

CURRICULUM PLAN 2026-27 (EVEN Semesters: II,IV,VI)

B.Sc. (H)-GE-Physics

Semester – III

DR ARAVIND KUMAR

Name of Paper & Code	Allocation of Lectures	Month wise schedule followed by the Department
Introduction to electronics		
Analog and digital signals, Active and passive electronic components, RC integrator and differentiator (use as low pass and high pass filter): Qualitative analysis and frequency response. I-V characteristics of a diode and its applications as rectifier (Half and full wave rectifier configurations), Clipper and Clamper circuits (Qualitative Analysis only). Principle and working of Photodiodes, Solar Cells, LED and Zener Diode as Voltage Regulator.	14	28-July to 29- Aug-26
Input and output characteristics of a bipolar junction transistor (BJT) in CB and CE configurations, identifying active, cut-off and saturation regions. Transistor parameters alpha and beta, and relation between them. Application of BJT as a switch and an amplifier in CE configuration (Graphical Analysis)	4	27-Aug to 25 Sep-2026
Review of basic and Universal Logic Gates, Binary to decimal and Decimal to binary conversion, binary addition and subtraction using 2's complement, Half and Full Adder, Half and Full Subtractor using NAND Gates. Operational Amplifier (Black Box Approach): Pinout diagram of IC 741; Characteristics of Op-amp (Voltage Gain, offset voltage, slew rate, CMRR, Bandwidth, Input Impedance and Output Impedance). Open loop configuration and its application as a comparator and zero crossing detector. Closed Loop Configuration and its Applications as Inverting and Noninverting Amplifier (Voltage gain using concept of virtual ground), Summing Amplifier and Subtract.	10	25 Sep to 18 October-2026
Block diagram of CRO, Voltage and frequency measurement. Pin-out diagram of IC 555 and its application as Astable Multivibrator	10	26-oct to 20- Nov-2026