

Master in Branch Automatic

Speciality *Automatic and Industrial Computing*

Objectives

The Master's degree in Automatic and Industrial Computing at Khemis-Miliana University focuses on engineering in the fields of automatic control systems, especially the design, installation, programming, diagnosis, and repair of automated equipment (machine tools, industrial robots, automatic production systems, etc.). It combines knowledge of industrial engineering disciplines, such as electrical, industrial electronics, and mechanical engineering, with some aspects of artificial intelligence. The two academic years includes a master's thesis and training in an industrial or research environment.

Field	Branch	Speciality
<i>Sciences and Technologies</i>	Automatic	Automatic and Industrial Computing

First Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	Volume (Hour)
Fundamental Unit	Multivariable Linear Systems	6	3	3h00	1h30		67h30
	Signal processing	4	2	1h30	1h30		45h00
	Association converters - machines	4	2	1h30	1h30		45h00
	Optimization	4	2	1h30	1h30		45h00
Methodological unit	Networks and protocols of industrial communication	3	2	1h30		1h00	37h30
	TP Multivariable Linear Systems	2	1			1h30	22h30
	TP Signal processing/TP Optimization	2	1			1h30	22h30
	TP Association converters - machines	2	1			1h30	22h30
Discovery Unit	Elective subjects	1	1	1h30			22h30
	Elective subjects	1	1	1h30			22h30
Transversal Unit	Technical English and terminology	1	1	1h30			22h30

Second Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	Volume (Hour)
Fundamental Unit	Nonlinear systems	6	3	3h00	1h30		67h30

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	Volume (Hour)
	Embedded systems and real-time systems	4	2	1h30	1h30		45h00
	Advanced PLC programming	4	2	1h30	1h30		45h00
	Applied Electronics	4	2	1h30	1h30		45h00
Methodological unit	Object-oriented design	3	2	1h30		1h00	37h30
	TP Nonlinear systems	2	1			1h30	22h30
	TP Embedded systems and real-time systems	2	1			1h30	22h30
	TP Advanced PLC programming/ TP Applied Electronics	2	1			1h30	22h30
Discovery Unit	Elective subjects	1	1	1h30			22h30
	Elective subjects	1	1	1h30			22h30
Transversal Unit	Ethics, deontology and intellectual property	1	1	1h30			22h30

Third Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	Volume (Hour)
Fundamental Unit	Advanced control	6	3	3h00	1h30		67h30
	Control of Manipulator Robots	4	2	1h30	1h30		45h00
	Discrete Event Systems	4	2	1h30	1h30		45h00
	FPGA and programming VHDL	4	2	1h30	1h30		45h00
Methodological unit	Industrial supervision	3	2	1h30		1h00	37h30
	TP Advanced control	2	1			1h30	22h30
	TP Control of Manipulator Robots	2	1			1h30	22h30
	TP FPGA and programming VHDL	2	1			1h30	22h30
Discovery Unit	Elective units *	1	1	1h30			22h30
	Elective units *	1	1	1h30			22h30
Transversal Unit	Elective units **	1	1	1h30			22h30

Semester 4

Internship in a company sanctioned by a thesis and a defense.

	VHS	Coeff	Crédits
Personal Work	550	09	18
Internship in a company	100	04	06
Seminars	50	02	03
Other (Supervision)	50	02	03
Total Semester 4	750	17	30