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Laboratory exercises. Written exam.

Course description

http://www.put.poznan.pl/

Lectures:
1.Introduction to spread spectrum systems.
2.Pseudo-noise sequences.
3. Direct sequence spread spectrum signals and systems.
4. Frequency hopping spread spectrum signals and systems.
5.Ultra wideband and MC-CDMA systems.
6.RAKE receiver.
7. Joint detection receivers.
8.CDMA system capacity.
9. Synchronization in spread spectrum systems.
10.IS-95 system architecture and operation (physical layer).
11.UMTS system architecture and operation (physical layer).
Laboratory exercises:
1. Generation and properties of pseudo-noise sequences.
2.Single-user DS-CDMA system in AWGN environment.

3.Multi-user DS-CDMA system in AWGN environment.

4.Single-user DS-CDMA system in multi-path environment.5.Multi-user DS-CDMA system in multi-path environment.

Basic bibliography:

1. J. G. Proakis, Digital Communications, McGraw-Hill, Inc., New York 1995

2. J. S. Lee, L. E. Miller, CDMA Systems Engineering Handbook, Artech House Publishers, Boston-London 1998

Additional bibliography:

R. C. Dixon, Spread Spectrum Systems with Commercial Applications, John Wiley & Sons, Inc., New York 1994
 R. Prasad, CDMA for Wireless Personal Communications, Artech House Publishers, Boston-London 1996

Result of average student's workload

Activity		Time (working hours)
1. Participation in lectures.		30
2. Laboratory exercises.		30
3. Preparation of reports.		20
4. Literature studies		20
5. Preparation to examination		20
6. Consulting with teachers		3
7. Exam		2
Student's workloa	ad	
		ГОТО

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	65	3
Practical activities	50	2