

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Electronics & Communication)
Semester: IV
Syllabus with Effect from: June - 2012

Paper Code: PS04CELC01	Total Credit: 4
Title Of Paper: Mobile Communication	

Unit	Description in detail	Weightage (%)
I	Introduction to cellular mobile system, a basic cellular system, performance criteria, Uniqueness of mobile radio environment, Operation of cellular systems, Planning of cellular system, Elements of Cellular Radio System Design: General description of problem, Concept of frequency reuse, channels, Co channel interference, reduction factor, Hand off mechanisms, Cell splitting, Consideration of the components of cellular systems.	20%
II	Co-channel Interference, Co-channel interference measurement at mobile radio transceivers, Design of antenna system Omni directional and directional, Reduction of cochannel interference. Problem related to Cellular System Design. Types of Non co-channel interference- adjacent channel Interference, Near-End- Far-End interference, Effects on Near-End mobile units, Cross-Talk, Effects on coverage and interference by applying power decrease	20%
III	Cell coverage for signal and traffic, Obtaining the mobile point-to-point model, Propagation over water or flat open area, foliage loss, propagation in near in distance, long distance propagation, Cell site antenna heights and signal coverage cells, Mobile-to-mobile propagation.	20%
IV	Frequency management and Channel Assignment: Frequency management, Frequency spectrum utilization, Setup channels, Fixed channels assignment, Nonfixed channel assignment algorithms, Traffic and channel assignment. Handoffs and Dropped Calls: Types of Handoff, Cell-site Handoff and Intersystem Handoff, Dropped Call Rate. Digital Cellular System: GSM, Architecture, Multiple Access Scheme: CDMA, Introduction to CDMA	20%

Basic Text & Reference Books:-

- Cellular and Mobile Communication: W.C.Y.Lee, McGraw Hill.
- Wireless Communication: Rappaport, Pearson Education

