Microwave and Optical Communications Laboratory

The **Microwave and Optical Communications Laboratory** provides Electronics and Communication Engineering (ECE) students with practical exposure to high-frequency microwave systems and fiber-optic communication technologies. The laboratory enables students to understand the principles of microwave generation, transmission, propagation, and measurement through hands-on experiments. Students perform experiments on microwave components such as klystrons, Gunn diodes, waveguides, attenuators, directional couplers, and frequency measurement devices. The optical communication section helps students study the characteristics of optical fibers, optical sources, detectors, fiber losses, and signal transmission techniques. Through practical experimentation, students analyze microwave and optical communication system performance, propagation characteristics, attenuation, bandwidth, and signal quality. The laboratory provides experience in using specialized communication equipment and measurement instruments. It enhances students' understanding of modern communication technologies and develops skills in system testing, analysis, and troubleshooting.

The knowledge gained from this lab serves as a foundation for advanced fields such as wireless communication, satellite communication, fiber-optic networks, radar systems, and 5G communication technologies. Overall, the Microwave and Optical Communication Laboratory plays a crucial role in developing the technical competence and practical skills required for modern communication engineering applications.



Figure -Microwave and Optical Communications laboratory