

Name of the Faculty : Rina
 Discipline : Civil Engg.
 Semester : 3RD
 Subject : Building Construction
 Lesson Plan Duration : 15 weeks

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1.	1.	1. Introduction: 1.1 Definition of a building, classification of buildings based on	1.	1 Demonstration of tools and plants used in building construction
		1.2 Different parts of a building	2.	do
	2.	2. Foundations: 2.1 Concept of foundation and its purpose	3.	2 To prepare Layout of a building: two rooms building with front verandah
		2.2 Types of foundation-shallow and deep	4.	do
2.	1.	2.2.1 Shallow foundation constructional details of: Spread foundations for walls, min. depth criteria, thumb rules for depth and width of foundation and thickness of concrete block,	1.	3 To construct brick bonds (English bond only) in one, one and half and two brick thick: (a) Walls for L, T and cross junction (b) Columns
		REVISION	2.	do
	2.	2.2.2 Introduction to deep foundation and their types	3.	To construct brick bonds (Flemish Bond) in One, One & half and Two brick thick:
		REVISION	4.	(a) Walls for L, T and Cross Junction (b) Columns
3.	1.	2.3.2 Excavation of foundation, trenches, shoring, timbering and de-watering.	1.	Demonstration of "Timbering of Excavated Trenching" through a model and visit at construction
		3. Walls: 3.1 Purpose of walls 3.2 Classification of walls - load bearing, non-load bearing, dwarf wall, retaining, breast walls and partition walls	2.	do
	2.	3.3 Classification of walls as per materials of construction: brick, stone, reinforced brick, reinforced concrete, precast, hollow and solid concrete block and composite masonry walls	3.	Demonstration of "Laying Damp Proof Courses" through a model and visit at construction site
		3.4 Partition walls: Constructional details, suitability and uses of brick and wooden partition walls	4.	do
4.	1.	3.5 Scaffolding, construction details and suitability of various types of tubular scaffolding, shoring, underpinning	1.	Demonstration of "Construction of Masonry Walls" through a model and visit at construction site
		4. Masonry 4.1 Brick Masonry: Definition of terms like header, stretcher, queen closer, king closer, frog and quoin, course, bond, facing, backing, hearting, jambs, reveals, soffit, plinth, pillars and pilasters	2.	do
	2.	4.1.1 Bond – meaning and necessity; English, Flemish bond	3.	do
		4.1.2 Construction of brick walls – methods of laying bricks in walls, precautions observed in the construction of walls, methods of bonding new brick work with old (toothing, raking, back and block bonding), Expansion and contraction joints	4.	do
5.	1.	4.1.3 Mortars: types, selection of mortar and its preparation	1.	Demonstration of "Brick Layers Scaffolding" through a model and visit at construction site
		4.2 Stone Masonry 4.2.1 Glossary of terms – natural bed, bedding planes, string course, corbel, cornice, block in course grouting, moulding, templates, corner stone, bond stone, throating, through stone, parapet, coping, pilasters and buttress	2.	do
	2.	4.2.2 Types of stone masonry: rubble masonry - random and coursed; Ashlar masonry, principles to be observed in construction of stone masonry walls	3.	Demonstration of "Steel Scaffolding" through a model and visit at construction site
		REVISION	4.	
6.	1.	FIRST SESSIONAL	1.	
		5. Arches and Lintels: 5.1 Meaning and use of arches and lintels: 5.2 Glossary of terms used in arches and lintels - abutment, pier, arch ring, intrados, soffit, extrados, voussoirs, springer, springing line, crown, key stone, skew back, span, rise, depth of an arch, haunch, spandril, jambs, bearing, thickness of lintel, effective span	2.	Demonstration of "Laying of Vitrified Tile Flooring" through visit at construction site

