



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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	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		ONLINE	NO	Study of topics developed Solving problems	1,66	7,0
11	22	Modeling and control of Inverters Exercise IX-c: DC-AC Solar Inverter		X		NO	Study of topics developed Solving problems	1,66	
12	23	Modeling and control of Inverters Exercise IX-d: DC-AC Solar Inverter	X		ONLINE	NO	Study of topics developed Solving problems	1,66	5,0
12	24	Session 3: Power Supply System AC-DC for HBLED		X	Computer room	YES	Getting the course material. Study materials developed. Results report generation	1,66	
13	25	EMC regulations applicable to electronic power converters	X		ONLINE	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	Conversion types: AC-DC Modeling and control of a Three Phase Rectifier	X		ONLINE	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		ONLINE	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		