

Syllabus for PGQP32 (M. Tech. in Nanotechnology)

Engineering Mathematics: Differential equations, Vectors, Complex Analysis, Tensors, Numerical methods, C programming Integral transforms. Matrix, determinants, Eigen value and Eigen vectors, probability and statistics

Heat & thermodynamics: Kinetic Theory, 1st Law, 2nd Law, zeroth Law, Maxwell's equations, radiation, specific heat

Basic Electronics: Diode, transistors, Boolean algebra, Logic Gates, semiconductor materials, direct and indirect band gap

Electromagnetics: EM waves, Maxwell's equation, electromagnetic induction,

Materials Science: lattice, metallic crystal systems, X-ray diffraction, types of bonding, Phase diagram, Basic Magnetism, Hysteresis loop, ceramic materials, polymer materials, : classification and polymerization, Optical properties of materials : refractive index, reflection, refraction, Superconductivity: BCS Theory, Cooper pairs, Josephson effect, Meissner effect. Dielectric and Ferroelectric materials, Stress-strain plots of materials. Hardness, Modulus

Cell Biology, Chemistry (Physical, Inorganic, Organic),