



- 1. Diode Circuit Applications (8hrs)**
Rectification, Clipping, Clamping, Voltage Multipliers, Diode Switching Circuits, Zener Diode Characteristics and Applications.
- 2. Bipolar Transistor Circuits (12hrs)**
Construction, Operation, Configurations and Characteristics, Operating Regions, Load–Lines, The Transistor as an Amplifier, DC Biasing Circuits and Stability, Power Dissipation, Switching Transistors.
- 3. BJT Small-Signal Analysis (12hrs)**
Transistor Equivalent Circuits, Voltage and Current Gain, Input and Output Impedance, analysis of CE, CB and CC configurations.
- 4. FET Transistor and Circuits (8hrs)**
Construction and Characteristics of JFET, MOSFET Construction and Characteristics, CMOS, DC Biasing Circuits.
- 5. FET Small-Signal Analysis (8hrs)**
Amplifier JFET / MOSFET, Small Signal Model Analysis, analysis of CS, CG and CD configurations.
- 6. Multistage Amplifiers. (4hrs)**
Analysis of Multistage Amplifiers (voltage gain, current gain, ect...), types of multistage amplifier, Cascade and cascode amplifier's, Darlington amplifier.
- 7. Tuned Amplifiers (4hrs)**
Transformer-coupled Amplifiers, single tuned amplifiers, tapped and double-tuned amplifiers.
- 8. Introduction to Four-Layer Devices (6 hrs)**
Description and operation of silicon controlled rectifier, DIAC, thyristor, GTO, and TRIAC.

Recommended Textbook:

- 1) **Boylested R.L.** , Electronic Devices and Circuit Theory, Prentice – Hall Int Pub .
- 2) **Bogart** , Electronic Devices and Circuit , Mc Graw – Hill
- 3) **Albert Malvino, David J Bates**, Electronic Principles, McGraw Hill 7th Edition. 2012

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