

B.E. Semester: IV

Civil Engineering

Subject Name: BUILDING CONSTRUCTION (CV402)

A. Course Objectives:

The educational objectives of this course are

To understand and utilize basic principles used in Building Construction.

B. Teaching /Examination Scheme

Teaching scheme				Total Credit	Evaluation Scheme					Total
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract/ Tut.	
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	
03	00	02	05	04	03	70	30	20	30	150

C. Detailed Syllabus :

1. Introduction :

Overview of Construction Practices, Theory and Methods

2. Subsurface Investigations:

Objectives, Methods of boring like wash boring, Percussion etc.

3. Shallow Foundations:

Necessity, types, setting out, excavation, construction, failures of foundation and remedial measures

4. Masonry Construction:

(a) Stone Masonry: Technical terms, lifting appliances, joints, types
random (un-coursed) rubble, coursed rubble, dry rubble masonry, Ash
Masonry- Ashlar fine, chamfered fine.

(b) Brick Masonry: Technical terms, bonds in brick work- English bon single &
double Flemish bond, garden wall bond, raking bond, Dutch bond.

(c) Composite Masonry: Stone facing with brick backing, brick facing with concrete
backing.

(d) Hollow concrete blocks and construction

(e) Cavity walls: Brick cavity walls, position of cavity at foundation, roof and at opening
levels.

(f) Lintels & arches: Lintels – types, construction. Arches – technical terms types – brick

arches, rough, axed, stone arches, flat – semi circular.

5. Plain and Reinforced Concrete Construction :

Precast and Cast-in situ Construction

6. Doors and Windows:

- (a) Doors: Location, technical terms, size, types, construction, suitability.
- (b) Windows: Factors affecting selection of size, shape, location and no.of windows, types, construction, suitability, fixtures and fastenings.
- (c) Ventilators: Ventilators combined with window, fan light.

7. Stairs and Staircases :

Definition, technical terms, requirements of good stair, fixing of going and rise of a step, types of steps, classification, example – stair planning, elevators, escalators.

8. Floorings :

Introduction, essential requirements of a floor, factors affecting selection of flooring material, types of ground floors, brick, flag stone, tiled cement- concrete, granolithic, terrazzo, marble, timber flooring, upper floor- timber, timber floor supported on RSJ flag stone floor resting on RSJ, jack arch floor, reinforced concrete floor, ribbed floor, pre cast concrete floor.

9. Roofs and Roof Covering :

Introduction, requirements of good roof technical terms, classification, types of roof coverings for pitched roof. A.C. sheet roofs – fixing of A.C. sheets, laying of big six sheets, G.I. Sheets roofs, slates, flat roof – advantages, disadvantages, types of flat terraced roofing.

10. Temporary works :

Timbering in trenches, types of scaffoldings, shoring, underpinning

11. Wall Finishes:

Plastering, pointing and painting.

12. Special Treatments:

Fire resistant, water resistant, thermal insulation, acoustical construction and anti-termite treatment.

D. Lesson Planning :

Sr. No.	Title of the Unit	Minimum Hours	Weightage
1.	Introduction	2	2
2.	Subsurface Investigations	4	8
3.	Shallow Foundations	4	8

4.	Masonry Construction	12	20
5.	Plain and Reinforced Concrete Construction	3	8
6.	Doors and Windows	5	15
7.	Stairs and Staircases	3	8
8.	Floorings	3	8
9.	Roofs and Roof Covering	3	8
10.	Temporary Works.	2	5
11.	Wall Finishes	2	5
12.	Special Treatments	2	5

E. List of Tutorials:

1.	Introduction
2.	Subsurface Investigations
3.	Shallow Foundations
4.	Masonry Construction
5.	Plain and Reinforced Concrete Construction
6.	Doors and Windows
7.	Stairs and Staircases
8.	Floorings
9.	Roofs and Roof Covering
10.	Temporary Works
11.	Wall Finishes
12.	Special Treatments

Term Work:

Term work shall be based on the above mentioned course content, Drawing sheet is required to show the building component.

Field Visit:

Field visit based on course content are Suggested.

F. Instructional method and pedagogy (Continuous Internal Assessment Scheme) (CIA):

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.
- Lecture may be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lectures and practical which carries marks.
- At regular intervals assignments will be given. Students should submit all assignments during given period.
- Classroom participation and involvement in solving the problems in Tutorial rooms
Carries Marks
- Internal exam of 30 marks will be conducted as a part of Mid semester evaluation.
- The course includes a practical, where students have an opportunity to build an appreciation for the concept being taught in lectures.

G. Student Learning Outcome:

- On the successful completion of this course the course helps student to understand the basics of Building Construction and helpful to the construction of industry.

H. Recommended Study Materials

(A) Reference Books:

1. Dr. B. C. Punamia ,Building Construction, Laxmi Publication Delhi.
2. Sushil Kumar, Building Construction.
3. Dr. S.C. Rangwala, Building Construction, Charotar Pub. House.
4. Gurucharan Singh, , Building Construction
5. National Building Code
6. IS 6313-1981/2001/2001 part 3
7. IS 2212-1991
8. IS 2250-1981
9. IS 1237-1980
10. IS 1081-1960
11. IS 1661-1972

(B) Web Materials:

1. <http://www.nptel.iitm.ac.in>