

## SCHEME OF COURSE WORK

### Course Details:

<b>Course Title</b>	:Wireless Networks		
<b>Course Code</b>	:13CS2211	<b>L T P C</b>	:4003
<b>Program:</b>	: M.Tech.		
<b>Specialization:</b>	: Cyber Security		
<b>Semester</b>	:II Semester		
<b>Prerequisites</b>	:Computer Networks.		
<b>Courses to which it is a prerequisite</b>	: GPS mechanisms, wireless protocols		

### Course Outcomes (COs):

1	Understand different issues involved in setting up different types of networks of computers.
2	Understand the knowledge on various wireless protocols and wifi technologies.
3	To give exposure on issues involved in MANETS.
4	To give an understanding of GPS mechanisms and issues.
5	To give exposure on various wireless and mobile protocols and their design issues.

### Program Outcomes (POs):

A graduate of Cyber Security Specialization will be able to

1	Understand what are the common threats faced today.
2	The foundational theory behind Cyber security
3	The basic principles and techniques when designing a secure system,
4	How to think adversarial, how today's attacks and defenses work in practice, how to assess threats for their significance, and how to gauge the protections and limitations provided by today's technology
5	The basic principles and techniques in ethical hacking and overcome various hackers
6	Learn various security methodologies to enhance the security of web.
7	Basic principles of cyber laws and security policies
8	Various scripting languages to develop programs for security mechanisms.
9	Various tools and methodologies to analyze the various cyber crimes
10	Secure protocols inner mechanisms and their practical implementation
11	Various Forensic technologies and methodologies for security measurements analyzation.
12	.Intrusion detection techniques and image model security aspects in Android application developments.

### Course Outcome versus Program Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1			S			S						
CO-2	M	M	S							S		M
CO-3			M							S		M
CO-4		S		S								
CO-5												S

*S - Strongly correlated, M - Moderately correlated, Blank - No correlation*

Week	TOPIC / CONTENTS	Course Outcomes	Sample questions	TEACHING-LEARNING STRATEGY	Assessment Method & Schedule
1	WIRELESS COMMUNICATIONS STANDARD: Wireless Communication Standard-First, Second and Third Generation Wireless Communication Network, Coverage Extension, Types	CO-1	1.Explain the wireless communication standards?	<ul style="list-style-type: none"> <li>Lecture</li> <li>Demonstration</li> </ul>	Assignment (Week 3 - 4)
2	Characterization of Wireless Channels- multipath Propagation, Linear Time Variant, Channel Model	CO-1	1.Explain Linear Time Variant?	<ul style="list-style-type: none"> <li>Lecture / Discussion</li> </ul>	Mid-Test 1 (Week 9)
3	Channel Correlation Function, Large Scale Path Loss and Shadowing, Fading.	CO-2	1.Explain Channel Correlation Function? 2.Explain fading?	<ul style="list-style-type: none"> <li>Lecture</li> </ul>	Seminar (Week 3 - 6)
4	BAND PASS TRANSMISSION TECHNIQUE FOR MOBILE RADIO: Band pass Transmission Technique for Mobile Radio- Signal Space and Decision Region	CO-3,CO-4			
5	Digital Modulation-MPSK, MSK, GMSK, OFDA	CO-3	1.Explain Digital Modulations MPSK, MSK, GMSK, OFDA?		
6	Power Spectral Density, Probability of Transmission Error; Receiver Technique for Fading Dispersive Channels	CO-3,CO-4	1.Explain Power Spectral Density?		
7	FREQUENCY REUSE AND MOBILITY MANAGEMENT: Frequency reuse and mobility Management, Cell Cluster Concept	CO-4	1.Explain Cell Cluster Concept?		
8	Co Channel and Adjacent Channel Interference, Call Blocking and Delay at Cell Site, cell clustering, sectoring.	CO-4	1.Explain the difference between Co Channel and Adjacent Channel Interference 2.Explain about cell clustering and sectoring?		
9	<b>Mid-Test 1</b>	CO-1,CO-2			
10	MULTIPLE ACCESS TECHNIQUE: Multiple Access Technique, Random Access, Carrier Sense Multiple Access (CSMA),	CO-3	1.Explain Multiple access techniques? 2. Explain CSMA?	<ul style="list-style-type: none"> <li>Lecture</li> <li>Discussion</li> </ul>	Mid-Test 2 (Week 18)
11	Conflict Free Multiple Access Technology and Spectral Efficiency- FDMA, TDMA, CDMA	CO-3	1.Explain Spectral efficiency of FDMA, TDMA, CDMA?		Seminar (Week 10 - 15)
12	Mobility management and In wireless network-CAC, Handoff Management, Location Management for Cellular Network and PCS network, Traffic calculation.	CO-3	1.Explain handoff management?		
13	WIRELESS INTERNETWORKING: Wireless Internetworking-Mobile IP, Internet Protocol (IP),	CO-3	1.Explain IP?		
14	Transmission Control Protocol (TCP), Network Performance,	CO-5	1.Explain Tcp?		
15	Wireless Application Protocol(WAP), Mobile AD HOC	CO-5	1.Explain MANET?		

	Network Characteristics of MANETs,				
16	Table-driven and Source-initiated On Demand routing protocols ,Hybrid protocols	CO-5	1.Explain Table-driven and Source-initiated On Demand routing protocols ,Hybrid protocols		
17	Wireless Sensor networks- Classification, MAC and Routing protocols.	CO-5	1.Explain Wireless sensor networks?		
<b>18</b>	<b>Mid-Test 2</b>				
<b>19/20</b>	<b>END EXAM</b>				

<b>Assessment Methods:</b>	Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam
----------------------------	--

### Teaching-Learning and Evaluation