



COURSE: DEVICES AND OPTICAL TRANSMISSION MEDIA		
DEGREE: BACHELOR IN MOBILE AND SPACE COMMUNICATIONS / TELEMATICS ENGINEERING	YEAR: 3º	TERM: 2º

The course has 29 sessions distributed over 14 weeks. The laboratory sessions are set in 4 of these sessions and the Continuous Evaluation assessments are made in 2 of these sessions.

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. M1: OPTICAL SOURCES (EMITTERS). BASIS AND DRIVER CIRCUITS.	X	X		NO	<ul style="list-style-type: none"> BASIC CONCEPTS OF LIGHT AND OPTICAL COMMUNICATIONS. GUIDELINES FOR DESIGNING BIASING CIRCUITS FOR OPTICAL EMITTERS. OPTICAL AND ELECTRICAL CHARACTERISTICS AND APPLICATIONS OF LEDS. 	1,66	5
1	2	M1: OPTICAL SOURCES: EXERCISES (I).		X		NO		1,66	
2	3	M1: OPTICAL SOURCES: LASER.	X			NO	<ul style="list-style-type: none"> OPTICAL AND ELECTRICAL CHARACTERISTICS AND APPLICATIONS OF LASERS. 	1,66	5
2	4	M1: OPTICAL SOURCES: EXERCISES (II).		X		NO		1,66	

3	5	M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS: PHYSICS, BASIC PARAMETERS AND OPTICAL ATTENUATION.	X			NO	<ul style="list-style-type: none"> • UNDERSTANDING OF BASIC OPTICAL FIBER PARAMETERS AND EFFECT OF OPTICAL FIBER ATTENUATION. IDENTIFY THOSE PARAMETERS IN STANDARDS REPORTS. 	1,66	5
3	6	M2: EXERCISES ABOUT BASIC OPTICAL FIBER PARAMETERS (NUMERICAL APERTURE, ACCEPTANCE ANGLE, NORMALIZED FREQUENCY, NUMBER OF MODES).		X		NO		1,66	
4	7	M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS: ATTENUATION AND DISPERSION. DISPERSION TYPES: MODAL DISPERSION.	X			NO	<ul style="list-style-type: none"> • UNDERSTANDING FIBER OPTICS: ATTENUATION (CAUSES ANS EFFECT ON OPTICAL LINK). DISPERSION (TYPES AND EFFECT ON DEPENDING ON OPTICAL FIBER). MODAL DISPERSION. 	1,66	7
4	8	M2: EXERCISES: ATTENUATION AND MODAL DISPERSION.		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	<ul style="list-style-type: none"> • UNDERSTANDING FIBER OPTICS: DISPERSION (TYPES AND EFFECT ON DEPENDING ON OPTICAL FIBER). CHROMATIC DISPERSION. 	1,66	5
5	10	M2: EXERCISES: DISPERSION IN SMF AND MMF OPTICAL FIBERS.		X		NO		1,66	
6	11	M3: OPTICAL DETECTORS (I).	X			NO	<ul style="list-style-type: none"> • STUDYING OPTICAL DETECTORS. • STUDYING FOR MIDTERM I. 	1,66	7
6	12	M3: OPTICAL DETECTORS AND CONDITIONING CIRCUIT EXERCISES. PRACTICE 1 PREPARATION.		X		NO		1,66	
7	13	CONTINUOUS ASSESSMENT: 1ST EV. EXAM: M1: OPTICAL SOURCES. M2: LIGHT PROPAGATION THROUGH OPTICAL FIBERS.	X			NO	<ul style="list-style-type: none"> • STUDYING OPTICAL DETECTORS • STUDYING FOR MIDTERM I. • WORKING ON THEORETICAL REPORT OF PRACTICE 1. 	1,66	6
7	14	PRACTICE 1: EMITTER CHARACTERIZATION, DETECTOR AND OPTICAL FIBER (SESSION I). PRACTICE 1 THEORETICAL REPORT SUBMISSION.		X	LAB.	YES		1,66	
8	15	M3: OPTICAL DETECTORS (II).	X			NO	<ul style="list-style-type: none"> • STUDYING OPTICAL DETECTORS. • WORKING ON EXPERIMENTAL REPORT OF PRACTICE 1. 	1,66	6
8	16	PRACTICE 1: EMITTER CHARACTERIZATION, DETECTOR AND OPTICAL FIBER (SESSION II).		X		NO		1,66	
9	17	M3: OPTICAL DETECTORS EXERCISES (II).	X			NO	<ul style="list-style-type: none"> • STUDYING PASSIVE OPTICAL DEVICES. • WORKING ON EXPERIMENTAL REPORT OF PRACTICE 1. 	1,66	6
9	18	M4: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS (I). PRACTICE 1 EXPERIMENTAL REPORT SUBMISSION.		X	LAB.	YES		1,66	

