

Basic Civil Engineering

Module-I(6 Classes)

Introduction to Civil Engineering: Various disciplines of Civil engineering, Importance of Civil engineering in infrastructure development of the country, interdisciplinary nature of construction projects.

Residential Buildings: NBC Classification, Basic Components of a building: Basic requirement. Planning and Design of buildings: fundamental requirements, selection of sites, Introduction to building design: functional and structural design.

Foundations: Classification, Bearing Capacity of Soil and related terms (definition only)

Module-II(6 Classes)

Fundamental Properties of Construction Materials: Physical, mechanical and durability properties.

Construction materials: stone, bricks, cement, aggregate, mortar, concrete, timber, steel, non-ferrous metals, paint, plastic, glass, adhesive, tiles, composites(Definition, classification and application),

Module-III(6 Classes)

Importance of Transportation, Transportation modes i.e. Highway, railway, airways, water, pipe and conveyor – Basic Characteristics, advantages and disadvantages. Indian road transport system: Types of roads, classification of highway, urban roads: basic requirements and classification. Basic Components of a Road, Rigid and Flexible pavement (comparison only)

Module-IV(6 Classes)

Quantity of water: Sources of water, Per capita demand, drinking water standards, Public Water Supply System: Necessity and Basic lay out. Conventional water treatment process: Screening, Plain Sedimentation, Sedimentation aided with Coagulation, Filtration, and Disinfection (working principles only).

Module-V(6 Classes)

Irrigation: Importance of Irrigation, Classification of Irrigation projects, Irrigation system: Types, Field water distribution, Multipurpose river valley projects, Dams: Purpose, types. Layout of canal Irrigation system: components and definitions.

Essential Reading:

- Basic Civil engineering, Gopi, S., Pearson Publication
- Basic Civil Engineering, Bhavikatti, S. S., New Age.

Course Outcomes:

- Able to understand the basics of civil engineering and fundamental aspects of building.
- Able to get the brief overview of general aspect of building material.
- Able to get brief idea about transportation modes and planning.
- Able to get brief idea about drinking water standards and water treatment plant.
- Able to get brief idea about irrigation network system.