CMR Institute of Technology, Bangalore		
Department(s): ECE, EEE & CIV		
Semester: 04	Section(s):): ECE-D, EEE-B, CIV-B.	
Engineering Mathematics IV	10MAT41	Lectures/week: 06
Course Instructor(s): M. Kamal Kumar		
Course duration: 18 Jan 2015 – 21 May 2015		

Course outline

Class	Chapter Title / Reference Literature	Topic	Percentage of portion covered	
			Reference	Cumulative
01 -10	NUMERICAL METHODS-I TB1-31.1-31.8	Numerical Solution of ordinary differential equations of first order	12.5	12.5
		Numerical methods for initial value problems		
		Picard's method		
		Taylor's series method		
		Modified Euler's method		
		Runge-Kutta method of fourth order		
		Predictor and corrector methods Milne's Method		
		Predictor and corrector methods Adams-Bashforth)		
11-20	NUMERICAL METHODS-2 TB1-31.9-31.10	Numerical solution of simultaneous first order ODEs	12.5	25
		Picard's Method		
		Problems on Picard's Method and Runge-Kutta method of fourth order		
		Runge-Kutta method of fourth order		
		Numerical solution of second order ODES -Picard's Method		
		Problems on Picards method		
		Numerical solution of second order ODES Runge-Kutta method		
		Problems on Runge-Kutta method. concept on Milne's method		
		Tutorial class		
21-30	PROBABILITY -I TB1-26.1-26.6	Introduction to Probability, Definitions	12.5	37.5
		Probability theorems, addition theorem of probability and problems		
		Probability associated with set theory		
		Random experiments, Sample Space and events		
		Axioms of probability		
		Conditional Probability, problems		
		Multiplication Law, problems		
		Baye's Theorem-proof		
		Problems on Baye's Theorem		

31-40	PROBABILITY -II TB1-26.7-26.18	Random Variables(Discrete random and continuous variables)	12.5	50
		Bernoulli's theorem,-Binomial Distribution(Mean and Standard deviation of the Binomial Distribution)		
		Problems on Binomial Distribution		
		Poisson distribution(Mean and Standard deviation of the Poisson Distribution)		
		Continuous Probability distributions		
		Exponential distribution(Mean and Standard deviation of the Exponential Distribution and problems)		
		Normal distribution and Standard Normal distribution		
		Problems on Normal distribution and Standard Normal distribution		
41-50	COMPLEX VARIABLES-I- TB1-20.1-20.6	Function of a complex variable, limit, continuity, differentiability	12.5	62.5
		Cauchy-Riemann equations in Cartesian and Polar form		
		Harmonic function, orthogonal property		
		Finding the derivative of an analytic function Milne-Thompson method		
		Finding the conjugate harmonic function and the analytic function		
		Properties of analytic functions		
		Harmonic Property		
		Orthogonal Property		
		Application to flow problems		
51-58	COMPLEX VARIABLES-II TB1-20.7-20.14	Conformal transformation	12.5	75
		Bilinear transformation		
		Discussion of $w = z^2$		
		Discussion of $w = e^z$		
		Discussion of $w = z+a^2/z$		
		Complex line integral		
		Cauchy's theorem and integral formula		
59-66	SPECIAL FUNCTIONS TB1-16.1-16.17	Solution of Laplace Equation in cylindrical system leading to Bessel differential equation	12.5	87.5
		Solution of Laplace Equation in Spherical system leading to Bessel differential equation		
		Properties on Bessel functions		
		Legendre's equation		
		Bessel's function and properties		
		Orthogonal Property of Bessel's function		
		Series Solution of Legendre's Differential equation		
		Rodrigue's formula-Derivation and problems		
		Problems on Rodrigue's formula		
67-75	SAMPLING THEORY TB1-27.1-27.18	Sampling distribution	12.5	100
		Testing Hypothesis		
		Standard error		
		Test for hypothesis for means		
		Limits for means		
		Student's *t* distribution		
		Test of Significance of Difference between sample means		
		Chi square distribution		

Syllabus for Internal Assessment Tests (IAT)*

Sessional	Syllabus
T1	01-40
T2	41-66
T3	67-75

*** See calendar of events for the schedules of IATs.**

Literature:

Book Type	Code	Author & Title	Publication information	
			Edition & Publisher	ISBN
Text Book	TB1	B.S.Grewal, Higher Engineering Mathematics, Latest Edition, Khanna publishers	Latest edition, khanna publications	8174091955
Text Book	TB2	Erwin Kreyszig, Advanced Engineering Mathematics, Latest Edition, Willey Publication	Wiley India publishers	978812653135
References	RB1	B.V.Ramana, Higher Engineering Mathematics,.	Latest Edition, Tata Mc.Graw Hill Publications	---
References	RB2	Peter V .O'Neil, Engineering Mathematics	Cengage Learning India Pvt. Ltd.Publishers	---
References	RB3	Dr.D.S.C, Engineering Mathematics IV	5th Edition 2011	978-81-7686-675-4
References	RB4	Dr.K.S.C, Engineering Mathematics IV	2011-2012	---

