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CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER :V
BRANCH :TCE
SUBJECT :Digital Signal Processing
SUBJECT CODE :10TE52
NO OF HRS/WK:6

NAME OF THE FACULTY: Mr.Raveesh Hegde
DATE OF COMMENCEMENT :25.07.2016
DATE OF CLOSING :19.11.2016
CLASS STRENGTH :53
TOTAL HRS :68

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/0	1 Aug 2016	Review of Signals and Systems	Board, chalk, duster	A1	
2	2/0	2 Aug 2016	Periodicity of sinusoids	,,		
3	3/0	3 Aug 2016	Properties of systems	,,		
4	4/0	4 Aug 2016	Convolution	,,		
5	5/0	5 Aug 2016	Problems on convolution	,,		
6	6/0	8 Aug 2016	Complex exponential as Eigen Function of LTI systems.	,,	A2	
7	7/0	9 Aug 2016	Introduction to Fourier Representation of Signals	,,		
8	8/0	10 Aug 2016	A problem on Fourier Series, discussion on nature of the spectrum	,,		

9	9/0	11 Aug 2016	Trigonometric Fourier Series	,,		
10	10/0	12 Aug 2016	Properties of Fourier series, Dirichlet Conditions, Parsevals theorem.	,,		
11	11/0	10 Aug 2016	Introduction to Fourier Transform. 1 problem.	,,		
12	12/0	12 Aug 2016	Problems on Fourier Transform, Dirac delta function.	,,		
13	13/0	13 Aug 2016	Problems on FT	,,		
14	14/0	16 Aug 2016	DTFS	,,		
15	15/0	17 Aug 2016	Problems on DTFS, Discussion on DTFT	,,		
16	1/1	18 Aug 2016	Frequency domain sampling, DFT	,,	A3	
17	2/1	19 Aug 2016	DFT and some properties, magnitude and phase spectrum.	,,		
18	3/1	20 Aug 2016	Problems on DFT	,,		
19	4/1	22 Aug 2016	DFT as linear transformation, some problems.	,,		
20	5/1	23 Aug 2016	Recap of DFT as linear transformation, properties of Wn, relationship of DFT to DTFS.	,,		
21	6/1	24 Aug 2016	Relationship between DFT and Z transform, DFT and CTFS coefficients, DFT and DTFT	,,		
22	1/2	25 Aug 2016	Parsevals theorem, Circular symmetry of a sequence	,,		
23	2/2	26 Aug 2016	Circular Symmetries of a sequence	,,	A4	

24	3/2	27 Aug 2016	Circular Convolution, derivation, problem solving methods	,,		
25	4/2	29 Aug 2016	Additional properties of DFT	,,		
26	5/2	30 Aug 2016	Correlation, parsevals theorem, linear convolution using circular convolution.	,,		
27	1/3	31 Aug 2016	Filtering of long data sequences, overlap add method	,,		
28	2/3	29 Aug 2016	Overlap save method, problem	,,		
29	3/3	1 Sep 2016	Introduction to FFT algorithms	,,	A5	
30	1/4	2 Sep 2016	Radix 2 DIT FFT algorithm	,,		
31	2/4	9 Sep 2016	Problems on DIT FFT algorithm	,,		
32	3/4	10 Sep 2016	Problems on DIT FFT algorithm	,,		
33	4/4	13 Sep 2016	Problems on DIT FFT algorithm	,,		
34	5/4	14 Sep 2016	Computational complexity of DIT FFT, Derivation of DIF FFT	,,		
35	6/4	15 Sep 2016	Problems on DIF FFT	,,		
36	7/4	16 Sep 2016	Problems on DIF FFT	,,		
37	8/4	17 Sep 2016	DIT -IFFT, Goertzel algorithm	,,	A6	
38	9/4	19 Sep 2016	Chirp Z transform	,,		
39	9/4	20 Sep 2016	DFT of 2 real sequences, DFT of 2N point sequence.	,,		

