TCET/FRM/IP-02/09 Revision: A

Semester Plan
(Theory)

Semester: VII Course: B.E. EXTC

Subject: Mobile Communication Class: B.E. A

Sr. No.	Bridge courses/Technology	Duration (Week/hrs)	Modes of Learning	Recommended Sources
1.	**Prerequisite course:** Computer Communication and Networks Digital Communication	4 hrs	Self learning and classroom revision	1. B. Forouzan, "Data Communication and Networking", McGraw Hill Publication 2. H. Taub, D. Schlling, and G. Saha, "Principles of Communication Systems," Tata Mc-Graw Hill.

Classroom Teaching:

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1		L.1.1	Theory orientation of Mobile Communication	Power Point Presentation	10/01/17		
2		L.1.2	Laboratory orientation of Mobile Communication	Power Point Presentation	10/07/17		
3		L.1.3	Outcome based education orientation of Mobile Communication.	Power Point Presentation	13/07/17		
4	Module 1:	L.1.4	Introduction – Introduction to wire1ess communication	Power Point Presentation	17/07/17	M1.1	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
5	Module 1:	L.1.5	Frequency Division Multiple access, Time Division Multiple access	Power Point Presentation	17/07/17	M1.1	
6	Module 1:	L.3.1	Spread Spectrum Multiple access, Space Division Multiple access, and OFDM	Power Point Presentation	18/07/17	M1.1	
7	Module 1:	L.3.2	Frequency reuse, channel assignment strategies	Power Point Presentation	19/07/17	M1.1	
8	Module 1:	L.3.3	Handoff strategies, interference and system capacity	Power Point Presentation	21/07/17	M1.1	
9	Module 1:	L.3.4	Trunking and grade of service	Power Point Presentation	24/07/17	M1.1	
10	Module 1:	L.3.5	Trunking related design problems	Power Point Presentation	24/07/17	M1.1	
11	Module 1:	L.3.6	Improving the capacity of cellular systems	Power Point Presentation	25/07/17	M1.1	
12	Module 1:	L.3.7	Trunking related design problems	Power Point Presentation	28/07/17	M1.1	
13	Module 2	L.4.1	GSM Network architecture	Power Point Presentation	31/07/17	M3.1	
14	Module 2	L.4.2	Signaling protocol architecture	Chalk & Board	31/07/17	M3.1	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
15	Module 2	L.4.3	Identifiers, channels, introduction frame structure	Chalk & Board	1/08/17	M3.1	
16	Module 2	L.4.4	Speech coder RPE-LTP	Chalk & Board	4/08/17	M3.1	
17	Module 2	L.5.1	Authentication and security, call procedure	Chalk & Board	7/08/17	M3.1	
18	Module 2	L.5.2	Handoff procedure, services and features	Chalk & Board	7/08/17	M3.1	
19	Module 2	L.5.3	GSM evolution in GPRS and EDGE: Architecture	Power Point Presentation	8/08/17	M3.1	
20	Module 2	L.5.4	GPRS & EDGE: services offered	Power Point Presentation	11/08/17	M3.1	
21	Module 2	L.6.1	IS-95 A& B(CDMA-1): Frequency and channel specifications of forward channel	Power Point Presentation	14/08/17	M3.1	
22	Module 2	L.6.2	IS-95 A& B(CDMA-1): Frequency and channel specifications of reverse CDMA channel	Power Point Presentation	14/08/17	M3.1	
23	Module 2	L.6.3	Packet and frame formats	Power Point Presentation	18/08/17	M3.1	
24	Module 2	L.8.1	Mobility and radio resource management	Power PointPres	1/09/17	M3.1	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
25	Module 3	L.8.2	IMT-2000/UMTS: Network architecture	Power Point Presentation	4/09/17	M3.1	
26	Module 3	L.8.3	IMT-2000/UMTS: air Interface specification	Power Point Presentation	04/09/17	M3.1	
27	Module 3	L.8.4	Forward and reverse channels in W-CDMA and CDMA 2000	Power Point Presentation	05/09/17	M3.1	
28	Module 3	L.9.1	Forward and reverse channels in W-CDMA and CDMA 2000 spreading and modulation.	Power Point Presentation	08/09/17	M3.1	
29	Module 3	L.9.2	Cell search and synchronization	Power Point Presentation	11/09/17	M3.1	
30	Module 3	L.9.3	Establishing a connection, hand off and power control in 3G system	Power Point Presentation	11/09/17	M1.2	
31	Module 3	L.9.4	3GPP LTE : Introduction and system overview	Power Point Presentation	12/09/17	M1.2	
32	Module 4	L.10.1	Frequency bands and spectrum network structure, and protocol structure	Power Point Presentation	15/09/17	M1.2	
33	Module 4	L.10.2	Frame slots and symbols, modulation, coding, multiple antenna techniques	Power Point Presentation	18/09/17	M1.2	
34	Module 4	L.10.3	Logical and Physical Channels: Mapping of data on to logical sub-channels physical layer procedures	Power Point Presentation	18/09/17	M1.2	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
35	Module 4	L.10.4	Establishing a connection, retransmission and reliability	Power Point Presentation	19/09/17	M1.2	
36	Module 4	L.11.1	Power Control	Power Point Presentation	22/09/17	M1.2	
37	Module 4	L.11.2	Emerging Technologies for 4G : 4G Introduction and vision	Power Point Presentation	25/09/17	M1.2	
38	Module 4	L.11.3	Multi antenna Technologies: MIMO;	Power Point Presentation	25/09/17	M1.2	
39	Module 4:	L.11.4	Software defined radio	Power Point Presentation	26/09/17	M1.2	
40	Module 5:	L.13.1	Adaptive multiple antenna techniques, radio resource management	Power Point Presentation	03/10/17	M1.2	
41	Module 6:	L.13.2	Study of indoor and outdoor propagation models	Power Point Presentation	06/10/17	M1.2	
42	Module 6:	L.13.3	Small scale fading and multi-path Small-scale multi-path propagation	Power Point Presentation	13/10/17	M1.2	
43	Module 6:	L.13.4	Parameter of multi-path channels, types of small scale fading, Raleigh and Ricean distribution	Power Point Presentation	16/10/17	M1.2	
44	Module 6:	L.14.1	Revision for TT2	Chalk & Board	16/10/17		

