OPTICAL AND MICROWAVE LABORATORY

Lab Description:

The main objective of Optical and Microwave Laboratory is to provide depth knowledge about the Microwave Components and Optical kits. Optical Laboratory is well equipped with advanced optical fiber kits which help the students to analyze the numerical aperture and attenuation measurements and also to measure the analog and digital transmission characteristics. The lab is also used to train the students to measure the performance of optical sources and detectors.

The Microwave Laboratory is equipped with X-band bench setups which provide the necessary support for training the students in the area of RF and Microwave Engineering. This lab is also equipped with horn antenna pattern measurement setup which provides the necessary exposure for analyzing the radiation characteristics of horn antenna. Some experiments are carried out using Ansys HFSS software through which students can design and simulate high frequency RF and Microwave components. It also helps students to understand and visualize the fields propagating inside the waveguide for different modes.

Lab Facilities:

Major Equipment in Optical Lab:
1. Laser Trainer Kit
2. Fiber Optic Communication Trainer kit Link A
3. Link-B Advanced Fiber Optic Kit
4. VOFT-06 Mux Demux Kit
5. 850 nm Led Module Fiber optic link, AL-03 Transmitter kit
6. 850 nm Pin photo diode module fiber optic analog link AL-03 Receiver kit

Major Equipment in Microwave Lab:
  A. Hardware:
1. Vector Network Analyzer (Upto 6 GHz)
2. Microwave power meter
3. Scalar Network analyzer & micro strip trainer system
4. Mixed signal Oscilloscopes
5. X band Microwave Klystron Test bench
6. X band Microwave Gunn Oscillator Test bench.

  B. Software: Ansys HFSS 100 Users Academic License and 10 Users Research License

Utilization:

A. **Academic:** This lab is utilized for conducting the laboratory course **10211EC306-Optical and Microwave Engineering Lab**
B. **Research:** Measurement of S parametersof fabricated antenna using Vector Network Analyzer.