SYLLABUS FOR ARCHITECTURE AND PLANNING (AR)

City planning:

Evolution of cities; principles of city planning; types of cities & new towns; planning regulations and building byelaws; eco-city concept; sustainable development.

Housing:

Concept of housing; neighbourhood concept; site planning principles; housing typology; housing standards; housing infrastructure; housing policies, finance and management; housing programs in India; self help housing.

Landscape Design:

Principles of landscape design and site planning; history of landscape styles; landscape elements and materials; plant characteristics & planting design; environmental considerations in landscape planning.

Computer Aided Design:

Application of computers in architecture and planning; understanding elements of hardware and software; computer graphics; programming languages C and Visual Basic and usage of packages such as AutoCAD, 3D-Studio, 3D Max.

Environmental Studies in Building Science:

Components of Ecosystem; ecological principles concerning environment; climate responsive design; energy efficient building design; thermal comfort; solar architecture; principles of lighting and styles for illumination; basic principles of architectural acoustics; environment pollution, their control & abatement.

Visual and Urban Design:

Principles of visual composition; proportion, scale, rhythm, symmetry, harmony, datum, balance, form, colour, texture; sense of place and space, division of space; barrier free design; focal point, vista, image ability, visual survey, figure-background relationship.

History of Architecture:

Indian Indus valley, Vedic, Buddhist, Indo-Aryan, Dravidian and Mughal periods; *European* Egyptian, Greek, Roman, medieval and renaissance periods- construction and architectural styles; vernacular and traditional architecture.

Development of Contemporary Architecture:

Architectural developments and impacts on society since industrial revolution; influence of modern art on architecture; works of national and international architects; art novuea, eclecticism, international styles, post modernism, deconstruction in architecture.

Building Services:

Water supply, sewerage and drainage systems; sanitary fittings and fixtures; plumbing systems, principles of internal & external drainage systems, principles of electrification of buildings, intelligent buildings; elevators & escalators, their standards and uses; air-conditioning systems; fire fighting systems, building safety and security systems.

Building Construction 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 e.g., PERT, CPM etc;

Materials and Structural Systems:

Behavioural 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; tall buildings; principles of disaster resistant structures.

Planning Theory:

Regional planning; settlement system planning; history of human settlements; growth of cities & metropolises; principles of Ekistics; rural-urban migration; urban conservation; urban renewal; Five-year plan; structural and sectoral plan.

Techniques of Planning:

Planning survey techniques; 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 and remote sensing techniques in urban and regional planning; decision making models.

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.

Infrastructure, Services and Amenities:

Principles of water supply 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.

Development Administration and Management:

Planning laws; development control and zoning regulations; 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.