

**Rajiv Gandhi Proudlyogiki Vishwavidyalaya, Bhopal**  
**Syllabus VII Semester**  
**Bachelor of Engineering (Information Technology)**  
**Credit based Grading System (CBGS)**

**IT- 7003 – Wireless & Mobile Computing**

**Unit I:** Antenna , radiation pattern, antenna types, antenna gain, propagation modes, types of fading. Model for wireless digital communication, multiple access technique-SDMA, TDMA, FDMA, CDMA, DAMA, PRMA, MAC/CA, Cellular network organization, operations of cellular system, mobile radio propagation effects, , handoff, power control, sectorization, traffic engineering, Infinite sources, lost calls cleared, grade of service, poisson arrival process

**Unit II:** GSM- Services, system architecture, radio interface, logical channels, protocols, localization and calling, handover, security, HSCSD, GPRS-architecture, Interfaces, Channels, mobility management DECT, TETRA, UMTS.

**Unit III:** IEEE 802.11: LAN-architecture, 802.11 a, b and g, protocol architecture, physical layer, MAC layer , MAC management, HIPERLAN-protocol architecture, physical layer, access control sub layer, MAC sub layer. Bluetooth-user scenarios- physical layer, MAC layer.

**Unit IV:** Mobile IP, DHCP, Ad hoc networks: Characteristics, performance issue, routing in mobile host. Wireless sensor network, Mobile transport layer: Indirect TCP, Snooping TCP, Mobile TCP, Time out freezing, Selective retransmission, transaction oriented TCP. Introduction to WAP.

**Unit V:** Intruders, Intrusion detection, password management, viruses and related threads, worms, trojan horse defense, difference biometrics and authentication system, firewall design principle.

**References:-**

- 1 J. Schiller, “Mobile Communication”, Addison , Wiley
- 2 William Stallings, “Wireless Communication and Network”, Pearson Education
- 3 Upena Dalal,” Wireless Communication”, Oxford Higher Education
- 4 Dr. Kamilo Feher, “Wireless Digital communication”, PHI
- 5 William C.Y Lee, “Mobile Communication Design Fundamental” , John Wiley.