SRM UNIVERSITY
FACULTY OF ENGINEERING AND TECHNOLOGY
SCHOOL OF BIO- ENGINEERING
Department Of Bio-Medical Engineering
LESSON PLAN

Course Code: BM0311
Course Title: Principles of Communication Engineering
Semester: V
Course Timings:

DAY	1	2	3	4	5	6	7
1	Y						
2				Y			
3		Y					

Location: Bioengineering block(5th floor)
Faculty Name: Ms.Lakshmi Prabha.P
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PURPOSE
To have knowledge about Analog and Digital transmission of both Analog data and Digital Data, Security, modulation and different accessing methods.

INSTRUCTIONAL OBJECTIVES
•To have understanding about different types of AM Communication systems (Transmitters & Receivers)
•To study in detail the different types of FM transmitters & Receivers and PM Transmitters and Receivers
•To gain knowledge about different digital modulation techniques for digital transmission
•To have knowledge about base band transmission ISI and distortion free base band transmission
•To know the spread spectrum modulation techniques and different multiple access methods

TEXT BOOKS

•Bernald Sklan, Digital Communication, Pearson Education, 2nd edition 2001
•Taub & Schilling, Principles of Communication, Tata McGraw Hill Publication, 1990
•Simon Haykins, Digital Communication, John Wiley, 2001

REFERENCE BOOKS
•B.P.Lathi, Analog and Digital Communication Systems, PHI, 1992
•Proakis, Digital Communication, McGraw-Hill, 1992
•A.B.Carlson, Communication Systems, McGraw-Hill, 1992.
•K.Sam Shanmugam, Digital and Analog Communication Systems, John Wiley, 1985

Day order	Hour	Unit	Topic(s)	No of hours	Teaching Method BB/PP
1	1	**I**	Introduction to Communication Engineering	1	BB
2	4	I	Basics of Communication	1	BB
3	2	I	Spectral characteristics of periodic signal	1	BB
1	1	I	Spectral characteristics of Aperiodic signal	1	BB
2	4	I	Spectra of common signals related to communication	1	BB
3	2	I	cross correlation & autocorrelation	1	BB
1	1	I	power/ energy density	1	BB
2	4	I	random signals	1	BB
3	2	I	Modeling noises	1	BB
1	1	I	Revision of Unit I	1	BB
2	4	II	Introduction to Analog Modulation Systems	1	
3	2	II	Basic principles of AM	1	BB
1	1	II	Basic principles of AM	1	BB
2	4	II	Basic principles of FM	1	BB
3	2	II	Basic principles of PM	1	BB
1	1	II	Basic principles of PM	1	
2	4	II	Basic principles of PM	1	BB
3	2	II	Spectra of Signals	1	BB
1	1	II	Power consideration	1	BB
2	4	II	Basics of Receivers	1	BB
3	2	II	Receivers characteristics	1	BB
1	1	II	Deduction of AM	1	BB
2	4	II	Deduction of FM	1	BB
3	2	II	Deduction of PM	1	BB
1	1	II	Systems performance	1	BB
2	4	II	Threshold effects	1	
3	2	II	Revision of Unit I	1	BB
1	1	II	Introduction to Base Band Data Communication	1	BB
2	4	**III**	Sampling and quantization	1	BB
3	2	**III**	PCM,	1	BB
1	1	**III**	ADPCM	1	BB
2	4	**III**	DM	1	BB
3	2	**III**	ADM	1	BB
1	1	**III**	Base band pulse shaping	1	BB

2	4	**III**	binary data formats	1	BB
3	2	**III**	base band transmission	1	BB
1	1	**III**	ISI	1	BB
2	4	**III**	correlative coding & optimum SNR	1	BB
3	2	**III**	matched filter detection	1	BB
1	1	IV	Introduction to Digital Modulation	1	BB
2	4	IV	coherent binary modulation techniques	1	
3	2	IV	coherent quadrature modulation techniques	1	BB
1	1	IV	M-array modulation	1	BB
2	4	IV	non-coherent binary modulation	1	BB
3	2	IV	performance of digital modulation systems based on probability of error	1	BB
1	1	IV	band width	1	BB
2	4	V	Fundamental concepts of Spread Spectrum And Error Correction Techniques	1	BB
3	2	V	Direct sequence spread spectrums	1	BB
1	1	V	frequency hopping spread spectrum	1	BB
2	4	V	Block Codes	1	BB
3	2	V	Cyclic codes.	1	BB

Test Portions:
Cycle test I: Unit 1
Cycle test II: Unit 2 & Unit 3
Model Exam: All 5 units

Assessment details:
Cycle Test 1 - 10 marks
Cycle Test 2 - 10 marks
Surprise Test 1 - 5 marks
Model Exam - 20 marks
Attendance - 5 marks