

## **MICROWAVE AND WIRELESS ANTENNAS (RP 4.1.4)**

**Large Reflector and feed:** Analysis and radiation characteristics of symmetrical paraboloidal reflector antennas; Different types of dual reflector antennas and their characteristics; Offset-reflector antennas.; corrugated horns and their radiation characteristics, multi mode horns. (3)

**Lens Antennas :** Basic lens operation; Lens shape design; Waveguide lenses; Bootlace type lenses; Dome antennas.(2)

**Printed Antennas :** Microstrip Antennas: Basic configuration and advantages; Radiation mechanism; Analysis and CAD; Basic characteristics; Feeding techniques; Broadbanding techniques; Phased arrays; Printed antennas for mobile and portable wireless equipment; Reconfigurable antennas, wearable antenna, antennas for RFID systems. (5)

**Dielectric Resonator Antennas (DRA) :** Dielectric Resonators, modes, radiation mechanisms, feeding mechanisms, characteristics, design and applications; materials for DRA, integration with active devices, challenges in RFIC designs. (4)

**Millimetre wave Antennas :** Periodic dielectric antennas, uniform wave guide leaky wave antenna, tapered slot antennas and printed circuit antennas. (2)

**Ultrawideband (UWB) Antennas:** Monopole antennas, UWB Slot antennas, Loop antennas, Tapered slot antennas, Impulse Radiating antennas, Conical antennas, Frequency independent antennas, basic principles and characteristics, Radiation mechanisms. (5)

**Antennas for special applications :** Antennas for on-board systems, antennas for medical applications, antennas for radiometry and remote sensing. (4)

**Antenna Measurements :** *Basic principles, antenna radiation measurements using anechoic chamber and compact range techniques, measurements of antenna patterns, gain, and efficiency, measurement circularly polarized antennas.* (5)