

# AMEE25 WIRELESS COMMUNICATION

## UNIT-1 EVOLUTION OF MOBILE RADIO COMMUNICATION FUNDAMENTALS.

### LARGE SCALE PATH LOSS

- 1.1 Propagation models,
- 1.2 Reflection, diffraction, scattering,
- 1.3 Practical link budget design using path loss model.
- 1.4 Small scale fading & multi-path propagation and measurements,
- 1.5 Impulse response model and parameters of multi-path channels,
- 1.6 Types of fading,
- 1.7 Theory of multi-path shape factor for fading wireless channels.

## UNIT-2 SPREAD SPECTRUM MODULATION TECHNIQUES:

- 2.1 Pseudo-noise sequence,
- 2.2 Direct sequence spread spectrum (DS-SS),
- 2.3 Frequency hopped spread spectrum (FH-SS),
- 2.4 Performance of DS-SS, performance of FH-SS,
- 2.5 Modulation performance in fading and multi- path channels,
- 2.6 Fundamentals of equalization,
- 2.7 Equalizer in communication receiver,
- 2.8 Survey of equalization techniques, linear equalizer,
- 2.9 Linear equalizer, non-linear equalizations,
- 2.10 Diversity techniques, RAKE receiver.

## UNIT-3 CHARACTERISTICS

- 3.1 Characteristics of speech signals,
- 3.2 quantization techniques, vocoders,
- 3.3 Linear predictive coders, time division multiple access,
- 3.4 Space division multiple access, and frequency division multiple access.

## UNIT-4 FREQUENCY

- 4.1 Frequency reuse,
- 4.2 Channel assignment strategies, handoff strategies,
- 4.3 Interference and system capacity,
- 4.4 Improving coverage and capacity in cellular systems.

### Reference Books:

1. William C. Y. Lee, "Mobile communication Design and fundamentals"
2. D. R. KamiloFehar, "Wireless digital communication"
3. Haykin S & Moher M., "Modern wireless communication", Pearson, 2005.
4. R. Pandya, "Mobile and personal communication system", PHI.