BASIC ELECTRONICS ENGINEERING SYLLABUS FOR SEM 2

UNIT I Electronic Components:

Passive components :

- Resistors
- capacitors
- inductors

(properties, common types, I-V relationship and uses)

Semiconductor Devices :

- Overview of Semiconductors
- basic principle & operation
- **characteristics of :**
    - PN diode
    - Zener diode
    - BJT
    - JFET
    - **optoelectronic devices :**
        - LDR
        - Photodiode
        - Phototransistor
        - solar cell
        - photo couplers

UNIT II Transducers:

Transducers :

- Instrumentation-general aspects
- classification of transducers
- basic requirements of transducers

Passive transducers :

- strain gauge
- thermistor
- Hall-Effect transducer
- LVDT

Active transducers :

- piezoelectric thermocouple
- DHT
- ULTRASONIC
- PIR..sensors

UNIT III Digital Electronics :

- Number systems
- binary codes
- logic gates
- Boolean algebra
- laws & theorems
- simplification of Boolean expression
- Implementation of Boolean expressions using logic gates
- standard forms of Boolean expression.

UNIT IV Digital Communication :

- Block diagram of a basic communication system
- frequency spectrum
- need for modulation
- **Types of communication :**
  - Analog communication
  - Digital communication
  - Advantages and Disadvantages of Digital Communication
- Time and frequency domain representation of signals
- Sampling theorem
- Nyquistrate and Nyquist interval
- Pulse code modulation
- Line coding-Various formats
- **Generation of digital modulation techniques :**
  - ASK
  - FSK
  - PSK