



C. U. SHAH UNIVERSITY
Wadhwan City

FACULTY OF: - Technology and Engineering
DEPARTMENT OF: - Electronics & Communication Engineering
SEMESTER: - VII
CODE: - 4TE07MAN1
NAME: – Mobile Ad-Hoc Networks (MAN)

Teaching & Evaluation Scheme:-

Subject Code	Subject Name	Teaching Schemes (Hours)				Credits	Evaluation Schemes							
		Th	Tu	Pr	To		Theory				Practical (Marks)		Total	
							Sessional Exam		University Exam		Internal			University
							Marks	Hours	Marks	Hours	Pr	TW		Pr
4TE07MAN1	Mobile Ad-Hoc Networks (MAN)	03	00	02	05	04	30	1.5	70	3.0	---	20	30	150

Objectives:-

- To understand Concepts of Mobile Ad-Hoc network/Infrastructure-less networks.

Prerequisites:-

Basic knowledge about **Wired** network, Wireless network and mobile Communication.

Course Outlines:-

Sr. No.	Course Contents	Hours
1	Origins Of Ad Hoc: Packet Radio Networks Introduction, Technical Challenges, Architecture of PRNETs. Components of Packet Radios. Routing in PRNETs. Route Calculation. Pacing Techniques. Media Access in PRNETs. Flow Acknowledgments in PRNETs.	05
2	Introduction to Ad-Hoc networks : Introduction to adhoc networks – definition, characteristics features, applications. Characteristics of Wireless channel, Adhoc Mobility Models:- Indoor and outdoor models.	06
3	Medium Access Protocols: MAC Protocols: design issues, goals and classification. Contention based protocols-with reservation, scheduling algorithms, protocols using directional antennas. IEEE standards: 802.11a, 802.11b, 802.11g, 802.15. HIPERLAN.	10
4	Network Protocols: Routing Protocols: Design issues, goals and classification. Proactive Vs reactive routing, Unicast routing algorithms, Multicast routing algorithms, hybrid routing algorithm, Energy aware routing algorithm, Hierarchical Routing, QoS aware routing.	10
5	End-End Delivery and Security: Transport layer : Issues in designing- Transport layer classification, adhoc transport protocols.	09

	Security issues in adhoc networks: issues and challenges, network security attacks, secure routing protocols.	
6	Cross Layer Design and Integration of Ad-Hoc Network For 4G: Cross layer Design: Need for cross layer design, cross layer optimization, parameter optimization techniques, Cross layer cautionary prespective. Intergration of adhoc with Mobile IP networks.	08

Learning Outcomes:-

After successful completion of the course, students should be able to understand:

- Ad-HocNetwork.
- Mobile Ad-Hoc Network.
- Various Protocols and Issues of Mobile Ad-Hoc Network.

Books Recommended:-

1. Ad hoc Wireless Networks Architectures and protocols, **C.Siva Ram Murthy and B.S.Manoj**, Pearson Education. 2nd Edition 2007.
2. Ad hoc mobile wireless networks protocols and systems, by **C. K. Toh**, Prentice Hall 2002.
3. Ad hoc Networking, **Charles E. Perkins**, Addison – Wesley, 2000.