**Lesson Plan**

**Subject : Basics of Electronics Engg.**

**Lesson Plan Duration** : **15 weeks**

**Work Load**

**(Lecture/Practical)**

**per week (in hours) : Lectures: 03 hours/week**

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| **Lecture No.** | **Theory** |
|  | Introduction to the contents |
|  | Introduction to P-N junction Diode and Equivalent Circuits |
|  | V-I characteristics of PN junction |
|  | Zener diode and its characteristics |
|  | Rectifiers: Half Wave |
|  | Rectifiers: Half Wave |
|  | Full Wave Rectifiers |
|  | Center tapped Full Wave Rectifiers expressions |
|  | Full Wave Bridge Rectifiers expressions |
|  | Numerical on rectifiers |
|  | Filter Circuit -- capacitor filter |
|  | BJT structure, , , |
|  | Different configuration of BJT’s |
|  | Working of BJT’s |
|  | CE configuration and working |
|  | input-output and transfer characteristics |
|  | BJT as a Common Emitter amplifier, frequency response and bandwidth. |
|  | Biasing of Transistors |
|  | Problems related to BJT’s |
|  | Digital Electronics basics, Difference between analog and digital signals |
|  | Boolean arithmetic |
|  | Logic gates and their operation |
|  | Boolean Algebra |
|  | Rules and laws of Boolean Algebra |
|  | Rules and laws of Boolean Algebra |
|  | Universal Property of NAND & NOR Gates |
|  | Simplification using theorems |
|  | Logic Expressions Simplification |
|  | K-Maps |
|  | K-Maps problems |
|  | Combinational circuits Half Adder Full Adder |
|  | Multiplexers, De-multiplexers |
|  | Flip flops |
|  | Counters- Synchronous |
|  | Asynchronous Counters |
|  | Operational Amplifier, Parameters |
|  | Inverting non Inverting, differential modes |
|  | IC 741 operation, adder, subtractor, scale changer |
|  | IC 555 timer |
|  | Oscillators, RC phase Shift, Wein Bridge |
|  | elements of communication system, Transmission media: wired and wireless |
|  | need of modulation, AM and FM modulation schemes |
|  | Mobile communication systems |
|  | cellular concept and block diagram of GSM system |
|  | Revision |