Course Type	Course Code	Name of Course	L	T	P	Credit
DE	NECD561	Wireless Sensor Networks	3	0	0	3

Course Objective
This course is required to understand the basic WSN technology and supporting protocols, with emphasis placed on standardization basic sensor systems and provides a survey of sensor technology. This will also provide the understanding of the Sensor management, sensor network middleware, operating systems.
Learning Outcomes
• Students are able to understand and explain the concept of ad-hoc and sensor networks, their applications and typical node and network architectures. • Students are able to understand and explain protocol design issues (especially energy-efficiency) and protocol designs for wireless sensor networks. • Students are able to critique protocol designs in terms of their energy-efficiency • Students are able to set up and evaluate measurements of protocol performance in wireless sensor networks.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Introduction: Basics of wireless networks.	9	Acquire an understanding of the basic of wireless networks
2	Wireless Sensor Networks: History, properties, medium access control, routing, energy efficiency, topology management, coverage, congestion and flow control, quality of service, resource allocation, scheduling, security, multimedia transmission, mobile sensor networks, applications.	11	Develop an understanding about the routing protocol with topology management for wireless sensor networks.
3	Wireless Mesh Networks: Evolution, medium access control, channel assignment, routing, transport protocols, congestion control, scalability, mobility management, applications.	11	Understand the concept of wireless mess networks
4	Vehicular Ad Hoc Networks: Introduction, applications and their classification, VANET communication stack, medium access control, routing, security, mobility models, vehicular sensor networks.	11	Understand the concept of Vehicular Ad Hoc Networks
	Total	**42**	

Textbook:

1. Daniel Minoli, TaiebZnatiKazemSohraby, "Wireless Sensor Networks: Technology, Protocols and Applications", Wiley, 2010.

Reference Books:

1. H. Karl and A. Willig, "Protocols and Architectures for Wireless Sensor Networks", Wiley Publishers, 2005.
2. Abbas Jamalipour Jun Zheng, "Wireless Sensor Networks: A Networking Perspective", Wiley-Blackwell, 2009