

Semester 1 - Master's Program: Electrical Control Systems

Teaching Unit	Subjects	Credits	Coefficient	Weekly Hours			Semester Hours (15 weeks)	Supplementary Work (15 weeks)	Evaluation Method	
	Titled			Course	TD	TP			Continuous Assessment	Exam
Fundamental UE Code: UEF 1.1.1 Credits: 10 Coefficients: 5	Electrical energy Transmission and Distribution Networks	4	2	1h30	1h30		45h00	55h00	40%	60%
	Advanced Power Electronics	4	2	1h30	1h30		45h00	55h00	40%	60%
	Microprocessors and Microcontrollers	2	1	1h30			22h30	27h30		100%
Fundamental UE Code: UEF 1.1.2 Credits: 8 Coefficients: 4	Advanced Electrical Machines	4	2	1h30	1h30		45h00	55h00	40%	60%
	Applied Numerical Methods and Optimization	4	2	1h30	1h30		45h00	55h00	40%	60%
Methodological UE Code: UEM 1.1 Credits: 9 Coefficients: 5	Lab: Microprocessors and Microcontrollers	1	1			1h00	15h00	10h00	100%	
	Lab: Transmission and Distribution Networks	2	1			1h30	22h30	27h30	100%	
	Lab: Advanced Power Electronics	2	1			1h30	22h30	27h30	100%	
	Lab: Applied Numerical Methods and Optimization	2	1			1h30	22h30	27h30	100%	
	Lab: Advanced Electrical Machines	2	1			1h30	22h30	27h30	100%	
Exploratory UE Code: UED 1.1 Credits: 2 Coefficients: 2	Industrial Automation and IT	1	1	1h30			22h30	02h30		100%
	Renewable Energies	1	1	1h30			22h30	02h30		100%
Cross-Disciplinary UE Code: UET 1.1 Credits: 1 Coefficients: 1	Technical English and Terminology	1	1	1h30			22h30	02h30		100%
Total Semester 1		30	17	12h00	6h00	7h00	375h00	375h00		

Semester 2 – Master: Electrical Control Systems

Teaching Unit	Subjects	Credits	Coefficient	Volume horaire hebdomadaire			Weekly Hours (15 weeks)	supplementary Work (15 weeks)	Assessment Method	
	Titled			Course	TD	TP			Continuous Assessment	Exam
Fundamental UE Code: UEF 1.2.1 Credits: 10 Coeff.: 5	Modeling and Identification of Electrical Systems	4	2	1h30	1h30		45h00	55h00	40%	60%
	Electrical Control Techniques	6	3	3h00	1h30		67h30	82h30	40%	60%
Fundamental UE Code: UEF 1.2.2 Credits: 8 Coeff.: 4	Sampled Control Systems and Digital Regulation	4	2	1h30	1h30		45h00	55h00	40%	60%
	Fault Diagnosis in Control Systems	4	2	1h30	1h30		45h00	55h00	40%	60%
Methodological UE Code: UEM 1.2 Credits: 9 Coeff.: 5	Lab: Modeling and Identification of Electrical Systems	2	1			1h30	22h30	27h30	100%	
	Lab: Electrical Control Techniques	3	2			2h30	37h30	37h30	100%	
	Lab: Sampled Control and Digital Regulation	2	1			1h30	22h30	27h30	100%	
	Lab: Fault Diagnosis in Control Systems	2	1			1h30	22h30	27h30	100%	
Exploratory UE Code: UED 1.2 Credits: 2 Coeff.: 2	Transient Regimes of Electrical Systems	1	1	1h30			22h30	02h30		100%
	Electrical Machines in Dynamic Regime	1	1	1h30			22h30	02h30		100%
Cross-disciplinary UE Code: UET 1.2 Credits: 1 Coeff.: 1	Compliance with Standards, Ethics and Integrity	1	1	1h30			22h30	02h30		100%
Total semester 2		30	17	12h00	6h00	7h00	375h00	375h00		

Semester 3 – Master's Program: Electrical Control Systems

Teaching Unit	Subjects	Credits	Coefficient	Weekly Hours			Semester Hours (15 weeks)	Supplementary Work (15 weeks)	Evaluation Method	
	Tiled			Cours	TD	TP			Continuous Assessment	Exam
Fundamental UE Code: UEF 2.1.2 Credits: 10 Coeff.: 5	Nonlinear and Advanced Control	6	3	3h00	1h30		67h30	82h30	40%	60%
	Programmable Logic Controllers (PLCs)	2	1	1h30			22h30	27h30		100%
UE Fondamentale Code : UEF 2.1.2 Crédits : 10 Coefficients : 5	Artificial Intelligence Techniques	4	2	1h30	1h30		45h00	55h00	40%	60%
	Electrical Control of Industrial Mechanisms	6	3	3h00	1h30		67h30	82h30	40%	60%
Methodological UE Code: UEM 2.1 Credits: 9 Coeff.: 5	Lab: Nonlinear and Advanced Control	4	2			3h00	45h00	55h00	100%	
	Lab: Artificial Intelligence Techniques / Lab: Real-Time Digital Control Implementation	2	1			1h30	22h30	27h30	100%	
	Lab: Electrical Control of Industrial Mechanisms	2	1			1h30	22h30	27h30	100%	
	Lab: Industrial Programmable Logic Controllers	1	1			1h00	15h00	10h00	100%	
Exploratory UE Code: UED 2.1 Credits: 2 Coeff.: 2	Industrial Automation	1	1	1h30			22h30	02h30		100%
	Control of Future Energy Systems	1	1	1h30			22h30	02h30		100%
Cross-disciplinary UE Code: UET 2.1 Credits: 1 Coeff.: 1	Research and Thesis Design	1	1	1h30			22h30	02h30		100%
Total semester 3		30	17	13h30	4h30	7h00	375h00	375h00		