GUJARAT TECHNOLOGICAL UNIVERSITY

M.E

Communication Engineering

Subject Name: **RF AND MICROWAVE ENGINEERING**

Sr.No	Course content
1	INTRODUCTION
2	Conceptual understanding of wave propagation in the guided media such as transmission lines, rectangular and circular waveguides; Various characteristics and parameters such as wave velocity, dispersion, mismatch effects; voltage - current - field distributions.
3	Poynting Power / Vectors Theorem and Uniqueness Theorems, Maxwell time varying equations, Smith chart applications to RF and Microwave Engineering,
4	RF and MICROWAVE ANALYSIS
5	Impedance and Admittance Matrix, Hybrid matrix, Scattering matrix, ABCD Matrix, Discontinuities and Modal analysis, Signal flow graph representation, Various excitation and coupling methods to the waveguides.
6	MICROWAVE COMPONENTS
7	Understanding the in-depth principle, working, analysis and design of ferromagnetic:
8	Passive components such as microwave resonators, power dividers and couplers, filters and impedance transformers – Chebyshev, Binomial and Tapered.
9	Ferromagnetic components such as isolators, phase shifters, circulators.
10	MICROWAVE DEVICES AND CIRCUITS
11	Conceptual understanding the principle, working and applications of microwave circuits and active devices such as: Mixers, Detectors, Microwave Integrated Circuits, Monolithic Microwave Integrated Circuits, Microwave Amplifiers, Oscillators and Synthesizers.

Reference Books:

1. Pozar D M, Microwave Engineering, Wiley
2. Mishra Ravindra, RF and Microwave Communication, Wiley
3. Gupta K C, Microwaves, New Age International Publn
4. Collin R E, Foundations for Microwave Engineering, McGrawHill International
5. M. Golio & J. Golio, RF and microwave Technologies:Vol I,II,III,CRC Press