# 22BEAS301 BUILDING CONSTRUCTION AND COST ESTIMATION

Hours	Perv	veek :
т	П	6

L	Т	Р	С	
1	2	0	2	

## PREREQUISITE KNOWLEDGE:

## COURSE DESCRIPTION AND OBJECTIVES:

This course intended with construction materials and processes of building finishing such as Damp Proofing, Plastering, Pointing, White washing. This course also covers design of buildings, construction economics and cost evaluation of buildings. The objective of this course is to provide knowledge of building materials, construction processes and cost evaluation of buildings.

# MODULE-1

### 4L+8T+0P=08 Hours

#### **BUILDING ELEMENTS:**

Rocks, Stones, Bricks, Properties and varieties of Tiles, Lime, Cement, Concrete, Sand. Glass, Rubber, Iron, Steel, Aluminium, Timber.

Lintels, Arches, Stair cases, Different types of floors.

Damp Proofing and water proofing, Plastering, Pointing, White washing and distempering - Painting

#### UNIT-2

UNIT-1

### 4L+12T+0P=16 Hours

2L+04T+0P=6 Hours

# **DESIGN OF BUILDINGS:**

Design procedures, Technology, building construction, Types of agricultural buildings and related needs, application of design theory and practice to the conservation, sloped and flat roof buildings.

#### **PRACTICES:**

- Design flow diagram.
- Design line plan of a building.
- Determination of plinth, floor and carpet area.
- Determination of FSI.
- Design of sloped roof buildings.
- Design of flat roof buildings.

# MODULE -2

## UNIT-1

# COST ESTIMATION:

Preliminary estimates, Detailed estimates of buildings, Source of cost information, Use of cost Analyzes for controlling design, Factors affecting building costs.



Source: https:// alliancefacades.com/wpcontent/uploads/2017/10/ alliancefacadessy steminstallation-1.jpg

## SKILLS:

- ✓ Identify suitable and economic type of materials for given construction project.
- ✓ Design flow diagram and line plan of a building.
- ✓ Design of sloped and flat roof buildings.
- ✓ Design of cash flow diagram and cost optimization of a building.

# UNIT-2

## 06L+12T+0P=18 Hours

## **COST EVALUATION:**

Cost evaluation of design and planning alternatives for building and estate development, Measurement and pricing, Economic methods for evaluating investments in buildings and building systems: cost-inuse, benefit-to-costs and savings-to-investment ratios, rate of return, net benefits, payback.

# PRACTICES

- Design of cost evaluation of a building.
- Design of cash flow diagram of a building.
- Design of cost optimization of a building.
- Design of rate of return of a building.
- Design of net benefits of a building.

# COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Apply different types of estimates and their uses	Apply	1	1, 2, 3, 9
2	Analysis of the ethical questions that arise in construction estimating.	Analyze	1	1, 2, 9, 12
3	Creative and interpret the drawings and specifications.	Create	2	1, 2, 9, 12
4	Creative quantity take-offs based on the draw- ings and specifications and generate detailed estimates.	Create	2	1, 2, 9, 12

# **TEXT BOOKS:**

- 1. B. C. Punmia, "Building construction", Laxmi Publications, New Delhi, 11th edition, 2016.
- 2. Y.S. Sane, "Planning and Designing of Buildings", Allies Book Stall, 2011.

## **REFERENCE BOOKS:**

- 1. G.C. Sahu and Joygopal Jena, "Building Materials and Construction" McGraw Hill Education (India) Pvt. Ltd. Chennai, 2015.
- 2. Kumar Neeraj Jha, "Construction Project Management", Pearson Publication, 2015.
- 3. S.K. Duggal, "Building material", New Age International Publishers, New Delhi, 3rd edition, 2009.