40	1/5	21 Sep 2016	Impulse response of ideal filters.	,,	A7	
41	2/5	22 Sep 2016	Basics of filter design, impulse response from even and odd parts.	,,		
42	3/5	23 Sep 2016	relationship between real and imaginary parts of frequency response, types of filters	,,		
43	4/5	24 Sep 2016	FIR filters, linear phase, different types of FIR filters	,,		
44	5/5	26 Sep 2016	Different types of FIR filters, z transforms and frequency response	,,		
45	6/5	27 Sep 2016	FIR filter design using windows	,,		
46	7/5	28 Sep 2016	Problems on FIR filter design	,,		
47	8/5	29 Sep 2016	Problems on FIR filter design	,,		
48	9/5	3 Oct 2016	FIR Filter Design using Kaiser window	,,		
49	10/5	4 Oct 2016	FIR Filter Design using Kaiser window	,,		
50	1/6	5 Oct 2016	IIR filter design, laplace transform, z transform	,,	A8	
51	2/6	6 Oct 2016	Introduction to IIR filter design from analog filters	,,		
52	3/6	7 Oct 2016	Properties of mapping functions. Introduction to IIR filter design using impulse invariance method	,,		
53	4/6	8 Oct 2016	IIR filter design by approximation of derivatives	,,		
54	5/6	13 Oct 2016	Approximation of derivatives, problems	,,		

55	7/6	14 Oct 2016	Bilinear Transformation	,,		
56	8/6	17 Oct 2016	Problems on Bilinear Transformation	,,		
57	9/6	18 Oct 2016	Problems on bilinear transformation, matched z transform	,,		
58	1/7	19 Oct 2016	Butterworth filter design- derivations	,,	A9	
59	2/7	20 Oct 2016	Problems on butterworth filter design	,,		
60	3/7	21 Oct 2016	Problems on butterworth filter design	,,		
61	4/7	22 Oct 2016	Analog frequency transformations	‘’		
62	5/7	27 Oct 2016	Chebyshev Filter Design	‘’		
63	6/7	28 Oct 2016	Chebyshev Filter Design problems	‘’		
64	7/7	2 Nov 2016	Design of Digital IIR filters	,,		
65	1/8	3 Nov 2016	Direct form I and II realization of systems.	‘’	A10	
66	2/8	4 Nov 2016	Parallel Form, Cascade Form,	‘’		
67	3/8	5 Nov 2016	Linear Phase FIR structures, Lattice structure realization of filters.	‘’		
68	4/8	6 Nov 2016	Problems on Linear Phase FIR structures, Lattice structure realization of filters.	,,		

Signature of faculty Signature of HOD Signature of Principal

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CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER :V
BRANCH : TCE
SUBJECT : AC
SUBJECT CODE : 10EC53
NO OF HRS/WK : 5

NAME OF THE FACULTY : Mrs.Meenakshi Devikar
DATE OF COMMENCEMENT : 25.07.2016
DATE OF CLOSING : 20.11.2016
CLASS STRENGTH : 60
TOTAL HRS : 64

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	25.07.16	Unit-1-INTRODUCTION TO ANALOG COMMUNICATION	Board, chalk, duster		
2	**2/1**	26.07.16	Set theory, Probability, Random variables	,,		
3	**3/1**	26.07.16	Cumulative Density Function.	,,		
4	**4/1**	29.07.16	Probability Density Function.	,,		
5	**5/1**	30.07.16	Several random variables.	,,		
6	**6/1**	30.07.16	Statistical averages: Moments, Mean	,,		
7	**7/1**	01.08.16	Random processes, Central limit theorem	,,	Assignment- I	
8	**8/1**	02.08.16	Correlation and Covariance function, Principles of autocorrelation function, cross – correlation functions.	,,		
9	**9/1**	02.08.16	Principles of autocorrelation function, cross – correlation functions.	,,		
10	**10/1**	05.08.16	Properties of Gaussian process.	,,		
11	**11/1**	06.08.6	WSS system, Ergodicity	Board, chalk,	Assignment -II	