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

https://sites.google.com/a/cmrit.ac.in/m-kamal-kumar2624/home/courses-offered/engineering-mathematics---iv

CMR Institute of Technology, Bangalore		
Department(s): TCE/ECE		
Semester: 04	Section(s): TCE(A) & ECE(C)	
Subject Title: Microcontrollers	Subject Code:10ES42	Lectures/week: 05
Course Instructor(s):Ms. Priya R.		
Course duration: 18 Jan 2016 – 11 May 2016		

Class #	Chapter no (No of hrs planed for the chapter)	DATE	Topic	Teaching Aid	Assignments planned
1.	1/1	18/01/2016	**Microprocessors & Microcontrollers**		Assignment 0
2.	2/1	19/1/2016	RISC & CISC CPU Architectures, Harvard & Von-Neumann CPU architecture, Computer Software.		
3.	3/1	21/1/2016	**8051 Architecture:** Introduction		
4.	4/1	22/1/2016	8051 Architecture.		
5.	5/1	23/1/2016	Pin diagram of 8051		Assignment 1
6.	6/1	27/1/2016	Internal RAM		
7.	7/1	28/1/2016	Memory Organization		
8.	8/1	28/1/2016	External memory interfacing		
9.	9/1	29/1/2016	Stack, Stack Pointer		
10.	10/1	01/02/2016	Revision, discussion of old question papers.		
11.	**01/02**	**2/2/2016**	**Unit 2: Addressing Modes** Introduction, Syntax, Data Types, Subroutines		
12.	2/2	3/2/2016	Addressing Modes: Immediate, register, Direct, indirect		
13.	3/2	4/2/2016	relative, Absolute, long, index addressing		
14.	4/2	4/2/2016	Bit inherent addressing, bit direct addressing		
15.	5/2	9/2/2016	Instruction set: instruction timings, data transfer instruction		Assignment 2
16.	6/2	10/2/2016	Arithmetic instruction, logical instructions		
17.	7/2	11/2/2016	Branch instruction, sub routine instruction, bit manipulation instruction		
18.	8/2	12/2/2016	Assembly language programs.		
19.	9/2	12/2/2016	Revision and discussion of old question papers.		
20.	10/2	16/2/2016	Revision and discussion of old question papers.		
21.	**1/3**	**17/02/2016**	**Unit 3: 8051 programming:** Assembler directives		
22.	2/3	18/02/2016	Assembly language programs using different instruction		
23.	3/3	22/02/2016	Time delay calculations		Assignment 3
24.	4/3	22/02/2016	Revision		
25.	5/3	25/02/2016	discussion of old question papers		
26.	**1/4**	**26/02/2016**	**8051 Interfacing and Applications** Basic concepts of I/O, I/O port operation		
27.	2/4	29/02/2016	8051 interfacing to LCD		
28.	3/4	01/03/2016	8051 interfacing to keyboard		
29.	4/4	01/03/2016	Parallel and Serial ADC		
30.	5/4	04/03/2016	Parallel and Serial DAC		

