

Subject Code: 2SC1000125	Subject Title: Laser and Fiber Optics
COURSE TYPE: Subject Elective	

COURSE OBJECTIVE:

This course is designed to get basic understanding of the Laser and Optical Fiber

LEARNING OUTCOMES:

- Develop an actual understanding about Laser and Optical fiber.
- To know the basic Applications of Laser and Optical fiber in various Field.

Teaching scheme (hours) per week		credit		Theory Examination		Practical Examination		Total
Theory	Practical	Theory	Practical	University Assessment	Cont. Assessment	University Assessment	Cont. Assessment	
2	---	2	---	35	15	---	---	50

Unit	Content	Lectures	Wt.(%)
1	Fundamental of Laser: LASER, Properties of LASER, Spontaneous Emission, Stimulated Emission, Einstein's Co-efficient, Relation Between Einstein's Coefficient, Lifetime, Optical Resonator, Meta Stable State, Population Inversion, Pumping, Laser Characteristics. Production of LASER : Nd: YAG Laser, CO ₂ Laser, Helium- Neon Laser, Semiconductor Laser, Applications of LASER in Various Field.	7	50
2	Fiber Optics: Introduction, Fiber optic System, Primary Advantages of fiber optic communication compared to metallic cable communication, Fiber cable construction, Basic principle – Total internal reflection, Acceptance angle and numerical aperture, Types of optical fiber based on mode of propagation.	7	50

Basic Reference book:

1. An Introduction to LASERS-N. Avadhanulu, S. Chand & company(2001)
2. Engineering Physics by G.Vijyakumari Vikas publication new delhi.