# 19IT3101 - WIRELESS NETWORKS

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| **Course Category:** | Professional Core | **Credits:** | 4 |
| **Course Type:** | Theory | **Lecture – Tutorial – Practical:** | 3-1-0 |
| **Prerequisite:** | Need to have basics of computer networks | **Sessional Evaluation:**  **Univ.Exam Evaluation:**  **Total Marks:** | 40  60  100 |
| **Course Objectives** | * To make the student understand the concepts of Wireless networks * To make the student take up further research as part of his higher studies | | |

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| **Course Outcomes** | Upon successful completion of the course, the students will be able to: | |
| CO1 | Understand the basics of wireless networks |
| CO2 | Learn various types of wireless networks |
| CO3 | Study the basics of wireless internet & Ad Hoc wireless networks |
| CO4 | Expose to the Quality-of-service standards in wireless network |
| CO5 | Deal with energy management issues wireless network |
| CO6 | Have Awareness on Recent Advances In Wireless Networks |
| **Course Content** | UNIT-I  **Introduction:** Fundamentals, Characteristics, Modulation techniques, Multiple access techniques, voice coding, error control, computer networks, Computer network architecture, IEEE 802 standard, wireless network.  UNIT-II  **Wireless Wans And Mans:** Introduction, The Cellular Concept, Cellular Architecture, The First-Generation Cellular Systems, The Second-Generation Cellular Systems, The Third-Generation Cellular Systems, Wireless In Local Loop IEEE 802.16 Standard, Hi per access.  UNIT-III  **Wireless Internet**: Introduction, What Is Wireless Internet, Mobile IP, TCP In Wireless Domain, WAP, Optimizing Web Over Wireless.  **Ad Hoc Wireless Networks:** Introduction: Cellular and Ad Hoc Wireless networks, Applications of Ad Hoc Wireless networks, Issues, Ad hoc wireless internet.  UNIT-IV  **Quality Of Service In Ad Hoc Wireless Networks:** Introduction, Issues And Challenges In Providing QOS In Ad Hoc Wireless , Networks, Classifications Of QOS Solutions, MAC layer Solutions, Network Layer Solutions, QOS Frameworks For Ad Hoc Wireless Networks.  UNIT-V  **Energy Management In Ad Hoc Wireless Networks:** Introduction, Need For Energy Management In Ad Hoc Wireless Networks, Classification Of Energy Management Schemes, Battery Management Schemes, Transmission Power Management Schemes, System Power Management Schemes.  UNIT-VI  **Recent Advances In Wireless Networks**: Introduction, Ultra-Wide-Band Radio Communication, Wireless Fidelity Systems, Optical Wireless Networks, The Multimode 802.11, The Meghadoot Architecture. | |
| **Text Books and References:** | **Text Books:**   1. Ad Hoc Wireless Networks: Architectures and Protocols – C. Siva Ram Murthy and B.S.Manoj, 2004, PHI.   **Reference Books:**   1. Wireless Ad- hoc and Sensor Networks: Protocols, Performance and Control – JagannathanSarangapani, CRC Press 2. Holger Karl & Andreas Willig, “Protocols And Architectures for Wireless Sensor Networks”, John Wiley, 2005. | |
| **E-Resources** | 1. <https://nptel.ac.in/courses> 2. <https://freevideolectures.com/university/iitm> | |