MANIPAL UNIVERSITY JAIPUR

School of Electrical, Electronics & Communication Engineering (SEEC)

Department of Electronics & Communication Engineering
Course Hand-out

Electromagnetic Wave & Microwave Antennas | EC 2102 | 4 Credits | 3 1 0 4

Session: Jan 14 – May 14 | Faculty: Prof. V. N. Tiwari | Class: Core Course

A. Course Outcomes: At the end of the course, students will be able to

[2102.1] Understand Transmission line, electromagnetic waves, their propagation and field patterns in waveguides to promote sustainable development in high frequency..
[2102.2] Investigate the operation of different antenna.
[2102.3] Analyse radiation characteristics and designing techniques of different antenna structures and hence develop employability skills.
[2102.4] Understand the measurement methods of radiation parameters in Antenna.

B. SYLLABUS

Eletromagnetic Waves : Introduction to transmission line, waveguides, Maxwell's equations, modes, boundary conditions, polarizatios, wave equations, Antenna: Types of antennas, parameters, lobes, radition mechanism, horn antennas, antenna arrays, field regions, radiation patterns corrugated horn, Antenna measurement : Outdoor and compact range measurement arrangements, anechoic chamber, pattern measurement, gain measurement, polarization measurement.

References:

1. C. A. Balanis, "*Antenna Theory*", *John Wiley and Sons. Inc.*, 2010
2. J. Kraus, "*Antenna and wave Propagation*", *Tata McGraw Hill*, 2010 3.
3. W. L. Stutzman & G. A. Thiele, "*Antennas Theory and Desig*", *John Wiley and sons*, 2009
4. P. S. Neelakanta, R. Chatterjee, "*Antennas for Information Super Skyways-An Exposition to Outdoor and Indoor Wireless Antennas*", *Prentice Hall of India*, 2008