

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electronics and Communication Engineering

Lesson plan of faculty member for the academic year 2017–18

Class: IV B Tech

Branch-Section: ECE-B

Semester: I

Subject: Cellular and Mobile Communications

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Introduction Cellular Mobile Radio Systems & Fundamentals of cellular Radio System Design		
1.	Limitations of Conventional Mobile Telephone Systems	12 July 2017
2.	Basic Cellular Mobile System	14 July 2017
3.	First, Second Generation Cellular wireless Systems	15 July 2017
4.	Tutorial (G3, G2, G1) – History of mobile communication systems	12,13,15 July 2017
5.	Third and Fourth Generation Cellular wireless Systems	17 July 2017
6.	Uniqueness of Mobile Radio Environment – Fading	19 July 2017
7.	Uniqueness of Mobile Radio Environment – Fading	21 July 2017
8.	Time Dispersion Parameters, Coherence Bandwidth	22 July 2017
9.	Tutorial (G3, G2, G1) – Problems on Cellular concepts	19,20,22 July 2017
10.	Doppler Spread and Coherence Time.	24 July 2017
11.	Concept of frequency reuse	26 July 2017
12.	Co-channel interference, co-channel interference reduction factor	28 July 2017
13.	Desired C/I from a normal case in an Omni directional antenna system	29 July 2017
14.	Tutorial (G3, G2, G1) – Problems on frequency reuse	26, 27, 29 July 2017
15.	System Capacity, Trunking and Grade of Service	2 August 2017
16.	Improving Coverage and Capacity in Cellular Systems - cell splitting	4 August 2017
17.	Sectoring, Microcell zone concept	5 August 2017
18.	Tutorial (G3, G2,G1) - Problems on co-channel interference	2, 3,5 August 2017
UNIT-II: Co-Channel Interference & Non- Co-Channel Interference		
19.	Measurement of real time co-channel interference	7 August 2017
20.	Design of antenna system, antenna parameters and their effects	9 August 2017
21.	Tutorial (G3) - Problems on co-channel interference	11 August 2017
22.	Design of antenna system, antenna parameters and their effects	12 August 2017
23.	Tutorial (G3, G2, G1) - Problems on adjacent channel interference	9,10,12 August 2017
24.	Diversity Techniques- Space Diversity, Polarization Diversity	16 August 2017
25.	Frequency Diversity, Time Diversity	18 August 2017
26.	Adjacent channel interference	19 August 2017
27.	Tutorial (G3, G2, G1) - Problems on adjacent channel interference	16,17,19 August 2017
28.	Near-end Far-end Interference, Cross Talk	21 August 2017
29.	Effects on Coverage and Interference by power decrease	23 August 2017
30.	Effects on Coverage and Interference by power decrease	26 August 2017
31.	Tutorial (G3, G2, G1) - Problems on adjacent channel interference	23,24,26 August 2017
32.	Antenna Height decrease	28 August 2017
33.	Effects of cell site components	30 August 2017
UNIT-III: Cell Coverage for Signal and Traffic & Cell Site and Mobile Antennas		
34.	Tutorial (G3, G2, G1) – Problems on multipath	30 ,31 August 1 September 2017
35.	Signal Reflections in Flat and hilly Terrain	1 September 2017
36.	Effect of human made structures	4 September 2017
37.	Phase difference between direct & reflected paths	9 September 2017

38.	Tutorial (G1) - Problems on multipath	9 September 2017
39.	Constant Standard Deviation, Straight line path loss slope	11 September 2017
40.	General formula for mobile propagation over water & Flat open area	13 September 2017
41.	Near & long distance propagation, Antenna height Gain	15 September 2017
42.	Path loss from a point-to-point prediction model in different conditions	16 September 2017
43.	Tutorial (G3, G2, G1) - problems antennas	13,14,16 September 2017
44.	Merits of Lee Model	18 September 2017
45.	Space Diversity Antennas, Umbrella pattern Antennas	22 September 2017
46.	Minimum separation of at cell site antennas, Mobile Antennas	23 September 2017
47.	Tutorial (G2, G1) - problems on path loss	21,23 September 2017
UNIT-IV: Frequency Management and Channel Assignment		
48.	Numbering and grouping	4 October 2017
49.	Setup access and paging channels	6 October 2017
50.	Channel assignments to cell sites	7 October 2017
51.	Tutorial (G3, G2, G1) - problems antennas	4,5,7 October 2017
52.	Channel assignments to cell sites mobile unit	9 October 2017
53.	sectorization	11 October 2017
54.	Channel sharing and borrowing	13 October 2017
55.	Channel sharing and borrowing	14 October 2017
56.	Tutorial (G3, G1) - problems on antennas	11,12 October 2017
57.	Overlaid cells	16 October 2017
58.	Non-fixed channel assignment	20 October 2017
UNIT-V: Handoff and Dropped Calls		
59.	Handoff initiation	21 October 2017
60.	Tutorial (G1, G2) – Channel Assignments	19,21 October 2017
61.	Types of Handoff, Delaying handoff	23 October 2017
62.	advantages of Handoff, Forced handoff	25 October 2017
63.	Mobile assigned and Soft Handoff	27 October 2017
64.	Intersystem Handoff	28 October 2017
65.	Tutorial (G3, G1, G2) – Handoff mechanism	25, 26, 28 October 2017
66.	Dropped call rates and their evaluation	30 October 2017
67.	Problems on dropped call rates	1 November 2017
68.	Revision	3 November 2017
69.	Discussion of Previous Question papers	4 November 2017
70.	Tutorial (G3, G1) - Discussion of Previous Question papers	1,2 November 2017
71.	Discussion of Previous Question papers	6 November 2017

Text books:

1. Mobile Cellular Telecommunications - W. C. Y Lee, Mc Graw Hill, 2nd Edn., 1989.
2. Wireless Communications - Theodore. S. Rapport, Pearson Education, 2nd Edn., 2002.
3. Mobile Cellular Communication – Gottapu Sashibhushana Rao, Pearson, 2012.

Name and signature of the faculty: Archana Subhash

Name and signature of Head of the Department: Ms N Shribala ---- page 2 of 2