31.	6/4	05/03/2016	Stepper motor operation		
32.	7/4	08/03/2016	8051 interfacing to stepper motor & programming		
33.	8/4	09/03/2016	DC motor operation		Assignment 4
34.	9/4	09/03/2016	8051 interfacing to DC Motor and programming		
35.	10/4	17/03/2016	Revision		
36.	11/4	18/03/2016	Question paper discussion		
37.	**1/5**	**19/03/2016**	**8051 Interrupts and Timers/counters:** Basics of interrupts.		
38.	2/5	21/03/2016	8051 interrupt structure		
39.	3/5	21/03/2016	Timers and counters		
40.	4/5	24/03/2016	8051 timer/counter programming in assembly.		Assignment 5
41.	5/5	28/03/2016	8051 timer/counter programming in C language		
42.	6/5	29/03/2016	Revision		
43.	7/5	30/03/2016	discussion of old question papers		
44.	**1/6**	**30/03/2016**	**8051 Serial Communication** Data Communication, Basics of Serial Data Communication		
45.	2/6	2/04/2016	8051 serial communication, connection to RS-232.		
46.	3/6	04/04/2016	Serial communication programming in assembly.		
47.	4/6	05/04/2016	Serial communication programming in C Language.		Assignment 6
48.	5/6	06/04/2016	8255 programmable peripheral Interface: Architecture.		
49.	6/6	06/04/2016	8255 I/O addressing, I/O interfacing with 8051 using 8255		
50.	7/6	12/04/2016	Revision and discussion of old question papers.		
51.	**1/7**	**13/04/2016**	**Motivation for MSP430microcontrollers** Low power embedded systems, on-chip peripheral, Low-power RF capabilities. Target applications.		
52.	2/7	15/04/2016	MSP 430 RISC CPU Architecture: Compiler friendly features, instruction set, Clock system, memory sub system.		
53.	3/7	16/04/2016	Key differentiating factors between different MSP 430 Families.		
54.	4/7	16/04/2016	Code composer Studio (CCSv4): How to use CCS for assembly, C projects for MSP 430.		
55.	5/7	21/04/2016	Interrupt Programming, Digital I/O ports, C and Assembly language programming, Muxing scheme of MSP 430 pins.		Assignment 7 (for MSP430)
56.	6/7	22/04/2016	Revision and discussion of old question papers.		
57.	**1/8**	**23/04/2016**	**On-chip peripherals. Watchdog Timer, Comparator** Watch-dog timer, comparator, op-amps, basic timer, real-time clock(RTC)		
58.	2/8	28/04/2016	ADC, DAC, SD-16, LCD, DMA		
59.	3/8	28/04/2016	Low power features of MSP 430: Clock system, low power modes, clock request feature		
60.	4/8	02/05/2016	Low power programming & interrupts, Interfacing of LCD, LED, external memory.		
61.	5/8	03/05/2016	Case Studies of application of MSP 430: data acquisition system, wired sensor network		
62.	6/8	04/05/2016	Wireless sensor network with chip on RF interfaces.		
63.	REVISION 1	05/05/2016	Revision and discussion of old question papers.		
64.	REVISION 2	05/05/2016	Revision and discussion of old question papers.		
65.	REVISION 3	10/05/2016	Revision and discussion of old question papers.		
66.	REVISION 4	11/05/2016	Revision and discussion of old question papers.		

Syllabus for Internal Assessment Test

Internal Assessment Test	Syllabus
T1	Class # 01 – 30
T2	Class # 31 - 50
Improvement Test	Class # 51 - 63

Literature:

Book Type	Code	Author & Title	Publication info	
			Edition&Publisher	ISBN #
Text Book	TB1	"8051 Microcontroller & Embedded Systems" by M.A Mazidi	First impression, 2008, Pearson education	81-317-1026-1
Text Book	TB2	"The 8051 Microcontroller", V. Uday Shankar & Mallikarjuna Swamy	TMH-2009	81-312-2003-2
Text Book	TB3	"The 8051 Microcontroller Architecture, Programming and Applications" BY Kenneth J Ayala	2e, PenRam International, 1996/Thomson Learning 2005.	81-315-0200-7
References	RB1	"Microcontrollers: Architecture, Programming, Interfacing & System Design" by Raj Kamal	Pearson education 2005"	81-317-0697-4
References	RB2	MSP 430Teaching CD-ROM (SOFTCOPY IN PDF FORM)	Texas Instruments, 2008.	Available in CD

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Electronics and Communication

SEMESTER : IV
SECTIONS : C
SUBJECT : Control System
SUBJECT CODE : 10EC43
NO OF HRS/WK : 6

NAME OF THE FACULTY : Preethi A
DATE OF COMMENCEMENT : 18.01.2016
DATE OF CLOSING : 11.05.2016
CLASS STRENGTH : 60
TOTAL HRS : 75

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**	19/01	Overview of Control System,History	Board, chalk, duster	Assignment 0	
2	**2/0**	20/01	Complex Variable, Functions and mapping, Laplace transform	,,		
3	**3/0**	22/01	Laplace transform, Inverse Laplace Transform	,,		
4	**1/1**	23/01	Introduction to control system, Types of control system ,Effect of feedback systems	,,		
5	**2/1**	25/01	Differential equation of physical system –Mechanical system	,,		
6	**3/1**	27/01	Differential equation of physical system –Friction, Translational system	,,		
7	**4/1**	29/01	Differential equation of physical system –Rotational System, Gear train	,,		
8	**5/1**	30/01	Modeling of electrical system, Analogous systems	Board, chalk, duster		

