.BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
SECOND SEMESTER 2015-2016
INSTRUCTION DIVISION
COURSE HANDOUT (Part II)

Date: 13/01/2016

In addition to part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : **EEE G592**
Course Title : **Mobile and Personal Communication.**
Instructor-in-Charge : **V K CHAUBEY**
Instructor : Anuj Ojha

1. Scope and Objective:

The course aims at the study of mobile personal communications, one of the fastest growing fields in the engineering world wide. Design methods and general concepts involved in understanding and implementation of wireless systems and techniques are discussed. In this course an effort will be made to impart an understanding of the basics of the rapidly growing field of mobile and personal communication systems, services and standards.

2. Text Book:

1. "Wireless Communications Principles and Practice" by Theodore S. Rappaport, Second Edition, Pearson Education Asia, 2002

3. Reference Book:

1. "Mobile Communication Engineering" WCY lee, Mc-Graw-Hill, International Editions (1998).
2. Wireless Network Evolution: 2G to 3G, V K Garg, Pearson Education Asia, 2002
3. Wireless Communications & Networks, William Stallings, Pearson Education,Asia, 2002

Lecture No.	Topic	Learning Objectives	Ref. To Text & Ref. Book.
1 & 2	Introduction & General Overview	Introduction to wireless communication and overview of mobile networks.	Ch-1 (T1 ,R1)
3 & 4	Modern wireless communication systems	Mobile and wireless, Second Generation Networks	Ch-2 (T1)
5 - 8	Cellular Design Concept	Frequency Reuse, channel assignment & handoff strategies; interference and system capacity. Coverage improvement and system capacity.	Ch-3 (T1)
9-12	Propagation Models	Different channel models for mobile communication. Modes of propagation. Outdoor and Indoor propagation.	Ch-4 (T1) Ch-1 (R1)
13-18	Multipath fading	Small scale fading & Statistical models	Ch.5 (T1) Ch.3 (R1)
19-21	Modulation Techniques	AM, FM, Digital Modulation Schemes, GMSK, Spread Spectrum Modulation and Modulation Performance in Fading	Ch.6 (T1)

22-25	Equalization, Diversity and Channel Coding , Speech Coding	Equalization in communication receivers, types, Diversity techniques and coding schemes for wireless systems	Ch-7, Ch.8 (T1)
26 - 30	Multiple Access Techniques for Wireless	FDMA, TDMA, CDMA and SDMA for wireless. Packet Radio, Capacity of Cellular Systems	Ch.9 (T1) Ch.15 (R1)
31-34	Wireless Networking	Development of Wireless Networks, fixed network transmission hierarchy, circuit switching , packet switching, wireless data services, ISDN, SS7, PCS/ PCNs, protocols, UMTS etc.,	Ch-10 (T1)
35-38	Wireless Systems and Standards	AMPS & ETACS, IS-54 , IS-136, GSM, CDMA (IS-95), PACS, PDC, PHS, PCS & ISM bands	Ch-11 (T1) & Class notes
39-41	Wireless LANs, PANs and New Trends	IEEE 802.11 Wireless LANs, Bluetooth, WiMax and emerging trends	Class discussions & notes

4. Evaluation scheme :

EC No	Component & Nature	Duration	Weightage	Date, Time	Nature
1.	Mid Sem Test	90 mints	30%	15/3 4:00- 5:30 PM	CB/OB
2.	Quiz (Surprize)	5 mints	15 %		
3.	Assignments/ Lab assign.	-	15%		
2.	Compre. Exam	3 Hrs	40%	6/5 AN	CB/OB

5. **Chamber consultation hours:** To be announced in the class.
6. **Make up Policy:** Make-up will be allowed for genuine cases. Prior application should be sent for seeking the same.
7. **Notices:** Notice regarding the course will be displayed on the EEE group notice board.

Instructor-in-charge
EEE G592