Adhoc Sensor Networks

Course Code	19CS4701B	**Year**	IV	**Semester**	I
Course Category	Program Elective - IV	**Branch**	CSE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Computer Networks
Continuous Internal Evaluation :	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		
Upon successful completion of the course, the student will be able to		
CO1	Understand the Basic Concepts of Adhoc Sensor Networks	**L2**
CO2	Apply appropriate MAC Protocols for a given scenario	**L3**
CO3	Apply suitable Routing/Transport Protocols for a given scenario and write an effective report	**L3**
CO4	Apply Data Dissemination/Localization aspects in the context of WSN	**L3**
CO5	Apply suitable QoS Framework/models to enhance quality of Service in WSN	**L3**

Syllabus		
Unit No.	**Contents**	**Mapped CO**
I	**Adhoc Wireless Networks** – Introduction, Issues In Ad Hoc Wireless Networks, Ad Hoc Wireless Internet **Mac Protocols For Ad Hoc Wireless Networks** – Design Goals Of A Mac Protocol For Ad Hoc Wireless Networks, Classifications Of MAC protocols, Contention-Based Protocols, Contention-Based Protocols With Reservation Mechanisms, Contention-Based MAC protocols With Scheduling Mechanisms, Other MAC protocols.	**CO1**

II	**Routing Protocols For Ad Hoc Wireless Networks -** Issues In Designing A Routing Protocol For Ad Hoc Wireless Networks, Classifications Of Routing Protocols, Table-Driven Routing Protocols, On-Demand Routing Protocols, Hybrid Routing Protocols, **Multicast Routing In Ad Hoc Wireless Networks** – Tree-Based Multicast Routing Protocols, Mesh-Based Multicast Routing Protocols, Energy-Efficient Multicasting	**CO1,CO2**
III	**Transport Layer And Security Protocols For Ad Hoc Wireless Networks** – Issues In Designing A Transport Layer Protocol For Ad Hoc Wireless Networks, Design Goals Of A Transport Layer Protocol For Ad Hoc Wireless Networks, Classification Of Transport Layer Solutions, TCP Over Ad Hoc Wireless Networks, Security In Ad Hoc Wireless Networks.	**CO1,CO3**
IV	**WirelessSensorNetworksAndMacProtocols**- WSNNetworkarchitecture, data dissemination, MAC Protocols For Sensor Networks: self-organizing, Hybrid TDMA/FDMAand CSMA based MAC, Location Discovery	**CO1,CO4**
V	**Quality Of Service In Ad Hoc Wireless Networks**– QoS Frameworks For Ad Hoc Wireless Networks:QoS Models. **Quality Of A Sensor Network**, Other Issues - EnergyEfficientDesign-Synchronization-TransportLayer issues.	**CO1,CO5**

Learning Resources

Text Books

1. A d Hoc Wireless Networks – Architectures and Protocols, C. Siva Ram Murthy and B.S. Manoj, 2004, Pearson Education.

References

1. Wireless Sensor Networks – An Information Processing Approach, Feng Zhao and Leonidas Guibas, 2004, Elsevier Publications.
2. Protocols and Architectures for Wireless SensorNetworks, Holger Karl and Andreas Willig, 2009, John Wiley and Sons.

e-Resources & Other Digital Material

1. https://nptel.ac.in/courses/106/105/106105160/
2. https://www.ida.liu.se/~petel71/SN/lecture-notes/sn.pdf