



COURSE: DEVICES AND OPTIC TRANSMISSION MEDIA		
DEGREE: TELEMATICS & COMMUNICATION SYSTEM ENGINEERING	YEAR: 3º	TERM: 2º

WEEKLY PROGRAMMING									
WEEK	SESSION	CONTENT DESCRIPTION	GROUP (mark X)		SPECIAL ROOM FOR SESSION (computer class room, audio-visual class room,...)	Indicate YES/NO it is a 2 teachers session	WEEKLY SCHEDULE FOR STUDENTS		
			LECTURE	SEMINAR			DESCRIPTION	CLASS HOURS	HOMEWORK (Max. 7h per week)
1	1	INTRODUCTION (goals, skills, methodology, evaluation, DyMTO schedule,...). INTRODUCTION TO OPTICAL COMMUNICATIONS	X			NO	• BASIC OPTICAL COMMUNICATIONS AND LIGHT CONCEPTS • GUIDELINES FOR DESIGNING BIASING CIRCUITS	1,66	5
1	2	M1: OPTICAL SOURCES (EMITTERS). BASIS AND DRIVER CIRCUITS OPTICAL SOURCES: LED AND DRIVER CIRCUITS		X		NO		1,66	
2	3	M1: OPTICAL SOURCES: LASER	X			NO	• OPTICAL AND ELECTRICAL LEDS CHARACTERISTICS AND APPLICATIONS • OPTICAL AND ELECTRICAL LASERS CHARACTERISTICS AND APPLICATIONS	1,66	5
2	4	M1: OPTICAL SOURCES: EXERCISES I		X		NO		1,66	
3	5	M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS: PHYSICS, BASIC PARAMETERS AND OPTICAL ATTENUATION	X			NO	• OPTICAL AND ELECTRICAL LASERS CHARACTERISTICS AND APPLICATIONS	1,66	5

3	6	M 1: OPTICAL SOURCES: EXERCISES II		X		NO	• UNDERSTANDING OF BASIC OPTICAL FIBER PARAMETERS AND EFFECT OF OPTICAL FIBER ATTENUATION. IDENTIFY THOSE PARAMETERS IN STANDARDS REPORTS.	1,66	
4	7	M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS: ATTENUATION AND DISPERSION. DISPERSION TYPES: INTERMODAL DISPERSION	X			NO	• UNDERSTANDING FIBER OPTICS: ATTENUATION, DISPERSION. DIFFERENT TYPES ON DEPENDING ON OPTICAL FIBER AND EFFECT ON OPTICAL LINK.	1,66	7
4	8	M2: EXERCISES ABOUT BASIC OPTICAL FIBER PARAMETERS (NUMERICAL APERTURE, ACCEPTANCE ANGLE, NORMALIZED FREQUENCY, NUMBER OF MODES)		X		NO		1,66	
5	9	M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS: CHROMATIC DISPERSION and POLARIZATION DISPERSION (PMD). DISPERSION EFFECTS IN OPTICAL LINKS	X			NO	• UNDERSTANDING FIBER OPTICS: ATTENUATION, DISPERSION. DIFFERENT TYPES ON DEPENDING ON OPTICAL FIBER AND EFFECT ON OPTICAL LINK	1,66	5
5	10	M2: EXERCISES: ATTENUATION AND INTERMODAL DISPERSION		X		NO		1,66	
6	11	M3: OPTICAL DETECTORS (I)	X			NO	• UNDERSTANDING FIBER OPTICS: COMMERCIAL OPTICAL FIBERS DISPERSION EFFECT ON OPTICAL LINK. • STUDYING OPTICAL DETECTORS • STUDYING FOR MIDTERM I • HAND IN: INDIVIDUAL QUIZ RELATED TO LABORATORY WORK 1	1,66	7
6	12	M2: EXERCISES: DISPERSION IN SMF AND MMF OPTICAL FIBERS		X		NO		1,66	
7	13	CONTROL TEST 1 (M1: OPTICAL SOURCES & M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS)	X			NO	• STUDYING OPTICAL DETECTORS • STUDYING FOR MIDTERM I • WORKING ON TEAM QUIZ RELATED TO LABORATORY WORK 1	1,66	6
7	14	EXERCISES: OPTICAL DETECTORS. INTRODUCTION TO POWER BUDGET AND DISPERSION ANALYSIS IN OPTICAL COMMUNICATIONS LINKS QUESTIONNAIRE 1: DISCUSSION		X		NO		1,66	
8	15	M3: OPTICAL DETECTORS (II)	X			NO	• STUDYING OPTICAL DETECTORS	1,66	6

