KL University
Department of Electronics & Computer Engineering
M.Tech (wcsn) First Semester 2015-2017

Course Code   : **15-EM51E1**
Course Title   : **Adhoc and vehicular Networks**
Course Structure   : **3-0-0**
Credits   : 3

SYLLABUS:
UNIT I
Introduction to Ad Hoc Networks: Characteristics of MANETs, Applications of MANETs and challenges of MANETs - **Routing in MANETs:** Criteria for classification, Taxonomy of MANET routing algorithms, Topology based routing algorithms, Position based routing algorithms, Other routing algorithms.

UNIT II
Data Transmission: Broadcast storm problem, Broadcasting, Multicasting and Geocasting - **TCP over Ad Hoc:** TCP protocol overview, TCP and MANETs, Solutions for TCP over Ad hoc.Basics **of Wireless Sensors and Applications:** Applications, Classification of sensor networks, Architecture of sensor network, Physical layer, MAC layer, Link layer.

UNIT III
Data Retrieval in Sensor Networks: Routing layer, Transport layer, High-level application layer support, Adapting to the inherent dynamic nature of WSNs, Sensor Networks and mobile robots - **Security:** Security in Ad Hoc networks, Key management, Secure routing, Cooperation in MANETs, Intrusion Detection systems.

UNIT IV
Introduction to GPS, Principles used in GPS, GPS Components, Signal structure and frame formats,Dilution of Precision, Position calculations, Data formats, DGPS, Applications.

UNIT V
IVC Routing: Broadcast; TRADE, DDT, Unicast: Position Based GPS, LAR, VANETS:
Introduction, VANET Specifications, DSRC, IEEE802.11p/WAVE,
Inter Vehicular Communication, Current trends in GPS applications, Location Services; Security in IVC

TEXT BOOKS:
1.Ad Hoc and Sensor Networks – Theory and Applications, *Carlos Corderio Dharma P.Aggarwal,* World Scientific Publications, March 2006, ISBN – 981-256-681-3
2.Wireless Sensor Networks: An Information Processing Approach, Feng Zhao,
Leonidas Guibas, Elsevier Science, ISBN – 978-1-55860-914-3 (Morgan Kauffman)

REFERENCES:
1. Jean-Marie zogg-Ublox, *GPS Basics: Introduction to GPS systems*
2. Sivaram Murthy and Manoj, *Adhoc networks by,Pearson,* 2006,
3. Latest Published articles related to IVC