Universidad Carlos III de Madrid

SUBJECT: Advanced industrial robotics and services		
MASTER DEGREE: MASTER IN CONNECTED INDUSTRY 4.0	ECTS: 3	QUARTER: 1

TIMETABLE FOR THE SUBJECT

WEEK	SESSION	DESCRIPTION OF EACH SESSION	GROUP (X mark)		Indicate if a different lecture room is needed (computer, audiovisual, etc.)	HOMEWORK PER WEEK		
			1	2		DESCRIPTION	ATTENDING HOURS	HOMEWORK Max. 7H/WEEK
1	1	Introduction to Advanced Industrial Robotics 1.1 Review of the evolution of key technologies and their applications	x			Installation of the software required in the course	1,66	3,7
1	2	1.2. Concept of collaborative robots or cobots.	x			Review of the concepts of sessions 1 and 2	1,66	3,7
2	3	2.- Sensorization of collaborative robots 2.1 Technologies and strategies for HRI	x			Final project development	1,66	3,7
2	4	2.2 Advanced security concepts 2.3 Modes of interaction	x			Review of the concepts of sessions 3 and 4	1,66	3,7
3	5	3.- Control and programming of collaborative robots 3.1 Task control for advanced applications	x			Final project development	1,66	3,7
3	6	3.2 Advanced methods of task control (force, vision)	x			Review of the concepts of sessions 5 and 6	1,66	3,7

4	7	3.3 Advanced programming of industrial robots	x			Review of the concepts of sessions 7	1,66	3,7
4	8	Lab session I	x	s	LAB 1.0.B06 LEGANES	Study for Lab session	1,66	3,7
5	9	Integration of advanced robots in the production and service processes 4.1 Applicable normative and regulations: AIR, collaborative robots	s			Final project development	1,66	3,7
5	10	4.2 Ethical and legal issues of security, responsibility, privacy of the cobots.	s			Review of the concepts of sessions 9 and 10	1,66	3,7
6	11	5.- Multi-robot systems 5.1 Communication technologies	s			Review of the concepts of sessions 11	1,66	3,7
6	12	Lab session II	s	s	LAB 1.0.B06 LEGANES	Study for Lab session	1,66	3,7
7	13	Final Project Presentation	s	s		Project presentation preparation	1,66	3,7
7	14	Final Exam	s	s		Study for final exam	1,66	3,7
TOTAL HOURS							22,4	51,8
							74,2	