AD-HOC NETWORKS
(ELECTIVE- IV)

Course Code :13IT1110

Pre requisites: Computer Networks.

Course Educational Objectives:
The main objective of the course is to expose the students to different networking environments like Mobile Ad Hoc Networks and Wireless Sensor Networks. Upon completion of this course, the student should be able to know:

✦ MANETs Environment.
✦ Routing in Ad Hoc Networks.
✦ Different Networking Environments like Broadcasting, Multicasting and Geocasting.
✦ Wireless LANs, Wireless PANs.
✦ Wireless Sensor Networks.

Course Outcomes:
At the end of the course the student will be able to

✦ Identify the major issues associated with ad-hoc/sensor networks.
✦ Explore current ad-hoc/sensor technologies by researching key areas such as algorithms, protocols, hardware, and applications.
✦ Gain hands-on experience through real-world programming projects on ad-hoc/sensor hardware.
✦ Implement or develop algorithms involved in ad-hoc/sensor systems.
✦ Understand data retrieval in sensor networks.
UNIT-I (12 Lectures)

INTRODUCTION TO AD HOC NETWORKS:
Introduction, Applications of MANETs, Challenges.

ROUTING IN AD HOC NETWORKS:

BROADCASTING, MULTICASTING AND GEOCASTING:
Introduction, The Broadcast Storm, Multicasting, Geocasting.

UNIT-II (12 Lectures)

WIRELESS LANS:

WIRELESS PANS:
Introduction, Why Wireless PANs, The Bluetooth Technology, Enhancements to Bluetooth, The IEEE 802.15 Working Group for WPANs, Comparison between WPAN Systems, WLANs versus WPANs.

UNIT-III (12 Lectures)

TCP OVER AD HOC NETWORKS:
Introduction, TCP Protocol Overview, TCP and MANETs, Solutions for TCP Over AdHoc.

UNIT-IV (12 Lectures)

WIRELESS SENSOR NETWORKS:

UNIT-V (12 Lectures)

DATA RETRIEVAL IN SENSOR NETWORKS:
Introduction, Classifications of WSNs, MAC Layer, Routing Layer, High
Level Application Layer Support, Adapting to the Inherent Dynamic Nature of WSNs.

SECURITY:

TEXT BOOKS:

REFERENCES: