

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

**Course Code** : 15-EM5215  
**Course Title** : WIRELESS SENSOR NETWORKS  
**Course Structure** : 3-0-2  
**Credits** : 4

**SYLLABUS:**

Unit-1 Cellular and Ad Hoc Wireless Networks-Applicationa of Ad Hoc Wireless Networks,Issues in Ad Hoc Wireless Networks: Medium Acces Scheme-Routing-Multicasting Transport Layer Protocols-Pricing Scheme-Quality of Service Provisioning-Self Organization-Security-Addressing and Service Discovery-Energy management Scalability-Deployment Considerations, Ad Hoc Wireless Internet.

Unit-2 Comparison with Adhoc wireless networks-Challenges for WSNs – Difference between sensor networks and Traditional sensor networks ,Types of Applications, Enabling Technologies for Wireless Sensor Networks –Single Node Architectures , Hardware Components , Energy Consumption of Sensor Nodes, Issues in Designing a Multicast Routing Protocol.

Unit-3Data Dissemination-Flooding and Gossiping-Data gathering Sensor Network Scenarios – Optimization Goals and Figures of Merit – Design Principles for WSNs Gateway Concepts – Need for gateway – WSN to Internet Communication –Internet to WSN Communication –WSN Tunneling

Unit-4 MAC Protocols for Sensor Networks -Location Discovery-Quality of Sensor Networks Evolving Standards-Other Issues- Low duty cycle and wake up concepts- The IEEE802.15.4 MAC Protocols- Energy Efficiency -Geographic Routing Mobile nodes

Unit-5 Gossiping and Agent based Unicast Forwarding-Energy Efficient Unicast-Broadcastand Multicast-Geographic Routing-Mobile nodes-Security-Application SpecificSupport - Target detection and tracking-Contour/ edge detection-Field Sampling.

**Text Books:**

1. Holger Karl and Andreas Wiilig, “Protocols and Architectures for Wireless Sensor Networks” John Wiley & Sons Limited 2008.
2. I.F .Akyildiz and Weillian, “A Survey on Sensor Networks”,IEEE Communication Magazine, August 2007.

**Reference Books:**

1. Wilson , “Sensor Technology hand book,” Elsevier publications 2005.
2. Anna Hac “Wireless Sensor Networks Design,” John Wiley& Sons Limited Publications 2003.
3. C.Siva Ram Murthy and B.S.Manoj “Ad Hoc Wireless Networks,” Pearson Edition 2005