

**CLUSTER UNIVERSITY SRINAGAR  
(SYLLABUS)**

Course Code	BCA-GE3105
Course Title	Physics
Semester	BCA 3 <sup>rd</sup> Semester
Course Type & Credits	General Elective 04 Credits (L) + 02 Credits (T) = 06 Credits

**UNIT -1**

Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law. Series, AC Electricity and DC Electricity. Kirchoff's voltage law, Familiarization with multimeter, voltmeter and ammeter. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Power factor

**UNIT-2**

Distinguishing between conductors, insulators and semi conductors. Intrinsic semiconductors, Extrinsic Semiconductors, N-Type and P-Type Semiconductors, P-N Junction Diode, formation of Depletion Layer, Characteristics of P-N Junction Diode, Diode as rectifier

**UNIT-3**

Reflection of light, Refraction of light, total internal reflection, Optical Fibres, advantages of fibre optics communication systems, propagation of electromagnetic waves in atmosphere, sky and space wave propagation, modulation, need for modulation, types of modulation, detection, Diode as detector.

**UNIT-4**

Instrumentations: Introduction to CRO: Block Diagram of CRO. Applications of CRO: (1) Study of Waveform, (2) Measurement of Voltage, Current, Frequency, and Phase Difference. Power Supply: Half-wave Rectifiers. Centre-tapped and Bridge Full-wave Rectifiers, Basic idea about capacitor filter, Zener Diode and Voltage Regulation

**Reference Books:**

- Principles of Electronics, V.K Mehta.
- Physics of Vibrations and Waves, H.J Pain

**L = Lecture, P = Practical, T = Tutorial**