				duster		
12	12/1	06.08.16	PSD and properties	,,		
13	**1/2**	08.08.16	Introduction to AM, Time Domain analysis.	,,		
14	**2/2**	09.08.16	AM Frequency Domain analysis. Problem	,,		
15	**3/2**	09.08.16	AM generation: square law modulator, switching modulator			
16	**4/2**	12.08.16	AM detection: square law detector, envelop detector.			
17	**5/2**	16.08.16	Double side band suppressed carrier modulation (DSBSC): Time Domain analysis.			
18	**6/2**	16.08.16	DSBSC Problem	,,		
19	**7/2**	17.08.16	Frequency Domain analysis.	,,		
20	**8/2**	18.08.16	DSBSC generation: balanced modulator	,,		
21	**9/2**	18.08.16	Ring modulator.	,,		
22	**10/2**	22.08.16	DSBSC detection: Coherent detection.	,,		
23	**11/2**	23.08.16	Costas loop. problems	,,		
24	**12/2**	23.08.16	Problems on AM, DSBSC	,,		
25	**1/3**	24.08.16	Hilbert transform, properties of Hilbert transform.	Board, chalk, duster	Assignment –III	
26	**2/3**	25.08.16	Quadrature carrier multiplexing	,,		
27	**3/3**	25.08.16	Pre-envelope, Canonical representation of band pass signals.	,,		
28	**4/3**	29.08.16	Pre-envelope, Canonical representation of band pass signals.	,,		
29	**5/3**	30.08.16	SSB modulation Time Domain analysis.	,,		
30	**6/3**	30.08.16	SSB modulation Frequency Domain analysis.	,,		
31	**7/3**	31.08.16	Problem on SSB	,,		

32	**8/3**	01.09.16	SSB generation: Phase discrimination method.	,,		
33	**10/3**	01.09.16	SSB demodulation	,,		
34	**11/3**	10.09.16	Problem on SSB	,,		
35	**1/4**	13.09.16	VSB Time & Frequency Domain description	Board, chalk, duster	Assignm nt –IV	
36	**2/4**	13.09.16	VSB Generation	,,		
37	**3/4**	14.09.16	VSB Envelop detection	,,		
38	**4/4**	15.09.16	Comparison of amplitude modulation techniques	,,		
39	**5/4**	15.09.16	Frequency translation	,,		
40	**6/4**	19.09.16	Frequency division multiplexing	,,		
41	**7/4**	20.09.16	Application: Radio broadcasting, AM radio	,,		
42	**1/5**	20.09.16	Introduction & Definitions of FM	Board, chalk, duster	Assignm nt –V	
43	**2/5**	21.09.16	Narrow band FM	,,		
44	**3/5**	22.09.16	Wide band FM	,,		
45	**4/5**	22.09.16	Transmission bandwidth of FM waves	,,		
46	**5/5**	26.09.16	FM generation: indirect FM	,,		
47	**6/5**	27.09.16	FM generation: direct FM.	,,		
48	**7/5**	27.09.16	Problems on FM	,,		
49	**1/6**	28.09.16	FM Demodulation	Board, chalk, duster	Assignm nt –VI	
50	**2/6**	29.09.16	FM stereo multiplexing	,,		
51	**3/6**	29.09.16	Phase-locked loop: Linear model of PLL	,,		
52	**4/6**	05.10.16	Phase-locked loop: Nonlinear model of PLL	,,		
53	**5/6**	06.10.16	Nonlinear effects in FM systems	,,		

