

ARCHITECTURE

NEW-ARCHITECTURE AND DESIGN:

Visual composition in 2D and 3D; Principles of Art and Architecture; Organization of space; Architectural Graphics; Computer Graphics– concepts of CAD, BIM, 3D modeling and Architectural rendition; Programming languages and automation. Anthropometrics; Planning and design considerations for different building types; Site planning; Circulation- horizontal and vertical; Barrier free design; Space Standards; Building Codes; National Building Code.

Elements, construction, architectural styles and examples of different periods of Indian and Western History of Architecture; Oriental, Vernacular and Traditional architecture; Architectural developments since Industrial Revolution; Influence of modern art on architecture; Art nouveau, Eclecticism, International styles, Post Modernism, Deconstruction in architecture; Recent trends in Contemporary Architecture; Works of renowned national and international architects.

BUILDING MATERIALS, CONSTRUCTION AND TECHNOLOGY:

Lime, Brick, Stone, Clay products; Timber, Industrial timber; Paints and varnishes, Concrete, Special concrete and light weight concrete; Ferrous metals; non ferrous metals; Glass; Plastics; Eco friendly materials; Thermal insulation materials and acoustic materials.

Construction techniques and practices using the above listed materials; Damp and water proofing; Pest control; Construction systems and equipment; Pre- stressed concrete and Tensile Structures; Grids domes; folded plates; Flat Slabs. Low cost construction & appropriate technologies.

HISTORY OF ARCHITECTURE:

Indian architecture- Hindu and Islamic; Indo Saracenic; Secular architecture of the princely states; Colonial and Post Independence Architecture; Works of masters such as Charles Correa; B V Doshi; Ananth Raje; Raj Rewal; Laurie Baker; Nari Gandhi; Kanvinde. Western architecture- Ancient Greek and Rome; Early Christian; Gothic and Renaissance; Baroque; Neo Classicism; Chicago School and development of skyscraper; Modern architecture: Art and Crafts; Art Nouveau; Expressionism and Cubism; Bauhaus; International style; Post Modernism and De constructivism; Critical Regionalism; Theories and projects of F L Wright; Le Corbusier; Gaudi; Gropius; Aalto; Mies; Eisenmann; Zaha Hadid; Soleri; Hasan Fathy; Ando; Bawa; Gehry; Libeskind; Toyo Ito; Louis Khan; Tschumi; Greg Lynn; Assymptote.

THEORY AND PRINCIPLES OF ARCHITECTURE:

Elements and ordering principles; Organisation of form and space; Design methodology and Creative thinking; Pattern language; Contemporary process: Diagrams, Shape grammar, fractals, Digital hybrid, Liquid architecture.

BUILDING SERVICES:

Water supply and distribution systems; water and waste management; Sewerage system; Electrical systems; Elevators and Escalators - standards and uses; Illumination and lighting; Air conditioning; Fire Safety; building automation and IBMS; Intelligent buildings and Integrated service management.

BUILDING SCIENCE:

Climate responsive architecture; design of solar shading devices; acoustics & building design; Architecture & Energy- Active & passive solar architecture, Day lighting & natural ventilation.

NEW-ENVIRONMENTAL PLANNING AND DESIGN:

Ecosystem– natural and man-made ecosystem; Ecological principles; Concepts of Environmental Impact Analysis; Environmental considerations in planning and design; Thermal comfort, ventilation and air movement; Principles of lighting and illumination; Principles of architectural acoustics; Green Building– Concepts and Rating; ECBC; Building Performance Simulation and Evaluation; Environmental pollution- types, causes, controls and abatement strategies; Water shed management; SUDS;sponge city;Green infrastructure; Urbanisation; Environmental legislations and regulatory frameworks.

NEW-PLANNING TECHNIQUES AND MANAGEMENT:

Tools and techniques of Surveys – Physical, Topographical, Landuse and Socio-economic Surveys; Methods of non-spatial and spatial data analysis; Graphic presentation of spatial data; Application of G.I.S and Remote Sensing techniques in urban and regional planning; Decision support system and Land Information System.

Tools- PERT; CPM; BIM for energy modelling; AI in architecture

Guidelines-URDPFI; Planning Legislation and implementation – Land Acquisition Act, PPP etc.; Local self-governance systems.

NEW-SITE PLANNING, LANDSCAPE AND CONSERVATION:

Landscape design and integration with built form for climate moderation and environmental comfort. Open spaces and typology; Parks and hierarchy;Astroturf; Green rating systems and landscape sustainability certificationsLEED, SITES, IGBC,etc.; Lighting systems and layering in outdoor environment.

HOUSING, URBAN DESIGN AND TOWN PLANNING:

National Housing Policies, Programs and Schemes; housing projects in India; Housing typologies; Slums; Affordable Housing; Housing for special areas and needs; Residential densities; Standards for housing and community facilities.

Urban morphology ofcities; Case Studies on urban revitalization from developed and developed economies; Planning concepts- Patrick Geddes, Ebenezer Howard, Le Corbusier, C A Perry; Urban planning, regional planning and Urban renewal in the Indian context.

NEW -Planning process; Types of plans – Master Plan, City Development Plan, Structure Plan, Zonal Plan, Action Area Plan, Town Planning Scheme, Regional Plan; Salient concepts, theories and principles of urban planning; Sustainable urban development; Emerging concepts of cities - Eco-City, Smart City, Ekistics, Transit Oriented Development (TOD), SEZ, SRZ , Cost Benefit analysis, etc.