

**11.Suggested Books:**

S. No.	Contents	Contact Hours
1.	Introduction and importance of Fiber Optics Technology. Ray analysis of optical fiber: Propagation mechanism of rays in an optical fiber, Meridional rays, Skew rays, Fiber numerical aperture	04
2.	Electromagnetic mode theory for optical propagation, Modal analysis of planar step index waveguide	08
3.	Mode theory for circular waveguides: step index fibers Propagation characteristics of step index fibers, graded index fibers Fabrication of optical fibers	10
4.	Signal degradation on optical fiber due to dispersion and attenuation, Pulse dispersion in graded index optical fibers, Material dispersion, Waveguide dispersion and design considerations	08
5.	Optical Sources : LEDs and Laser diodes Detectors for optical fiber communication	06
6.	Optical fiber amplifiers – EDFA: Gain spectrum and gain band width, EDFA for WDM transmission.	06
	<b>Total</b>	<b>42</b>

1. Subject code: EP- 304

Course title: **Fabrication and Characterization of Nanostructures**

2. Contact Hours:

L: 3 T: 1 P: 0

3. Examination Duration (Hrs):

Theory: 3 Practical: 0

4. Relative Weight:

CWS: 25, PRS:--, MTE: 25, ETE: 50, PRE: --

5. Credits:

4

6. Semester:

EVEN

7. Subject area:

DCC

8. Pre-requisite:

Basic knowledge of crystal structure and physics of solids

9. Objective:

The main goal of this subject is to provide basic understanding of Fabrication and Characterization of nanostructures in the fascinating world of “Nanotechnology” and implementing it for various applications

10. Detail of Course:

S. No.	Contents	Contact Hours
1.	X-ray Diffraction (XRD), Bragg's law, Application in crystallography, Diffractogram, Particle size determination using XRD, <b>Probe Techniques:</b> Atomic Force Microscopy (AFM), Scanning Electron Microscopy (SEM), Scanning Tunneling Microscopy (STM),	08