Universidad Carlos III de Madrid

SUBJECT: IMAGING SYSTEMS		
MASTER DEGREE: PHOTONICS ENGINEERING	ECTS: 3	QUARTER:

TIMETABLE FOR THE SUBJECT

WEEK	SESSION	DESCRIPTION OF EACH SESSION	GROUP (X mark)		Indicate if a different lecture room is needed (computer, audiovisual, etc.)	HOMEWORK PER WEEK		
			LECTURES	SEMINARS/ LAB		DESCRIPTION	ATTENDING HOURS	HOMEWORK Max. 7H/WEEK
1	1	**0. Introduction to the course imaging systems.** **1. Fundamentals of optics for imaging systems (I).** - Ray propagation (Geometric Optics)	X			Previous reading. Revision of class material.	1.5	4
1	2	**1. Fundamentals of optics for imaging systems (II).** **-** Wave propagation (Wave Optics)	X			Previous reading. Revision of class material.	1.5	
2	3	**2. Visual perception.** - Anatomy of the eye. Visual Parameters. Color perception. Depth of field.	X			Previous reading. Revision of class material.	1.5	5
2	4	**3. Imaging acquisition and storage (I).** - Fundamentals of image acquisition. - The MOS cell. An image sensor CCD-IT.	X			Previous reading. Revision of class material.	1.5	
3	5	**3. Imaging acquisition and storage.** - The C-MOS sensor. - Digital image storage.	X			Previous reading. Revision of class material.	1.5	5
3	6	**4. Image reproduction in 2D imaging systems (I).** - Fundamentals of 2D displays. Parameters. - Fundamentals of driving.	X			Previous reading. Revision of class material.	1.5	

4	7	**4. Image reproduction in 2D imaging systems (II).** - 2D display technologies. - Other display technologies.	X			Previous reading. Revision of class material.	1.5	5
4	8	**4. Image reproduction in 2D imaging systems (III).** - Display programming tools.	X			Previous reading. Revision of class material.	1.5	
5	9	**5. Image reproduction in 3D imaging systems (I).** - Fundamentals of 3D displays. Human factors. - 3D imaging systems technologies (I).	X			Previous reading. Revision of class material.	1.5	5
5	10	**5. Image reproduction in 3D imaging systems (II).** - 3D imaging systems technologies (II). - Plenoptic cameras.	X			Previous reading. Revision of class material.	1.5	
6	11	**6. Imaging systems applications.**	X			Previous reading. Revision Session P1 documentation.	1.5	5
6	12	**Laboratory session P1.** Display programming tools. Implementation (I)		X	LAB	Working Lab Session P1 in groups. Revision Session P2 documentation.	1.5	
7	13	**Laboratory session P2.** Display programming tools. Implementation (II)		X	LAB	Working Lab Session P2 in groups.	1.5	5
7	14	**Presentation and discussion of a work**	X			The students will prepare the oral presentation of works.	1.5	
						Subtotal 1	**21**	**34**
		Total 1 *(Hours of class plus student homework hours between weeks 1-7)*					**55**	

		Tutorials, handing in, etc				Solving any remaining question	10	
8	15	Assessment				Studying the documentation for the final 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**