

CS 707: SELECTED TOPICS IN WIRELESS SENSOR NETWORKS (3-0-0: 3)

Course Description

This course focuses on selected research topics in Wireless Sensor Networks (WSNs) and is intended for master or doctoral students. Through this course, students can learn the state of the art and open problems in WSNs, thus enhancing their potential to do research or pursue a career in this exciting area. This course is structured as a research seminar where research papers from leading conferences & journals will be presented by a student or the instructor. One selected topic will be taken each week, on which three to four papers will be studied and discussed in the class. The list of topics will be updated throughout the semester, depending on the availability of high-quality papers published or to appear in most recent top conferences & journals. Tentative topics may include (but not limited to):

- WSN Power
- Energy Harvesting
- Coverage, Connectivity, longevity, scheduling, synchronization in WSNs
- WSN security
- QoS
- WSN Hardware
- Middleware for WSNs
- WSN Applications
- Internet of Things
- WSN Deployment
- Routing Protocols for WSNs
- Fault Tolerance and Diagnostics
- Networks Resource Management, network protocols, lightweight protocols
- Data Storage, query processing, operating systems in WSNs

References:

1. K. Sohrabi, D. Minoli, and T. Znati, "Wireless Sensor Networks: Technology, Protocols and Applications", Wiley-Interscience.
2. I. F. Akyildiz and M. C. Vuran, "Wireless Sensor Networks", Wiley.
3. J. Wu, "Handbook on Theoretical and Algorithmic Aspects of Sensor, Ad-Hoc Wireless and Peer to Peer Network", CRC Press.
4. Y. Li, M. T. Thai, "Wireless Sensor Networks and Applications", Springer.
5. Papers published in leading conferences and journals.