Lesson Plan

Name = Dr. Ashok Kumar Subject = Physics	Session-2021-22. Class = B.Sc. Ist Year (2nd Sem.)

Week-1 (21-26) March.	Elasticity, Hooke's Law, Elastic constants and their relations, Poisson's ratio, torsion of cylinder & twisting couple, Bending of Beam cantilevars, Centrally Loaded Beam.
(Week-2) (28 March TO 02 April)	Assumptions of K.E. Theory of Gases, Law of Equiparation of Energy and its applications for specific Heat of Gases, Maxwell Distribution of speeds and velocities.
Week-3 (4-9) April	Experimental verification of Maxwell's Law of speed distribution; Most Probable speed, average and r.m.s. speed; Mean Free Path, Transport of Energy and Momentum, diffi of Gases, Browanian Motion, Real Gases, Vanderwall's Equation.
Week-4 (11-16) April	Reference systems, Inertial Frames, Gallilean Invariance and Conservation Laws, Neutonian Relativity Principle, Michelson-Morely Experiment; Search For Ether.
Week-5 (18-23) April	Lorentz Transformations Length contraction, Time dilation, velocity addition Theorem, Variation of Mass & velocity & Mass Energy Equivalence.

Week-6 (25-30) April	Growth and Decay of current in a circuit with- a) Capacitance and Resistance (b) Resistance and Inductance (c) Capacitance and Inductance (d) Capacitance Resistance and Inductance.
Week-7 (2-7) may	A.C circuit analysis using Complex variables with → (a) Capacitance and Resistance (b) Resistance and Inductance (c) Capacitance and Inductance (d) Capacitance, Inductance and Resistance series and parallel Resonant circuit. Quality Factor (Sharpness of Resonance)
Week-8 (9-14) may	Energy Bands in Solids, Intrinsic & Extrinsic semiconductors, Hall effect, P-N junction diode and their V-I characteristics.
Week-9 (16-21) may	Zener and Avlanche Breakdown. Resistance of a diode, Light Emitting diodes (LED). Photo Conduction in Semiconductors, Photodiode, Solar Cell.
Week-10 (23-28) May	P-N junction half wave and Full wave Rectifier Types of Filter circuits (L and - with theory), Zener diode as voltage Regulator, Simple Regulated Power Supply.
Week-11 (30 may To 4 June)	Junction Transistors, Bipolar Transistors, working of N·P·N and PNP transistors, Transistor connections (C,B, C,E, C-C) Modes. Constants of Transistor.

Week-12 (6–11) June	Transistor Characteristics curves (Excluding h-parameter analysis), advantage of C-B configuration, C.R.O, (Principle, Construction and working in Detail).
Week-13 (13–18) June	Transistor Biasing, Methods of Transistors Biasing and Stabilisation, D.C. Load Line, Common Base and Common emitter Transistor Biasing, Common Base, Common emitter amplifiers, Classification of Amplifiers.
Week-14 (20–25) June	Resistance - Capacitance (R-C) Coupled Amplifier (Two-stage Concept of Band width, No derivation) Feed Back in Amplifiers, Advantage of Negative Feed Back Emitter Follower.
(Week-15) (27 June To 02 July)	Oscillators, Principle of Oscillations, Classifications of oscillator, Condition For Self-Sustained oscillation. Barkhausen Criterion For oscillations. Tuned collector common emitter oscillator, Hartley's oscillator, Colpitt's Oscillator.