

COURSES IN ENGLISH 2018-19 - ESILV year 4

Year 4 - FALL Semester						
SEM.	Major	Learning Unit	ECTS	Module name	Face to face hours	Homework load
7	Available to all Majors	SOFT SKILLS	2	ELECTIVE WEEK	25,00	20,00
		PROJECT	9	Project PI2 A4		200,00
		LANGUAGES	4	French	17,50 or 35	17,50 or 35
	-		English	[17,50]	[17,50]	
	Computer Science, Big Data, Connected Objects	DATA PROCESSING	6	Machine Learning	27,00	43,00
			6	Advanced Data Structures & Algorithms	27,00	43,00
		ADVANCED PROGRAMMING METHODS	6	Cloud & virtualization techniques	27,00	43,00
			6	Advanced Database management	27,00	43,00
		SOFTWARE ENGINEERING	6	Java EE & frameworks	27,00	43,00
			6	Design Pattern & Software development process	27,00	43,00
	New Energies	PHYSICS	6	Biomass Engineering	15,00	20,00
			6	Advanced fluid mechanics	15,00	20,00
			6	Sustainable energies	30,00	40,00
		DIGITAL	3	Machine learning	27,00	43,00
		TRANSITION	3	Smart metering and energy efficiency	27,00	43,00
		DIGITAL	3	Operational research: graph theory	27,00	43,00
	Computational Mechanics and Modeling	MECHANICAL ENGINEERING	3	Sustainable development	27,00	43,00
			3	Structural Analysis	30,00	40,00
		NUMERICAL ENGINEERING	6	Structural optimization	15,00	20,00
			6	Finite Element Method (FEM)	30,00	40,00
		SYSTEM ENGINEERING	3	Finite Volume Method (FVM)	18,00	17,00
		SYSTEM ENGINEERING	3	Automatic and control	30,00	40,00
	Mathematics and Financial Engineering	MECHANICAL ENGINEERING	3	Fluid Mechanics	21,00	14,00
			3	Powertrain systems	21,00	14,00
		SYSTEM ENGINEERING	3	Mechatronics Fundamentals	30,00	40,00
		FINANCIAL MARKET	6	Foundations of Insurance	36,00	34,00
			6	Cryptocurrencies Market	21,50	13,50
IT FOR FINANCE		6	Financial Concepts	21,50	13,50	
PROGRAMMING LANGUAGES FOR FINANCE	6	Machine learning	27,00	43,00		
	6	Version Control	15,00	20,00		
	6	Web Development	15,00	20,00		
	6	VBA and DOT Net for Finance	34,00	36,00		
					27,00	43,00

Year 4 - SPRING Semester							
SEM.	Major	Learning Unit	ECTS	Module name	Face to face hours	Homework load	
8	Available to all Majors	PROJECT I	9	Project PI2 A4	-	200,00	
		LANGUAGES	4	French	17,50 or 35	17,50 or 35	
			-	English	[17,50]	[17,50]	
	Computer Science, Big Data, Connected Objects	INTERNSHIP OR PROJECT II	6	Internship / Project	0		
		BIG DATA	3	Advanced topics in NoSql databases	27,00	43,00	
			6	Advanced network programming	27,00		
			6	Web Application Architectures	27,00	43,00	
		elective 1 *					
		BIG DATA & IA	6	Web datamining & semantics	27,00	43,00	
		6	Chatbot and recommendation systems	27,00	43,00		
	New Energies	IoT & CYVER SECURITY	6	LoraWan Academy	12,00	58,00	
			6	Mobile application development	27,00	43,00	
		PHYSICS	6	Advanced computational fluid dynamics	27,00	43,00	
	6		Sustainable energies	30,00	40,00		
	DIGITAL	3	Embedded systems	27,00	43,00		
		3	LoRaWAN Academy	12,00	58,00		
		3	Energy Law	15,00	20,00		
	TRANSITION	3	Power Grid	15,00	20,00		
		MECHANICAL ENGINEERING	6	Non linear Structural Analysis	27,00	43,00	
			6	Mechanical vibration	33,00	37,00	
	Computational Mechanics and Modeling	INDUSTRIAL PROCESSES	3	Industrial systems	27,00	43,00	
		MECHANICAL ENGINEERING	3	Computational Fluid dynamic (CFD)	21,00	49,00	
		MECHANICAL ENGINEERING	3	Probabilistic Mechanic and Reliability	21,00	14,00	
		SYSTEM ENGINEERING	3	Practical Robotics and Mechatronic	27,00	48,00	
	Mathematics and Financial Engineering	IT FOR FINANCE	3	Programming Bloomberg API with C#	20,00	30,00	
		MATHEMATICS FOR FINANCE	6	Econometry	12,00	58,00	
			6	Advanced Probability	30,00	40,00	
		elective 1 *					
		QUANTITATIVE FINANCE	6	Stochastic Calculus	33,50	36,50	
			6	Investment Management	21,50	13,50	
			6	Market Risk	21,50	13,50	
		elective 2 *					
		FINTECH	6	Blockchain Programming	33,50	36,50	
			6	NoSQL databases	18,00	17,00	
	6		Cryptography	19,00	16,00		
	elective 3 *						
ACTUARIAL SCIENCES	6	Actuarial Mathematics	33,50	36,50			
	6	ALM	19,00	16,00			
	6	Life Insurance	19,00	16,00			

*Choose only one elective learning unit