54	**6/6**	06.10.16	Pre-emphasis, De-emphasis			
55	**7/6**	07.10.16	Pre-emphasis, De-emphasis	,,		
56	**7/6**	08.10.16	Examples	,,		
57	**8/6**	08.10.16	Examples	,,		
58	**9/6**	17.10.16		,,		
59	**10/6**	18.10.16		,,		
60	**1/7**	18.10.16	Introduction: shot noise, thermal noise, white noise.	Board, chalk, duster	Assignm nt –VII	
61	**2/7**	19.10.16	Noise equivalent bandwidth	,,		
62	**3/7**	20.10.16	Narrow bandwidth. Noise Figure	,,		
63	**4/7**	20.10.16	Problems	,,		
64	**5/7**	27.10.16	Equivalent noise temperature.	,,		
65	**6/7**	28.10.16	Cascade connection of two-port networks, Problems	,,		
66	**7/7**	28.10.16	Problems	,,		
67	**1/8**	02.11.16	Introduction to Receiver model	Board, chalk, duster	Assignm nt –VIII	
68	**2/8**	03.11.16	Noise in DSB-SC receivers	,,		
69	**3/8**	03.11.16	Noise in SSB receivers	,,		
70	**4/8**	07.11.16	Noise in AM receivers Threshold effect	,,		
71	**5/8**	08.11.16	Noise in FM receivers, FM threshold effect	,,		
72	**6/8**	08.11.16	Pre-emphasis and De-emphasis in FM.	,,		

Syllabus for Sessional:

Sessional #	Syllabus
T1	Class # 1-23
T2	Class # 24-44
T3	Class # 45-64

Literature:

Book Type	Code	Author and title	Publisher info	
			Edition and Publisher	**ISBN #**
Text Book	TB1	Simon Haykins "Communication Systems"	5th Edition, John Willey India Pvt. Ltd 2009	9971513056
Text Book	TB2	Simon Haykins "An Introduction to Analog and Digital Communication"	2nd Edition, John Willey India Pvt. Ltd 2008	9788126509324
Text Book	TB3	Taub, Schilling, " Principal Of Communication Systems"	2nd Edition, TMH publications, 2009	0-07-462456-3
References	RB1	B.P. Lathi "Modern digital and analog communication systems"	4th Edition, Oxford University Press 2010	9780198073802
References	RB2	Harold P. E, Stern Samy and A Mahmond "Communication Systems"	Pearson Ed, 2004	9786756745332
References	RB2	Singh and Sapre "Communication Systems"	Analog and digital TMH 2nd, Ed 2007	9785653423235
References	RB4	A.B Carlson, P.B Crilly, J.C. Rutledge, "Communication Systems"	4th Edition , Mc GRAW-HILL Publications	0-07-121028-8

AS: Assignment

SIGNATURE OF FACULTY HOD PRINCIPAL

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CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER : V
BRANCH : TCE
SUBJECT : TLW
SUBJECT CODE : 10TE54
NO OF HRS/WK : 5

NAME OF THE FACULTY : Mrs.Richa Tengshe
DATE OF COMMENCEMENT : 1.08.2016
DATE OF CLOSING : 9.11.2016
CLASS STRENGTH : 107
TOTAL HRS : 67

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	01.08.16	Introduction to transmission lines ,wave guides,	Board, chalk, duster		
2	**2/1**	02.08.16	lines of cascaded t sections, deriving Z_o, Propagation constant	,,		
3	**3/1**	03.08.16	Transmission – Line Theory The transmission Line general solution-derivation	,,		
4	**4/1**	04.08.16	Continuation of derivation, problems on transmission line voltage & current equation	,,		
5	**5/1**	05.08.16	The distortion less Line	,,		
6	**6/1**	06.08.16	The telephone cable	,,		
7	**7/1**	08.08.16	Reflection on a Line not terminated in Z_o, Open and short circuited Lines,	,,	Assignment- I	
8	**8/1**	09.08.16	Reflection loss, Insertion loss,	Board, chalk, duster		
9	**9/1**	10.08.16	T and PI sections equivalent to Lines	,,		

