COURSE: PHOTONICS TECHNOLOGY I (6 ECTS)		
MASTER: Master in Photonics Engineering	**YEAR:** 2019-2020	**TERM: 1st**

WEEKLY PLANNING

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
1	**Ray optics.** Image formation	X			Introduction to the subject.	1,5	12
2	**Photonic energy propagation and image formation.** Radiometry and Passive elements	X			Previous reading and revision of class materials.	1,5	
3	**Photonic energy propagation and image formation II.** Passive elements.	X			Previous reading and revision of class materials.	1,5	
4	**Electromagnetic optics Polarization of light.**	X			Previous reading and revision of class materials.	1,5	
5	**Practical examples.** Radiometry and passive elements		x		Revision of previous class materials. Previous reading of lab guide.	1,5	
6	**Practical examples.** Radiometry and passive elements		X		Revision of previous class materials. Previous reading of lab guide.	1,5	
7	**Propagation in dispersive and anisotropic media I**.	X			Previous reading and revision of class	1,5	8

					materials.		
8	**Propagation in dispersive and anisotropic media II**.	X			Previous reading and revision of class materials.	1,5	
9	**Non linear effects.**	X			Previous reading and revision of class materials.	1,5	
10	Exercises		X		Revision of theoretical concepts and proposed exercises	1,5	
11	**Theory of diffraction I.** Interference	X			Previous reading and revision of class materials.	1,5	
12	**Theory of diffraction II.** Optical Fourier Transform	X			Previous reading and revision of class materials.	1,5	
13	**Theory of diffraction III.** Diffraction of light Limitations in image formation. Holography	X			Previous reading and revision of class materials.	1,5	
14	**Propagation of Gaussian Beams I.** Properties of Gaussian Beams	X			Previous reading and revision of class materials.	1,5	18
15	**Propagation of Gaussian Beams II.** Transmission through optical components	X			Previous reading and revision of class materials.	1,5	
16	Exercises		x		Revision of theoretical concepts and proposed exercises	1,5	
17	**Practical examples.** Light diffraction and interference		x		Revision of previous class materials. Previous reading of lab guide.	1,5	
18	**Polarization of ligth.** Anisotropic media. Polarization devices	X			Previous reading and revision of class materials.	1,5	
19	**Devices based on periodic structures.** Bragg mirrors	X			Previous reading and revision of class materials.	1,5	14
20	**Devices based on periodic structures**. Resonator	X			Previous reading and revision of class materials.	1,5	
21	Exercises		x		Revision of theoretical concepts and proposed exercises	1,5	
22	**Optical waveguides: integrated waveguides.** Planar waveguides	X			Previous reading and revision of class materials.	1,5	16
23	**Optical waveguides: integrated waveguides II**. Two-	X			Previous reading and revision of class	1,5	

	dimensional waveguides. Optical coupling				materials.		
24	**Optical waveguides:** fiber optics	X			Previous reading and revision of class materials.	1,5	
25	**Fiber optics:** limitations and nonlinear effects	X			Previous reading and revision of class materials.	1,5	
26	Exercises		x		Revision of theoretical concepts and proposed exercises	1,5	
27	**Practical examples.** Plastic optical fiber		x		Revision of previous class materials. Previous reading of lab guide.	1,5	
28	**Practical examples.** Plastic optical fiber		x		Revision of previous class materials. Previous reading of lab guide.	1,5	
					Subtotal 1	**42**	**68**
					Total 1 *(Hours of class plus student homework hours between weeks 1-14)*	**110**	

[1] **A maximum of 3-4 lab sessions**

	Tutorials, handing in, etc				Solving any remaining question	20	
29	Assessment				Studying the documentation for the final assessment.	3	17
					Subtotal 2	**3**	**37**
					Total 2 *(Hours of class plus student homework hours at week 15)*	**40**	

TOTAL *(Total 1 + Total 2)*	**150**