

CURRICULUM PLAN 2025-26

Odd Semester: I, III, V

Dr. V. Bhasker Raj

Department of Physics

DSE Paper: Physics of Materials

B.Sc. (H) Physics – III year, V Sem

Content	Allocation of Lectures	Month-wise Schedule followed	Tutorial/ assignment/ presentation etc
Physics of Materials			
Unit – I – Semiconductors: Basic concept of mobility and conductivity, density of states, determination of electron and hole concentration in doped semiconductor, Fermi level, Fermi energy, Fermi temperature, Fermi wavelength, Fermi surface	04	August	<ul style="list-style-type: none">• Syllabus Overview• Reference books• Derivations• Numericals
Unit – V – Carbon based materials: Structure and properties of Fullerenes, C60, single walled and multi walled CNTs, Graphene and their energy band diagram.	03	September	<ul style="list-style-type: none">• Derivations• Numericals• Assignments
Unit – VI – Synthesis of materials: Ceramic (Calcination, Sintering, Grain), thin films (general idea of vacuum, thermal evaporation, molecular beam epitaxy, pulsed laser deposition), Crystals (qualitative idea of zone refining and Czochralski method), Polymers (Polymerization mechanism)	08		<ul style="list-style-type: none">• Derivations• Numericals• Test• Discuss Previous Year Question papers