

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electronics and Communication Engineering

Lesson plan of faculty member for the academic year 2016–17

Class: IV B Tech

Branch-Section: ECE-C

Semester:II

Subject: Wireless Communications and Networks

Lectures per week: 3+1 (Tutorial)

Lecture number	Topics to be covered	Date (s)
UNIT – I: The Cellular Concept-System Design Fundamentals:		
1	Tutorial (G2, G3) – Introduction, Frequency Reuse	9 December 2016
2	Channel assignment strategies	10 December 2016
3	Prioritizing Handoffs	15 December 2016
4	Handoff strategies	15 December 2016
5	Tutorial (G1,G2, G3) Handoff strategies -, Practical Handoff Considerations	16 December 2016
6	Interference and system capacity	17 December 2016
7	Co channel Interference	22 December 2016
8	Tutorial (G1, G2, G3): System capacity, Channel planning for wireless systems.	22 December 2016
9	Adjacent Channel Interference	23 December 2016
10	Power control for Reducing Interference	24 December 2016
11	Trunking and grade off service	29 December 2016
12	Tutorial (G1,G2, G3):Improving Coverage & Capacity in Cellular Systems	29December 2016
13	Problems on frequency reuse	30 December 2016
14	Cell Splitting, Sectoring	31 December 2016
UNIT–II: Mobile Radio Propagation: Large-Scale Path Loss		
15	Introduction to Radio Wave Propagation, Free Space Propagation	5 January 2017
16	Tutorial (G1, G2,G3): Relating Power to Electric Field.	5 January 2017
17	Brewster Angle, Reflection from perfect conductor	6 January 2017
18	The Three Basic Propagation Mechanisms,	7 January 2017
19	Reflection- Reflection from Dielectrics,	7 January 2017
20	Tutorial (G1,G2): , Ground Reflection (Two-Ray) Model, Ground Reflection (Two-Ray) Model	12 January 2017
21	Diffraction-Fresnel Zone Geometry ,Knife-edge	12 January 2017
22	Multiple knife-edge Diffraction, Scattering,okumura,Hata	13 January 2017
23	Tutorial (G1,G2, G3):PCS Extension to Hata Model.	19 January 2017
24	Outdoor Propagation Models- Longley-Ryce Model,	19 January 2017
25	Walfisch and Bertoni Model	20 January 2017
26	Outdoor Propagation Models ,Wideband PCS Microcell Model	21 January 2017
27	Tutorial (G2): Indoor Propagation Models-Partition losses (Same Floor)	27 January 2017
28	Log-distance path loss model, Ericsson Multiple Breakpoint Model	28 January 2017
29	Tutorial (G1,G2):, Attenuation Factor Model	23 February 2017
30	, Signal penetration into buildings	23 February 2017
31	Ray Tracing and Site Specific Modeling	25 February 2017
Unit III:Mobile Radio Propagation: Small –Scale Fading and Multipath:		
32	Tutorial (G1,G2,G3):, Small Scale Multipath propagation	3 March 2017

33	Factors influencing small scale fading , Small-Scale Multipath Measurements	2 March 2017
34	Direct RF Pulse System, SS Sliding Correlator Channel Sounding,	2 March 2017
35	Tutorial (G1,G2, G3): - Parameters of Mobile MP	2,3,4 March 2017
36	Coherence Bandwidth, Doppler Spread and Coherence Time,	4 March 2017
37	Types of Small-Scale Fading-Fading effects Due to Multipath Time Delay Spread	09 March 2017
38	Flat fading, Frequency selective fading, Fading effects Due to Doppler Spread-Fast fading, slow fading, Statistical Models for multipath Fading Channels-Clarke's model for flat fading,	09 March 2017
39	Tutorial (G1,G2, G3): spectral shape due to Doppler spread in Clarke's model	09,10,11 March 2017
UNIT-IV: Equalization and Diversity		
40	Introduction, Fundamentals of Equalization, Training A Generic Adaptive Equalizer,	11 March 2017
41	Equalizers in a communication Receiver	16 March 2017
42	Algorithms for adaptive equalization-Zero Forcing Algorithm, Least Mean Square Algorithm, Recursive least squares algorithm.	16 March 2017
43	Tutorial (G1,G2, G3): Practical Space Diversity Consideration-Selection Diversity, Feedback or Scanning Diversity	16,17,18 March 2017
44	Maximal Ratio Combining, Equal Gain Combining, Diversity Techniques-Derivation of selection Diversity improvement,	18 March 2017
45	Polarization Diversity, Frequency Diversity	23 March 2017
46	Time Diversity, RAKE Receiver.	24,25, March 2017
UNIT V -Wireless Networks:		
47	Introduction to wireless Networks,	30 March , 2017
48	Advantages and disadvantages of Wireless Local Area Networks	30 March 2017
49	WLAN Topologies,	31 March 2017
50	WLAN Standard IEEE 802.11	1 April 2017
51	Tutorial (G1,G2, G3): IEEE 802.11 Medium Access Control	6,7,8 April 2017
52	Comparison of IEEE 802.11 a,b,g and n standards,	6 April 2017
53	IEEE 802.16 and its enhancements, Wireless PANS	7 April 2017
54	Hiper Lan	8 April 2017
55	WLL	13 April 2017

TEXT BOOKS:

1. Wireless Communications, Principles, Practice – Theodore, S. Rappaport, 2nd Ed., 2002, PHI.
2. Wireless Communications-Andrea Goldsmith, 2005 Cambridge University Press.
3. Mobile Cellular Communication – Gottapu Sasibhushana Rao, Pearson Education, 2012.

REFERENCE BOOKS:

1. Principles of Wireless Networks – Kaveh Pah Laven and P. Krishna Murthy, 2002, PE.
2. Wireless Digital Communications – Kamilo Feher, 1999, PHI.
3. Wireless Communication and Networking – William Stallings, 2003, PHI.
4. Wireless Communication – Upen Dalal, Oxford Univ. Press.
5. Wireless Communications and Networking – Vijay K. Gary, Elsevier.

Name and signature of the faculty: S V M G PHANI KUMAR C ----

Name and signature of Head of the Department : Shribala N ----