10	**10/1**	11.08.16	Constant K LPF & HPF	,,		
11	**11/1**	12.08.16	Constant K LPF & HPF	,,		
12	**12/1**	16.08.16	Constant K LPF & HPF	,,		
13	**7/2,3,4**	17.08.16	problems	,,		
14	**1/2,3,4**	18.08.16	Problems	,,		
15	**2/2,3,4**	19.08.16	Problems			
16	**3/2,3,4**	20.08.16	Problems			
17	**4/2,3,4**	22.08.16	Problems			
18	**5/2,3,4**	23.08.16	Problems	,,		
19	**6/2,3,4**	24.08.16	The Line at radio frequencies, Constants for the Line of zero dissipation, Problems	,,		
20	**7/2,3,4**	25.08.16	Standing waves; nodes; standing wave ratio,	,,		
21	**8/2,3,4**	26.08.16	Problems	,,		
22	**9/2,3,4**	27.08.16	Input impedance of open circuited Lines	,,	Assignment -II	
23	**10/2,3,4**	29.08.16	Input impedance of short circuited Lines			
24	**11/2,3,4**	30.08.16	Problems	Board, chalk, duster		
25	**12/2,3,4**	31.08.16	The quarter wave Line;	,,		
26	**13/2,3,4**	01.09.16	Impedance matching Single stub impedance matching on a Line	,,		
27	**14/2,3,4**	02.09.16	Problems	,,		
28	**15/2,3,4**	09.09.16	The smith circle diagram, Application of the Smith chart	,,		
29	**16/2,3,4**	10.09.16	Problems	,,		
30	**17/2,3,4**	13.09.16	Problems	,,		
31	**18/2,3,4**	14.09.16	Double stub impedance, problems	,,		

32	**19/2,3,4**	15.09.16	Open and Short circuit impedances when considering dissipation	,,		
33	**20/2,3,4**	16.09.16	Problems	Board, chalk, duster		
34	**21/2,3,4**	17.09.16	Quarter and Half wave Lines of small dissipation	,,		
35	**22/2,3,4**	19.09.16	Problems	,,		
36	**23/2,3,4**	20.09.16	Problems	,,		
37	**1/5**	21.09.16	Microwave network theory and passive devices, Problems	,,		
38	**2/5**	22.09.16	Symmetrical Z and Y parameters, for reciprocal Networks	,,	Assignment –III	
39	**3/5**	23.09.16	S matrix representation of multi port networks	,,		
40	**4/5**	24.09.16	Properties of S -parameters	,,		
41	**5/5**	26.09.16	Comparison between S,Z,Y Matrices,problems	,,		
42	**6/5**	27.09.16	Relations of Z,Y,ABCD parameters with S- parameters	,,		
43	**7/5**	28.09.16	Problems	,,		
44	**8/5**	29.09.16	Problems	,,		
45	9/5	3.10.16	Problems	,,		
46	10/5	4.10.16	Problems	,,		
47	**1/7**	5.10.16	Microwave diodes,	,,		
48	**2/7**	6.10.16	Transfer electron devices: Introduction GUNN effect diodes – GaAs diode	,,		
49	**3/7**	7.10.16	RWH theory,Problems	Board, chalk, duster		
50	**4/7**	8.10.16	Modes of operation Avalanche transit time devices: READ diode	,,		

51	**5/7**	13.10.16	IMPATT diode, Problems	,,		
52	**6/7**	14.10.16	BARITT Diode,Problems	,,		
53	**7/7**	17.10.16	Parametric amplifiers Other diodes: PIN diodes,	,,		
54	**8/7**	18.10.16	Schottky bar**ri**er diodes	,,		
55	**9/7**	19.10.16	Problems	,,		
56	**10/7**	20.10.16	Problems			
57	**1/6**	21.10.16	Microwave waveguides and components: Introduction Rectangular waveguides, Problems			
58	**2/6**	22.10.16	TE ,TM Modes in Rectangular waveguides, Problems			
59	**3/6**	27. 10.16	Circular waveguides TE ,TM Modes in Circular waveguides, Problems			
60	**4/6**	28.10.16	Microwave cavities, Q factor, problems		Assignment -V	
61	**5/6**	2.11.16	Microwave hybrid circuits, Magic Tees, Problems			
62	**6/6**	3.11.16	Directional couplers, Two hole couplers			
63	**7/6**	4.11.16	Hybrid couplers, problems,			
64	**8/6**	5.11.16	Microwave circulators			
65	**9/6**	7.11.16	Problems			
66	**10/6**	8.11.16	Revision			
67	**11/6**	9.11.16	Revision			

