



Course: M.Tech	Name of Faculty: APARNA P S
Topic: ELE 3207 SPREAD SPECTRUM COMMUNICATION	Semester: II
Lecture Hall:	Timings: as per CBCS

Week and date	Lecture topics	Assignments	Remarks
Week 1 (3 rd January 2017)	Module I - Introduction to spread spectrum communication -pulse noise jamming -direct sequence spread spectrum, -frequency hopping , time-hopping spread spectrum systems		
Week 2 (9 th January 2017)	- correlation functions -spreading sequences maximal-length sequences, gold codes, Walsh orthogonal codes -properties and generation of sequences - Synchronization and Tracking: delay lock and taudither loops, match filter techniques	Assignment I coarse synchronization- principles of serial search IS-95 standard	
Week 3 (16 th January 2017)	Module II - Performance of spread spectrum system under AWGN -multi-user Interference, jamming and narrowband interferences -Low probability of intercept methods		
Week 4 (23 rd January 2017)	-optimum intercept receiver for direct sequence spread spectrum -Error probability of DS-CDMA system under AWGN and fading channels -RAKE receiver		
Week 5 (30 th January 2017)	Module III - Basics of spread spectrum multiple access in cellular environments	Assignment I Submission	

	-reverse Link power control -multiple cell pilot tracking -soft and hard handoffs - cell coverage issues with hard and soft hand off		
Week 6 (6 th February 2017)	First Internals		
Week 7 (13 th February 2017)	- spread spectrum multiple access outage - outage with imperfect power control -Erlang capacity of forward and reverse links		
Week 8 (20 th February 2017)	Module IV - Multi-user Detection -MF detector -decorrelating detector -MMSE detector		
Week 9 (27 th February 2017)	Seminar		
Week 10 (6 th March 2017)	- Interference Cancellation: successive, Parallel Interference Cancellation -performance analysis of multiuser detectors and interference cancellers		
Week 11 (13 th March 2017)	Module V - General aspects of CDMA cellular systems	Assignment II - Evolution to Third Generation systems - WCDMA and CDMA-2000 standards.	
Week 12 (20 th March 2017)	- Principles of Multicarrier communication -MC- CDMA -MC-DS-CDMA		
Week 13 (27 th March 2017)	Second Internals		
Week 14 (3 rd April 2017)	-	Assignment II submission	