

NIRMA UNIVERSITY

Institute of Architecture and Planning

Bachelor of Architecture

Semester-III

L	W	S	C
2	2	-	3

Course Code	2AR363
Course Title	Building Construction & Technology - III

Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

- Demonstrate basic principles for planning, design and construction of Floors, RCC frame structure and Openings as used in buildings.
- Explain principles of spanning system and their application.
- Apply requirement and criteria for making openings to build openings with various materials and techniques.

Syllabus: 15 weeks (4 hours/week)

Total Teaching hours: 60 Hr

Unit No.	Syllabus: Topic	Sub Topic	Teaching hours:
1	Understanding Floor Systems	<ul style="list-style-type: none">• Understanding construction of wooden, steel, precast and RCC floor.• Various elements of floors: beams, slab, girders etc.• Types of floors : Flat slab, ribbed, metal deck, precast, etc.	16 hours
2	Introduction to RCC Framed structure	<ul style="list-style-type: none">• Understanding construction of a RCC frame structure with all components like footing, columns, beams, slabs, infill walls etc.	12 hours
3	Introduction to Materials and its properties	<ul style="list-style-type: none">• Metal: Properties and use of both ferrous and non ferrous metals.• Glass and glass products : Manufacturing of glass, types of glass and their utilisation, etc	8 hours
4	Doors and windows	<ul style="list-style-type: none">• Understanding requirements, use and construction of openings (doors and windows) with timber, metal, PVC etc.• Components, assembly and manufacturing of	16 hours

		doors and windows based on material and system. <ul style="list-style-type: none"> • Planning and design criteria related to openings. 	
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L= Lecture, W= Workshop, S= Studio, C= Credit

Suggested Readings:

1. Kotadiya A. S.. Building Construction. : Mahajan Publishing, 2014
2. Barry, R. Construction of Buildings Vol - 3: Single Storey Frames, Shells and Lightweight Coverings. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
3. Barry, R. Construction of Buildings Vol - 4: Multi-Storey Buildings, Foundation and Substructures, Structural Steel Frames, External Walls and Cladding of Framed Buildings. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
4. Barry, R.. Construction of Buildings Vol - 1: Foundations and Oversite Concrete, Walls, Floors, Roofs. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
5. Barry, R.. Construction of Buildings Vol - 2: Windows, Doors, Fibers, Stairs Finishes. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
6. Levy, Matthys. Why Buildings Fall Down: How Structures Fail. New York: W. W. Norton and Co., 2002
7. McKay J. K.. Building Construction Vol - 2: Metric. Delhi: Pearson Education Asia Pte. Ltd., 2014
8. McKay, J. K.. Building Construction Vol - 3: Metric. Delhi: Pearson Education Pte. Ltd., 2013
9. McKay, J. K.. Building Construction Vol - 4: Metric. Delhi: Pearson Education Pte. Ltd., 2013
10. Mckay, W. B.. Building Construction Vol - 1: Metric. New Delhi: Pearson Education Asia Pvt. Ltd.; India, 2013
11. Rangawala, S. C.. Building Construction. Anand: Charotar Publishing House, 2014
12. Rangwala, S. C.. Surveying and Leveling. Anand: Charotar Publishing House, 2011