MCM DAV College for Women, Sector – 36A, Chandigarh
MonthlyTeaching Plans (Odd Semester/Even Semester)
Session–(2022-2023)

Name of the Teacher: Dr. Gurjit Kaur
Department: Department of Physics

Class: B.Sc. III (NM and Voc)
Subject: Electronics and Solid State Devices-1 & 2 (Paper B)
Section (s) A, B, Voc

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
Odd semester				
1.	18h August 2022	31th August 2022	Basic introduction, Concepts of current and voltage sources, Thevenin's theorem, Norton's theorem, Source conversion.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems
2.	1th Sept. 2022	30th Sept. 2022	CRO, Block diagram, construction and principle of working, Use of CRO for frequency, time period, special features of dual trace, phase measurements. Energy band diagrams in semiconductors, Direct and indirect semiconductors, Formula to calculate Position of Fermi level in p and n semiconductors, Barrier formation, energy band diagram of p-n junction, Formula for Depletion width, Qualitative ides of current flow mechanism in forward and reverse biased diode, V-I characteristics.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems (v) online material
3.	1st Oct. 2022	31st Oct. 2022	Static and dynamic resistance, Depletion and diffusion capacitance, zener diode, LED, photodiode and solar cell, Diode circuits, Clipping circuits, Rectification: half wave, full wave and bridge rectifiers, filter circuits (C, LC and π filters). Rectification efficiency and ripple factor in LC	(i) Lecture method (ii) PPt (iii) Group discussion (iv) Notes (v) Numerical Problems (vi) online material

			filter, voltage regulation circuit using zener diode, voltage multiplier circuits.	
4.	1st Nov. 2022	25th Nov. 2022	Bipolar Junction transistors: Structure and working, different currents in transistor, switching action. Characteristics of CB, CE and CC configurations, Active, cutoff and saturation regions, Load line analysis of transistors, Q-point, Transistor biasing and stabilization of operating point, fixed bias, collector to base bias, bias circuit with emitter resistor, voltage divider biasing circuit. Working ans analysis of CE amplifier using h-parameters, current, voltage and power gain, input and output impedance. Class A, B and C amplifiers.	(i) Lecture method (ii) PPt (iii) Group discussion (iv) Notes (v) Numerical Problems
Even Semester				
1.	16rd Jan. 2023	31rd Jan. 2023	Structure and working of JEFT, characteristics, drain and trans-conductance curve, FET amplifier and its voltage gain, Structure and working of MOSFET, Feed back in amplifiers, voltage gain of negative feedback amplifier, advantages of negative voltage feedback, negative current feedback circuit, emitter follower.	(i) Lecture method (ii) PPt (iii) Group discussion (iv) Notes (v) Numerical Problems
2.	1rd Feb. 2023	28th Feb. 2023	Theory of sinusoidal oscillations, loop gain and phase, Lead-lag RC circuit, Wein bridge oscillator. Barkhausen criterion of sustained oscillations, positive feedback amplifier, LC oscillators, Colpitts and Hartley oscillators. Operational amplifier (black box approach) : Characteristics of ideal and practical opamp 741, open-loop and closed-loop gain, characteristics and applications - inverting and non-inverting amplifiers, adder, subtractor, differentiator and integrator, Comparator, Timer IC555, pin diagram and its applications as astable and monostable multivibrator.	(i) Lecture method (ii) PPt (iii) Group discussion (iv) Notes (v) Numerical Problems

2.	1st March,2023	31st March,2023	Analog and digital circuits, binary numbers, decimal to binary conversions, AND, OR, NOT gates, NAND NOR gates as universal gates, XOR and XNOR gates. De Morgan's theorem, Simplification of logic circuit using Boolean algebra, Minterms and Maxterms, Conversion of a truth table into an equivalent logic circuit by Sum of products method.	(i) Lecture method (ii) PPt (iii) Group discussion (iv) Notes (v) Numerical Problems (vi) online material
3.	1st April,2023	29st April,2023	Analog and digital communication systems, Amplitude and Frequency modulation, Power in AM wave, generation and detection, Brief account of Satellite communication, Sky-wave communication, and mobile communication.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems