stage											1	
	Internship report	Rapport de stage											1	
Optional components														
	French as a foreign language	Français Langue Etrangère									21h20		21h20	1
	Contribution to INSA Centre Val de Loire's developme	Participation au rayonnement de l'institut											1	
	Plastic Arts Studies	Arts Plastiques Etude									37h30		37h30	1

Annee 2020-2021
Département Sécurité et Technologies Informatiques (STI)
Diplôme Sécurité Informatique -