

Subject Code: 1ET4010305	Subject Title: Building Construction
Pre-Requisite	----

RATIONALE:

Building Construction is a core subject in civil engineering. This subject is intended for gaining useful knowledge with respect to facts, concepts, principles and procedures related to building construction system so that student can effectively be able to execute building construction work and carry out repairs and maintenance of existing building with safety and quality in construction.

COURSE OBJECTIVE:

The content should be taught and implemented with the aim to develop skills so that students are able to acquire following competencies:

1. Understand different types of technology used in construction works.
2. Students are able to appreciate various types of construction machineries, formworks and safety measures involved in construction works.
3. Student should be able to apply these concepts in actual construction practices.
4. Provide procedural knowledge of the simple testing methods of different construction materials.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
3	-	2	4	60	40	20	30

DETAILS OF COURSE CONTENTS:

S. NO.	TOPIC	Total Hrs.	WEIGHTAGE
1	Introduction: 1.1 Introduction of various Civil Engineering structures. 1.2 Functions of various components of building and other Structures.	02	04
2	Foundations: 2.1 Classification and types of foundations. 2.2 Selection of the suitable type of foundation for Required Structure and as per situation. 2.3 Foundations in black cotton soil, loose soils etc. 2.4 Timbering in trenches. 2.5 Failures in foundation Precautions & remedial measures.	08	20
3	Masonry Work: 3.1 Brick and stone masonry. 3.2 Selection of suitable type of masonry.	08	20

	3.3 Construction procedures. 3.4 Types of mortar used in masonrywork.		
4	Concreting: 4.1 Production of concrete including batching, mixing, transporting, placing, compacting & curing 4.2 Properties of fresh concrete and hardened concrete. 4.3 Concreting in different situation 4.4 Types of special concrete.	04	08
5	Scaffolding and Centering: 5.1 Purpose & types of scaffolding and centering. 5.2 Suitability of scaffolding as per situations and type of structures. 5.3 Erection of centering for different component.	04	10
6	Building Components: 6.1 Technical terms related with door and window. 6.2 Types of Doors & Windows, Purpose, Size, Location, Material. 6.3 Ventilation. 6.4 Technical terms of roof. 6.5 Types of roof & roof covering 6.6 Terms & Components related to stair 6.7 Types of stair as per arrangement of	04	10
7	Building Items: 7.1 Plastering & pointing- its purpose, 7.2 Types of Plastering. 7.3 Damp proof course. 7.4 Anti-termite measures and treatments. 7.5 Construction joints-need and materials used. 7.6 Plumbing and electrification- various types of fittings 7.7 And laying procedure.	04	10
8	Construction Machinery: 8.1 Purpose, advantages and disadvantages. 8.2 Machineries used for earthwork and for other construction works. 8.3 Their details, special features, suitable uses, specifications.	04	08
9	Building Maintenance and Safety Measures: 9.1 Purpose, need, importance, methods. 9.2 Causes and types of defects in buildings. 9.3 Preparation of report on maintenance work. 9.4 Remedial measures and execution procedure of any	04	10

	one type of building maintenance work. 9.5 Importance of various Laws / Norms / Regulations / Acts for safety. 9.6 Precautions and precautionary Measures. 9.7 Post-accident procedures.		
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COURSE OUTCOME:

After completing this course, student will be able to

1. Identify components of building structures.
2. Propose suitable type of foundation for building structures.
3. Select suitable type of masonry for building structures.
4. Select relevant material for finishing works.

LIST OF PRACTICAL:

SR. No.	Experiment
1	Draw a various types sketches of Foundations, timbering in trenches
2	Draw a Brick and stone masonry work
3	Draw a Scaffolding works and centering
4	Draw a Different types of Damp Proof Course
5	Arrange field visit at construction site where the Excavation for foundation work are in progress
6	Arrange field visit at construction site where the Masonry work are in progress
7	Arrange field visit at construction site where the Concreting work are in progress
8	Arrange field visit at construction site where the Plastering and pointing work are in progress.
9	Exercise for layout using foundation plan of a given building on site.
10	Exercise for carrying out different types of masonry.

LIST OF REFERENCES:

Sr.no.	Title	Author
1	Building Construction	S. P. Arora and Bindra (Dhanpat Rai Publication, Delhi.)
2	Building Construction	Rangawala, S. C. (Charotar Publication, Anand)
3	Building Construction	Punmia B. C., and Jain A. K (Firewall Media)
4	Building Construction	Janardan Zha (Khanna Publication)
5	A to Z Building Construction	Mantri S (SatyaPrakashan, New Delhi)