

PEL7J004

MOBILE COMMUNICATION

3-0-0

MODULE-I An Overview of Wireless Systems: Introduction, First- and Second-Generation Cellular Systems, Cellular Communications from 1G to 3G, Wireless 4G Systems, Future Wireless Networks Radio Propagation and Propagation Path-Loss Models: Introduction, Free-space Attenuation, Attenuation over Reflecting Surfaces, Radio wave Propagation, Characteristics of Wireless Channel, Signal Fading Statistics, Propagation Path-loss Models, Cost 231 Model

MODULE-II Fundamentals of Cellular Communications: Introduction, Cellular Systems, Hexagonal Cell Geometry, Co-channel Interference Ratio, Cellular System Design in Worst-Case Scenario with an Omni directional Antenna, Co-channel Interference Reduction, Directional Antennas in Seven-Cell Reuse Pattern, Cell Splitting, Adjacent Channel Interference (ACI), Segmentation,

MODULE-III

Multiple Access Techniques: Introduction, Narrowband Channelized Systems, Comparisons of FDMA, TDMA and DS-CDMA, Comparison of DS-CDMA vs. TDMA System Capacity, Multicarrier DS-CDMA (MC-DS-CDMA) Modulation schemes: Introduction, Introduction to modulation, Phase Shift Keying, Quadrature Amplitude Modulation, M-ary Frequency Shift Keying, Synchronization,

MODULE-IV

Equalization Spread Spectrum(SS) and CDMA Systems: Introduction, Concept of Spread Spectrum, System Processing Gain, Requirements of Direct-Sequence Spread Spectrum, Frequency-Hopping Spread Spectrum Systems

Text Books: 1. Essential Reading: Selected portions from V K Garg, Wireless Communication and Networking; Morgan Kaufman Publishers India; 2008

Reference Book:

1. T S Rappaport, Wireless Communications, Pearson Education, India
2. W C Y Lee, Mobile Communication Engineering – Theory and Applications; TMH
3. T L Singhal, Wireless Communications, Tata McGraw Hill 2010