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
45	Module 6:	L.14.2	University paper discussion	Chalk & Board	17/04/17		
Remark:: Course:		Syllabus Coverage:		Practice Session:		Beyond Syllabus:	
No. of (lectures planned)/(lecture taken): 45/							

Bridge courses Objective: Bridging of gaps with respect to prerequisites and industry skills or to carryout research in signal processing field**. (20 Hrs / Semester / student)**

Sr . No.	Bridge courses/Technology	Duration (Week/hrs)	Modes of Learning	Recommended Sources
1	**Advanced course:** Introduction to Wireless and Cellular Communication	12 week	Technology Based learning	1. https://onlinecourses.nptel.ac.in/noc17_cs37/preview 2. Vijay K. Garg, —Wireless Communication and Networking‖, Morgan -Kaufmann Series in Networking—Elsevier

Text Books:

1.1. Theodore S. Rappaport , —*Wireless Communications*‖, Prentice Hall of India, PTR publication
1.2. Andreas Molisch , —*Wireless Communications*‖, Wiley, Student second Edition.
1.3. Vijay Garg , —*Wireless Network Evolution 2G-3G*‖, Pearson Education.

Reference Books:
2.1 C.Y Lee , —Mobile Communication‖, Wiley

Digital Reference:

3.1 Vijay K. Garg, —*Wireless Communication and Networking*‖, Morgan -Kaufmann Series in Networking—Elsevi**er**

Sd/-	**Sd/-**	**Sd/-**
(Megha Gupta)	(Dr. Vinitkumar Dongre)	(Dr. R. R. Sedamkar)
Name & Signature of Faculty	Signature of HOD	Signature of Principal /Dean (Academics)
Date:	Date:	Date:

Note:
1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.

3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non –digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.