

**RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL**

**New Scheme Based On AICTE Flexible Curricula**

**Electronics & Communication Engineering V-Semester**

**Departmental Elective EC- 503 (B) MOBILE COMMUNICATION**

**Unit I** Introduction to wireless communication systems, different generations of wireless networks. Cellular system design fundamentals, frequency reuse, handoff strategies, Interference and system capacity, Trunking and grade of service.

**Unit II** Mobile radio propagation: free space propagation model, Ground reflection propagation model, Long term fading, Small scale multipath propagation, Time dispersion parameters, Coherence bandwidth, Doppler spread and coherence time, types of small scale fading, Clarke's model for flat fading, level crossing and fading statistics.

**Unit III** Capacity in cellular systems, cell splitting and sectoring, cell-site antennas and mobile antenna, cochannel interference reduction, Frequency management and channel assignment.

**Unit IV** Frequency division and time division multiple access. Global System for Mobile: System Architecture. GSM Radio subsystem, GSM. GSM Traffic Channel and Control Channel, Frame Structure.

**Unit V** Spread spectrum multiple access (Frequency Hopped Multiple Access and Code Division Multiple Access ). Different spreading codes. CDMA Digital Cellular system: different standards with detailed description of forward and reverse channels. Capacity of cellular systems.

**Reference Books:**

1. Mobile cellular telecommunication- W. C. Lee, McGraw-Hill
2. Wireless communication -T. S. Rappaport, Prentice Hall
3. Wireless communication – Simon Haykins, Pearson