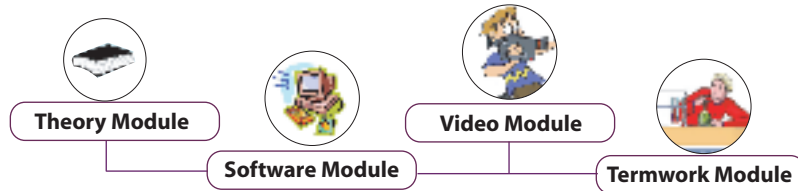


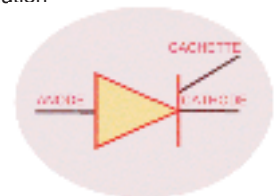
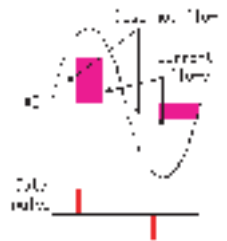
# Power Electronics



**System Requirement:-** IBM-PC Compatible Min P-III with Window-OS, 128 MB RAM/Multimedia Kit

## List of Topics

- ✗ **Introduction** : Concept, Types of Converters, Power Electronic Module.
- ✗ **Power Semiconductor Diodes and Transistors** : Characteristics of Power Diodes, Types of Power Diodes,
  - □ □ □ □ Power Transistor, Power MOSFETs, Insulated Gate Bipolar Transistor (IGBT) .
- ✗ **Diode Circuits and Rectifiers** : Diode Circuits with DC Source, Freewheeling Diodes, Diode and L-Circuit, Recovery of
  - □ □ Trapped Energy, Single-phase Diode Rectifiers.
- ✗ **Thyristors** : Terminal Characteristics of Thyristors, Thyristor Turn-on Methods, Switching Characteristics of Thyristors,
  - Thyristor ratings, Thyristor Protection, Series and Parallel Operation of Thyristors, Other members of the
  - Thyristors family, Gate Turn off (G.T.O.) Thyristors, Firing Circuits for Thyristors.
- ✗ **Thyristors Communication Techniques** : Class A, B, C, D , E, F Communication.
- ✗ **Phase Controlled Rectifiers** : Principle of Phase Control, Full-wave Controlled Converters, Single-phase Full-wave Converters,
  - □ □ Single -phase Two-pulse Converters with Discontinuous Load Current, Three phase
  - □ □ Converter Systems using Diodes, Three-phase Thyristor Converter Circuits,
  - □ □ Effect of Source Impedance on the Performance of Converters, Dual Converters.
- ✗ **Choppers** : Principal of Chopper, Operation, Step-up Chopper, Types of Chopper Circuits, Thyristor Chopper Circuits,
  - Multiphase Circuit.
- ✗ **Inverters** : Single-phase Voltage Source Inverters, Force-commutated Thyristor Inverters, Three Phase Bridge Inverters,
  - Voltage Control In Single-phase Inverters, Pulse-width Modulated Inverters, Current Source Inverters, Series Inverters,
  - Single-phase Parallel Inverter.
- ✗ **AC Voltage Controllers** : Types of AC Voltage Controllers, Integral Cycle Control, Single-phase Voltage Controllers,
  - □ □ Sequence Control of AC Voltage Controllers.
- ✗ **Cycloconverters** : Principle of Cycloconverter Operation, Three-phase Half-wave Cycloconverter, Output Voltage Equation
  - □ for a Cycloconverter, Load-commutated Cycloconverter.
- ✗ **Some Applications** : Switched Mode Power Supply (SMPS), Uninterruptible Power Supplies, Static Switches,
  - □ Static Circuit Breakers, Solid State Relays, Resonant Converters.
- ✗ **Electric Drives** : Concept of Electric Drive, DC Drives, Single-phase DC Drives, Three-phase DC Drives, Chopper Drives,
  - □ A.C.Drives, Induction - motor Drives, Speed Control of Three-phase Induction Motors.



### Branch offices