Universidad Carlos III de Madrid
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COURSE: MICROSYSTEMS AND NANOELECTRONICS		
MASTER: ELECTRONIC SYSTEMS ENGINEERING AND APPLICATIONS	YEAR: 2014-15	TERM: 2nd

WEEKLY PLANNING							
WEEK	SESSION	DESCRIPTION	GROUPS (mark X)		Special room for session (computer classroom, audio-visual classroom…)	WEEKLY PROGRAMMING FOR STUDENT	
			LECTURES	SEMINARS/ LAB[1]		DESCRIPTION	CLASS HOURS	HOMEWORK HOURS (Max. 7h week)
1	1	Introduction to Electronic Microsystems and MEMS. Historical overview and Applications. Design, Microfabrication, Integration and Packaging of MEMS and Microsystems	X			Previous reading. Answering questions about background.	1,5	4
1	2	Examples of Microsystems and MEMS: Pressure and Gas Sensors, Accelerometers, Gyroscopes and microfluidics Systems	X			Previous reading. Revision of Class Materials.	1,5	
2	3	MOEMS: Micro-optical Devices: micromirrors and MEMS for optical Communication and Sensing	X			Previous reading. Revision of Class Materials.	1,5	7
2	4	Liquid Crystals, microscreens and displays	X			Previous reading. Revision of Class Materials.	1,5	
3	5	Microsystems: Discussion of Case Studies		X		The students, split in groups, will prepare the description of one microsystem that will be discussed in class	1,5	

3	6	Fundamentals for Nanoelectronics	X			Previous reading. Revision of Class Materials.	1,5	
4	7	Technological Aspects: Fabrication	X			Previous reading. Revision of Class Materials.	1,5	
4	8	Technological Aspects: New materials and Components (CNT, Graphene,…)	X			Previous reading. Revision of Class Materials.	1,5	
5	9	Molecular Electronics and Metatronics	X			Previous reading. Revision of Class Materials.	1,5	
5	10	Quantum Computing	X			Previous reading. Revision of Class Materials.	1,5	
6	11	Nanoelectronic Logic Devices	X			Previous reading. Revision of Class Materials.	1,5	
6	12	Nanoelectronic Component and Systems for Data Transmission and Interfaces	X			Previous reading. Revision of Class Materials.	1,5	
7	13	Nanoelectronic Sensors and Sensors arrays	X			Previous reading. Revision of Class Materials.	1,5	
7	14	Nanoelectronics: Discussion of Case Studies		X		The students, split in groups, will prepare the description of one nanoelectronic system that will be discussed in class	1,5	5
[1] A maximum of 1-2 lab sessions						**Subtotal 1**	**21**	**34**
						Total 1 *(Hours of class plus student homework hours between weeks 1-7)*	**55**	

1-7		Tutorials, handing in, etc					10	
8		Assessment					3	7
						Subtotal 2	**3**	**17**
						Total 2 *(Hours of class plus student homework hours at week 8)*	**20**	

TOTAL *(Total 1 + Total 2)*	**75**