

EEE 544 Microwave & Optics engineering

Microwave frequencies and uses; microwave transmission lines and wave guides microwave circuits. Passive micro waves device: cavity resonators, waveguide tees, directional couplers, ferrite isolators and circulators. Active components: klystron and magnetrons, travelling wave tubes, parametric amplifier.

Principle of solid state microwave device including varactor, PIN, gunn-effect diodes, phototransistor and Microwave integrated circuits (ICs). Measurement at microwave frequency.

Optical Fibre Communication: Basic laws of electrodynamics, energy, force and momentum, scattering and dispersion, interior boundary value problems. Geometrical optics (G.O), physical optics (P.O). Aperture radiation integrals. Minimum range requirements. Stationary phase, sidelobes, backlobes, aperture blocking, radar echo area, geometrical theory of diffraction gyrotropic media.