**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 to  Frequency 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