



and Sanitation Systems; Water Treatment; Solid Waste Disposal Systems; Waste Treatment, Recycle & Reuse; Urban Rainwater Harvesting; Power Supply And Communication Systems --- Network, Design & Guidelines; Demography Related Standards at Various Levels of the Settlements for Health, Education, Recreation, Religious & Public-Semi Public facilities.

**Building Materials, Construction, Structural Systems and Management:** Building Construction Techniques, Methods and Details; Building Systems and Prefabrication of Building Elements; Principles of Modular Coordination; Estimation, Specification, Valuation, Professional Practice; Project Management Techniques like PERT, CPM; Gantt charts etc. Behavioral Characteristics of All Types of Building Materials E.G. Mud, Timber, Bamboo, Brick, Concrete, Steel, Glass, FRP, Different Polymers, Composites; Principles of Strength of Materials; Design of Structural Elements in Wood, Steel and RCC; Elastic and Limit State Design; Complex Structural Systems; Principles of Pre-Stressing; Long span structures and Tall Buildings; Principles of Disaster Resistant Structures; Temporary structures for rehabilitation.

**Planning Theory & Technics:** Regional Planning; Settlement hierarchy and Planning; History of Human Settlements; Growth of Cities & Metropolises; Principles of Ekistics; Rural-Urban Migration; Heritage Conservation; Urban Renewal and Conservation; Five-Year Plan; Long term Comprehensive Plans, Structural and City development Plan, Master Plan, Zonal Plan and Local Area Plan, Land utilization plan, Planning in rural areas. Planning Survey Techniques; Land Use and socio-economic surveys Preparation of Urban and Regional Structure Plans, Development Plans, Action Plans; Site Planning Principles and Design; Statistical Methods of Data Analysis; Application of G.I.S high resolution satellite data processing and Remote Sensing Techniques in Urban and Regional Planning; Decision Support systems and Land Information Systems.

**Traffic and Transportation Planning:** Principles of Traffic Engineering and Transportation Planning; Traffic Survey Methods; Design of Roads, Intersections, Grade Separators and Parking Areas; Hierarchy of Roads and Levels of Services; Traffic and Transport Management in Urban Areas, Intelligent Transportation System; Mass Transportation Planning; Para-Transits and Other Modes of Transportation, Pedestrian & Slow Moving Traffic Planning.

**Development Administration and Management:** Planning Laws; Development Control and Zoning Regulations; Building Byelaws; Laws Relating to Land Acquisition; Development Enforcements, Urban Land Ceiling; Land Management Techniques; Planning and Municipal Administration; Disaster Mitigation Management; 73rd & 74th Constitutional Amendments; Valuation & Taxation; Revenue Resources and Fiscal Management; Public Participation and Role of NGO & CBO; Institutional Networking & Capacity Building. URDPFI Guidelines, UN – Habitat norms, Urban and regional governance, participatory approach in planning

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