# NC5252 ADVANCED WIRELESS NETWORKS

## DETAILED SYLLABUS

### UNIT I INTRODUCTION

. Introduction to 1G/2G/3G/4G Terminology. Evolution of Public Mobile Services - Motivation for IP Based Wireless Networks -Requirements and Targets for Long Term Evolution (LTE) - Technologies for LTE- 4G Advanced Features and Roadmap Evolutions from LTE to LTEA - Wireless Standards. Network Model-Network Connectivity-Wireless Network Design with Small World Properties

### UNIT II WIRELESS IP NETWORK ARCHITECTURES

3GPP Packet Data Networks - Network Architecture - Packet Data Protocol (PDP) Context -Configuring PDP Addresses on Mobile Stations - Accessing IP Networks through PS Domain – LTE network Architecture - Roaming Architecture- Protocol Architecture- Bearer Establishment Procedure -Inter-Working with other RATs.

### UNIT III ADAPTIVE LINK AND NETWORK LAYER

Link Layer Capacity of Adaptive Air Interfaces-Adaptive Transmission in Ad Hoc Networks Adaptive Hybrid ARQ Schemes for Wireless Links-Stochastic Learning Link Layer Protocol Infrared Link Access Protocol-Graphs and Routing Protocols-Graph Theory-Routing with Topology Aggregation-Network and Aggregation Models

### UNIT IV MOBILITY MANAGEMENT

Cellular Networks-Cellular Systems with Prioritized Handoff-Cell Residing Time Distribution Mobility Prediction in Pico- and Micro-Cellular Networks

### UNIT V QUALITY OF SERVICE

QoS Challenges in Wireless IP Networks - QoS in 3GPP - QoS Architecture, Management and Classes -QoS Attributes - Management of End-to-End IP QoS - EPS Bearers and QoSin LTE networks.

**OBJECTIVES:**

To study about advanced wireless network, LTE, 4G and Evolutions from LTE to LTE.

To study about wireless IP architecture, Packet Data Protocol and LTE network architecture

To study about adaptive link layer, hybrid ARQ and graphs routing protocol.

To study about mobility management, cellular network, and micro cellular networks

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