SCHEME OF COURSE WORK

Course Details:

Course Title	:PULSE AND DIGITAL CIRCUITS					
Course Code	:13EC1106	L	T	P	C	:4 0 0 3
Program:	: Engineering- Bachelor of Technology					
Semester	: Four					
Prerequisites	:Knowledge of electronic devices and circuits, Mathematics					
Courses to which it is a prerequisite	: -VLSI Design					

Course Outcomes (COs):

1	Capability to design linear and non-linear wave shaping circuits.
2	Capability to design square wave and time base generators and their applications.

Program Outcomes (POs):

A graduate of B.Techwill be able to

1	Be on par with those from any advanced institution.
2	Take up any job either in the core industry (or) in allied disciplines.
3	Fit to write any competitive examinations for getting selected either for M.S. program (or) to undertake relevant career at a high end.
4	Develop a techno ethical personality that makes him serve the people in general & Electrical & Electronics Engineering in particular.
5	Enable the students adopt themselves in any socio-technological situation.
6	Develop communication and leadership skills so that the candidates in their future become leaders in the industry & academia.
7	Make students do projects either of fundamental nature (or) of the ones useful to industry such that in either case they enter the frontiers of research.
8	Have a basic capability to analyze and /or design an electrical &electronics system and be useful to the community in general.
9	Function effectively as an individual and also as a member and leader in diverse teams.
10	Communicate effectively problems of his discipline to the experts of other disciplines.
11	Have sufficient working knowledge in IT tools for him to correctly model the system and predict the solution.
12	Prepare for a life-long learning in the broadest context of technological changes.

Course OutcomeVersusProgram Outcomes:

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1	M	M	M	M	M	M	S	S	M	M		M
CO-2	S	M	M	M	M	M	M	M	M	M	M	S

S - Strongly correlated, *M - Moderately* correlated, *Blank - No correlation*

AssessmentMethods:	Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam

Teaching-Learning and Evaluation

Week	TOPIC / CONTENTS	Course Outcomes	Sample questions	TEACHING-LEARNING STRATEGY	Assessment Method & Schedule
1	Low pass and High pass RC Circuits, Response for sinusoidal, step, pulse, square and ramp inputs, RC network as differentiator and integrator, Ringing Circuit.	C0-1	1.What is a signal? 2.What is the use of a differentiator circuit? 3.With the help of neat circuit diagrams, explain the working of RC and RL low-pass circuits?	Lecture/Discussion	Assignment-1/Quiz -1 Dec-14
2	Diode Clippers, Transistor Clippers, Emitter coupled clipper, clamping circuits, clamping circuit theorem.	C0-1	1.With the help of a neat circuit diagram, explain the working of a transistor clipper. 2.Explain how a sine wave may be converted into a square wave using a clipping circuit.	Lecture/Discussion	Assignment-1/Quiz-1 Jan-15
3	Classification of multivibrators, Bistablemultivibrators, commutating capacitors, triggering binary-symmetrical and unsymmetrical triggering, Schmitt Trigger circuit.	CO-2	1.Write notes on commutating capacitors. 2.With the help of a neat circuit diagram and waveforms, explain the working of a Schmitt trigger	Lecture/Discussion	Assignment-1/Quiz-1 Jan-15
4	Monostablemultivibrators- collector coupled, emitter coupled, Triggering monostable, astablemultivibrators – Collector coupled and emitter coupled using transistors.	C0-2	1.With the help of a neat circuit diagram and waveforms, explain the working of a collector-coupled monostablemultivibrator. 2.With the help of a neat circuit diagram and waveforms, explain the working of an astablemultivibrator	Lecture/Discussion	Assignment-1/Quiz-1 Jan-15
5	General features of a timebase signal, methods of generating time base waveform, Miller and boots traptime base generators basic principles	CO-2	1.With the help of a neat diagrams, explain the working of a transistor Miller time-base generator	Lecture/Discussion	Assignment-1/Quiz-1 Jan-15
6	PONGAL VACATION – No Instruction	--	--	--	--
7	Transistor miller time base generator, transistor Boots trap time base generator, current time base generators	C0-2	1.With the help of a neat diagram, explain the working of a transistor bootstrap time-base generator	Lecture/Discussion	Assignment-1/Quiz-1 Jan-14
8	**Mid Exam-1**	-	-		
9	Synchronization and frequency division: Principles of synchronization, Frequency division in sweep circuits, Astable relaxation circuits	C0-2	1.How does the sync signal affect the frequency of operation of the sweep generator?	Lecture/Discussion	Assignment-2 & Quiz-2 Feb-15
10	Monostable relaxation circuits, Synchronization of a sweep circuit with symmetrical signal		1.Explain the use of a monostable relaxation device as a divider	Lecture/Discussion	Assignment-2 & Quiz-2 Feb-15
11	Sine wave frequency division with a sweep circuit.	C0-2	1.With the help of a neat waveforms, explain sine wave frequency division with a sweep circuit.	Lecture/Discussion	Assignment-2/Quiz-2 Mar-15
12	Sampling Gates: Basic operating principles of sampling gates, Unidirectional and Bidirectional sampling gates	C0-2	1.With the help of a neat diagram, explain the working of bidirectional gates using transistors.	Lecture/Discussion	Assignment-2& Quiz-2 Mar-15
13	Reduction of pedestal in gate circuits, Applications of sampling gates.	CO-2	1.What are the applications of sampling gates.	Lecture/Discussion	Assignment-2& Quiz 2 Mar-15

14	Logic Gates: Logic gates using Diodes, resistors and transistor – RTL, DTL	C0-2	1.With the help of a neat diagram, explain the working of a four-diode gate.	Lecture/Discussion	Quiz-2/Assignment 2 Mar-15
15	Exercise Problems- Unit 1& 2	-	-	Tutorial	
16	Exercise Problems – Unit 3 & 4	-	-	Tutorial	-
17	Revision – Unit 1 & 2	-	-	Seminar/Discussion	-
18	Revision- Unit 3, 4 & 5	**-**	**-**	Seminar/Discussion	-
19	**Mid-2**				
20	PRACTICAL EXAMS (No Class work)				
21 & 22	**END EXAM**				