9	**6/1**	01/02	problems	,,	Assignment 1	
10	**7/1**	01/02	Problems	Tutorial		
11	**8/1**	02/02	Problems	Board, chalk, duster		
12	**9/1**	05/02	Problems			
13	**1/2**	08/02	Definition of transfer function and block diagram	,,		
14	**2/2**	08/02	Block diagram representation and reduction	,,		
15	**3/2**	09/02	Problems on block diagram reduction	,,		
16	**4/2**	10/02	Problems on block diagram reduction			
17	**5/2**	10/02	Problems on block diagram reduction			
18	**6/2**	12/02	Signal flow graph			
19	**7/2**	13/02	Problems on signal flow graph	,,		
20	**8/2**	14/02	Problems	,,		
21	**9/2**	15/02	Problems	,,		
22	**1/3**	16/02	Time response of feedback system for standard test signals	,,		
23	**2/3**	17/02	Unit step response of first order system	,,		
24	**3/3**	22/02	Unit step response of second order system			
25	**4/3**	23/02	Time response specifications of second order system			
26	**5/3**	24/02	problems	Board, chalk, duster		
27	**6/3**	25/02	Steady state errors and error constant	,,		
28	**7/3**	26/02	Problems	,,		
29	**8/3**	26/02	Introduction to PID controllers	,,		
30	**1/4**	01/03	Concepts of stability	,,	Assignment 2	

31	**2/4**	2/03	Necessary conditions for stability,	Board, chalk, duster		
32	**3/4**	03/03	Routh Hurwitz criterion for stability analysis	,,		
33	**4/4**	04/03	Problems	,,		
34	**5/4**	05/03	Problems	,,		
35	**6/4**	05/03	Relative stability analysis			
36	**7/4**	09/03	Problems	,,		
37	**1/5**	10/03	Introduction of root locus	,,		
38	**2/5**	11/03	Root locus technique and properties	,,		
39	**3/5**	17/03	Construction of root locus	,,	Assignment 4	
40	**4/5**	18/03	Problems	,,		
41	**5/5**	18/03	Problems	,,		
42	**6/5**	21/03	Problems	,,		
43	**7/5**	22/03	Problems			
44	**1/6**	23/03	Frequency domain analysis and introduction	,,		
45	**2/6**	24/03	Correlation b/w time and frequency domain	,,		
46	**3/6**	28/03	Bode plot explanation	,,		
47	**4/6**	28/03	Problems	,,		
48	**5/6**	30/03	Experimental determination of transfer function	,,		
49	**6/6**	31/03	Problems	,,	Assignment 5	
50	**7/6**	01/04	Assessment of Relative stability using bode plot	,,		
51	**8/6**	02/04	Problems	,,		

52	**9/6**	04/04	Introduction to lead, lag and lead-lag compensating networks			
53	**1/7**	04/04	Introduction to Polar Plots	Board, chalk, duster		
54	**2/7**	06/04	Mathematical preliminaries	,,		
55	**3/7**	07/04	Problems	,,		
56	**4/7**	11/04	Nyquist stability criterion	,,		
57	**5/7**	12/04	Problems	,,	Assignment 6	
58	**6/7**	13/04	Assessment of relative stability using Nyquist criterion	,,		
59	**7/7**	13/04	Problems	,,		
60	**8/7**	16/04	Problems	,,		
61	**9/7**	18/04	problems	,,		
62	**1/8**	20/04	Concept of state and related definitions	,,		
63	**2/8**	22/04	Problems			
64	**3/8**	22/04	Problems	,,		
65	4/8	28/04	State variable and state models for electrical systems	,,	Assignment 7	
66	**5/8**	29/04	Problems on State variable and state models for electrical systems			
67	**6/8**	30/04	Solution of state equations			
68	7/8	02/05	Problems on state equations			
69	8/8&9/8	03/05	problems			
70	I	05/05	Revision Unit 1			
71	II	06/05	Revision Unit 2			
72	III	07/05	Revision Unit 3&4			
73	IV	10/05	Revision Unit 5&6			
74	V	11/05	Revision Unit 7			
75	VI	11/05	Revision Unit 8			

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Electronics and Communication

SEMESTER : IV
BRANCH : ECE "A" an "B"
SUBJECT : Signals & Systems
SUBJECT CODE :10EC44
NO OF HRS/WK :6

NAME OF THE FACULT :Dr. Binish Fatimah
DATE OF COMMENCEMENT :18.01.2016
DATE OF CLOSING :11.05.2016
CLASS STRENGTH :62
TOTAL HRS :63

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	18 Jan. 2016	INTRODUCTION TO THE SUBJECTS.WHAT IS SIGNALS? WHAT IS SYSTEMS?	Board, chalk, duster		
2	2/1	20 Jan. 2016	CLASSIFICATION OF SIGNALS: CONT. AND DISCRETE TIME SIGNALS,DETERMINISTIC AND NON-DETERMINISTIC SIGNALS	,,		
3	3/1	20 Jan. 2016	CLASSIFICATION OF SIGNALS: EVEN AND ODD SIGNALS	,,		
4	4/1	22 Jan. 2016	CONJUGATE SYMMETRY,PERIODIC AND NON-PERIODIC SIGNALS	,,		
5	5/1	23 Jan. 2016	ENERGY SIGNALS AND POWER SIGNALS	,,	A1	
6	6/1	23 Jan. 2016	ELEMENTARY SIGNALS	,,		
7	7/1	25 Jan. 2016	ELEMENTARY SIGNALS:CONTINUOUS AND DISCRETE TIME SIGNALS	,,		
8	8/1	28 Jan. 2016	OPERATIONS ON SIGNALS: DISCRETE SIGNALS, DIFFERENTIATION & INTEGRATION	,,		

