BUILDING CONSTRUCTION II

ENAR 206

Lecture : 2 **Year : II**
Tutorial : 0 **Part : I**
Practical : 3

Course Objectives:
This course is designed to provide students with a comprehensive understanding of building construction systems for small to medium-sized projects. The objective is to introduce the key structural components of buildings, with a focus on the various methods and techniques used in constructing staircases, doors, windows, and roofs. The course provides an overview of retaining walls and basement waterproofing.

1 Temporary Works (8 hours)

1.1 Introduction to temporary construction works
1.2 Types and uses of formwork in building
1.3 Types and uses of shoring in buildings and construction site
1.4 Types and uses of scaffolding in building
1.5 Types and uses of underpinning

2 Staircase (6 hours)

2.1 Terminologies and type of staircase
2.2 Design by building type
2.3 Staircase design calculation

3 Openings in a Building (4 hours)

3.1 Elements of door and window
3.2 Types and uses of door and window
3.3 Comparative analysis of different material
3.4 Selection criteria for material option
3.5 Design details of timber doors and windows
3.6 Roof opening and details

4 Reinforced Cement Concrete Structures (6 hours)

4.1 Introduction to reinforced cement concrete structures
4.2 Basic concept on structural performance
4.3 Application of material in column, beam and slab

5 Retaining Walls and Basement Construction (2 hours)

5.1 Terminology and types of retaining wall
5.2 Uses of retaining wall
5.3 Types of basement
5.4 Detailing of basement water proofing

6 Timber Roof (4 hours)

6.1 Terminology and types of timber roof
6.2 Application by building span and usage
6.3 Roof coverings (Thatch, metal, slate, tiles, CGI Sheets, PVC Sheets)

Assignments

1. Self-field-based study reports of construction site incorporating major portion of the units.
2. Comparative analysis of self-field-based observation and theory

Practical (45 hours)

1. Preparation of drawings and detailing of temporary works (Formworks, shoring, scaffolding, underpinning)
2. Preparation of drawings and detailing of staircases
3. Preparation of drawings and detailing of openings (Door, window, roof openings)
4. Preparation of drawings and detailing of reinforced cement concrete structures
5. Preparation of drawings and detailing of retaining walls and basements
6. Preparation of drawings and detailing of timber structures

Final Exam

The questions will cover all the chapters in the syllabus. The evaluation scheme will be as indicated in the table below:

Chapter	Hours	Marks distribution*
1	8	8
2	6	6
3	4	4
4	4	4
5	4	4
6	4	4
Total	**30**	**30**

* There may be minor deviation in marks distribution.

References

1. Chudley, R., Greeno, R. (2005). Construction Technology Volumes 1-4: Pearson Prentice Hall.
2. Mckay, W. B., Mckay, J. M. (1974). Building Construction Vol. I-IV Orient BlackSwan.
3. Kumar, S. (2001). Building Construction: Standard Publishers Distributors Delhi.
4. Ching, F. D. K., Adams, C. (2001). Building Construction Illustrated: Wiley.
5. Barry, R. (1984). The Construction of Buildings Volumes 1-5 R. Barry: BSP Professional.
6. VARGHESE, P. C. (2009). BUILDING CONSTRUCTION: PHI Learning.
7. Rangwala, S. C. (2009). Building Construction: Charotar Publishing House Pvt. Limited.
8. Achilles, A., Hanses, K., Kummer, N., Navratil, D., Steiger, L. Bielefeld, B. (2015). Basics Building Construction. Birkhäuser.P
9. Söffker, G. H., Deplazes, A. (2005). Constructing Architecture: Materials, Processes, Structures: Birkhäuser Basel.