	2	5.3 Arches: 5.3.1 Types of Arches - Semi circular, segmental, elliptical and <u>parabolic, flat, inverted and relieving</u>	3.	do
		5.3.2 Stone arches and their construction	4.	
		5.3.3 Brick arches and their construction		
7.	1.	5.4 Lintels 5.4.1 Purpose of lintel	1.	do
		5.4.2 Materials used for lintels		
	5.4.3 Cast-in-situ and pre-cast lintels	2.		
	5.4.4 Lintel along with sun-shade or chhajja			
2	6. Doors, Windows and Ventilators: 6.1 Glossary of terms with neat sketches 6.2 Classification based on materials i.e. wood, metal and plastic and their suitability for different situations. Different type of doors- panel door, flush door, glazed door, rolling shutter, steel door, sliding door, plastic and aluminium doors	3.	REVISION	
	6.3 Window – Panel window, glazed windows (fixed and openable) ventilators, sky light window, Louveres shutters, plastic and aluminium windows.		4.	REVISION
8.	1.	6.4 Door and window frames – materials and sections, fixtures and fasteners, hold fasts	1.	REVISION
		7. Damp Proofing and Water Proofing 7.1 Dampness and its ill effects on bricks, plaster, wooden fixtures, metal fixtures and reinforcement, damage to aesthetic appearance, damage to heat insulating materials, damage to stored articles and health	2.	Demonstration of “Plastering and Pointing Exercise” through visit at construction site
	2	7.2 Sources of dampness - moisture penetrating the building from outside e.g. rainwater, surface water, ground moisture. Moisture entrapped during construction i.e. moisture in concrete, masonry construction and plastering work etc. Moisture which originates in the building itself i.e. water in kitchen and bathrooms etc.		3.
		7.3 Damp proofing materials and their specifications: rich concrete and mortar, bitumen, bitumen mastic, polymer coating, <u>use of chemicals</u>	4.	do
9.	1.	7.4. Damp proofing of basement, Ground floors, plinth and walls, <u>water storage tank, kitchen, W.C., roof.</u>	1.	REVISION
		8. Floors 8.1 Glossary of terms-floor finish, topping, under layer, base <u>course, rubble filling and their purpose</u>	2.	REVISION
	2	8.2 Types of floor finishes - concrete flooring, ceramic tile flooring, stone (marble and kota) flooring. Wooden flooring	3.	3 To construct brick bonds (English bond only) in one, one and half and two brick thick: (a) Walls for L, T and cross junction (b) Columns
		8.3 Special emphasis on level/slope/reverse slope in bathrooms, toilets, kitchen, balcony and staircase	4.	REVISION
10.	1.	9. Roofs 9.1 Types of roofs, concept of flat, pitched and arched roofs	1.	REVISION
		9.2 Glossary of terms for pitched roofs - batten, eaves, fascia board, gable, hip,	2.	REVISION
	2.	lap, purlin, rafter, rag bolt, valley, ridge, rain water gutter, <u>anchoring bolts</u>	3	REVISION
		9.3 False ceilings using gypsum, plaster boards, cellotex, fibre boards	4	REVISION
11.	1.	REVISION	1.	
		SECOND SESSIONAL	2.	
	2	10. Stairs 10.1 Glossary of terms: Staircase, winders, landing, stringer, newel, baluster, riser, tread, width of staircase, hand-rail, nosing	3.	Demonstration of “Constructing RCC work – Foundations, Columns, Beams and Slabs” through visit at construction site
		10.2 Classification of staircase on the basis of material – RCC,		4.
1.	10.3 Planning and layout of staircase: Relations between rise and tread, determination of width of stair, landing etc	1.	Demonstration of “Constructing RCC work – Foundations, Columns, Beams and Slabs” through visit at construction site	
	10.4 Various types of layout - straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), <u>bifurcated stair, spiral stair</u>		2.	do

12.	2	11. Surface Finishes 11.1 Plastering - classification according to use and finishes like plain plaster, grit finish, rough cast, pebble dashed, concrete and stone cladding etc., dubbing, proportion of mortars used for different plasters, techniques of plastering and curing	3.	do
		11.2 Pointing - different types of pointing and their methods	4.	do
13.	1.	11.3 Painting - preparation of surface, primer coat and application of paints on wooden, steel and plastered wall surfaces	1.	Demonstration of "Pre-construction and post construction termite treatment of building and woodwork" through visit at construction site
		11.4 Application of white washing, colour washing and distempering, polishing, application of cement and plastic paints	2	do
	2.	11.5 Selection of appropriate paints/finishes for interior and exterior surfaces	3	do
		11.6 Importance of preparation of surfaces such as hacking, grooving etc before application of surface finishes	4	do
14.	1.	12 Anti Termite Measures as per IS 6.313- I-III 12.1 Anti Termite Treatment to Foundation, Masonary, RCC, Floors, Junction of walls and Floors.	1.	Demonstration of "False Ceiling" through visit at construction site
		12.2 Treatment to wooden joinery 12.3 Treatment to existing	2.	
		REVISION	3.	construction site
	2	THIRD SESSIONAL	4.	do
15.	1.	REVISION	1.	REVISION
		REVISION	2.	REVISION
	2.	REVISION	3.	REVISION
		REVISION	4.	REVISION