

GUJARAT TECHNOLOGICAL UNIVERSITY

Wireless Communications Networks and Systems (EC)

M.E. Semester: II

Subject Name: **Optical Networks**

Sr. No.	Course Content
1.	Overview of optical networks. Optical Layer: Line systems
2.	Fiber and Components, Fiber, transmitters, receivers, amplifiers, simple couplers, channel impairment parameters (signal power attenuation, dispersion, noise), parameters (signal power attenuation, dispersion, noise)
3.	WDM line systems, Components: multiplexers, demultiplexers, amplifiers, filters, Transmission system engineering, and design
4.	Optical Layer: Network – Circuit switched paradigm, Rings and mesh topologies, components, OADM, switches.
5.	Network Design, Client models. Routing and traffic grooming, Traffic models, Optimization algorithms and methods – routing algorithms, integer and mixed integer linear.
6.	Network Survivability
7.	SONET/SDH, GFP, Ethernet, Storage Area Networks

Reference Books:

1. **Optical Networks: A Practical Perspective** - By Rajiv Ramaswami, Kumar N. Sivarajan, Galen Hajime Sasaki. Morgan Kaufmann, 2009
2. **Optical WDM networks** - Biswanath Mukherjee, Birkhäuser, 2006.
3. **Emerging optical network technologies: architectures, protocols, and performance**- Krishna M. Sivalingam, Suresh Subramaniam.
4. **Optical WDM networks: concepts and design principles**-Jun Zheng (Ph.D.), Hussein T. Mouftah