SCHEME OF COURSE WORK

Department of Information Technology

Course Details:

COURSE TITLE	WIRELESS COMMUNICATIONS		
COURSE CODE	15IT1106	L T P C	3 0 0 3
PROGRAM	B.TECH		
SPECIALIZATION	IT		
SEMESTER	VII		
PRE REQUISITES	Computer Networks		
COURSES TO WHICH IT IS A PRE REQUISITE	High Speed Networks, Wireless Sensor Networks		

Course Outcomes (COs):

1	Learn fundamental cellular radioconcepts
2	Know different ways to radio propagation models
3	Discuss analog and digital modulation techniques in wireless communication
4	Learn different types of equalization techniques and diversity concepts
5	Explain transceiver schemes, second and third generation wireless networks

Course Outcome versus **Program Outcomes**

Course outcomes	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1		2	3	3	2			3			2	
CO2		2	2									
CO3			3	3		2		3				
CO4		2		2				3				
CO5		2	2								2	

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

Assessment Methods	Assignment / Quiz / Mid-Test

Teaching- Learning & Evaluation

Week	Topic/ Contents	Course Outcomes	Sample questions	Teaching learning strategy	Assessment method & schedule
1	Types of Services, Requirements for the services, Multipath propagation, Spectrum Limitations.	CO1	1. Describe the requirements for Services. 2. Discuss about multipath propogation.	Lecture Brain storming PPT Q&A	Assignment-1, Test- 1 Quiz-1
2	Noise and Interference limited systems, Principles of Cellular networks, Multiple Access Schemes.	CO1	1. Explain the Noise inference limited. 2. Explain the principles of cellular networks.	Lecture Brain storming PPT Q&A	Assignment-1, Test- 1 Quiz-1
3	Propagation Mechanisms (Qualitativetreatment), Propagationeffects with mobile radio	CO2	1. Describe the Propagation mechanisms. 2. What is meant by propagation effects with mobile radio?	Lecture Brain storming PPT Q&A	Assignment-1, Test- 1 Quiz-1
4	Channel Classification, Link calculations, Narrowband and Wideband models	CO2	1. List out the attributes for link calculations. 2. Illustrate the wideband models with a suitable example.	Lecture Brain storming PPT Q&A	Assignment-1, Test- 1 Quiz-1
5	Structure of a wireless communication link, Modulation and demodulation – Quadrature Phase Shift Keying	CO3	1. Describe the structure of wireless communication link. 2. Differentiate the modulation and demodulation with a suitable example.	Lecture Brain storming	Assignment-1, Test- 1 Quiz-1
6	Shift Keying, Minimum Shift Keying, Gaussian Minimum Shift	CO3	1. Discuss the shift keying minimum shift and power	Lecture Brain storming PPT Q&A	Assignment-1,2, Quiz-1, Test-1, 2

	Keying, Power spectrum and Error performance in fading channels		spectrum. 2. Illustrate the error performance in fading channels.		
7	Power spectrum and Error performance in fading channels	CO3	1. List out the error performance s in fading channels.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
8	Test 1				
9	Principle of Diversity, Micro diversity, Signal Combining Techniques	CO4	Describe the signal combing techniques.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
10	Transmit diversity, Equalisers- Linear and Decision Feedback equalisers,	CO4	1. Explain the Transmit diversity equalisers. 2. Discuss the linear and decision feedback eqalisers.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
11	Review of Channel coding and Speech coding techniques	CO4	1. Explain the review of coding and speech and techniques.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
12	Spread Spectrum Systems- Cellular Code Division Multiple Access Systems- Principle	CO4	1. Discuss the cellular coding division multiple access systems.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
13	Power control, Effects of multipath propagation on Code Division Multiple Access	CO4	1. Explain the multipath propagation on code division multiple access.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
14	Orthogonal Frequency Division Multiplexing – Principle.	CO5	1. List the principles of orthogonal frequency division multiplexing.	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2
15	Cyclic Prefix, Transceiver implementation, Second Generation(GSM, IS–95) and Third	CO5	1. Define cyclic prefix transceiver. 2. Discuss the third generation wireless	Lecture Brain storming PPT Q&A	Assignment-2, Test- 2, Quiz-2

	Generation Wireless Networks and Standards.		networks and standards.		
16	**TEST-2**				
17	**END EXAM**				