Signature of faculty Signature of HOD Signature of Principal

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CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER : V
SECTIONS : A,B
SUBJECT : DIGITAL SWITCHING SYSTEMS
SUBJECT CODE : 10TE55
NO OF HRS/WK : 5

NAME OF THE FACULTY : SRIDEVI S(ECE)
DATE OF COMMENCEMENT : 25.07.2016
DATE OF CLOSING : 19.11.2016
CLASS STRENGTH : 56,56
TOTAL HRS : 60

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	28/7	Developments of telecommunications	Board, chalk, duster		
2	**2/1**	29/7	Network structure Network services,	,,		
3	**3/1**	30/7	terminology ,Regulation, Standards	,,		
4	**4/1**	1/8	Introduction to telecommunications transmission, Power levels	,,		
5	**5/1**	2/8	Four wire circuits	,,		
6	**6/1**	3/8	Digital transmission, FDM,	,,		
7	**7/1**	4/8	TDM	,,	Assignment 1	
8	**8/1**	5/8	Primary multiplex group	Board, chalk, duster		
9	**9/1**	8/8	PDH and SDH, Transmission performance	,,		
10	**10/1**	9/8	Unit 1 test	,,		
11	**1/2**	10/8	**EVOLUTION OF SWITCHING SYSTEMS:** Introduction, Message switching, Circuit switching,Manual Systems	,,		
12	**2/2**	11/8	Strowger switching system			

13	**3/2**	12/8	Strowger switching system	,,		
14	**4/2**	17/8	Functions of switching systems,	,,		
15	**5/2**	18/8	Distribution systems	,,		
16	**6/2**	19/8	Basics of crossbar systems,			
17	**7/2**	20/8	Electronic switching, Digital switching systems.			
18	**8/2**	22/8	**DIGITAL SWITCHING SYSTEMS:** Fundamentals : Purpose of analysis, Basic central office linkages			
19	**9/2**	23/8	Outside plant versus inside plant, Switching system hierarchy	,,		
20	**10/2**	24/8	Evolution of digital switching systems, Stored program control switching systems	,,		
21	**11/2**	25/8	Digital switching system fundamentals	,,		
22	**12/2**	26/8	Building blocks of a digital switching system, Basic call processing	Projector	Assignment 2	
23	**13/2**	29/8	Unit 2 test			
24	**14/2**	31/8	Revision for Internal 1			
25	**15/2**	1/9	Revision for Internal 1			
26	**1/3**	10/9	**TELECOMMUNICATIONS TRAFFIC:** Introduction, Unit of traffic,	,,		
27	**2/3**	13/9	Congestion,			
28	**3/3**	14/9	Traffic measurement,			
29	**4/3**	15/9	Mathematical model	Board, chalk, duster		
30	**5/3**	16/9	lost call systems,	,,		
31	**6/3**	17/9	Queuing systems	,,	Assignment 3	
32	**7/3**	19/9	Unit 3 test			
33	**¼**	20/9	**SWITCHING SYSTEMS:** Introduction, Single stage networks,.	,,		

