



Democratic and Popular Republic of Algeria
Ministry of Higher Education and Scientific Research
Setif 1 University – Ferhat Abbas

Faculty of Technology
Department of Automatic and intelligent systems

Study program

Automation Engineer

Specialty: Automatic and intelligent systems

Semester 1:

semester	Teaching unit	Subject headings	code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
						Course	Tutorials	PW		Continuous assessment	Final exam
1	Fundamental EU Code: UEF 1.1.1 Credits: 12 Coefficients: 7	Analysis 1	IST.1.1	6	3	3h00	1h30	-	67h30	40%	60%
		Algebra 1	IST.1.2	4	2	1h30	1h30	-	45h00	40%	60%
		Probability and statistics	IST.1.5	2	2	1h30	1h30	-	45h00	40%	60%
	Fundamental EU Code: UEF 1.1.2 Credits: 14 Coefficients: 8	Elements of Chemistry (Structure of Matter)	IST.1.3	7	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
		Elements of Mechanics (Physics 1)	IST.1.4	7	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Methodological EU Code: UEM 1.1 Credits: 2 Coefficients: 2	Computer structure and applications	IST.1.6	2	2	-	-	3h00	45h00	100%	-
	Transversal EU Code: UET 1.1 Credits: 2 Coefficients: 2	Ethics and deontology dimension (the foundations)	IST.1.7	1	1	1h30	-	-	10h30	-	100%
		Foreign language 1 (French or English)	IST.1.8	1	1	-	1h30	-	10h30	100%	-
Total Hourly Volume			-	30	19	9h00	13h30	6h00	427h30	-	-

Semester 2:

semester	Teaching unit	Subject headings	code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
						Course	Tutorials	PW		Continuous assessment	Final exam
2	Fundamental EU Code: UEF 1.2.1 Credits: 10 Coefficients: 5	Analysis 2	IST.2.1	6	3	3h00	1h30	-	67h30	40%	60%
		Algebra 2	IST.2.2	4	2	1h30	1h30	-	45h00	40%	60%
	Fundamental EU Code: UEF 1.2.2 Credits: 14 Coefficients: 8	Electricity and Magnetism (Physics 2)	IST.2.3	7	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
		Thermodynamics	IST.2.4	7	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Methodological EU Code: UEM 1.2 Credits: 4 Coefficients: 4	Technical drawing	IST.2.5	2	2	-	-	3h00	45h00	100%	-
		Programming (computer science 2)	IST.2.6	2	2	-	-	3h00	45h00	100%	-
	Transversal EU Code: UET 1.2 Credits: 1 Coefficients: 1	Foreign Language 2 (English)	IST.2.7	1	1	-	1h30	-	10h30	100%	-
	EU Discovery Code: UED 1.2 Credits: 1 Coefficients: 1	Engineering professions	IST.2.8	1	1	1h30	-	-	10h30	-	100%
Total Hourly Volume			-	30	19	7h30	12h00	9h00	427h30	-	-

Semester 3:

semester	Teaching unit	Subject headings	code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
						Course	Tutorials	PW		Continuous assessment	Final exam
3	Fundamental EU Code: UEF 2.1.1 Credits: 11 Coefficients: 6	Analysis 3	IST.3.1	6	3	3h00	1h30	-	67h30	40%	60%
		Numerical analysis 1	IST.3.2	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Fundamental EU Code: UEF 2.1.2 Credits: 14 Coefficients: 9	Waves and vibrations	IST.3.3	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
		Fluid mechanics	IST.3.4	5	4	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
		Rational Mechanics I	IST.3.5	4	2	1h30	1h30	-	45h00	40% (20% TD + 20% TP)	60%
	Methodological EU Code: UEM 2.1 Credits: 3 Coefficients: 3	Computer Science 3 (Matlab)	IST.3.6	2	2	1h30	-	1h30	45h00	100%	-
		Computer Aided Design	IST.3.7	1	1	-	-	1h30	10h30	100%	-
	Transversal EU Code: UET 2.1 Credits: 2 Coefficients: 2	Technical English	IST.3.8	2	2	-	3h00	-	45h00	100%	-
Total Hourly Volume			-	30	19	9h00	12h00	7h30	427h30	-	-

