Curriculam Plan for 2025-26 EVEN SEM

Prof. Seema Gupta

IInd year GE NanoPhysics

No. Of period: 2

TOPICS	No. OF LECTURES	MONTH WISE SCHEDULE	Tutorial/Assignment/presentation
Basic Introduction of nano science and nanotechnology- Implication of nanoscience on Physics, Chemistry, Biology and engineering, Classification of nanomaterials, Introduction to different properties like optical, mechanical, electronic, magnetic and how they change at nano scale. Synthesis of nano materials.	8	January	Assignment
Synthesis of nano material contd. Schrodinger equation, Density of states for 2D and 3D, OD and 1D, Confinement of charges and consequences on its properties	8	February	Assignment
Applications of nanomaterials, MEMS, NEMS, Target drug delivery, medical diagnostics, Sun screen lotions, paints etc. Time and length scale, diffusive and ballistic transport	8	March	Test
Conductance quantization in 2DEG, Integer	8	November	Assignment

quantum hall effect, Quantization in 1D Structure using split gate, Charging effect, Coulumb Blockade effect Single electron transfer device, Excitons in semiconductor-optical properties			