

Name of the Faculty :
Discipline : **Civil Engg.**
Semester : **3rd**
Semester : **Semester**
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 occupancy	1.	1 Demonstration of tools and plants used in building construction
	2.	1.2 Different parts of a building		
	3.	2. Foundations: 2.1 Concept of foundation and its purpose		
	4.	2.2 Types of foundation-shallow and deep		
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,	2.	2 To prepare Layout of a building: two rooms building with front verandah
	2.	stepped foundation for masonry pillars and concrete columns		
	3.	2.2.2 Introduction to deep foundation and their types		
	4	2.3. Earthwork 2.3.1 Layout/setting out for surface excavation, cutting and filling		
3.	1.	2.3.2 Excavation of foundation, trenches, shoring, timbering and de- watering.	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

	2.	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	
	3.	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	
	4.	3.4 Partition walls: Constructional details, suitability and uses of brick and wooden partition walls	
4.	1.	3.5 Scaffolding, construction details and suitability of mason's brick layers and tubular scaffolding, shoring, underpinning	4. Demonstration of following items of work at construction site by: a) Timbering of excavated trenching
	2.	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	
	3.	4.1.1 Bond – meaning and necessity; English, Flemish bond and other types of bonds	
	4.	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	
5.	1.	4.1.3 Mortars: types, selection of mortar and its preparation	b) Laying damp proof courses
	2.	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	

	3.	4.2.2 Types of stone masonry: rubble masonry - random and coursed; Ashlar masonry, principles to be observed in construction of stone masonry walls		
	4	REVISION		
6.	1.	FIRST SESSIONAL	6.	c) Construction of masonry walls
	2.	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		
	3.	5.3 Arches: 5.3.1 Types of Arches - Semi circular, segmental, elliptical and parabolic, flat, inverted and relieving		
	4	5.3.2 Stone arches and their construction 5.3.3 Brick arches and their construction		
7.	1.	5.4 Lintels 5.4.1 Purpose of lintel 5.4.2 Materials used for lintels	7.	d) Laying of tile flooring on an already prepared lime concrete base
	2.	5.4.3 Cast-in-situ and pre-cast lintels 5.4.4 Lintel along with sun-shade or chhajja		
	3.	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		
	4	6.3 Window – Panel window, glazed windows (fixed and openable)		

		ventilators, sky light window, Louveres shutters, plastic and aluminium windows.		
8.	1.	6.4Door and window frames – materials and sections, fixtures and fasteners, hold fasts	8.	e) Plastering and pointing exercise
	2.	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		
	3.	7.2Sources 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.		
	4	7.3 Damp proofing materials and their specifications: rich concrete and mortar, bitumen, bitumen mastic, polymer coating, use of chemicals		
9.	1.	7.4.Damp proofing of basement, Ground floors, plinth and walls, water storage tank, kitchen, W.C., roof.	9.	f)Constructing RCC work
	2.	8. Floors 8.1 Glossary of terms-floor finish, topping, under layer, base course, rubble filling and their purpose		
	3.	8.2 Types of floor finishes - concrete flooring, ceramic tile flooring, stone (marble and kota) flooring. Wooden flooring		
	4	8.3 Special emphasis on level/slope/reverse slope in bathrooms, toilets, kitchen, balcony and staircase		
10.	1.	9. Roofs 9.1Types of roofs, concept of flat, pitched and arched roofs	10.	g)Pre-construction and post construction termite treatment of building and woodwork
	2.	9.2 Glossary of terms for pitched roofs -		

		batten, eaves, fascia board, gable, hip, lap, purlin, rafter, rag bolt, valley, ridge, rain water gutter, anchoring bolts		
	3.			
	4.	9.3 False ceilings using gypsum, plaster boards, cellotex, fibre boards		
11.	1.	REVISION	11.	h) Interlocking tiles
	2.	SECOND SESSIONAL		
	3	10. Stairs 10.1 Glossary of terms: Staircase, winders, landing, stringer, newel, baluster, riser, tread, width of staircase, hand-rail, nosing		
	4	10.2 Classification of staircase on the basis of material – RCC, timber, steel, Aluminium		
12.	1.	10.3 Planning and layout of staircase: Relations between rise and tread, determination of width of stair, landing etc	12.	REVISION
	2.	10.4 Various types of layout - straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair		
	3.	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		
	4	11.2 Pointing - different types of pointing and their methods		
13.	1.	11.3 Painting - preparation of surface, primer coat and application of paints on wooden, steel and plastered wall surfaces	13.	REVISION

	2.	11.4 Application of white washing, colour washing and distempering, polishing, application of cement and plastic paints		
	3.	11.5 Selection of appropriate paints/finishes for interior and exterior surfaces		
	4.	11.6 Importance of preparation of surfaces such as hacking, grooving etc before application of surface finishes		
14.	1.	12Anti Termite Measures as per IS 6.313-I-III 12.1Anti Termite Treatment to Foundation, Masonary, RCC, Floors, Junction of walls and Floors.	14.	REVISION
	2.	12.2Treatment to wooden joinery 12.3Treatment to existing building		
	3.	REVISION		
	4	THIRD SESSIONAL		
15.	1.	PREPARATION FOR FINAL EXAM	15.	REVISION
	2.	DO		
	3.	DO		
	4.	DO		