



C.U.SHAH UNIVERSITY – Wadhwan City

FACULTY OF: -Technology and Engineering (Diploma Engineering)

DEPARTMENT OF: -Civil Engineering

SEMESTER: - III **CODE:** -2TE03BCN1

NAME – Building Construction

Teaching & Evaluation Scheme:-

Subject Code	Subject Name	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	ToTal		Theory				Practical (Marks)			Total
											Internal		University	
							Sessional Exam		University Exam		Pr	TW	Pr	
						Marks	Hours	Marks	Hours					
2TE03BCN1	Building Construction	03	00	02	05	04	30	1.5	70	03	30	20	---	150

Objectives: To equip the students with comprehensive knowledge of process of construction..

Prerequisites:- Thorough knowledge of process of construction and execution.

Course Outlines:-

Sr. No.	Course Contents	Teaching Hours
1	Building as Structure: Definition as per IS 1256-1958 ,Component of structure: Substructure (Foundation, Plinth & DPC) and Superstructure (Wall, Peirs, Floor, Lintel, Sill, Opening in Walls, Chajjas, Ceiling, Beams, Roof, Staircase, Wall finishes) neat sketch, its functions and requirement. Load Bearing structure and framed structure. Comparison, Materials to be recommended for framed structure.	07
2	Foundation: Definition, Function and essential requirement of good foundation, Types of foundation. Shallow and Deep Foundation. Depth & size of foundation. Definition of Different Bearing Capacity of soil. Most common foundations, their suitability and requirement and neat sketches of Spread footing(Wall footing and isolated footing), Combined footing (Inverted arch footing & Continuous footing), Strap footing, Grillage foundation, Mat or Raft footing , Under reamed pile foundation. Plinth: Definition. DPC: Definition, Causes, effects, material used treatment to wall and basement.	07
3	Masonry: Stone and Brick masonry : Definition and its different types Definition of different terms used in masonry.Principles of masonry construction, Aggregate: Classification, characteristics , uses Stone: Engineering properties and their selection, uses and tests Classification of stone masonry, Uncoursed and coursed Rubble	08

	masonry. Dressing of stones, Supervision of stone masonry construction Bricks: Characteristics of different classes of bricks. Common defects in brick. Surkhi, Classification on the basis of materials. Proportion of burnt clay brick, Special brick, hollow brick, Fly ash brick., Rules for bonds in brick work, Different types of bond, Stretcher, Header, English and Flemish bond. Laying of Brick Supervision of brick masonry construction, tools & plants used. Purpose of Cavity wall construction. Comparison of Stone and brick masonry.	
4	Finishes: Plastering , Pointing and Painting : Plastering: Definition, Object & requirement of good plaster. Types of mortar for plastering, Lime: Classification of lime, Slaking of lime, setting, uses. Different terminologies used in plastering work. Tools for plastering, number of coats of plaster. Methods of cement plastering Types of plaster finishes, defects in plastering, special materials used in plastering. Pointing : Definition, mortar used in pointing, preparation of surface, methods of pointing & types of pointing , Painting: Definition, characteristics of an ideal paint, Constituents of paint, Classification and types of paint, Defects in painting. Surface preparation, selection of suitable painting material, Distemper and Distempering, Color washing, white washing and varnishes.	06
5	Doors and Windows, Lintels: Definition of technical terms, location of doors and windows, size and type of doors panelled doors, battened doors, flush doors, collapsible doors, rolling shutters, Revolving doors, Glazed doors. Sizes of door. Types of windows fully panelled, partly panelled & glazed, glazed wooden, steel, Aluminum windows, sliding windows, louvered window, ventilators, cement grills. Protective treatment for doors and windows, fixtures and fastenings for doors and window. Lintels: Definition, types and load on lintel.	05
6	Floors and Roof : Floors: Definition, Types of floor brick flooring, Cement concrete flooring, Mosaic flooring, Rubber flooring., floor finishes and suitability, Roof : Definition, Different technical terms Requirement of ideal roof, Classification of roof, Pitched roof (Lean to roof, King post truss, Queen post truss), Types of Flat roof (RCC roof), Selection of roof covering.	04
7	Stairs : Terms used, Classification of stairs, Stairs of different materials, specifications and suitability Design of dog legged staircase.	03
8	Non Conventional materials and low cost housing materials : Non Conventional materials: Fly ash, plastics, fiberglass etc. Corrugated sheets, refabricated brick panel, mud mortar. Ecofriendly materials. Types of timber to be recommended for structural component, Plywood, Particle board, Veneer, Sun mica, Foremica. Low cost housing materials: Bamboo, clay waste from granite industry, hollow concrete blocks.	05

Experiment List:-

Learning Outcomes:

- Knowledge of all construction processes and their importance.
- Ability to monitor and measure the outcome.

Books Recommended:-

- Building Construction by **Sushil Kumar** Standard Publication, Edition 19th 1997
- Building Construction by **B. C. Punmia Laxmi** Publication, Edition 10 th 2009
- Building Construction by **S. C. Rangawala Charotar** Publication, Edition 25th 2007
- Building Construction by **S. P. Arora and Bindra Dhanpat** Rai Publication Edition 4th 1988
- Civil Engineering Materials by **Technical Teachers Training Institute**, Chandigarh Tata McGraw-Hill Publishing Company Ltd. New Delhi Edition 1st 1992