PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY, PANIPAT
DEPARTMENT OF ELECTRONICS & COMMUNICATION

LESSON PLAN

Name: -Mr. Pankaj Batra **Subject Name: - FOC**
Branch/Semester: -7th Sem. **Subject Code:-ECP-10A**

Lecture No	Unit No	Topic	References
L1	1	**Unit-1:** Introduction to the subject Optical communication.	John M. Senior, Optical Fiber Communication
L2	1	Propagation within the fiber, Numerical aperture of fiber	John M. Senior, Optical Fiber Communication
L3	1	Acceptance angle, step index and graded index fiber, Modes of propagation in the fiber	John M. Senior, Optical Fiber Communication
L4	1	Single mode and multi-mode fibers	John M. Senior, Optical Fiber Communication
L5	1	Single mode and multi-mode fibers	John M. Senior, Optical Fiber Communication
L6	1	Splices and connectors.	Gerd Keiser, Optical Fiber Communication
L7	1	Optical Power Launching and Coupling	Gerd Keiser, Optical Fiber Communication
L8	1	Fiber-to-fiber joints.	Gerd Keiser, Optical Fiber Communication
L9	2	**Unit 2: LOSSES IN OPTICAL FIBER** : Attenuation, Absorption Losses	John M. Senior, Optical Fiber Communication
L10	2	Scattering Losses, Leaky modes, Mode coupling losses, Bending Losses, Combined Losses in the fiber	John M. Senior, Optical Fiber Communication
L11	2	Effect of dispersion on the pulse transmission Intermodal dispersion	John M. Senior, Optical Fiber Communication
L12	2	Material dispersion, Wave guide dispersion	John M. Senior, Optical Fiber Communication
L13	2	Polarization Mode Dispersion, Total dispersion	John M. Senior, Optical Fiber Communication
L14	2	Transmission rate. Dispersion Shifted Fibers	Gerd Keiser, Optical Fiber Communication
L15	2	Dispersion Compensating Fibers	Gerd Keiser, Optical Fiber Communication

L16	3	Unit 3: LEDS as light Source	Gerd Keiser, Optical Fiber Communication
L17	3	Laser Action in semiconductor Lasers	Gerd Keiser, Optical Fiber Communication
L18	3	Semiconductor Lasers for optical communication – Laser modes	John M. Senior, Optical Fiber Communication
L19	3	Semiconductor Lasers for optical communication – Laser modes	John M. Senior, Optical Fiber Communication
L20	3	Spectral Characteristics, Power Voltage Characteristics, Frequency response.	John M. Senior, Optical Fiber Communication
L21	3	**DETECTORS** : P-I-N Photodiode	John M. Senior, Optical Fiber Communication
L22	3	Working of APD	John M. Senior, Optical Fiber Communication
L23	3	Noise Analysis in detectors	John M. Senior, Optical Fiber Communication
L24	3	Coherent and non-coherent detection,	John M. Senior, Optical Fiber Communication
L25	3	Working of Infrared sensors	John M. Senior, Optical Fiber Communication
L26	4	**Unit 4: The fiber-optic Communication System:** Design considerations of fiber optic systems	Gerd Keiser, Optical Fiber Communication
L27	4	Concept of Analog and digital modulation	Gerd Keiser, Optical Fiber Communication
L28	4	Types of Optical Devices Optical coupler	Gerd Keiser, Optical Fiber Communication
L29	4	Space switches, linear divider-combiners	Gerd Keiser, Optical Fiber Communication
L30	4	Space switches, linear divider-combiners	Gerd Keiser, Optical Fiber Communication
L31	4	WDM: strategy, wavelength division multiplexer and demultiplexer	John M. Senior, Optical Fiber Communication
L32	4	WDM: strategy, wavelength division multiplexer and demultiplexer	John M. Senior, Optical Fiber Communication
L33	4	Working of Optical amplifier	John M. Senior, Optical Fiber Communication
L34	4	**OPTICAL NETWORKS**: Elements and Architecture of Fiber-Optic Network	John M. Senior, Optical Fiber Communication
L35	4	Optical link network-single hop, multihop	John M. Senior, Optical Fiber Communication
L36	4	Hybrid and photonic networks.	John M. Senior, Optical Fiber Communication

Mr. Pankaj Batra
(COURSE INCHARGE)