

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY  
DESIGN AND MANUFACTURING (IIITDM) KANCHEEPURAM

INTRODUCTION OF NEW COURSE

Course Title	Wireless Networks	Course No	CSE5XXX			
Specialization	Computer Science and Engineering	Structure (LTPC)	3	1	0	4
To be offered for	UG / PG	Status	Core <input type="checkbox"/>		Elective <input checked="" type="checkbox"/>	
Faculty Proposing the course	Dr. Jagadeesh Kakarla	Type	New <input checked="" type="checkbox"/>		Modification <input type="checkbox"/>	
Date of DAC	16/11/2018	Members Present in DAC	All Faculty Members of the Dept.			
Pre-requisite	Computer Networks	Submitted for approval	39 <sup>th</sup> Senate			
Learning Objectives	<ul style="list-style-type: none"> <li>The course aims to expose students to the concepts involved of wireless networks, protocol stack and standards, advanced wireless networks.</li> </ul>					
Learning Outcomes	<ul style="list-style-type: none"> <li>In this course, students will be exposed to wireless networks. This course will motivate the students to learn and do projects in other related areas such as Wireless sensor networks, Vehicular networks, and Internet of Things.</li> </ul>					
Contents of the course (With approximate break-up of hours)	<p><b>Wireless LAN</b> - Introduction to WLAN technologies: Infrared, UHF narrowband, spread spectrum, IEEE802.11(x), Bluetooth: Architecture, Radio Layer, Baseband layer, Link manager Protocol, IEEE802. (12 hours)</p> <p><b>Network layer</b> - Mobile IP: IP packet delivery, tunneling and encapsulation, reverse tunneling, IPv6, Mobile ad-hoc networks: Routing, destination sequence distance vector, dynamic source routing. (10 hours)</p> <p><b>Transport Layer</b>- Traditional TCP: Congestion Control, Fast Retransmit/Fast Recovery, Implications Of Mobility : Classical TCP Improvements: Indirect TCP, Snooping TCP, Mobile TCP, Time Out Freezing, Selective Retransmission, Transaction Oriented TCP . (10 hours)</p> <p><b>Advanced Wireless Networks</b> -Introduction to Overview of 3G and 4G technologies, Introduction to Wireless sensor networks, vehicular ad-hoc networks, cognitive radio networks, Internet of Things (12 hours)</p>					
Text Books	<ol style="list-style-type: none"> <li>Jochen Schiller, "Mobile Communications", Second Edition, Pearson Education 2012.</li> <li>C S. Ram Murthy, B. S. Manoj, Ad Hoc Wireless Networks: Architectures and Protocols, Prentice Hall of India, Second Edition. 2006.</li> </ol>					
Reference Books	<ol style="list-style-type: none"> <li>Jun Zheng and Abbas Jamalipour "Wireless sensor networks A networking perspective", Wiley publications, 2009.</li> <li>Pethuru Raj and Anupama C. Raman, "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", CRC Press, 2017.</li> <li>Bruce A. Fette, "Cognitive Radio Technology", Elsevier, 2009.</li> </ol>					