

LESSON PLAN

Branch: IV ECE 'A'

Semester: I

Subject : Optical Communications

Academic year:2015-16

faculty :Swathi jallu

Period	Date (Tentative)	Topic	Unit No.	Teaching Methodology	Remarks	Corrective Action upon Review
1.	13.07.2015	Overview of total syllabus	I	Black Board		
2.	13.07.2015	Overview of OC historical development	I	B.B		
3.	15.07.2015	The general system OC advantages	I	B.B		
4.	16.07.2015	Introduction to optical fibre wave guides	I	B.B		
5.	20.07.2015	Ray theory transmission, Total internal reflection, acceptance angle	I	B.B		
6.	20.07.2015	Numerical aperture skew rays	I	B.B		
7.	22.07.2015	Cylindrical fibres-modes , V number, mode coupling	I	B.B		
8.	23.07.2015	Step index, graded index fibres,problems related to unit 1	I	B.B		
9.	27.07.2015	Single mode fibres cutoff wavelength, mode field diameter, effective refractive index	II	B.B		
10.	27.07.2015	Fibre materials glass, halide	II	B.B		
11.	29.07.2015	Active glass, chalgenide glass, plastic optical fibres	II	B.B		
12.	30.07.2015	Signal distortion in OFCS Attenuation	II	B.B		
13.	03.08.2015	Absorption, scattering and blending losses	II	B.B		
14.	03.08.2015	Core and cladding losses, Problems related to unit 2	II	B.B		
15.	05.08.2015	Information capacity determination, group delay	III	B.B		
16.	06.08.2015	Types of dispersion-Material dispersion, wave guide dispersion	III	B.B		
17.	10.08.2015	Polarization mode dispersion	III	B.B		
18.	10.08.2015	Intermodal dispersion, pulse broadening	III	B.B		
19.	12.08.2015	Optical fibre connectors-connector types	III	B.B		
20.	13.08.2015	Single mode fiber connectors	III	B.B		
21.	17.08.2015	Connector return loss	III	B.B		
22.	19.08.2015	Fiber splicing –splicing techniques	IV	B.B		

23.	19.08.2015	Splicing single mode fibers	IV	B.B		
24.	20.08.2015	Fiber alignment and joint loss	IV	B.B		
25.	24.08.2015	Multi mode and single mode fiber joints	IV	B.B		
26.	24.08.2015	Optical source-leds structures and materials	IV	B.B		
27.	26.08.2015	Quantum efficiency power and ,modulation, power band width product	IV	B.B		
28.	27.08.2015	Injection , laser diode - modes	IV	B.B		
29.	31.08.2015	Threshold conditions	IV	B.B		
30.	31.08.2015	External quantum efficiency	IV	B.B		
31.	02.09.2015	Laser diode rate eq's resonant frequencies	IV	B.B		
32.	03.09.2015	Reliability of led and ILD	IV	B.B		
33.	14.09.2015	Source to fiber power launching output patterns	V	B.B		
34.	14.09.2015	Source to fiber power launching output patterns	V	B.B		
35.	16.09.2015	Power coupling, power launching	V	B.B		
36.	17.09.2015	Equilibrium N.A	V	B.B		
37.	21.09.2015	Laser diode to fiber coupling	V	B.B		
38.	21.09.2015	Optical detectives physical principle of PIN & APD	VI	B.B		
39.	23.09.2015	Detector response time , temp effect on avalanche gain	VI	B.B		
40.	24.09.2015	Detector response time , temp effect on avalanche gain	VI	B.B		
41.	28.09.2015	Comparison of photo detectors	VI	B.B		
42.	28.09.2015	Optical receiver operation	VI	B.B		
43.	30.09.2015	Fundamental receiver operation	VI	B.B		
44.	01.10.2015	Digital signal transmission	VI	B.B		
45.	05.10.2015	Error sources	VI	B.B		
46.	05.10.2015	Receiver configuration	VI	B.B		
47.	07.10.2015	Digital receiver performance	VI	B.B		
48.	08.10.2015	Probability of error	VI	B.B		
49.	12.10.2015	Quantum limit , analog receivers	VI	B.B		
50.	12.10.2015	Optical system design	VII	B.B		
51.	14.10.2015	Considerations component choice	VII	B.B		
52.	15.10.2015	Multiplexing	VII	B.B		
53.	19.10.2015	Point to point link systems considerations	VII	B.B		
54.	19.10.2015	Link power budget with examples	VII	B.B		
55.	21.10.2015	Overall fiber dispersion in	VII	B.B		

		single and multi mode				
56.	22.10.2015	Overall fiber dispersion in single and multi mode	VII	B.B		
57.	26.10.2015	Rise time budgets with examples	VII	B.B		
58.	26.10.2015	Transmission distance	VIII	B.B		
59.	28.10.2015	Line coding in optical links	VIII	B.B		
60.	29.10.2015	WDM, necessity	VIII	B.B		
61.	02.11.2015	Principles, types of WDM	VIII	B.B		
62.	02.11.2015	Principles, types of WDM	VIII	B.B		
63.	04.11.2015	Measurements of attenuation and dispersion	VIII	B.B		
64.	05.11.2015	Eye pattern	VIII	B.B		

CR: CLASS ROOM

PPT: POWER POINT PRESENTATION

LCD

TEXT BOOKS :

1. Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd Edition, 2000.
2. Optical Fiber Communications – John M. Senior, PHI, 2nd Edition, 2002.

REFERENCE BOOKS :

1. Fiber Optic Communications – D.K. Mynbaev , S.C. Gupta and Lowell L. Scheiner, Pearson Education, 2005.
2. Text Book on Optical Fibre Communication and its Applications – S.C.Gupta, PHI, 2005.
3. Fiber Optic Communication Systems – Govind P. Agarwal , John Wiley, 3rd Edition, 2004.
4. Fiber Optic Communications – Joseph C. Palais, 4th Edition, Pearson Education, 2004.
5. Fiber Optics Communications – Harold Kolimbiris (Pearson Education Asia)

FACULTY

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