COURSE CODE: **IGIT– 504-DSE2**
COURSE TITLE: **WIRELESS AND MOBILE COMMUNICATION**
CREDITS **4 + 2 =06**

Unit I

Classification and types of Wireless telephones. Introduction to Cordless, Fixed Wireless (WLL), Wireless with limited mobility (WLL-M) and (Fully) Mobile Wireless phones. Introduction to various generations of mobile phone technologies and future trends. Wire line vs. Wireless portion of mobile communication networks. Mobile-Originated vs. Mobile-Terminated calls. Mobile-Phone numbers vs. Fixed-Phone numbers.

Unit II

Concept of cells, sectorization, coverage area, frequency reuse, cellular networks & handoffs. Wireless Transmission concepts; types of antennas; concepts of signal propagation, blocking, reflection, scattering & multipath propagation. Comparison of multiple access techniques FDM, TDM and CDM. Concept of Spread Spectrum (SS) techniques; Frequency Hopping SS. Direct Sequence SS and concept of chip-sequence.

Unit III

Concept of Forward and Reverse CDMA channel for a cell/sector. Concept/derivation of Walsh codes & Code Channels within a CDMA Channel. Simplified illustration of IS-95 CDMA using chip sequences. Purpose of Pilot, Sync, Paging, Forward Traffic Channels. Purpose of Access & Reverse TCs.

Unit IV

GSM reference architecture and components of Mobile Networks: MS, BTS, BSC, MSC; their basic functions and characteristics. Use of HLR and VLR in mobile networks. Handoff scenarios in GSM.

Recommended Books

1) Mobile Communications, Jochen Schiller, Addison Wesley/Pearson
2) Wireless Communications: Principles and Practice, Theodore's Rappaport, Prentice Hall
3) Principles of Wireless Network: Unified Approach, K Pahalvan , P Krishnamurthy, Prentice Hall