9	9/1	28 Jan. 2016	PROBLEMS SOLVING ON SIGNALS	,,		
10	10/1	30 Jan. 2016	PROPERTIES OF SYSTEMS	,,		
11	11/1	01 Feb. 2016	PROPERTIES OF SYSTEMS	,,		
12	1/2	01 Feb. 2016	LTI SYSTEM, CONVOLUTION SUM	,,		
13	2/2	02 Feb. 2016	PROBLEMS ON CONVOLUTION SUM	,,		
14	3/2	04 Feb. 2016	PROBLEMS ON CONVOLUTION SUM	,,	A2	
15	4/2	04 Feb. 2016	PROPERTIES OF CONVOLUTION	,,		
16	5/2	08 Feb. 2016	STABILITY AND CAUSALITY OF THE SYSTEM FOR THE IMPULSE RESPONSE	,,		
17	6/2	09 Feb. 2016	CONVOLUTION INTEGRAL	,,		
18	7/2	09 Feb. 2016	PROPERTIES OF CONVOLUTION INTEGRAL	,,		
19	8/2	10 Feb. 2016	PROPERTIES OF IMPULSE FUNCTION AND PROPERTIES OF CONVOLUTION	,,		
20	9/2	12 Feb. 2016	GRAPHICAL METHOD OF CONVOLUTION	,,		
21	10/2	12 Feb. 2016	PROBLEMS AND DOUBT SOLVING ON CONVOLUTION	,,		
22	1/3	15 Feb. 2016	DIFFERENCE /DIFFERENTIAL EQUATION	,,		
23	2/3	16 Feb. 2016	SOLVING DIFFERENTIAL EQUATION	,,		
24	3/3	16 Feb. 2016	SOLVING DIFFERENTIALEQUATION	,,		
25	4/3	17 Feb. 2016	IMPULSE RESPONSE FOR DIFFERENCE EQUAION	,,	A3	

26	5/3	22 Feb. 2016	BLOCK DIAGRAM REPRESENTATION	,,		
27	6/3	22 Feb. 2016	BLOCK DIAGRAM REPRESENTATION	,,		
28	1/4	24 Feb. 2016	FOURIER SERIES: COMPLEX SINUSOIDALS	,,		
29	2/4	25 Feb. 2016	FREQUENCY RESPONSE,MAGNITUDE SPECTRUM,PHASE SPECTRUM	,,		
30	3/4	26 Feb. 2016	PROBLEMS ON FOURIER COEFFICIENT,MAGNITUDE SPECTRUM AND PHASE SPECTRUM	,,	A4	
31	4/4	01Mar. 2016	PROBLEMS ON FOURIER COEFFICIENT,MAGNITUDE SPECTRUM AND PHASE SPECTRUM & FINDING FOURIER SERIES	,,		
32	5/4	03Mar. 2016	PROBLEMS ON FOURIER SERIES	,,		
33	6/4	04Mar. 2016	PROPERTIES OF FOURIER SERIES	,,		
34	7/4	04Mar. 2016	PROBLEMS ON FOURIER SERIES	,,		
35	8/4	05Mar. 2016	DTFS:PROPERTIES	,,		
36	9/4	09Mar. 2016	PROBLEMS ON DTFS	,,		
37	10/4	11Mar. 2016	CONJUGTATE PROPERTIES OF FOURIER CO-EFFICIENT	,,		
38	1/5	17Mar. 2016	FOURIER TRANSFORM,MAGNITUDE AND PHASE SPECTRUM	,,		
39	2/5	18Mar. 2016	FOURIER TRANSFORM: BASIC PROBLEMS	,,		
40	3/5	21Mar. 2016	PROPERTIES OF FOURIER TRANSFORM	,,		
41	4/5	23Mar. 2016	PROPERTIES OF FOURIER TRANSFORM	,,	A5	