10	19	M4: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS EXERCISES (I).	X			NO	<ul style="list-style-type: none"> STUDYING PASSIVE OPTICAL COMPONENTS AND OPTICAL AMPLIFIERS. WORKING ON THEORETICAL REPORT OF PRACTICE 2. 	1,66	5
10	20	M4: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS (II). PRACTICE 2 PREPARATION.		X		NO		1,66	
11	21	M4: PASSIVE OPTICAL DEVICES AND OPTICAL AMPLIFIERS EXERCISES (II).	X			NO	<ul style="list-style-type: none"> STUDYING OPTICAL PASSIVE COMPONENTS AND OPTICAL AMPLIFIERS. STUDYING FOR MIDTERM II. WORKING ON EXPERIMENTAL REPORT OF PRACTICE 2. 	1,66	7
11	22	PRACTICE 2: OPTICAL PASSIVE COMPONENTS CHARACTERIZATION AND CATV FIBER NETWORK. PRACTICE 2 THEORETICAL REPORT SUBMISSION.		X	LAB	YES		1,66	
12	23	CONTINUOUS ASSESSMENT: 2ND EV. EXAM: M3: OPTICAL DETECTORS. M4: PASSIVE OPTICAL COMPONENTS AND AMPLIFIERS.	X			NO	<ul style="list-style-type: none"> STUDYING OPTICAL FIBER LINKS. STUDYING FOR MIDTERM II. 	1,66	6
12	24	M5: OPTICAL COMMUNICATIONS LINKS. OPTICAL FIBER CABLES AND JOINTS. POWER BUDGET AND DISPERSION ANALYSIS. PRACTICE 2 EXPERIMENTAL REPORT SUBMISSION.		X		NO		1,66	
13	25	M5: POWER BUDGET AND DISPERSION EXERCISES. PRACTICE 3 PREPARATION.	X			NO	<ul style="list-style-type: none"> STUDYING MULTIPLEXING TECHNIQUES. WORKING ON THEORETICAL REPORT OF PRACTICE 3. 	1,66	6
13	26	M6: MULTIPLEXING TECHNIQUES.		X	LAB.	YES		1,66	
14	27	PRACTICE 3: 10 MBPS LINK. PRACTICE 3 THEORETICAL REPORT SUBMISSION.	X			NO	<ul style="list-style-type: none"> STUDYING MULTIPLEXING TECHNIQUES. WORKING ON EXPERIMENTAL REPORT OF PRACTICE 3. 	1,66	6
14	28	M6: MULTIPLEXING TECHNIQUES EXERCISES. PRACTICE 3 EXPERIMENTAL REPORT SUBMISSION.		X		NO		1,66	
15	29	PROBLEMS AND EXERCISES UPON DEMAND. QUESTIONS.							

* EXTRA SESSION SCHEDULE ON SEMINAR TIME

								Subtotal 1	48,14	82
Total 1 (Student homework and seminars in weeks 1-14)									130,14	
15		Recovery, tutorial classes, etc		X				1,66		
16		Discussion and grading						3.2		
17										
18										
								Subtotal 2	3.2	15

Total 2 (<i>Student homework and seminars in weeks 15-18</i>)	19,86
TOTAL (<i>Total 1 + Total 2. <u>Maximum 180 hours</u></i>)	150