**13EC3203-OPTICAL COMMUNICATIONS**

**(ECE)**

**Lectures/Week:4Hrs. Sessional Marks:40**

**Univ. Exam. Duration:3Hrs Univ Exam.Marks:60**

**UNIT-I**

Introduction and optical materials Introduction, fiber characteristics and classification, Dispersion, Diffraction, Absorption and scattering, Fiber losses, Optical fiber modes and configurations, Fiber types and rays, and modes and fiber materials.

**UNIT-II**

Optical sources and components: Electro luminescence, LED’s Laser’s and their excitation light source linearity, Model partition and reflection fiber noise- to-fiber joints. LED coupling to single -mode fibers. Fiber splicing and fiber connectors.

**UNIT-III**

Optical detectors and receivers: Types of photo detectors, Photo diodes and its noise, PIN photo diodes, Photo transistors, Photo Darlington receiver transistor operation, receiver performance and calculation

**UNIT-IV**

Optical amplifiers and networks: Types of optical amplifiers semi conductor optical amplifiers, fiber amplifiers and basic noise networks, Broadcast-and-select WDM networks.

**UNIT-V**

Optical communications applications: components of optical communication systems transmitter transmission channel receiver, Telephony Telemetry, video distribution military applications passive and active sensing.

**TEXT BOOKS:**

1. Optical communications\_Gred keiser 3rd edition, Mc Graw-Hill-2000.
2. Optical fiber communication-John M Senior

**Reference Books;**

1 Electronic communications systems-Williams Schweber, 3rd edition, prentice hall, 1999.

2 Optical fiber communication systems- C.P Saud bance, john Wiley 1980.

3 Modern electronic communication-G.M.Miller 6th edition prentice hall 1999.