

**EC-454****MICROWAVE & OPTICAL COMMUNICATION LAB****L T P C****- - 3 2****COURSE OBJECTIVES:**

1. To understand the concepts of transmission of microwaves using microwave bench system
2. To understand the concepts of communication using fiber optics.

**COURSE OUTCOMES:****After successful completion of the course, the students are able to**

1. demonstrate Microwave bench setup for measuring parameters.
2. demonstrate the principles of microwave devices.
3. Analyze the losses in fibers, fiber optic components, optical sources, detectors, optical transmitter and receiver configuration.
4. Develop confidence in independent study and ability for lifelong learning.

**List of Experiments:****Experiments Related to Microwave Engineering**

1. Characteristics of Reflex Klystron
2. Verification of the Expression  $1/\lambda_0^2 = 1/\lambda_g^2 + 1/\lambda_c^2$
3. Measurement of VSWR using Microwave Bench
4. Measurement of Unknown Impedance Using Microwave Bench
5. Measurement of Directivity of a given directional coupler
6. Measurement of Gain of an Antenna.
7. Measurement of Dielectric Constant of a Given Material

**Experiments Related to Optical Communication**

8. Characteristics of Light Sources
9. Characteristics of Light Detectors
10. Measurement of Coupling and Bending Losses of a Fiber
11. Analog Link Set up using a Fiber
12. Digital Link Set up using a Fiber
13. Set up of Time Division Multiplexing using Fiber Optics
14. Study of Cellular Communication.

**Note:** A minimum of 10(Ten) experiments have to be Performed and recorded by the candidate to attain eligibility for Semester End Practical Examination.