BASIC MECHANICAL HANDLING SYSTEMS

Objectives and Principles of Material Handling. Classification of handling equipment. Quantitative techniques for analysis of material flow.

Design of basic elements like-wire ropes, chain hooks, shackles, grab, lifting electro-magnets, pulleys, sheaves, sprokets, drums, arresting gears, buffers, limit switches, rope tackle and pulley blocks, various power transmission units like gearing, belting, winches, capstans etc.

Kinematics analysis and basic design procedure of various forms of conveying and elevating equipments like scrapes, conveyors, Belt conveyor, Belt Chain, Bucket elevators, Enmasses chain conveyor, Overhead chain conveyors, crew and Ribbon conveyors, electric hoists, jibcranes, EOT cranes, Gantry cranes, Mobile Cranes etc.

Text Books

1. Material Handling Equipments - N. Rudenko. Envee Publishers, ND, 1978.
2. Conveying Machines (Vol I & II) - A.O.Spivakovsky, & V.K. Dyachkav. MIR Publication
3. Mechanical Engg Design - J.E.Shiegley. Mc-Graw Hill Book Co., 1986.
4. Design of Machine Elements - M.F. Spotts and T.E. Shoup. PHI, 1998.

Reference Books

1. Design of Machine Elements - V. Dobrovolsky, et al., MIR Publishers, 1977.
2. Machine Design - D.N. Reshetov. MIR Publishers, 1978.