UNIT-I: INTRODUCTION:

UNIT-II: DIFFERENT TYPES OF CONTROL ACTION:
Different types of control actions like on-off proportional, Integral derivatives etc. Time domain analysis of control system: Typical test signals. Impulse response functions. First order system, Second order and higher order systems.

UNIT-III: ERROR ANALYSIS:

UNIT-IV: FREQUENCY RESPONSE:

UNIT-V: TRANSFER FUNCTION:

Books recommended:
1. Control systems engineering - Nagrath & Gopal
2. Control systems - B.S. Manke.
UNIT-I: CRYSTAL STRUCTURE:

UNIT-II: LATTICE DYNAMICS AND THERMAL PROPERTIES:

UNIT-III: ELECTRONIC ENERGY BANDS:

UNIT-IV: ELEMENTS OF POLYMERS ELECTRONICS:

UNIT-V: OPTICAL PROPERTIES OF SOLIDS:

Books recommended:
1. Introduction of solid state physics: Kittel
2. Solids state Physics: Ashcroft and Mermin
3. An introduction to X-ray crystallography: Woolfson
4. Solid state physics: Azaroff
5. Intermediates quantum theory of crystalline solids: Aniamalu
6. Solid-state Physics: Epifanov
7. Electrical properties of polymers: A.R. Blythe
SENSOR, TRANSDUCERS AND ELECTRONIC MEASUREMENTS

UNIT-I: OPTICAL SENSORS:

UNIT-II: TRANSDUCERS:

UNIT-III: TRANSDUCER II:

UNIT-IV: OSCILLOSCOPE:

UNIT-IV: MEASUREMENT OF BASIC PARAMETERS:

Books Recommended:
1. Electronic instrumentation and measurements techniques: W.D. Cooper & A.D. Heisie.
2. Understanding oscilloscope Sahny. Kulshreshtha, Gupta
3. Instrumentation devices and systems: Rangan, Sharma and Mani
UNIT-I: BINARY SYSTEMS:
Binary number system and other codes, Octal number system, Hexadecimal number system and conversion to decimal system, BCD system, Binary arithmetic, Series and parallel processing of bits, Logic of the addition operation, Logic fundamentals, Boolean theorems, Synthesis of Boolean function, Karnaugh diagram, Logic circuits for addition, Binary arithmetic using 1's and 2's complements.

UNIT-II: LOGIC GATES:
Logic gates AND, OR, NOT, NAND and NOR gates, Logic gates and their operation, using DTL, logic and TTL logic, Emitter coupled logic gates, CMOS inverter circuits, Design idea of logic circuits, Idea of logic gates using IC 7400 and 7408 based circuits.

UNIT-III: DIGITAL SYSTEM:
Binary adders, Half adders, Full adder, MSI adders, Serial operation, Arithmetic functions, Binary subtraction, parity checker, Parity generator.

UNIT-IV: DIGITAL SWITCHING CIRCUITS:
Transistor a switch, Multivibrators, RS flip-flop, D flip-flop, T flip-flop, JK flip-flop, Bi-stable, Mono-stable multivibrator, Astable multivibrator, Shift register, Counting, Decode matrix, Digital to analog conversion, Multiplexers and Demultiplexers.

UNIT-V: COUNTERS AND APPLICATION:
Ripple counters, up down counters, divide by N counters, synchronous counters, parallel carry, application of counters, dynamic MOS circuit two phase MOS, idea of MOS shift registers & MOSROM.

BOOKS RECOMMENDED:
1. Electronics fundamentals and application Mottershed
2. Integrated electronic: Millman & Halkias