34	**2/4**	21/9	Gradings,	,,		
35	¾	22/9	Link Systems	,,		
36	**4/4**	23/9	GOS of Linked systems		Assignment 4	
37	**5/4**	24/9	Unit 4 test			
38	**1/5**	27/9	**TIME DIVISION SWITCHING:** Introduction,	,,		
39	**2/5**	3/10	space and time switching,	,,		
40	**3/5**	4/10	Time switching networks	,,		
41	**4/5**	5/10	Synchronisation	Board, chalk, duster	Assignment 5	
42	**5/5**	6/10	Unit test 5	,,		
43	**1/6**	7/10	**SWITCHING SYSTEM SOFTWARE:** Introduction, Scope, Basic software architecture,Operating systems, Database Management	,,		
44	**2/6**	8/10//	Concept of generic program, software architecture for level 1 control, Software architecture for level 2 control, Software architecture for level 3 control,	,,		
45	**3/6**	13/10	Digital switching system software classification	,,		
46	**4/6**	14/10	Call models, Connect sequence, Software linkages during call,	,,	Assignment 6	
47	**5/6**	17/10	Call features, Feature flow diagram, Feature interaction	,,		
48	**6/6**	18/10	Unit 6 test	,,		
49	**1/7**	20/10	**MAINTENANCE OF DIGITAL SWITCHING SYSTEM:** Software			

			maintenance, Interface of a typical digital switching system central office, System outage and its impact on digital switching system reliability, Impact of software patches on digital switching system maintainability			
50	**2/7**	21/10	Embedded patcher concept, Growth of digital switching system central office ,Generic program upgrade, A methodology for proper maintenance of digital switching system	,,		
51	**3/7**	22/10	Effect of firmware deployment on digital switching system, Firmware-software coupling, Switching system maintainability metrics, Upgrade process success rate, Number of patches applied per year, Diagnostic resolution rate, Reported critical and major faults corrected, A strategy improving software quality		Assignment7	
52	**4/7**	27/10	Program for software process improvement ,Software processes improvement, Software processes, Metrics, Defect analysis,	,,		
53	**5/7**	28/10	Unit 7 test	,,		
54	**1/8**	2/11	**A GENERIC DIGITAL SWITCHING SYSTEM MODEL:** Scope, Hardware architecture,	,,		
55	**2/8**	3/11	Software architecture, Recovery strategy,	,,		
56	**3/8**	4/11	Simple call through a digital system,	,,	Assignment 8	
57	**4/8**	5/11	Common characteristics of digital switching systems, Analysis report.	,,		
58	**5/8**	7/11	Reliability analysis.	,,		
59	**6/8**	8/11	Unit 8 test			
60	**7/8**	9/11	Revision	Board, chalk, duster		

Signature of faculty Signature of HOD Signature of Principal

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CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER : V A & B
BRANCH : TCE
SUBJECT : Fundamental of CMOS VLSI
SUBJECT: 10EC56
TOTAL HRS : 61

NAME OF THE FACULTY : Mrs.S.Sophiya Susan
DATE OF COMMENCEMENT : 25.07.2016
DATE OF CLOSING : 19.11.2016
NO OF HRS/WK : 5

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1.	**1/17**	28/07/2016	**Unit-1 :**Integrated Circuit's Era, PMOS and NMOS transistors	Board, chalk, duster		
2.	**2/17**	29/07/2016	Metal Oxide Semiconductor (MOS) and Related VLSI Technology	Board, chalk, duster		
3.	**3/17**	1/08/2016	Basic MOS Transistors ,	Board, chalk, duster		
4.	**4/17**	2/08/2016	Modes of operation			
5.	**5/17**	3/08/2016	Enhancement mode transistor action	Board, chalk, duster,,		
6.	**6/17**	4/08/2016	nMOS Fabrication Process	Projector		
7.	**7/17**	5/08/2016	CMOS Fabrication Process	Projector		
8.	**8/17**	8/08/2016	BiCMOS Technology	Projector		
9.	**9/17**	9/08/2016	Production of E-beam Processing Thermal aspects of of processing	Board, chalk, duster		
10	**10/17**	10/08/2016	Threshold Voltage equations Body Effect	Projector		
11	**11/17**	11/08/2016	Second order effects	Projector		

