

# NIRMA UNIVERSITY

## Institute of Architecture and Planning

### Bachelor of Architecture

#### Semester-IV

<b>L</b>	<b>W</b>	<b>S</b>	<b>C</b>
<b>2</b>	<b>2</b>	<b>-</b>	<b>3</b>

<b>Course Code</b>	<b>2AR463</b>
<b>Course Title</b>	<b>Building Construction &amp; Technology - IV</b>

#### Course Learning Outcomes (CLO):

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

- Illustrate planning, designing and construction of vertical circulation systems, toilets and kitchen areas based on application of their basic principles.
- Explain and develop components and construction of roofs and roofing system.
- Design components and details of Stairs, Toilets and Kitchens.

**Syllabus: 15 weeks (4 hours/week)**

**Total Teaching hours: 60 Hr**

<b>Unit No.</b>	<b>Syllabus: Topic</b>	<b>Sub Topic</b>	<b>Teaching hours:</b>
1	Vertical Transportation systems	<ul style="list-style-type: none"><li>• Types of stairs, ramps, lifts and escalators; associated requirements and functional aspects.</li><li>• Design and construction details of staircase in RCC, Steel, wood, etc</li><li>• Understanding of Installation, working and mechanisms of escalators, travellers, autowalks, etc</li><li>• Basic Codes and Standards of practise</li></ul>	24 hours
2	Roof and Roofing systems	<ul style="list-style-type: none"><li>• Classification of roof and roofing systems</li><li>• Waterproofing and rain water gutter details</li><li>• Conceptual, construction and functional aspects with different materials.</li></ul>	12 hours
3	Toilet and Kitchen	<ul style="list-style-type: none"><li>• Design and detailing of toilet, bath, utility and kitchen.</li><li>• Introduction to associated components, materials, construction processes and techniques.</li></ul>	24 hours

L= Lecture, W= Workshop, S= Studio, C= Credit

## **Suggested Readings:**

1. Barry, R. Construction of Buildings Vol - 3: Single Storey Frames, Shells and Lightweight Coverings. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
2. Barry, R.. Construction of Buildings Vol - 2: Windows, Doors, Fibers, Stairs Finishes. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
3. Losantos, Agata. Stair Design. Newyork: DAAB Publication, 2006
4. McKay J. K.. Building Construction Vol - 2: Metric. Delhi: Pearson Education Asia Pte. Ltd., 2014
5. McKay, J. K.. Building Construction Vol - 3: Metric. Delhi: Pearson Education Pte. Ltd., 2013
6. McKay, J. K.. Building Construction Vol - 4: Metric. Delhi: Pearson Education Pte. Ltd., 2013
7. Mckay, W. B.. Building Construction Vol - 1: Metric. New Delhi: Pearson Education Asia Pvt. Ltd.; India, 2013
8. McLeod, Virginia. Detail In Contemporary Timber Architecture. UK: Laurence King Publishing, 2010
9. Punaima, B. C.. Comprehensive Design of Steel Structures. New Delhi: Laxmi Publications Pvt. Ltd., 2012
10. Punmia, B. C.. Building Construction. New Delhi: Laxmi Publications Pvt. Ltd., 2008
11. Rangawala, S. C.. Building Construction. Anand: Charotar Publishing House, 2014
12. Schillaci, Fabio. Construction and Design Manual Architectural Renderings. Germany: Dom Publishers, 2010
13. Shah, M. G.; Padki, S. Y. ; Kale, C. M.. Building Construction Vol - 4: Metric. New Delhi: Tata McGraw Hill Education Ltd., 2015
14. Watson, Donald. Time saver Standards for Building Materials and Systems: Design Criteria and Selection Data. New Delhi: Tata McGraw Hill Education Private Limited, 2009
15. Watts, Andrew. Modern construction handbook. New York: Springer, 2013
16. .Construction And Design Manual Mobile Architecture. Germany: Dom Publishers, 2012