NIRMA UNIVERSITY

Institute:	**Institute of Technology**
Name of Programme:	**B Tech in Civil Engineering**
Course Code:	2CL202
Course Title:	**Construction Technology**
Course Type:	(☑Core/□Value Added Course/□Departmental Elective/ □Institute Elective/□University Elective/(□Open Elective Any other)
Year of Introduction:	2023-24

L	**T**	**Practical component**				**C**
		LPW	**PW**	**W**	**S**	
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Course Learning Outcomes (CLOs):

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

1. identify construction methods of sub-structure components of buildings (BL3)
2. choose appropriate construction methods of super-structure components of buildings (BL3)
3. plan and implement various types of building services (BL3)
4. make use of appropriate construction tools, plants and equipment. (BL3)

Syllabus: **Total Teaching hours: 30**

Unit	**Syllabus**	**Teaching hours**
Unit-I	**Introduction to Civil Engineering Structures** Types and Components of buildings, bridges, roads, hydraulic structures, tunnels, etc.	03
Unit-II	**Construction of Sub-structure Components of Buildings** Types, functions, and construction procedure: excavation, foundations, anti-termite, damp-proofing, temporary supporting structures.	07
Unit-III	**Construction of Super-structure Components of Buildings** Types, functions, and construction procedure: Masonry, RC elements, openings, roofing, vertical and horizontal transportation. Scaffolding and formwork. Finishing: Types, functions, plastering, pointing, flooring, cladding, painting, structural glazing.	08
Unit-IV	**Building Services** Importance and design parameters of various building services: mechanical, electrical and plumbing, firefighting, elevators and escalators.	05
Unit-V	**Construction Tools, Plants and Equipment** Types: Earth moving, hauling, hoisting, compacting, concreting, pumping and dewatering, asphalt laying, piling, tunnelling, etc.	07

Self-Study:	The self-study contents will be declared at the commencement of the semester. Around 10% of the questions will be asked from self-study contents.
Suggested Readings/ References:	• Bindra, S. P., & Arora, S. P. *Building Construction*, Dhanpat Rai. • Punmia, B. C. *Building Construction*, Laxmi Publications. • Rangwala, S. C. *Building Construction*, Charotar Publication. • Mckay, W. B. *Building Construction Metric Vol. I to IV*, Orient Longman. • Sarkar, S.B. *Construction Technology*, Oxford University Press • Chudley, R., & Greeno, *Building Construction Handbook*, Butterworth Heinneman Ltd. • Goyal, M. M. *Handbook of building construction: The Essential Source of Construction Practice*, Amrendiya Consultancy. • Peurifoy, R. L., & Schexnayder, C. J. *Construction Planning, Equipment and Methods*, Tata McGraw Hill.
Suggested List of Experiments:	Laboratory work will be based on the above syllabus with minimum 05 exercises to be incorporated.

Sr. No.	Name of Experiments/Exercises	Hours
1.	Model of sub-structure/super-structure components of a building	08
2.	Planning and execution of construction activities of a building	08
3.	Preparation of a model/chart for temporary structures	04
4.	Planning and detailing of building services	06
5.	Preparation of report/poster/chart for construction equipment	04