



## RCETCECC02 - Building Planning and Construction

### Course outcomes:

- Test all the concrete materials as per IS code.
- Determine the properties of fresh and hardened of concrete.
- Design special concretes and their specific applications.

### Syllabus:

#### UNIT I

**Construction Materials:** Tiles: For flooring, roofing and decorative – properties and uses.

Lime: Properties and uses. Timber: Varieties, properties, uses, defects, seasoning and preservation.

**Foundations** Introduction to different types of foundations – masonry footing, isolated, combined and strap, RCC footings, raft foundation, friction piles and bearing piles, caissons and coffer dams

**Brick Masonries** Bricks: Types, refractive and modular bricks and their application. Bonds in bricks, reinforced brick work, hollow block construction and rat trap masonry.

#### UNIT II

##### Concrete Technology

**Fresh Concrete:** Definition, Cement: Types, composition, properties and uses. Coarse aggregate and fine aggregate, properties and uses. Physical tests on ingredient of fresh concrete as per I.S. Quality of water and water-cement ratio, segregation, and bleeding. Mix design, proportion, batching, workability, mixing, placing, compacting, various methods of curing, Test on fresh concrete as per IS.

#### UNIT III

**Admixtures:** A brief description on commonly used admixtures and their effects on concrete.

**Hardened Concrete:** Maturity, creep, shrinkage, Destructive and non-destructive tests as per IS: 13311

**Mixed Design:** as per IS: 10262.

### Reference Text Books:

1. S. K. Duggal, “Building Materials”, New Age International Publishers.
2. Sushil Kumar “Building Materials and construction”, Standard Publishers, 20th edition, reprint, 2015.
3. Dr.B. C. Punmia, Ashok kumar Jain, Arun Kumar Jain, “Building Construction”, Laxmi Publications (P) Ltd., New Delhi.