Lecture Plan

Course Title: Optical Communication **Course Code: ECE-722**

S.No	Topic	Date	No. of Lectures Required
	Unit I		
01	Brief Overview of Optical Communication, Basic concepts, light wave components, principle of light transmission, channel capacity etc. Nature of light, polarization, basic laws and definition	18-23August 2020	12
	Mode theory analysis for optical communication, optical fiber modes and configuration, wave propagation in optical fibre,operating wavelength, single mode and multimode fibres	24-28August 2020	
	V–numbers, mode field diameter, numerical aperture, refractive index profiles.	28-2 Sepetember2020	
	Unit II		
02	Attenuation, absorption, scattering losses, bending losses in optical fibres. Dispersion in optical waveguides	3Sept -10Sept2020	08
	Group delay, material dispersion, waveguide dispersion,	11 Sept-18Sept2020	
	Intermodal dispersion and chromatic dispersion in single mode fibres, Non Linearities in Fibres	19Sept-25Sept2020	
	Unit III		
03	Basic concepts from semiconductor electronics, energy bands, Concept of Direct and indirect Band Devices	25Sept-30Sept2020	08
	Light emitting diodes: Structure, principle, material, modulation response, transient response.	30Sept-5OctSept2020	
	Laser diodes: Principle of action, structure, efficiency and characteristics of laser diodes, modulation He–Ne lasers, DFB lasers.	6Sept-10Oct2020	
	Unit IV		
04	Basic concepts, photodiodes, PIN photodiode,	10Oct-12Oct2020	08
	Avalanche photodiode detector response time, avalanche gain	13Oct-15Oct2020	
	Receiver noise, Receiver sensitivity	16Oct-20Oct2020	
	Unit V		
05	Overview of analog and digital optical link power launching and coupling	20Oct-24Oct2020	09

	Point to point link system consideration, Advanced Multiplexing	25Oct-27Oct2020	

Teacher–In-Charge:

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