Semester 4:

semester	Teaching unit	Subject headings	code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
						Course	Tutorials	PW		Continuous assessment	Final exam
4	Fundamental EU Code: UEF 2.2.1 Credits: 9 Coefficients: 5	Numerical analysis 2	IST.4.1	5	3	3h00	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
		Resistance of materials	IST.4.2	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Fundamental EU Code: UEF 2.2.2 Credits: 13 Coefficients: 7	Fundamental electronics	IST.4.3	4	2	1h30	1h30	-	45h00	40%	60%
		Basic electricity	IST.4.4	4	2	1h30	1h30	-	45h00	40%	60%
		Signal theory	IST.4.5	4	2	1h30	1h30	-	45h00	40%	60%
	Methodological EU Code: UEM 2.2 Credits: 7 Coefficients: 6	Measurement and metrology	IST.4.6	3	2	1h30	-	1h30	45h00	40%	60%
		Computer Science 4	IST.4.7	2	2	1h30	-	1h30	45h00	40%	60%
		Assisted Design Computer	IST.4.8	2	2	-	-	1h30	45h00	100%	-
	Transversal EU Code: UET 2.2 Credits: 1 Coefficients: 1	Expression techniques, of information and communication	IST.4.9	1	1	-	3h00	-	10h00	100%	-
Total Hourly Volume				30	19	12h00	9h00	7h30	427h30		

Semester 5:

Teaching unit	Subject headings	Code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
					Course	Tutorials	PW		Continuous assessment	Final exam
Fundamental EU Code: UEF 3.1.1 Credits: 15 Coefficients: 10	Servo control of continuous linear systems.	ASI5.1	6	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Combinatorial and sequential logic	ASI5.2	6	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Industrial actuators	ASI5.3	3	2	1h30		00h45	33h45	40%	60%
Fundamental EU Code: UEF 3.1.2 Credits: 8 Coefficients: 4	Power electronics	ASI5.4	5	2	1h30	1h30	00h45	56h15	40% (20% TD + 20% TP)	60%
	Applied numerical methods	ASI5.5	3	2	1h30		00h45	33h45	40%	60%
Methodological EU Code: UEM 3.1 Credits: 6 Coefficients: 4	Applied electronics	ASI5.6	3	2	1h30		1h30	45h00	40%	60%
	Programming language 1	ASI5.7	1	1			1h30	10h30	100%	
	Sensors and industrial instrumentation	ASI5.8	2	1	1h30		00h45	33h45	40%	60%
Transversal EU Code: UET 3.1 Credits: 1 Coefficients: 1	Technical English in Automation	ASI5.9	1	1	-	1h30	-	10h30	100%	
Total Hourly Volume			30	19	1h30	6h00	9h00	427H30		

Semester 6:

Teaching unit	Subject headings	Code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
					Course	Tutorials	PW		Continuous assessment	Final exam
Fundamental EU Code: UEF 3.2.1 Credits: 14 Coefficients: 8	Microprocessors and Microcontrollers	ASI6.1	6	3	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Servo control of discrete linear systems	ASI6.2	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Signal processing	ASI6.3	3	2	1h30	1h30	12h45	56h15	40% (20% TD + 20% TP)	60%
Fundamental EU Code: UEF 3.2.2 Credits: 10 Coefficients: 6	Industrial programmable logic controllers	ASI6.4	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Optimization techniques	ASI6.5	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
Methodological EU Code: UEM 3.2 Credits: 5 Coefficients: 4	Industrial regulation	ASI6.6	3	2	1h30		12h45	33h45	40%	60%
	Programming Language 2	ASI6.7	1	1			1h30	10h30	100%	
	Internship in a company 1	ASI6.8	1	1	Hourly volume hourly out of quota (on average 100 hours) Tutoring: 1.5 hours Weekly practical				100%	
Transversal EU Code: UET 3.2 Credits: 1 Coefficients: 1	Entrepreneurship and business management	ASI6.9	1	1	1h30	-	-	10h30		100%
Total Hourly Volume			30	19	12h00	7h30	9h00	427H30		

Semester 7:

