

SUBJECT NAME: Electrooptic Systems		
DEGREE: BACHELOR IN INDUSTRIAL ELECTRONICS AND AUTOMATION ENGINEERING	COURSE: 4th	TERM: 2nd

SUBJECT SCHEDULE									
Week	SESSION	DESCRIPTION OF THE CONTENT OF THE SESSION	GROUP (Mark X)		Indicate necessary space different classroom (classroom inform, laboratory, etc..)	Indicate YES / NO it's a session with 2 teachers	STUDENT WORK DURING THE WEEK		
			BIG	LITTLE			DESCRIPTION	PRESENCE HOURS	HOURS OF WORK Week Maximum 7 H
1	1	<u>Introduction to the subject.</u> <u>Basic knowledge review</u>	X				Study of basic optics concepts. Radiation-matter interaction effects study	1.66	4
1	2	<u>Electro-optical effects</u> : transmission, reflection, dispersion, absorption, etc. Snell's Law. E / O materials.		X				1.66	
2	3	<u>Chromogenic Materials : Liquid Crystals</u> . Electrical and optical properties. Types of CLs .	X				Study of basic configurations of CLs . Phases and associated properties of the CLs state .	1.66	4
2	4	<u>Chromogenic Materials : Liquid Crystals</u> .Application examples: basic configurations. Electric modeling. Practical circuits		X				1.66	
3	5	<u>Chromogenic Materials : Electrochromic & Electrochromic & Electrochromic</u> . Operating principle.	X				Electrical and optical behavior of EC and SPD materials . Applications and use cases	1.66	4

		Electrical and optical properties. Applications							
3	6	<u>Optical devices: Emitters (I)</u> . Semiconductor basics. LED operation. Practical circuits				X	Principle of operation of optical emitting devices. Driver Circuits Application examples . Management of characteristics sheets	1.66	4
4	7	<u>Optical devices: Emitters (II)</u> . Semiconductor basics. Diode lasser operation. Practical circuits			X			1.66	
4	8	<u>Optical Emitter Problems</u>			X			1.66	

5	9	<u>Optical detectors (I). Basic concepts. Detector types . Practical circuits</u>	X				Operation of photodetectors .	1.66	4
5	10	<u>Optical detectors (II). Characteristic curves. Detection noise . Signal / noise ratio. Optical Detector Problems</u>		X			Conditioning circuits . Management of characteristics sheets.	1.66	
6	11	<u>Optical Detector Problems</u>	X				Photodetector application problems		5
6	12	Proposal of work to develop in group. Assignment. Methodology.		X			Description of works to develop. Group assignment. Objectives and Methodology to follow.	1.66	4
7	13	<u>Optical transmission media: Optical fibers (I). Introduction. Physical parameters. Spread</u>	X				Study of OF parameters Propagation mechanisms OF Modes. Fiber types. Problem resolution	1.66	4
7	14	<u>Optical transmission media. OF problems</u>		X				1.66	
8	15	<u>Optical transmission media: Optical fibers (II). Attenuation and intermodal dispersion</u>	X				Study of OF parameters Attenuation and types of dispersion in OF SM and MM. Problem resolution	1.66	4
8	16	<u>Optical transmission media: Optical fibers (III). Chromatic dispersion and PMD</u>	X						
9	17	<u>Optical transmission media: Optical fibers (IV). Application problems</u>		X			Study of optical detectors. Responsivity. Efficiency. Practical problems solving	1.66	4
9	18	<u>Optical transmission media: Optical fibers (V). Application problems</u>	X					1.66	
10	19	<u>Optical components: Filters, MUX / DEMUX, couplers, optical amplifiers, Diffraction Networks, etc.</u>		X			Study of optical components for manipulation and processing of photonic signal	1.66	4
10	20	Control I Exam	X					Partial examination of chromogenic materials , emitters, detectors and OF	
11	21	<u>Optical Components Problems</u>	X				solving practical application examples	1.66	4
11	22	<u>Optical Links (I) . Power balance and time balance</u>		X			Definition of optical links. Functional blocks. Power balance calculation. Time balance calculation. Restrictions	1.66	4
12	23	<u>Optical Link Problems</u>		X				Optical link problems and practical exercises	

12	24	Lab session . Prototype testing developed	X		LAB		Optical link problems and practical exercises	1.66	two
13	25	<u>Study case 1. Preparation for ordinary exam</u>		X			Practical problem solving	1.66	4
13	26	Lab session . Prototype testing developed	X		LAB			1.66	
14	27	<u>Study Case 2. Preparation for ordinary exam</u>		X			Resolution of preparatory examples ordinary call and resolution of doubts.	1.66	5
14	28	<u>Presentation /evaluat .</u>	X					Presentation and evaluation of the works developed by the students in group	

		group work (I)								
* EXTRA SESSION IN COMPATIBLE SCHEDULE								Subtotal 1	46.48	69
Total 1 (Contact hours and student work between weeks 1-14)									115.48	
15		Recoveries, tutorials, delivery of work, etc.								
16		Preparation for evaluation and final evaluation						3		
17										
18										
								Subtotal 2	3	fifteen
Total 2 (Contact hours and student work between weeks 15-18)									18	
TOTAL (Total 1 + Total 2, Maximum 180 hours)									133.48	

<u>Optical Links (I) . Power balance and time balance</u>	X	Definition of optical links. Functional blocks. Power balance calculation. Time balance calculation. Restrictions
---	---	---