Subject Name: EC2401Wireless Communication

Staff Name : E.VelmuruganAssistantProfessor

Year : Final Year –ECE ‘B’ Section

**Syllabus:**

**UNIT I SERVICES AND TECHNICAL CHALLENGES**

Types of Services, Requirements for the services, Multipath propagation, SpectrumLimitations, Noise and Interference limited systems, Principles of Cellular networks,Multiple Access Schemes.

**UNIT II WIRELESS PROPAGATION CHANNELS**

Propagation Mechanisms (Qualitative treatment), Propagation effects with mobile radio,Channel Classification, Link calculations, Narrowband and Wideband models.

**UNIT III WIRELESS TRANSCEIVERS**

Structure of a wireless communication link, Modulation and demodulation – QuadraturePhase Shift Keying, /4-Differential Quadrature Phase Shift Keying, Offset-QuadraturePhase Shift Keying, Binary Frequency Shift Keying, Minimum Shift Keying, GaussianMinimum Shift Keying, Power spectrum and Error performance in fading channels.

**UNIT IV SIGNAL PROCESSING IN WIRELESS SYSTEMS**

Principle of Diversity, Macrodiversity, Microdiversity, Signal Combining Techniques,Transmit diversity, Equalisers- Linear and Decision Feedback equalisers, Review ofChannel coding and Speech coding techniques.

**UNIT V ADVANCED TRANSCEIVER SCHEMES**

Spread Spectrum Systems- Cellular Code Division Multiple Access Systems- Principle,Power control, Effects of multipath propagation on Code Division Multiple Access,Orthogonal Frequency Division Multiplexing – Principle, Cyclic Prefix, Transceiverimplementation, Second Generation(GSM, IS–95) and Third Generation WirelessNetworks and Standards

**TEXT BOOKS:**

1. Andreas.F. Molisch, “Wireless Communications”, John Wiley – India, 2006.

2. Simon Haykin& Michael Moher, “Modern Wireless Communications”, Pearson

Education, 2007.

**REFERENCES:**

1. Rappaport. T.S., “Wireless communications”, Pearson Education, 2003.

2. Gordon L. Stuber, “Principles of Mobile Communication”, Springer International Ltd.,2001.

3. Andrea Goldsmith, Wireless Communications, Cambridge University Press,