42	5/5	24Mar. 2016	PROBLEMS ON CTFT	,,		
43	6/5	28Mar. 2016	PROBLEMS ON CTFT	,,		
44	7/5	30Mar. 2016	PROBLEMS BASED ON PROPERTIES OF CTFT	,,		
45	8/5	01 Apr. 2016	DTFT AND BASIC PROBLEMS	,,		
46	9/5	02 Apr. 2016	PROBLEMS ON DTFT	,,		
47	10/5	04 Apr. 2016	PROPERTIES OF DTFT	,,		
48	11/5	06 Apr. 2016	PROBLEMS BASED ON PROPERTIES OF DTFT	,,		
49	1/7	11 Apr. 2016	Z-TRANSFORM: BASIC CONCEPTS	,,		
50	2/7	12 Apr. 2016	PROBLEMS ON Z-TRANSFORM & ROC CONCEPT	,,		
51	3/7	13 Apr. 2016	PROBLEMS ON Z-TRANSFORM AND ROC	,,	A6	
52	4/7	15Apr. 2016	PROPERTIES OF Z-TRANSFORM	,,		
53	5/7	20 Apr. 2016	PROBLEMS BASED ON PROPERTIES OF Z-TRANSFORM	,,		
54	1/8	21 Apr. 2016	INVERSE Z-TRANSFORM	,,		
55	2/8	22 Apr. 2016	INVERSE Z-TRANSFORM	,,		
56	3/8	28 Apr. 2016	LTI SYSTEM USING Z-TRANSFORM,SYSTEM FUNCTION	,,		
57	4/8	30 Apr. 2016	SYSTEM FUNCTION ,STABLE AND CAUSAL CONDITION	,,	A7	
58	5/8	02May 2016	UNILATERAL Z-TRANSFORM	,,		

59	1/6	03May 2016	FREQUENCY RESPONSE OF THE SYSTEM	,,		
60	2/6	05May 2016	FREQUENCY RESPONSE AND IMPULSE RESPONSE	,,	A8	
61	3/6	07May 2016	SAMPLING THEOREM:PROBLEMS	,,		
62	4/6	10May 2016	REVISION: PROBLEMS DISCUSSION	,,		
63	5/6	11 May2016	REVISION: PROBLEMS DISCUSSION	,,		

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Electronics and Communication

SEMESTER :IV
BRANCH : ECE
SUBJECT : Fundamentals Of HDL
SUBJECT CODE : 10EC45
NO OF HRS/WK : 5

NAME OF THE FACULTY : SunilKumar/Jyoti/Mahesh
DATE OF COMMENCEMENT : 18.01.2016
DATE OF CLOSING : 15.5.2016
CLASS STRENGTH : 60
TOTAL HRS : 65

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	Prerequisites	18/1/2016	Digital logic, Review of sequential circuits (ALU, state machines), Review of combinational logic circuits (adders, multipliers, decoders, encoders, DE multiplexers	Board, chalk, duster		
2		19/1/2016		,,		
3		20/1/2016		,,		
4	**1/1**	21/1/2016	Why HDL?	,,		
5	**1/ 2**	21/1/2016	A brief history of HDL	,,		
6	**1/3**	22/1/2016	Structure of HDL	,,		
7	**¼**	23/1/2016	Operators	,,		
8	**1/5**	27/1/2016	Data types	Board, chalk, duster	Assignment I	
9	**1/6**	02/2/2016	Types of description	,,		
10	**1/7**	9/02/2016	Simulation and synthesis	,,		

11	**1/8**	10/02/2016	Brief comparison of VHDL and Verilog	,,		
12	**1/9**	11/02/2016	Some small examples with respect to description.	,,		
13	**2/1**	15/02/2016	High lights of data flow descriptions	,,		
14	**2/2**	15/02/2016	Structure of data flow description	,,		
15	**2/3**	16/02/2016	Some programs on DF(VHDL)		Assignment II	
16	**2/4**	17/02/2016	Some programs on DF (Verilog)			
17	**2/5**	17/02/2016	Data type vectors			
18	**2/6**	18/02/2016	Example programs in VHDL	,,		
19	**2/7**	20/02/2016	Example programs in Verilog	,,		
20	**2/8**	22/02/2016	Signal declaration	,,		
21	**3/1**	22/02/2016	High lights	,,		
22	**3/2**	23/02/2016	Structure of VHDL behavioral description	,,		
23	**3/3**	24/02/2016	Structure of Verilog behavioral description		Assignment –III	
24	**3/ 4**	25/02/2016	VHDL variables	Board, chalk, duster		
25	**3/5**	26/02/2016	Assignment statements	,,		
26	**3/6**	29/02/2016	Sequential statements	,,		
27	**3/7**	1/3/2016	Tutorials	,,		
28	**4/1**	2/3/2016	Highlights of structural description	,,		
29	**4/2**	4/3/2016	Organization of structural description	,,		
30	**4/3**	5/3/2016	Binding	,,		
31	**4/4**	8/3/2016	State machines	,,	Assignment –IV	

