Universidad Carlos III de Madrid
www.uc3m.es

COURSE: MATERIALS FOR ENERGY PRODUCTION AND STORAGE		
DEGREE: BACHELOR IN ENGINEERING OF INDUSTRIAL TECHNOLOGIES	**YEAR: 4th**	**TERM: 2st**

WEEKLY PLANNING

WEEK	SESSION	DESCRIPTION	GROUPS		SPECIAL ROOM FOR SESSION (Computer class room, audio-visual class room	Indicate YES/NO If the session needs 2 teachers: Maximum 4 sessions	WEEKLY PROGRAMMING FOR STUDENT		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK HOURS Maximum 7 h
1	1	Introduction					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
2	2	Fuel Cells. Solid Oxide Fuel Cells.					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
3	3	Proton Exchange Membrane Fuel Cells I.					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
4	4	Proton Exchange Membrane Fuel Cells II.					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
5	5	Capacitors, Supercapacitors and Ferroelectrics.					Study of recommended references and	1,66	4

							material used by the teacher and solving exercises.		
6	6	Phase Change Materials					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
7	7	Redox Flow Batteries					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
8	8	Lithium Batteries					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
9	9	Post-Lithium Batteries					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
10	10	Superconductors					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
11	11	Magnetic Materials.					Study of recommended references and material used by the teacher and solving exercises.	1,66	4
12	12	Characterization Techniques of Fuel cells.			Laboratory		Report on results associated with practical cases.	1,66	4
13	13	Characterization Techniques of Batteries.			Laboratory		Report on results associated with practical cases.	1,66	4
14	14	Team work					Preparation of team work and exposure.	1,66	6
							Subtotal 1	**23,33**	**58**
		Total 1 *(Presential and working hours of the student in weeks 1-14)*						81.33	
15		Others							
16		Preparing exam and exam						3	4
17									
18									
							Subtotal 2	**3**	**4**

	Total 2 *(Presential and working hours of the student in weeks 15-18)*	7
TOTAL *(Total 1 + Total 2. Maximum 180 hours)*		**88,33**