

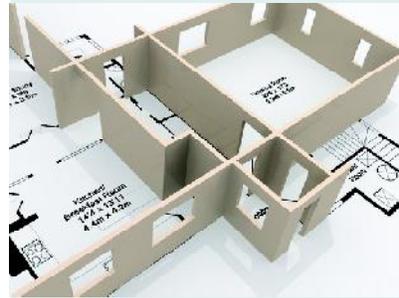
16CE206 BUILDING CONSTRUCTION AND PLANNING

Hours Per Week :

L	T	P	C
3	-	2	4

Total Hours :

L	T	P	WA/RA	SSH/HSB	CS	SA	S	BS
45	-	30	20	35	4	10	2	-



Course Description and Objectives:

This course deals with construction processes of building components such as foundation, walls, beams and columns. This course also covers planning of construction and principles of planning. The objective of this course is to provide knowledge of planning and construction of residential, industrial and public buildings.

Course outcomes:

The Students will be able to:

- understand different properties of brick and stone masonry.
- understand different types of foundations and their specifications.
- plan and construct residential and commercial buildings.
- understand building bye laws.

SKILLS:

- ✓ Find out engineering properties of brick and stone.
- ✓ Identify suitable type of foundation for given site conditions.
- ✓ Design stair cases.
- ✓ Design scaffolding and formwork.
- ✓ Apply byelaws for construction of a new project.

ACTIVITIES:

- o Construct a wall using English bond and Flemish bond.
- o Prepare a model of scaffolding.
- o Make a plan of 2BHK house.
- o Make a plan of U Block of Vignan's University.
- o Prepare a model of various Blocks of Vignan's University.

UNIT – 1**L-09**

STONE AND BRICK MASONRY: Technical terms, Types of bonds in brickwork and their suitability, Classification of stone masonry, Walls, Classification of walls, Floors, Technical terms, Types of ground floors, Roofs, Technical terms, Classification of roofs, Steel sloping roofs, Roof covering materials, Types of flat roofs.

UNIT – 2**L-09**

FOUNDATIONS: Shallow foundations, Spread, combined strap and mat footings, Deep foundations, pile foundations, cofferdam, caissons (Basic description only).

FINISHINGS (BASIC DESCRIPTION ONLY): Plastering and pointing, White washing and distempering, Painting, Constituents of paint, Types of paints, Painting of new/old Wood, Varnish.

STAIRCASES: Technical terms, Types of staircases, Design considerations.

DAMPNESS AND DAMP PROOFING: Causes of dampness, Methods of preventing dampness, Damp proofing materials, Methods of providing DPC under different situations.

SCAFFOLDING & FORM WORK: Types of scaffolding, Types of formwork, Centering.

UNIT – 3**L-09**

PRINCIPLES OF PLANNING: An Approach to planning , Principles of Planning, Aspect, prospect, Privacy, Roominess, Furniture requirements, Grouping, Circulation, Orientation, Flexibility, Sanitation, Lighting, Ventilation, Elegance and economy, Climatic considerations, Flow diagram and line plan, Space for equipment for air-conditioning, Space for machinery etc.

UNIT – 4**L-09**

BUILDING RULES AND BYE-LAWS: Zoning regulations, Regulations regarding layouts or sub divisions, Building regulations, Rules for special type of buildings, Calculation of plinth, Floor and carpet area, Floor space index.

BUILDING ELEMENTS: Conventional signs, Guidelines for staircase planning, Guidelines for selecting doors and windows, Terms used in the construction of door and window, Specifications for the drawing of door and window.

UNIT – 5**L-09**

RESIDENTIAL BUILDINGS: Minimum standards for various parts of buildings, Requirements of different rooms and their grouping, characteristics of various types of residential buildings.

PUBLIC BUILDINGS: Planning of educational institutions, Hospitals, Dispensaries, Office buildings, Banks, Industrial buildings, Hotels and motels, Buildings for recreation.

LABORATORY EXPERIMENTS

LIST OF EXPERIMENTS

Total hours: 30

1. Conventional signs.
2. Plan, section and elevation of doors and windows.
3. English and Flemish bonds King-post and Queen-post trusses.
4. Plan, Section and Elevation of a single storied residential building.
5. Generating Plan, Section and elevation of a two storied residential building.
6. Generating plan, Section and elevation of a post-office/Bank.
7. Learning basic commands of CAD software.
8. Drawing the line diagram of basic building components like door, window by CAD software.
9. Drawing plan, section and elevation of a single storied residential building by CAD software.

TEXT BOOKS:

1. B. C. Punmia, "Building construction", 11th edition, Laxmi Publications, New Delhi, 2008.
2. N. Kumaraswamy, "Building Planning and Drawing", 2nd edition, Charotar Publishing House, 2007.

REFERENCE BOOKS:

1. M. G. Shah, C. M. Kale and S. Y. Patki, "Building Drawing", 4th edition, Tata McGraw-Hill, New Delhi, 2002.
2. McKay, "Building Construction", Vol. I, II, III and IV, 4th edition, Orient Long Man, 2004.