8	16	PRACTICE 1: LAB SESSION 1 Theoretical report (in groups) submission		X	LAB	SI	• WORKING ON TEAM 1 LABORATORY WORK PROJECT WITH MEASUREMENTS	1,66		
9	17	M4: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS (I)	X			SI	• STUDYING OPTICAL DETECTORS • STUDYING OPTICAL PASSIVE COMPONENTS	1,66	6	
9	18	PRACTICE 1: LAB SESSION 2		X		NO	• WORKING ON INDIVIDUAL QUIZ RELATED TO LABORATORY WORK 2	1,66		
10	19	M4: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS (II)	X			NO	• STUDYING OPTICAL PASSIVE COMPONENTS • WORKING ON TEAM 1 LABORATORY WORK PROJECT WITH MEASUREMENTS	1,66	5	
10	20	EXERCISES: OPTICAL DETECTORS (II)		X	LAB	SI	• HAND IN: INDIVIDUAL QUIZ RELATED TO LABORATORY WORK 2	1,66		
11	21	M5: OPTICAL LINKS: POWER BUDGET AND DISPERSION ANALYSIS	X			NO	• STUDYING OPTICAL PASSIVE COMPONENTS • STUDYING OPTICAL FIBER LINKS	1,66	7	
11	22	M4: EXERCISES: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS QUESTIONNAIRE 2: DISCUSSION		X		NO	• STUDYING FOR MIDTERM II • WORKING ON TEAM QUIZ RELATED TO LABORATORY WORK 2	1,66		
12	23	CONTROL TEST II (M3: OPTICAL DETECTORS & M4: OPTICAL DEVICES)	X			NO	• STUDYING FOR MIDTERM II • WORKING ON TEAM 2 LABORATORY WORK PROJECT WITH MEASUREMENTS	1,66	6	
12	24	PRACTICE 2: LAB SESSION 3		X	LAB	SI	• WORKING ON TEAM QUIZ RELATED TO LABORATORY WORK 3	1,66		
13	25	M5: EXERCISES: POWER BUDGET AND DISPERSION					• STUDYING OPTICAL FIBER LINKS • WORKING ON TEAM 3 LABORATORY WORK PROJECT WITH MEASUREMENTS	1,66	4	
13	26	PRACTICE 3: LAB SESSION 4		X	LAB	SI		1,66		
14	27	M6: MULTIPLEXING TECHNIQUES	X			NO	• STUDYING MULTIPLEXING TECHNIQUES	1,66		
14	28	M6: EXERCISES: MULTIPLEXING TECHNIQUES		X		NO		1,66		
15	29	REVIEW OF THE COURSE (IF IT IS ASKED BY THE STUDENTS)	X			NO		1,66	2	
EXTRA SESSION SCHEDULE ON SEMINAR TIME								Subtotal 1	48,33	82
Total 1 (Student homework and seminars in weeks 1-14)									130.33	
15				X				1,66		

16										
17		Discussion and grading							3	
18										
								Subtotal 2	3	15
								Total 2 (Student homework and seminars in weeks 15-18)		19,66
TOTAL (Total 1 + Total 2. Maximum 180 hours)									150	