

DENOMINACIÓN ASIGNATURA: Electrical Machines control

GRADO: CURSO: 4 **CUATRIMESTRE:** 2
GTI

*La asignatura tiene 29 sesiones que se distribuyen a lo largo de 14 semanas. Los laboratorios pueden situarse en cualquiera de ellas.
Semanalmente el alumnos tendrá dos sesiones, excepto en un caso que serán tres.*

WEEKLY PLANING

WEEK	LECTURE	DESCRIPTION OF THE CONTENTS	GROUP (marcar X)	Room, other tan usual room	Two teachers lectura (Yes/No)	Student working hours per week

			Big	Small		DESCRIPTION	On-site hours	Working hours (max 7h/week)
1	1	Introduction and mechanical systems	X		NO	Brief introduction and resolution of the mechanical equation	1,66	
1	2	Introduction to MATLAB/Simulink and rest of computer tools		PC room	NO	MATLAB and Simulink programming	1,66	
2	3	Mechanical systems and DC converters	X		NO	DC converters	1,66	
2	4	Mechanical equation dynamic simulation		PC room	NO	Single axis dynamic model with simulink	1,66	
3	5	Electrical rotating machinery control	X		NO	Generic explanation of machine control concepts	1,66	
3	6	Chopper simulation		PC room	NO	Dynamic simulation of a chopper using MATLAB, Simulink and SimPowerSystems	1,66	
4	7	DC motor control	X		NO	Control strategies and techniques for dc machines	1,66	
4	8	Chopper simulation (II)		PC room	NO	Dynamic simulation of a chopper continued	1,66	
5	9	Lab sesión 1		LABORATORI	NO	DC motor control (ELWE)	1,66	
5	10	dc motor dynamic model		PC room	NO	Implementation in Simulink	1,66	
6	11	Grid converter (I) (5mar)	X		NO	Invertir structure, dynamic model.		
6	12	Dc motor control		PC room	NO	Control loops in simulink		

7	13	Grid converter (II)	X		NO	Dimensioning and operating modes	1,66			
7	14	DC motor control (II)		PC room	NO	Dc motor control continued	1,66			
8	15	Asynchronous machine dynamic model	X		NO	Space vectors, Park transformation and torque equation	1,66			
8	16	Grid invertir simulation		PC room	NO	Dimensioning and working point problems	1,66			
9	17	Scalar control	X		NO	Squirrel cage scalar control	1,66			
9	18	Asynchronous machine dynamic model (II)		PC room	NO	Machine model in simulink	1,66			
10	19	Vector control(I)	X		NO	Vector control fundamentals	1,66			
10	20	Asynchronous machine dynamic model (III)		PC room	NO	Machine model in simulink continued	1,66			
11	21	Lab sesión 2		LABORATORI	NO	Synchronous machine control (Unidrive)	1,66			
11	22	Scalar control simulation		PC room	NO	Implementation in simulink	1,66			
12	23	Vector control (II)	X		NO	Control loops and regulators tuning	1,66			
12	24	Scalar control simulation (II)		PC room	NO	Implementation in simulink continued	1,66			
13	25	Lab session 3		LABORATORI	NO	Squirrel cage motor control (Lifts)	1,66			
13	26	Vector control simulation		PC room	NO	Simulink implementation	1,66			
14	27	Vector control simulation (II)		PC room	NO	Implementation in simulink continued	1,66			
14	28	Vector control simulation (III)		PC room	NO	Implementation in simulink continued	1,66			
15	29	Lab exam		LABORATORI		Lab sesión evaluation	1,66			
15	30	Simulations exam		PC room	NO	Dynamic simulations evaluation	1,66	S u b t o t a l	48,33	

