**Approval: 1st Convocation Adhoc Meeting**

**Course Name:** Wireless Communication
**Course No.:** EE 613
**Credits:** 3-0-0-3
**Prerequisites:**
**Students intended for:**
**Elective or Compulsory:** Elective
**Semester**: Odd/Even

**Course contents:**

**Cellular Communications**
Introduction to Cellular Communications, Frequency reuse, Channel assignment strategies, Hand-off strategies, Interference and system capacity, Trunking and Grade of services, Improving Coverage and capacity in cellular systems (cell splitting, sectoring, microcell Zone, Tele-traffic Theory

**Large scale path loss, small scale fading and Diversity**
Wireless Channel Modeling, Path loss, Hata, Okumura Models, Shadowing, Diffraction Knife Edge models, Fast Fading, Rayleigh/Ricean Fading Channels, BER Performance, Radio Power budgeting, Diversity, BER Performance with diversity, Types of Diversity, RMS Delay Spread, Doppler Fading, Jakes Model, Autocorrelation, Jakes Spectrum, Impact of Doppler Fading

**Modems for Wireless Communications**
Analog modulation, Digital Modulation, Pulse Trains and Pulse shaping, ASK, BPSK, M-ary Modulation, Constant Envelope Modulation Techniques, M-ary phase modulation, M-ary QAM, O-QPSK, Pi/4 QPSK, MSK, GMSK, Shannon theorem, Channel capacity in Rayleigh fading

**CDMA**
Introduction to CDMA, PN Sequences, DS CDMA, FH CDMA, Multipath diversity, RAKE Receiver, CDMA Receiver Synchronization

**WirelessStandards**
AMPS, IS 54, GSM, CDMA 2000