

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
PHY-433	MATERIALS SCIENCE-III (THEORY)	3	VIII
Year	Discipline		
4	Physics		

Course Outlines:

Constitution of alloys: Metallic Solid Solutions, Solid Solubility, Phase Diagrams of Pure Substances.

Equilibrium phase diagrams; Iron-Iron Carbide diagram, Gibbs Phase Rule, Binary Isomorphous Alloy Systems, Binary Eutectic Alloy Systems, Nonequilibrium Solidification of alloys, Binary Eutectic Alloy Systems, Binary Monotectic Systems, Invariant Reactions, Phase Diagrams with Intermediate Phases and Compounds, Introduction to Ternary Phase Diagrams.

Corrosion: Definition, Types, its determination and protection.

Books Recommended:

1. *Introduction to Physical Metallurgy* by S.H. Avner, McGraw-Hill Book Comp. New York, 1999.
2. *Materials Science and Engineering and Introduction* by W.D. Callister, John Wiley & Sons (USA), 1999.
3. *Principles of Materials Science and Engineering* by W.F. Smith, McGraw-Hill Book Comp, New York, 1999.
4. *Material Science & Metallurgy* by O.P. Khanna, DhanpatRai& Sons Delhi, 1994.