Universidad Carlos III de Madrid
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COURSE: Power Electronics Systems		
DEGREE: Industrial Technologies Engineering (Elective, 6 ECTS)	YEAR: 4º	TERM: 2º

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room)	Indicate YES/NO If the session needs 2 teachers	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURES	SEMINARS			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	Course introduction.	X			NO	Study of topics developed. Obtaining course materials	1,66	4,0
1	2	Electrical Concepts		X		NO	Study of topics developed	1,66	
2	3	Electrical Components	X			NO	Study of topics developed	1,66	4,0
2	4	Conversion types: DC-DC **Exercise I:** DC-DC converter		X		NO	Study of topics developed Solving problems	1,66	
3	5	Dynamic of converters	X			NO	Study of topics developed	1,66	4,0
3	6	Modeling of converters (I) **Exercise II:** Modeling of a buck converter		X		NO	Study of topics developed Solving problems	1,66	
4	7	Modeling of converters (II)	X			NO	Study of topics developed	1,66	4,0
4	8	**Exercise III:** Modeling of a boost converter		X		NO	Study of topics developed Solving problems	1,66	
5	9	Injected and absorbed current method **Exercise IV:** Modeling of a Flyback converter in DCM	X			NO	Study of topics developed Solving problems	1,66	4,0
5	10	Control of power electronic converters (I)		X		NO	Study of topics developed	1,66	

6	11	Control of power electronic converters (II)	X			NO	Study of topics developed	1,66	4,0
6	12	**Exercise V:** Control of a Buck DC-DC converter		X	Computer room	NO	Study of topics developed Solving problems	1,66	
7	13	**Exercise VI:** Control of a Bidirectional DC-DC converter	X			NO	Study of topics developed Solving problems	1,66	7,0
7	14	Session 1: Regulated Switched-Power Supply: DC-DC Converter		X	Lab	YES	Getting the course material. Study materials developed. Results report generation	1,66	
8	15	Power Factor Corrector **Exercise VII-a:** PC Power Supply	X			NO	Study of topics developed Solving problems	1,66	4,0
8	16	Power Factor Corrector **Exercise VII-b:** PC Power Supply		X		NO	Study of topics developed Solving problems	1,66	
9	17	Power Factor Corrector **Exercise VII-c:** PC Power Supply	X			NO	Study of topics developed Solving problems	1,66	5,0
9	18	**Exercise VIII:** Power Supply Converters for LED lighting (HBLED)		X		NO	Study of topics developed Solving problems	1,66	
10	19	Conversion types: DC-AC Modeling and control of Inverters **Exercise IX-a:** DC-AC Solar Inverter	X			NO	Study of topics developed Solving problems	1,66	7,0
10	20	Session 2: Power Supply for PC - Power Factor Corrector (PFC)		X	Computer room	YES	Getting the course material. Study materials developed. Results report generation	1,66	
11	21	Modeling and control of Inverters **Exercise IX-b:** DC-AC Solar Inverter	X			NO	Study of topics developed Solving problems	1,66	7,0
11	22	Session 3: Power Supply System AC-DC for HBLED		X	Computer room	NO	Getting the course material. Study materials developed. Results report generation	1,66	
12	23	Modeling and control of Inverters **Exercise IX-d:** DC-AC Solar Inverter	X			NO	Study of topics developed Solving problems	1,66	5,0
12	24	Modeling and control of Inverters **Exercise IX-c:** DC-AC Solar Inverter		X		YES	Study of topics developed Solving problems	1,66	
13	25	Conversion types: AC-DC Modeling and control of a Three Phase Rectifier	X			NO	Study of topics developed	1,66	7,0
13	26	Session 4: Solar Inverter for grid connection. dq Control		X	Computer room	YES	Getting the course material. Study materials developed. Results report generation	1,66	
14	27	Introduction to Digital Control of Converters	X			NO	Study of topics developed	1,66	5,0
14	28	Overview of the course (I): Theory-Practice		X		NO	Preparation and study of the topics developed	1,66	
15	29	Overview of the course (II): Theory-Practice	X			NO	Preparation and study of the topics developed	1,66	3,0
							Subtotal 1	**48,33**	**74**

		Total 1 *(Hours of class plus student homework hours between weeks 1-14)*						**123,33**	
15		Tutorials, handing in, etc			ONLINE		Resolution of questions of continuous assessment exercises and examinations		2,67
16		Assessment					Studying for final exam	3	21
17									
18									
							Subtotal 2	**3**	**23,67**
		Total 2 *(Hours of class plus student homework hours between weeks 15-18)*						**26,67**	
TOTAL *(Total 1 + Total 2. Maximum 180 hours)*								**150**	