EX63: Microwave Devices and Circuits

Course Overview:

An understanding of the microwave principles and working of microwave devices is presented in this course. The course needs strong basics of electromagnetic wave engineering. In this course we study the generation of microwave. It also include various processes of amplification of microwave.
The subject deals with the waveguides and its different types include circular and rectangular waveguides. The characteristic equation of waveguides, its properties, components of waveguide and analysis of waveguides is covered.
The course gives understanding of microwave solid state devices which includes Gunn diode, TRAPATT and IMPATT diodes. There are methods of measurement of power, frequency VSWR and impedance which is studied under this course.

Pre-Requisite:

Electromagnetic engineering

Course Educational Objectives (CEO):

CEO 1	To explain basic principle, generation and amplification of microwave
CEO 2	To teach the concept of waveguide and its components and also to teach measurement of various parameters
CEO 3	To teach to comprehend the operation physics of microwave diodes and transistors and their applications in microwave circuits.

Evaluation System:

- Theory Examination: 100 marks
- Term Work: 25 marks
- Total: 125 marks

Recommended Books:

- Microwave Devices and Circuits, Samuel Y. Liao, PHI
- Microwave Circuits and Passive Devices, M L Sisodia, G S Raghuvanshi, New Age International (p) Ltd
- Microwave Engineering, Annapurna Sas, Tata McGRAW Hills
- Electronic Communication Systems, Kennedy, Davis, 4e TMH
- Microwave Engineering, Passive Circuits, Peter A. Rizzi, PHI
- Foundations for Microwave Engineering, 2e, Robert E. Collin John Wiley
- Basic Microwave Techniques & Laboratory Manual Sisodia M.L, Raghuvanshi G.S. 2001 New Age International (p) Ltd.