EC520 - WIRELESS COMMUNICATIONS AND NETWORKS

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Course Learning Outcomes:
- To be able to appreciate the need and importance of wireless networks
- Good understanding of various wireless communication and technologies for long range and short range communications
- Familiarity with protocols used for wireless environment in comparison with wired networks.
- Application of this knowledge to incorporate wireless network technologies into embedded devices.

UNIT - I (8 hours) spread spectrum techniques

The concept of spread spectrum, Frequency hopping spread spectrum, Direct sequence spread spectrum, Code division multiple access, Generation of spreading sequences.

UNIT - II (8 hours) Cellular systems

Error Detection, Block error correction codes, Convolutional codes, automatic repeat request.

UNIT - III (9 hours) Wireless broad band systems

Cordless systems, Wireless local loop, IEEE 802.16 fixed broadband wireless access standard, Mobile IP, Wireless application protocol.

UNIT – IV (9 hours) Wireless LANs

Infrared LANs, Spread spectrum LANs, Narrowband microwave LANs, IEEE 802 Protocol architecture, IEEE 802.11 Architecture and services, IEEE 802.11 Medium access control, IEEE 802.11 Physical layer.

UNIT - V   (8 hours)
Bluetooth
Bluetooth overview, Radio specification, Baseband specification, Link manager specification, Logical link control and adaptation protocol.

TEXT BOOKS:
1.William Stallings, "Wireless communications and Networking", Prentice Hall, India
2.symen Haykin, Michael Moher"Modern wireless Communications", Pearson, 2005.

REFERENCES:
1.Kamilo Feher, "Wireless Digital Communications", Prentice Hall, India
2.Dharma Prakash Agarwal, Qing- An Zeng, "Introduction to Wireless and Mobile Systems", Thomson , 2006
3.Garry J .Mullet, "Introduction to Wireless Telecommunication systems and Networks", cenage learning