

13.	MOS SRAM Cell and Peripheral Circuit, Bipolar SRAM, SOI	2
14.	Application Specific SRAMs; DRAMs, MOS DRAM Cell	2
15.	Failures in DRAM, Advanced DRAM Design and Architecture	2
16.	Bipolar & CMOS PROM, EEPROMs, Floating Gate EPROM Cell	2
17.	Nonvolatile SRAM, Flash Memories	2
18.	Introduction to ASICs and FPGAs, Fundamentals in digital IC design	2
19.	FPGA & CPLD Architectures, FPGA Programming Technologies	2
20.	FPGA Logic Cell Structures	2
21.	FPGA Implementation of Combinational Circuits	2
22.	FPGA Sequential Circuits	2
	Total	42

11.Suggested Books

S . N o	Name of Books/Authors	Year of publication/ reprint
1	Douglas A. Pucknell and Kamran Eshraghian, "Basic VLSI Systems and Circuits Prentice Hall of India Pvt. Ltd.	1995
2	Wayne Wolf, "Modern VLSI Design, 2nd Edition Prentice Hall of India Pvt. Ltd.	2002
3	Ashok K. Sharma, " Semiconductor Memories Technology Testing and Reliability Prentice Hall of India Pvt. Ltd.	2002
4	Wen C. Lin, "Handbook of Digital System Design	1990

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|--------------------------------|--------|--|------------------------------------|
| 1. Subject Code: | EP 407 | Course Title: | Mobile and Satellite Communication |
| 2. Contact Hours: | | L: 3 | T: 0 P: 2 |
| 3. Examination Duration (Hrs.) | | Theory: 3 | Practical: 0 |
| 4. Relative Weight: | | CWS: 15 | PRS:15 MTE: 30 ETE: 40 PRE: 0 |
| 5. Credits: | | 4 | |
| 6. Semester: | | ODD | |
| 7. Subject Area: | | DCC | |
| 8. Pre-requisite: | | NIL | |
| 9. Objective: | | To familiarize the student with the concept of Modulation techniques and satellite system. | |
| 10. Details of Course: | | | |

DRAFT SCHEME OF STUDY

11.Suggested Books

S. No.	Contents	Contact Hours
1.	Introduction to wireless communication: Evolution of mobile communications, mobile radio systems- Examples, trends in cellular radio and personal communications. Cellular Concept: Frequency reuse, channel assignment, hand off, Interference and system capacity, tracking and grade of service, Improving Coverage and capacity in Cellular systems, Free space propagation model, reflection,diffraction, scattering.	10
2.	Modulation Techniques: Minimum Shift Keying, Gauss ion MSK, M-ary QAM, M-ary FSK, Orthogonal Frequency Division Multiplexing, Performance of Digital Modulation in Slow-Flat Fading Channels and Frequency Selective Mobile Channels.Coding: Vocoders, Linear Predictive Coders, Selection of Speech Coders for Mobile Communication, GSM Codec, RS codes for CDPD.	10
3.	Multiple Access Techniques: FDMA, TDMA, CDMA, SDMA, Synchronous & Statistical TDM, North American digital multiplexing hierarchy, European TDM, Spread spectrum: Frequency Hopping & Direct Sequence spread spectrum. Terminal handling & polling. Switched Communication Networks: Circuit, Message, Packet & Hybrid Switching, Softswitch Architecture with their comparative study, X.25, ISDN. Capacity of Cellular CDMA and SDMA.Second Generation and Third Generation Wireless Networks and Standards, WLL, Blue tooth. AMPS, GSM, IS-95 and DECT	10
4.	Introduction to satellite communication, Satellite Systems, Orbits and constellations: GEO, MEO and LEO, Satellite space segment, Propagation and satellite links, Free-space loss, Attenuation, polarization, fading and scintillation, Link budget analysis, Satellite Communication Techniques, FEC and ARQ, Satellite Communications Systems and Applications- INTELSAT systems, VSAT networks, GPS, GEO, MEO and LEO mobile communications, INMARSAT systems,Iridium, Globalstar, Odyssey	12
	Total	42

S.No.	Name of Books/ Authors	Year of Publication/ Reprint
1.	T.S.Rappaport, Wireless Communications: Principles and Practice, Second Edition Pearson Education/ Prentice Hall of India,	Third Indian Reprint 2003
2.	R. Blake, Wireless Communication Technology Thomson Delmar,	2003
3.	W.C.Y.Lee, Mobile Communications Engineering: Theory and applications, Second Edition McGraw-Hill International	1998

DRAFT SCHEME OF STUDY (Year 2,3,4 B. Tech Program)