**LECTURE SCHEDULE**

**Department : E.C.E.**

**Faculty : D.V.A.N.Ravi Kumar**

**Subject : Pulse and Digital Circuits (R-16)**

**Class : 2RD YEAR 2st SEMESTER E.C.E-1&2.**

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| **UNIT** | **TOPICS** | **PERIODS REQUIRED** |
| **UNIT** **I** | **LINEAR WAVE SHAPING:**High pass circuit and its response for step, pulse inputs**(1)**High pass circuit and its response for square input**(2)**High pass circuit and its response for ramp and exponential input**(1)**High pass circuit and its response for sinusoidal input**(1)**Low pass circuit and its response for step, pulse inputs**(1)**Low pass circuit and its response for square input**(2)**Low pass circuit and its response for ramp and exponential input**(1)**Low pass circuit and its response for sinusoidal input**(1)**RC network asdifferentiator and integrator, attenuators, its applications in CRO probe**(1)** RLand RLC circuits and their response for step input, Ringing circuit**.(1)** |  **12****20/11/17 to****7/12/17** |
| **UNIT****II** |  **NON-LINEAR WAVE SHAPING :** Diode clippers**(3)** Transistor clippers**(2)**clipping at two independent levels, Transfer characteristics of clippers,Emitter coupled clipper**(2)**, Comparators, applications of voltage comparators**(1)**clamping operation, clamping circuits using diode with different inputs**(2)**Clamping circuit theorem, practical clamping circuits**(1),** effect of diodecharacteristics on clamping voltage, Transfer characteristics of clampers**(1)** |  **12****8/12/17 to****23/12/17** |
| **UNIT III** | **SWITCHING CHARACTERISTICS OF DEVICES :** Diode as a switch,piecewise linear diode characteristics**(1.5)**Transistor as a switch**(1)**, Break downvoltage consideration of transistor, saturation parameters of Transistor**(1)**andtheir variation with temperature**(1),** Design of transistor switch, transistor switching time**(1)****Bistable Multi Vibrator:** Analysis and Design of Fixed Bias**(1.5)**Self BiasBistable Multi Vibrator**(1.5),** Collector catching Diodes, Commutating Capacitors, Methods of Triggering using RC network & Diode**(1.5)** Emitter Coupled Bistable Multi Vibrator (Schmitt trigger)**(2)** |  **12****24/12/17 to****10/1/18** |
| **UNIT IV** | **MULTIVIBRATORS :****Monostable Multi Vibrator:** Analysis and Design of Collector Coupled Monostable Multi Vibrator**(3.5)**, Triggering method of a Monostable MultiVibrator, Application of Monostable Multi Vibrator as a Voltage to TimeConverter**.(1.5)****Astable Multi Vibrator:** Analysis and Design of Collector Coupled AstableMulti vibrator**(3.5)** , Application of Astable Multi Vibrator as a Voltage toFrequency Converter. All circuits are transistor version**.(1.5)** |  **10****22/1/18to****10/2/18** |
| **UNIT****V** | **VOLTAGE TIME BASE GENERATORS :** General features of a timebase signal, methods of generating time base waveform**(1)** Miller and Bootstraptime base generators basic principles**(1)** Transistor miller time base generator**(2.5),**Transistor Bootstrap time base generator**(2.5)** | **7****12/2/18 to****23/2/18** |
| **UNIT VI** | **Digital Logic gate circuits:** Realization of Logic Gates using DTL, TTL,ECL and CMOS logic circuits**(4)**Comparison of logic families**(0.5)****Sampling Gates:**Basic operating principles of sampling gates**(0.5)**Unidirectional sampling gates**(1.5)**and Bidirectionalsampling gates**(1.5)** Reduction of pedestal in gate circuits,Applications of sampling gates**(1)** | **9****24/2/18 to****15/3/18** |
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**TEXT BOOKS:**

1. Pulse, Digital and Switching Waveforms - J. Millman and H. Taub, McGraw-Hill

2. Pulse and Digital Circuits – A. Anand Kumar, PHI, 2005

**REFERENCES:**

1. Pulse, Digital and Switching Waveforms - J. Millman and H. Taub, Mothiki S Prakash Rao McGraw-Hill,

Second Edition, 2007.

2. Solid State Pulse circuits - David A. Bell, PHI, 4th Edn., 2002

3. Pulse & Digital Circuits by Venkata Rao,K,Ramasudha K, Manmadha Rao,G., Pearson,2010