

LESSON PLAN

Period	Date (Tentative)	Topic	Unit No.	Teaching Methodology	Remarks	Corrective Action Upon Review
1.	16-06/14	Overview of Optical Fiber Communication	<u>I</u>	B. B		
2.	17/6	The general System, Advantages of OFC		"		
3.	18/6	Optical fiber wave guides - Introduction		"		
4.	18/6	Ray theory to transmission - Total internal Reflection				
5.	19/6	Acceptance angle, Numerical Aperture		"		
6.	23/6	Skew rays		"		
7.	24/6	Cylindrical fibers - Modes, Mode Coupling		"		
8.	24/6	Step index fibers, Graded index fibers, V-number		"		
9.	25/6			"		
10.	26/6	Single-mode fibers	<u>II</u>	"		
11.	30/6	- Cut-off wavelength Mode-field diameter and effective refractive index		"		
12.	1/7	Fiber materials glass, Halide		"		
13.	1/7	Active glass, chalcogenide glass		"		
14.	2/7	Plastic optical fibers		"		
15.	3/7	Attenuation		"		
17.	7/7	Absorption, Scattering & Bending losses		"		
18.	8/7	Core & cladding losses		"		
19.	8/7	Information Capacity determination	<u>III</u>	"		
20.	9/7	Group delay, Types of dispersion		"		

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21.	10/3	Plasma discharge, etch - grade discharge	III	B.S.		
22.	14/3	Polarization mode dispersion, Intermodal dispersion		"		
23.	15/3	Pulse broadening		"		
24.	18/3	Optical fiber connector types		"		
25.	16/3	Single mode fiber connector (LDA)		"		
26.	17/3	Connectable network LAN		"		
27.	21/3	Fiber splicing - Splicing techniques	IV	"		
28.	22/3	Splicing single mode fibers		"		
29.	22/3	Fiber alignment & joint loss		"		
30.	23/3	Single mode fiber joints		"		
31.	24/3	Optical isolators - LED's, structures		"		
32.	28/3	Mechanics, operation efficiency		"		
33.	29/3	Power modulation, power B.W products		"		
34.	30/3	Injection laser diodes modes		"		
35.	4/8	Threshold conditions, External quantum efficiency		"		
36.	5/8	Laser diode rate equation, Response frequencies		"		
37.	5/8	Reliability of LEDs, LD		"		
38.	6/8	Source to fiber power launching	V	"		
39.	7/8	Output patterns, power coupling		"		
37.	18/8	Power Launching		"		

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Topic	Unit	Learning Objectives	Resources	Estimated Time
Equilibrium equations Aperture	I	BS		
Label due to fiber coupling				
Optical detection - Poynting theorem of Poynting Detailed response time	II			
Temperature effect on Attenuation gain				
Comparison of photo detection				
Fundamental matrix operations, Digital signal transmission				
OTDR losses, Receiver configuration				
Receiver performance				
Po, quantum limit				
Analog receivers				
Optical system design - Considerations	III			
Component choice, Multiplexing				
Point to point link, System Considerations				
Link power budget with examples				
Overall fiber design in MATH & single mode fibers ← do →				
Rise time budget with examples				
Transmission distance	IV			
Line coding in optical links				

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12/14