BASICS OF ELECTRONICS & COMMUNICATION ENGINEERING

EC– 201

L: 2 T: 1 P: 0 Cr: 3

COURSE OUTCOMES

1. Studying semiconductor diodes and their various characteristics
2. Expanding the ideas: construction and working of BJTs and introducing JFET
3. Exploring various types of operational amplifiers
4. Understanding the idea of feedback and thus studying various electronic instruments
5. Learning various parameters of communication systems

Syllabus

UNIT – 1: Semiconductor Diodes:

P-N junction diode, V-I characteristics, static and resistance, linear and non-linear applications of diodes; half wave, full wave and bridge rectifiers, zener diode, characteristics and its use as a voltage regulator, AND, OR, NAND, NOR and Ex-OR gates.

UNIT – 2: TRANSISTORS (BJT & JFET):

Bipolar junction transistor (BJT) , biasing and amplifier action, load line analysis of transistor amplifier, BJT amplifier configurations and their comparison using small signal h-parameter model, Junction field Effect transistor (FET), biasing and amplifier action.

UNIT – 3: OPERATIONAL AMPLIFIER:

Op-am- basics, practical op-ampcircuits, inverting and non-inverting amplifier, summing amplifier, integrators and differentiators.

UNIT – 4: FEEDBACK AND ELECTRONIC INSTRUMENTS:

Feedback concept, Barkhausen Criteria of oscillation, Wein Bridge and phase shit oscillator, cathode Ray oscilloscope (CRO), electronics multimeters.

UNIT – 5: COMMUNICATION SYSTEMS:

Introduction to modulation, amplitude modulation generation of AM waves, demodulation of AM wave, introduction to FM.

Text Books:

1. Boylestad & Nashelsky, Electronic Devices and Circuit Theory, 9th Ed, Pearsons
2. Dinesh Prasad, Basic of Analog Electronics, Scitech Publications

Reference Books:

1. Sedra and Smith, Micro Electronic Circuits, 6th Ed, Oxford Press