32	**4/5**	9/3/2016	Generate	,,		
33	**4/6**	10/3/2016	Generic	Board, chalk, duster		
34	**4/7**	11/3/2016	Parameter statements	,,		
35	**4/8**	17/3/2016	Programs	,,		
36	**5/1**	18/3/2016	High lights of procedure	,,		
37	**5/2**	19/3/2016	High lights of task	,,		
38	**5/3**	21/3/2016	Function	,,		
39	**5/4**	22/3/2016	Procedure and task	,,		
40	**5/5**	23/3/2016	Function in Verilog	,,		Assign ment - V
41	**5/6**	24/3/2016	Advance HDL description	,,		
42	**5/7**	28/3/2016	File processing	,,		
43	**5/8**	29/3/2016	Examples	,,		
44	**6/1** **6/2**	30/3/2016	Why mixed type description?	,,		
45	**6/3**	31/3/2016	VHDL user define type	,,		
46	**6/4**	1/4/2016	VHDL package	,,		
47	**6/5**	2/4/2016	Tutorials	,,		Assign ment - VI
48	**6/6**	4/4/2016	Mixed type description examples	,,		
49	**6/7**	5/4/2016	Examples on counters	Board, chalk, duster		
50	**6/8**	6/4/2016	Examples on FF	,,		
51	**7/1**	7/4/2016	High lights of mixed language description	,,		

52	**7/2**	11/4/2013	How to innovate one language from other	,,		
53	**7/3**	12/4/2016	Examples	,,		
54	**7/4**	13/4/2016	Mixed language description examples	,,		
55	**7/5**	15/4/2016	Limitation of mixed language examples	,,		
56	**7/6**	16/4/2016	Tutorials	,,		
57	**7/7**	18/4/2016	tutorials	,,		
58	**8/1**	20/4/2016	Highlights of synthesis	,,		
59	**8/2**	21/4/2016	Synthesis information from entity	,,		Assign ment - VII
60	**8/3**	22/4/2016	Synthesis information from module	,,		
61	**8/4**	23/4/2016	Mapping process	Board and Chalk		
62	**8/5**	28/4/2016	Mapping of loop statements	,,		
63	**8/6**	29/4/2016	Mapping of procedure, task	,,		
64	**8/7**	30/4/2016	Mapping process in hardware domain	,,		
65	**8/8**	2/5/2016	Example programs	,,		
66		3/5/2016	Example programs	,,		
67		4/5/2016	Example programs	,,		
68		5/5/2016	Example programs	,,		
69		6/5/2016	Example programs	,,		
70		7/5/2016	Revision	,,		
71		10/5/2016	Revision	,,		
72		11/5/2016	Revision	,,		

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER : IV
SECTIONS : A, B
SUBJECT : Linear Integrated Circuits
SUBJECT CODE: 10EC46
NO OF HRS/WK: 6

NAME OF THE FACULTY : Surya Varchasvi D
DATE OF COMMENCEMENT : 18.01.2016
DATE OF CLOSING : 11.05.2016
CLASS STRENGTH : 64.
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/Prerequisites**	18.01.2016	CE, CC operation of NPN transistor,	Board, chalk, duster	Assignment 0	
2	**2/ Prerequisites**	19.01.2016	World War II and motivation for OPAMP	,,		
3	**3/ Prerequisites**	20.01.2016	Various parameters (input and output characteristics) of CE and CC transistor.	,,		
4	**4/ Prerequisites**	21.01.2016	Differential amplifier, KCL, KVL, Capacitor effect on AC voltages.	,,		
5	**5/ Prerequisites**	22.01.2016	Op-amp symbol, stages, characteristics of ideal op-amp.	,,		
6	**6/ Prerequisites**	23.01.2016	Reading data sheet of µA741, Practical values of R & C.	,,		
7	**1/1**	27.01.2016	Basic Op-Amp circuit	,,		
8	**2/1**	28.01.2016	Op-Amp parameters – Input and output voltage.	Board, chalk, duster		

