EEE.9-2.9 Satellite Communications

Course contents: * Parameters of satellite orbits, determination of azimuth and elevation angles of the satellite from a terrestrial station.* Link budgets for the up- and down-links and calculation of the carrier to noise ratio (C / N) at the ground terminal receiver. * Calculation of signal to noise ratio (SNR) or rate error (BER) for a satellite link. * Design a satellite communication system to achieve specific targets for the signal to noise ratio (S / N) and BER using appropriate multi-access techniques - improvement of BER through ARQ and FEC coding techniques. * Effect of rain attenuation on a satellite link and availability of the link based on the geographical location of the terrestrial terminals. * Types and dimensions of antennas used in satellites and ground stations. * GEO or LEO satellite systems for voice, video or data using analogue or digital configuration. * International regulatory framework for satellite services and space applications.