Teaching unit	Subject headings	Code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
					Course	Tutorials	PW		Continuous assessment	Final exam
Fundamental EU Code: UEF 4.1.1. Credits: 14 Coefficients: 8	Control of linear systems in state space	ASI7.1	6	3	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Modeling and identification of systems	ASI7.2	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Advanced Signal Processing	ASI7.3	3	2	1h30	1h30	12h45	56h15	40% (20% TD + 20% TP)	60%
Fundamental EU Code: UEF 4.1.2 Credits: 7 Coefficients: 4	Discrete event systems	ASI7.4	4	2	1h30	1h30		45h00	40%	60%
	Industrial communication networks	ASI7.5	3	2	1h30		12h45	33h45	40%	60%
Methodological EU Code: UEM 4.1 Credits: 8 Coefficients: 6	Programming of reconfigurable FPGA circuits	ASI7.6	4	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Embedded Systems Engineering	ASI7.7	2	2	1h30		1h30	45h00	40%	60%
	Professional Personal Project	ASI7.8	2	1	Hourly volume hourly out of quota Tutoring: 1.5 hours of practical work per				100%	
Transversal EU Code: UET 4.1 Credits: 1 Coefficients: 1	Electrical standards and installation	ASI7.9	1	1	1h30			10h30	40%	60%
Total Hourly Volume			30	19	1h30	7h30	7h30	427H30		

Semester 8:

Teaching unit	Subject headings	Code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
					Course	Tutorials	PW		Continuous assessment	Final exam
Fundamental EU Code: UEF 4.2.1 Credits: 13 Coefficients: 8	Control of nonlinear systems	ASI8.1	6	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Multivariable systems	ASI8.2	6	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Industrial automation and supervision	ASI8.3	3	2	1h30		1h30	45h00	40% (20% TD + 20% TP)	60%
Fundamental EU Code: UEF 4.2.2 Credits: 10 Coefficients: 6	Modeling of robotic systems	ASI8.4	4	2	1h30	1h30	12h45	56h15	40% (20% TD + 20% TP)	60%
	Advanced optimization techniques	ASI8.5	4	2	1h30		1h30	45h00	40%	60%
Methodological EU Code: UEM 4.2 Credits: 6 Coefficients: 4	Artificial intelligence techniques	ASI8.6	3	2	1h30		1h30	45h00	40%	60%
	Design and production of electronic circuits	ASI8.7	2	1	1h30		00h45	33h45	40%	60%
	Internship in a company 2	ASI8.8	1	1	Hourly volume outside quota (on average 100 hours) Tutoring: 1.5 hours of practical work per				100%	
Transversal EU Code: UET 4.2 Credits: 1 Coefficients: 1	Compliance with standards and rules of ethics and integrity	ASI8.9	1	1	1h30			10h30		100%
Total Hourly Volume			30	19	12h15	4h30	9h45	427H30		

Semester 9:

Teaching unit	Subject headings	Code	Credits	Coefficients	Weekly Hourly Volume			SHV	Assessment method	
					Course	Tutorials	PW		Continuous assessment	Final exam
Fundamental EU Code: UEF 5.1.1. Credits: 14 Coefficients: 8	Advanced order	ASI9.1	6	4	3h00	1h30	1h30	90h00	40% (20% TD + 20% TP)	60%
	Deep learning	ASI9.2	4	2	1h30		1h30	45h00	40%	60%
	Image and sound processing	ASI9.4	4	2	1h30		1h30	45h00	40%	60%
Fundamental EU Code: UEF 5.1.2. Credits: 8 Coefficients: 5	Robot control	ASI9.3	5	3	1h30	1h30	1h30	67h30	40% (20% TD + 20% TP)	60%
	Real-time systems	ASI9.5	3	2	1h30		1h30	45h00	40%	60%
Methodological EU Code: UEM 5.1 Credits: 7 Coefficients: 5	Virtual instrumentation	ASI9.6	3	2	1h30		1h30	45h00	40%	60%
	WEB design and development	ASI9.7	3	2	1h30		1h30	45h00	40%	60%
	Industry 4.0	ASI9.8	1	1	1h30			10h30		100%
Transversal EU Code: UET 5.1 Credits: 1 Coefficients: 1	Documentary research and memory design	ASI9.9	1	1	1h30	-	-	10h30		100%
Total Hourly Volume			30	19	3h00	3h00	10h30	427H30		

Semester 10:

The end-of-studies project, which must be related to the industrial sector or in a company, or within the framework of decree 1275 (start-up), is validated by a dissertation and a defense.

	VHS	Coefficients	Credits
Personal Work	655	11	18
Internship in a company	100	04	06
Seminars	50	02	03
Other (Supervision)	50	02	03
Total Semester 10	855	19	30

❖ Evaluation of the End of Engineering Training Cycle Project

- Scientific value (Jury assessment)	/6
- Writing the Dissertation (Jury Assessment)	/4
- Presentation and answer to questions (Jury assessment)	/4
- Supervisor's assessment	/3
- Presentation of the internship report (Jury assessment)	/3