12	**12/17**	12/08/2016	MOS device design equations , Small signal AC Characteristics	,,		
13	**13/17**	17/08/2016	CMOS inverter DC Characteristics	Board, chalk, duster	I	
14	**14/17**	18/08/2016	CMOS inverter DC Characteristics	,,		
15	**15/17**	19/08/2016	Static load inverters	,,		
16	**16/17**	20/08/2016	Differential inverter, Tristate Inverter	,,		
17	**17/17**	22/08/2016	Transmission Gate	,,		
18	1/7	24/08/2016	**Unit-2 :**MOS layers, Stick diagrams.			
19	2/7	25/08/2016	Design rules and layout – lambda-based design and other rules.	Board, chalk, duster		
20	3/7	26/08/2016	Examples. Layout diagrams.	,,		
21	**4/7**	27/08/2016	Symbolic diagrams	,,	II	
22	5/7	29/08/2016	Physical design of simple logic gates	,,		
23	6/7	31/08/2016	Physical design of simple logic gates	,,		
24	7/7	1/09/2016	Physical design of simple logic gates	,,		
25	1/6	2/09/2016	**Unit-3:** CMOS Complementary Logic	,,		
26	2/6	9/09/2016	Bi CMOS Logic, Pseudo-nMOS Logic	,,		
27	**3/6**	10/09/2016	Dynamic CMOS Logic	,,		
28	4/6	13/09/2016	Clocked CMOS Logic	,,		
29	5/6	14/09/2016	Pass Transistor Logic	,,		
30	6/6	15/09/2016	CMOS Domino Logic Cascaded Voltage Switch Logic (CVSL)	,,		
31	1/7	16/09/2016	**Unit-5:** Architectural issues	,,		

32	2/7	17/09/2016	Gate logic	,,		
33	3/7	19/09/2016	Switch logic	,,		
34	4/7	21/09/2016	Design examples – combinational logic	,,	III	
35	57	22/09/2016	Clocked circuits, Other system considerations.	,,		
36	6/7	23/09/2016	Clocking strategies	,,		
37	7/7	24/09/2016	Clocking strategies	,,		
38	1/5	26/09/2016	**Unit-7:** Timing considerations			
39	2/5	28/09/2016	Memory elements			
40	3/5	29/09/2016	Memory cell arrays			
41	4/5	3/10/2016	Memory cell arrays			
42	5/5	4/10/2016	Memory cell arrays			
43	1/8	5/10/2016	**Unit-6:** General considerations, Process illustration, Process illustration			
44	2/8	7/10/2016	ALU subsystem.			
45	3/8	8/10/2016	Adders	Projector		
46	4/8	13/10/2016	Adders	,,		

47	5/8	14/10/2016	Adders	,,		
48	6/8	17/10/2016	Multipliers	,,		
49	7/8	19/10/2016	Multipliers	,,		
50	8/8	20/10/2016	Multipliers	,,		
51	1/6	21/10/2016	**Unit-4:** Sheet resistance, Area capacitances Capacitance calculations	,,		
52	2/6	22/10/2016	The delay unit, Inverter delays, Driving capacitive loads	,,		
53	3/6	27/10/2016	Propagation delays, Wiring capacitances	,,		
54	4/6	28/10/2016	Scaling models and factors	,,		
55	5/6	2/11/2016	Limits on scaling	,,		
56	6/6	3/11/2016	Limits due to current density and noise	,,		
57	1/5	4/11/2016	**Unit-8:** Performance parameters Layout issues I/O pads	,,		
58	2/5	5/11/2016	Real estate and System delays	Board, chalk, duster		
59	3/5	7/11/2016	Ground rules for design	,,		
60	4/5	8/11/2016	Test and testability	,,		
61	5/5	9/11/2016	Test and testability	,,		

Note: From time to time, assignments will be posted on

https://sites.google.com/a/cmrit.ac.in/sophiya-susan/home

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