

## ADVANCE WIRELESS AND MOBILE NETWORKS

<b>I Semester :CSE</b>								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
BCSB08	Elective	L	T	P	C	CIA	SEE	Total
		3	0	0	3	30	70	100
<b>Contact Classes: 45</b>		<b>Total Tutorials: Nil</b>		<b>Total Practical Classes: Nil</b>		<b>Total Classes: 45</b>		
<b>I.COURSE OVERVIEW:</b>								
<p>This course offers a comprehensive understanding of wireless networking, focusing on multiple access techniques for wireless communication. Students will learn about the principles and protocols of wireless LAN (Local Area Network), gaining insights into its practical applications and challenges. Additionally, the course covers the concepts of information extraction and machine translation.</p>								
<b>II.OBJECTIVES:</b>								
<b>The students will try to learn:</b>								
<p>I. The examples of wireless communication systems, paging systems, cordless telephone systems.            II. The different generations of mobile networks, WAN and PAN.            III. The concepts of basic cellular system, frequency reuse, channel assignment strategies, hand off strategies.            IV. The mobile communication protocols.            V. The WAN industry, wireless home networking IEEE 802.11 the physical layer</p>								
<b>III.COURSE OUTCOMES:</b>								
<b>After successful completion of the course, students should be able to:</b>								
CO 1	<b>Outline</b> various types of compression used in wireless networking with an illustration.						Evaluate	
CO 2	<b>Make use of</b> different types of generations of mobile networks in mobile wireless communication systems with a specific application.						Analyze	
CO 3	<b>Choose</b> an appropriate wireless access protocol in creation of mobile IP with an illustration.						Remember	
CO 4	<b>Select</b> an appropriate wireless LAN technology in applications of web TVs and gaming devices with a wireless router.						Evaluate	
CO 5	<b>Utilize</b> wireless WAN in information extraction and machine translation used in short messaging services in GPRS mobile application protocol.						Apply	
<b>IV. SYLLABUS:</b>								
<b>UNIT-I</b>	<b>INTRODUCTION TO WIRELESS NETWORKING</b>						<b>Classes: 09</b>	
<p>Introduction to wireless networking: Introduction to wireless networks, difference between wireless and fixed telephone networks, development of wireless networks, traffic routing in wireless networks, examples of wireless communication systems, paging systems, cordless telephone systems, compression of various wireless systems.</p>								
<b>UNIT-II</b>	<b>MOBILE WIRELESS COMMUNICATION SYSTEMS</b>						<b>Classes: 09</b>	

<p>Mobile wireless communication systems: Evaluation of mobile radio communications second generation cellular networks, third generation wireless networks, wireless in local loop, wireless local area networks; Multiple access techniques for wireless communication: Introduction to multiple accesses, FDMA, TDMA, spread spectrum, multiple accesses, SDMA, packet radio, packet radio protocols, CSMA protocols, reservation protocols.</p>		
<b>UNIT-III</b>	<b>WIRELESS DATA SERVICES</b>	<b>Classes: 09</b>
<p>Wireless data services: CDPD, ARDIS, RMD, common channel signaling, ISDN, BISDN and ATM, SS7, SS7 user part, signaling traffic in SS7.</p> <p>Mobile IP and wireless access protocol: Mobile IP operation of mobile IP, collocated address, registration, tunneling, WAP architecture, overview, WML scripts, WAP service, WAP session protocol, wireless transaction, wireless datagram protocol.</p>		
<b>UNIT-IV</b>	<b>WIRELESS LAN</b>	<b>Classes: 09</b>
<p>Wireless LAN technology: Infrared LANS, spread spectrum LANS, narrow bank microwave LANS, blue tooth overview, radio specification, base band specification, links manager specification, and logical link control and adaptation protocol, introduction to WLL technology; Wireless land: Historical overviews of the land industry, evolution of the wan industry, wireless home networking IEEE 802.11 the physical layer, MAC layer wireless ATM, hyperlink, hyperlan-2.</p>		
<b>UNIT-V</b>	<b>INFORMATION EXTRACTION AND MACHINE TRANSLATION</b>	<b>Classes: 09</b>
<p>Wireless WAN: Mechanism to support at mobile environment, communication in the infrastructure , IIS95 CDMA forward channel, IS95 CDMA risers channel, packet and frame formats in IS95, IMT- 20000, forward channel in W-CDMA and CDMA 2000, reverse channels in W-CDMA and CDMA - 2000 GPRS and higher data rates, short messaging service in GPRS mobile application protocols.</p>		
<b>Text Books:</b>		
<ol style="list-style-type: none"> <li>1. Theodore, S. Rappaport, “Wireless Communications, Principles, Practice”, PHI, 2<sup>nd</sup> Edition, 2002.</li> <li>2. William Stallings, “Wireless Communication and Networking”, PHI, 2<sup>nd</sup> Edition, 2003.</li> </ol>		
<b>Reference Books:</b>		
<ol style="list-style-type: none"> <li>1. Kamilo Feher, “Wireless Digital Communications”, PHI, 1<sup>st</sup> Edition, 1999.</li> <li>2. Kaveh PahLaven, P. Krishna Murthy, “Principles of Wireless Networks”, Prentice Hall PTR, 1<sup>st</sup> Edition, 2002</li> <li>3. Andrews F. Molisch, “Wireless Communications”, Wiley India, 2<sup>nd</sup> Edition, 2006.</li> </ol>		
<b>Web References:</b>		
<ol style="list-style-type: none"> <li>1. <a href="http://www.yiritech.com/en/products/71.html?">http://www.yiritech.com/en/products/71.html? .</a></li> <li>2. <a href="https://www.pearsonhighered.com/product/Stallings-Wireless-Communications-Networks-2ndEdition">https://www.pearsonhighered.com/product/Stallings-Wireless-Communications-Networks-2ndEdition.</a></li> <li>3. <a href="http://nptel.ac.in/video.php?subjectId=117102062">http://nptel.ac.in/video.php?subjectId=117102062</a></li> </ol>		