



**Bhartiya Skill Development University**  
**Syllabus for Ph.D. Entrance Test**  
**Industrial Engineering & Management**

Taylor's scientific management, Gilbreths's contributions; productivity – concepts and measurements; method study, micro-motion study, principles of motion economy; work measurement –time study, work sampling, standard data, PMTS; ergonomics; job evaluation, merit rating, incentive schemes, and wage administration.

Facility location factors and evaluation of alternate locations; types of plant layout and their evaluation; computer aided layout design techniques; assembly line balancing; materials handling systems.

Operations Research: Linear Programming, Simplex Method, Transportation, Assignment, and Game theory Problems. Network Analysis: PERT and CPM.

Forecasting techniques – causal and time series models, moving average, exponential smoothing, trend and seasonality; aggregate production planning; MRP, concept of JIT manufacturing system; Logistics, distribution, and supply chain management; Basics of Inventory control systems.

Interest Factors, Present Worth, Annual Equivalent, and Pay back calculations. Methods of Depreciation, Basics of cost accounting, Break-even analysis, techniques for evaluation of capital investments.