

## WIRELESS COMMUNICATIONS AND NETWORKS

<b>Course Code</b>	20EC4501A	<b>Year</b>	IV	<b>Semester</b>	VII
<b>Course Category</b>	Program Core Professional Elective-I	<b>Branch</b>	ECE	<b>Course Type</b>	Theory
<b>Credits</b>	3	<b>L-T-P</b>	3-0-0	<b>Prerequisites</b>	Nil
<b>Continuous Internal Evaluation:</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

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<b>Course Outcomes</b>	
Upon successful completion of the course, the student will be able to	
<b>CO1</b>	<b>Comprehend</b> concepts of all Wireless Communication techniques. (L2)
<b>CO2</b>	<b>Identify</b> the Multiple Access Techniques for Wireless Communication. (L3)
<b>CO3</b>	<b>Illustrate</b> the Development of wireless networks, WLAN & Bluetooth. (L3)
<b>CO4</b>	<b>Analyze</b> the Wireless Data Services, Mobile IP and Wireless Access Protocol (L4)
<b>CO5</b>	<b>Illustrate</b> the Mobile Data Networks ,Wireless ATM & HiPER LAN .(L3)

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<b>Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)</b>														
Note: 1- Weak correlation    2-Medium correlation    3-Strong correlation														
* - Average value indicates course correlation strength with mapped PO														
COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
<b>CO1</b>	2									2			2	2
<b>CO2</b>	2									2			2	2
<b>CO3</b>	3									3			3	3
<b>CO4</b>		2								2			2	2
<b>CO5</b>	2									2			2	2
Average * (Rounded to nearest integer)	2	2								2			2	2

<b>Syllabus</b>		
Unit No.	Contents	Mapped CO
I	<b>Multiple Access Techniques for Wireless Communication:</b> Introduction, FDMA, TDMA, Spread Spectrum, Multiple access, SDMA, Packet radio, Packet radio protocols, CSMA protocols, Reservation protocols	CO1,CO2
II	<b>Introduction to Wireless Networking:</b> Introduction,	CO1,CO3

	Difference between wireless and fixed telephone networks, Development of wireless networks, Traffic routing in wireless networks.	
III	<b>Wireless Data Services:</b> Common channel signalling, ISDN, BISDN, SS7, SS7 user part, signalling traffic in SS7. <b>Mobile IP and Wireless Access Protocol:</b> Mobile IP Operation of mobile IP, Co-located address, Registration, Tunnelling, WAP Architecture, overview, WML scripts, WAP service, WAP session protocol, Wireless datagram protocol.	CO1,CO4
IV	<b>Wireless LAN Technology:</b> Infrared LANs, Spread spectrum LANs, Narrow band microwave LANs, IEEE 802 protocol Architecture and services, 802.11 medium access control, 802.11 physical layer. <b>Bluetooth:</b> Overview, Radio specification, Base band specification, Links manager specification, Logical link control and adaptation protocol. Introduction to WLL Technology.	CO1,CO3
V	<b>Mobile Data Networks:</b> Introduction, Data oriented CDPD Network, GPRS and higher data rates, Short messaging service in GSM, Mobile application protocol. <b>Wireless ATM &amp; HiPER LAN:</b> Introduction, Wireless ATM, HIPERLAN, Adhoc Networking and WPAN	CO1,CO5

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<b>Learning Resources</b>	
<b>Text Books</b>	
<ol style="list-style-type: none"> <li>1. William Stallings- Wireless Communication and Networking –PHI, 2003.</li> <li>2. Theodore, S. Rappaport, Wireless Communications, Principles, Practice –PHI, 2<sup>nd</sup> Ed., 2002.</li> </ol>	
<b>Reference Books</b>	
<ol style="list-style-type: none"> <li>1. Thiagarajan Viswanathan - Telecommunication switching systems and networks – PHI</li> <li>2. Kamilo Feher - Wireless Digital Communications – PHI, 1999.</li> <li>3. Kaveh Pah Laven and P. Krishna Murthy - Principles of Wireless Networks –, Pearson Education, 2002</li> </ol>	

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