		Government Polytechnic, Mandi Adampur		
Name of Faculty: Sh. Balinder Singh				
Discipline: Electronics				
Semester: 5				
Subject: Optical Fiber Communication				
Lesson Plan Duration: 18 Weeks				
Week	**Theory**		**Practical**	
	Lecture Day	**Topic**	**Practical Day**	**Topic**
Week 1	Day 1	**Unit 1 Introduction :** Historical perspective	day 1	Setting up of fiber analog link
	Day 2	, basic communication systems		
	Day 3	optical frequency range,		
Week 2	Day 4	advantages of optical fibre communication,	day 2	File Check
	Day 5	application of fibre optic communication		
	Day 6	Electromagnetic spectrum used Advantages and disadvantages of optical communication.		
Week 3	Day 7	Electromagnetic spectrum used Advantages and disadvantages of optical communication.	day 3	Setting up to optic digital link
	Day 8	Principle of light penetration, reflection, critical angle.		
	Day 9	**Test Unit 1**		
Week 4	Day 10	**Unit 2 Optical Fibers and Cables :** Fiber Type construction	day 4	File Check
	Day 11	multimedia and monomode fibers		
	Day 12	multimedia and monomode fibers		
Week5	Day 13	step index	day 5	Measurement of various losses in optical fibers
	Day 14	and graded index fibers,		
	Day 15	acceptance angle		
Week 6	Day 16	and acceptance types of optical fiber cables	day 6	File Check
	Day 17	**Test of Unit 2**		
	Day 18	**Unit 3 Losses in optical fiber cable:** a) Absorption Losses		
Week 7	Day 19	Scattering Losses	day 7	To observe and measure the splice or connector loss
	Day 20	Radiation losses		
	Day 21	Compelling losses,		

Week 8	Day 22	Bending loses.	day 8	To measure and calculate numerical aperture of optical fiber
	Day 23	b) Dispersion,		
	Day 24	Material dispersion, wave guide dispersion		
	Day 25	modal dispersion total dispersion and bit rate.	day 9	File Check
	Day 26	**Test Unit 3**		
	Day 27	**Unit 4 Light sources and Detectors:** a) Characteristics of light source used in optical communication		
Week 10	Day 28	principle of operation of LED, different type of LED structures used and their brief description,	day 10	To observe characteristics of optical source
	Day 29	LED driving circuitry, Injection Laser diode, principle of operation,		
	Day 30	different injection laser diodes,		
Week 11	Day 31	comparison of LED and ILD,	day 11	File Check
	Day 32	non semiconductor laser.		
	Day 33	b) Characteristics of photo detectors used in optical communication; PIN diode		
Week 12	Day 34	and avalanche photo diode (APD), their brief description.	day 12	To observe characteristics of optical defector
	Day 35	**Test unit 4**		
	Day 36	**Unit 5 Connectors, Splicing and coupling :** Fiber alignment		
Week 13	Day 37	and joint losses	day 13	File Check
	Day 38	splicing		
	Day 39	types of splices		
Week 14	Day 40	types of connectors used	day 14	To Connectorise a fiber with connector at both ends
	Day 41	couplers		
	Day 42	three and four port coupler		
Week 15	Day 43	stare coupler, fiber optic switch.	day 15	File Check
	Day 44	**Test Unit 5**		
	Day 45	**Unit 6 Optical Fiber System:** Optical transmitter circuit		
Week 16	Day 46	optical receiver circuit	day 16	Introduction to various
	Day 47	optical power budgeting		

	Day 48			components and tools used in optical fiber communication
		multiplexing methods used.		
Week 17	Day 49	multiplexing methods used	day 17	A visit to nearby Telephone Exchange
	Day 50	Modulation methods used		
	Day 51	Modulation methods used		
Week 18	Day 52	Introduction to SDH	day 18	File Check
	Day 53	SONET		
	Day 54	**Test Unit 6**		