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|  |  | |  | | | | |
| Hours / Week | : | 4 | |  | Sessional Marks | : | 40 |
| Credits | : | 4 | |  | End Examination Marks | : | 60 |

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| **UNIT – I** |
| **Introduction to Wireless Networks**: Evolution of Wireless Networks : Early Mobile Telephony, Analog Cellular Telephony , Digital Cellular Telephony, Cordless Phones, Wireless Data Systems, Fixed Wireless Links, Satellite Communication Systems, Challenges. |
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| **UNIT – II** |
| **Wireless Communications Principles and Fundamentals:** The Electromagnetic Spectrum: Transmission Bands and their Characteristics, Spectrum Regulation, Wireless Propagation Characteristics and Modeling, Analog and Digital Data Transmission, Modulation Techniques for Wireless Systems, Multiple Access for Wireless Systems. |
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| **UNIT – III** |
| **Satellite Networks:** Satellite Communications Characteristics, Spectrum Issues, Applications of Satellite Communications, Satellite Systems, VSAT Systems, Examples of Satellite-based Mobile Telephony Systems and Satellite-based Internet Access.  **Fixed Wireless Access Systems**: Wireless Local Loop versus Wired Access, Wireless Local Loop, Wireless Local Loop Subscriber Terminals (WLL), Wireless Local Loop Interfaces to the PSTN. |
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| **UNIT – IV** |
| **Wireless Local Area Networks**: Benefits of Wireless LANs, Wireless LAN Applications. Wireless LAN Topologies, Wireless LAN Requirements.  **The Physical Layer**: The Infrared Physical Layer, The Medium Access Control (MAC) Layer: The HIPERLAN 1 MAC Sublayer, The IEEE 802.11 MAC Sublayer. |
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| **UNIT – V** |
| **Wireless ATM and AdHoc Routing**: ATM, Wireless ATM, Wireless ATM Architecture, HIPERLAN 2 - An ATM Compatible WLAN, Routing in Wireless Ad Hoc Networks  **Security Issues in Wireless Systems**: The Need for Wireless Network Security, Attacks on Wireless Networks, Security Services, Wired Equivalent Privacy (WEP) Protocol, Mobile IP, Weaknesses in the WEP Scheme Virtual Private Network (VPN). |
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| TEXT BOOKS |
| 1. P. Nicopolitidis, M.S.Obaidat, G.I.Papadimitriou, A.S.Pomportsis: Wireless Networks , John Wiley & Sons Ltd 2003. |
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| REFERENCE BOOKS |
| 1. 802.11 Wireless Networks: The Definitive Guide, 2nd Edition by Matthew S. Gast. |