9	**3/1**	29.01.2016	CMRR and PSRR.	,,		
10	**4/1**	30.01.2016	offset voltages and currents, Input and output impedances.	,,		
11	**5/1**	01.02.2016	Slew rate and Frequency limitations.	,,		
12	**1/2**	02.02.2016	Op-Amps as DC Amplifiers.			
13	**2/2**	03.02.2016	Biasing Op-Amps,	,,		
14	**3/2**	04.02.2016	Direct coupled –Voltage Followers.	,,		
15	**4/2**	05.02.2016	Non-inverting Amplifiers, Inverting amplifiers.	,,		
16	**5/2**	08.02.2016	Summing amplifiers and Difference amplifier.			
17	**6/2**	09.02.2016	Capacitor coupled Voltage Follower.		Assignment 1	
18	**7/2**	10.02.2016	High input impedance - Capacitor coupled Voltage Follower.			
19	**8/2**	11.02.2016	Capacitor coupled Non-inverting Amplifiers.	,,		
20	**9/2**	12.02.2016	High input impedance - Capacitor coupled Noninverting Amplifiers.	,,		
21	**10/2**	13.02.2016	Capacitor coupled Inverting amplifiers.	,,		
22	**11/2**	15.02.2016	Lab Demonstration	,,	Assignment 2	
23	**12/2**	16.02.2016	Setting the upper cut-off frequency, Capacitor coupled Difference amplifier.	,,		
24	**13/2**	17.02.2016	Use of a single polarity power supply.			
25	**14/2**	18.02.2016	Numerical			
26	**1/4**	22.02.2016	Numerical	Board, chalk, duster		
27	**2/4**	23.02.2016	Voltage sources, current sources and current sinks.	,,		
28	**3/4**	24.02.2016	Current amplifiers, instrumentation amplifier,	,,		
29	**4/4**	25.02.2016	Precision rectifiers.	,,	Assignm	

					ent 3	
30	**1/4**	26.02.2016	Limiting circuits.	,,		
31	**2/4**	29.02.2016	Clamping circuits.	,,		
32	**3/4**	01.03.2016	Peak detectors, sample and hold circuits.	,,		
33	**4/4**	02.03.2016	V to I and I to V converters.	,,		
34	**5/4**	03.03.2016	Log and antilog amplifiers.	,,	Assignment 4	
35	**6/4**	04.03.2016	Multiplier and divider.	Board, chalk, duster		
36	**6/4**	05.03.2016	Triangular / rectangular wave generators.	,,		
37	**8/4**	08.03.2016	Wave form generator design.	,,		
38	**9/4**	09.03.2016	phase shift oscillator.	,,		
39	**6/4**	10.03.2016	Wein bridge oscillator.	,,		
40	**8/4**	11.03.2016	Crossing detectors	,,		
41	**9/4**	17.03.2016	inverting Schmitt trigger circuits,	,,		
42	**10/4**	18.03.2016	Monostable & Astable multivibrator,	,,	Assignment 5	
43	**11/4**	19.03.2016	Active Filters –First Low pass & High pass filters.			
44	**1/5**	21.03.2016	Active second order Low pass & High pass filters.	,,		
45	**2/5**	22.03.2016	Other Linear IC applications: 555 timer - Basic timer circuit.	,,		
46	**3/5**	23.03.2016	555 timer used as astable and monostable multivibrator.	,,	Assignment 6	
47	**4/5**	24.03.2016	Schmitt trigger.	,,		
48	**5/5**	28.03.2016	PLL-operating principles.	,,		
49	**6/5**	29.03.2016	Phase detector / comparator.	,,		
50	**7/5**	30.03.2016	VCO.	,,		
51	**8/5**	31.03.2016	Basic DAC Techniques, D/A and A/ D converters.	,,	Assignment 7	

52	**9/5**	01.04.2016	A2D converters.			
53	**1/6**	02.04.2016	Circuit stability	Board, chalk, duster		
54	**2/6**	04.04.2016	, Frequency and phase response.	,,		
55	**3/6**	05.04.2016	Frequency compensating methods.	,,		
56	**4/6**	06.04.2016	Band width and Slew rate effects.	,,		
57	**5/6**	07.04.2016	ZinMod compensation, and circuit stability precautions.	,,	Assignment 8	
58	**1/7**	11.04.2016	Introduction, Series Op-Amp regulator.	,,		
59	**2/7**	12.04.2016	IC Voltage regulators,	,,		
60	**3/7**	13.04.2016	723 general purpose regulator.	,,		
61	**4/7**	15.04.2016	Switching regulator.	,,		
62	**5/7**	16.04.2016	Numerical from Text and Reference books.	,,	Assignment 9	
63	**6/7**	18.04.2016	Numerical from Text and Reference books.			
64	**1/8**	20.04.2016	Numerical from Text and Reference books.	,,		
65	**2/8**	21.04.2016	Project Presentation	,,		
66	**3/8**	22.04.2016	Project Presentation			
67	**4/8**	23.04.2016	Project Presentation			
68	**5/8**	28.04.2016	Numerical from previous year question paper			
69	**6/8**	29.04.2016	Numerical from previous year question paper			
70	**7/8**	30.04.2016	Numerical from previous year question paper			
71	**8/8**	02.05.2016	Lab Demonstration			
72	**9/8**	03.05.2016	Technical presentation by students			
73	**10/8**	04.05.2016	Technical presentation by students			

Signature of faculty Signature of HOD Signature of Principal