GOVT. POLYTECHNIC SIRSA

Lesson Plan

Name of Faculty **:RITU BALA**

Dicipline **:CIVIL ENGG.**

Subject **: BUILDING CONSTRUCTION**

Lesson Plan duration **:15 Weeks (From 7 SEP. TO 24 DEC 2020)**

Work load (Lecture/Practical) per week (in hours): Lectures-04,Practicals-02

Week	Theory		Practical	
	Lecture day	Topic(Including assignment/test)	Practical Day	Topic
1	1	Introduction:	1	1. Demonstration of tools and plants used in building construction
	2	Definition of a building, classification of buildings based on occupancy		
	3	Different parts of a building		
	4	Concept of foundation and its purpose		
2	5	Types of foundation-shallow and deep	2	2. To prepare Layout of a building: two rooms building with front verandah
	6	Shallow foundation - constructional details of: Spread foundations for walls, min. depth criteria		
	7	, thumb rules for depth and width of foundation and thickness of concrete block, stepped foundation for masonry pillars and concrete columns		
	8	Introduction to deep foundation and their types		
3	9	Layout/setting out for surface excavation, cutting and filling	3	viva-voice
	10	Excavation of foundation, trenches, shoring, timbering and de- watering		
	11	Purpose of walls		
	12	Classification of walls - load bearing, non-load bearing, dwarf wall, retaining, breast walls and partition walls		
4	13	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. 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
	14	Partition walls: Constructional details, suitability and uses of brick and wooden partition walls		

	15	Scaffolding, construction details and suitability of mason's brick layers and tubular scaffolding, shoring, underpinning		
	16	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		
5	17	Bond – meaning and necessity; English, flemish bond and other types of bonds	5	viva-voice
	18	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		
	19	Revision		
	20	Mortars: types, selection of mortar and its preparation		
6	21	Stone Masonry 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	6	4. Demonstration of following items of work at construction site by: Timbering of excavated trenching
	22	Types of stone masonry: rubble masonry - random and coursed; Ashlar masonry, principles to be observed in construction of stone masonry walls		
	23	Meaning and use of arches and lintels:		
	24	Glossary of terms used in arches and lintels - abutment, pier, arch ring, intrados, soffit, extrados, voussoirs, springer, springing line,		
7	25	crown, key stone, skew back, span, rise, depth of an arch, haunch, spandril, jambs, bearing, thickness of lintel, effective span	7	Laying damp proof courses
	26	Types of Arches - Semi circular, segmental, elliptical and parabolic, flat, inverted and relieving		

	27	Stone arches and their construction		
	28	Brick arches and their construction		
8	29	Purpose of lintel Materials used for lintels	8	Construction of masonry walls ,Laying of tile flooring on an already prepared lime concrete base
	30	Cast-in-situ and pre-cast lintels Lintel along with sun-shade or chhajja		
	31	Glossary of terms with neat sketches		
	32	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,		
9	33	rolling shutter, steel door, sliding door, plastic and aluminium doors	9	viva-voice
	34	Window – Panel window, glazed windows (fixed and openable) ventilators, sky light window, Louveres shutters, plastic and aluminium windows.		
	35	Door and window frames – materials and sections, fixtures and fasteners, hold fasts		
	36	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		
10	37	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.	10	Plastering and pointing exercise ,Constructing RCC work Pre-construction and post construction termite treatment of building and woodwork , Interlocking tiles
	38	Damp proofing materials and their specifications: rich concrete and mortar, bitumen, bitumen mastic, polymer coating, use of chemicals		
	39	Damp proofing of basement, Ground floors, plinth and walls, water storage tank, kitchen, W.C., roof.		

	40	Glossary of terms-floor finish, topping, under layer, base course, rubble filling and their purpose		
11	41	Types of floor finishes - concrete flooring, ceramic tile flooring, stone (marble and kota) flooring. Wooden flooring	11	viva-voice
	42	Special emphasis on level/slope/reverse slope in bathrooms, toilets, kitchen, balcony and staircase		
	43	Types of roofs, concept of flat, pitched and arched roofs		
	44	Glossary of terms for pitched roofs - batten, eaves, facia board, gable, hip, lap, purlin, rafter, rag bolt, valley, ridge, rain water gutter, anchoring bolts		
12	45	False ceilings using gypsum, plaster boards, cellotex, fibre boards	12	viva-voice
	46	Glossary of terms: Staircase, winders, landing, stringer, newel, baluster, riser, tread, width of staircase, hand-rail, nosing		
	47	Classification of staircase on the basis of material – RCC, timber, steel, Aluminium		
	48	Planning and layout of staircase: Relations between rise and tread, determination of width of stair, landing etc		
13	49	Various types of layout - straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair	13	viva-voice
	50	Plastering - classification according to use and finishes like plain plaster, grit finish, rough cast, pebble dashed, concrete and stone cladding etc., dubbing,		
	51	proportion of mortars used for different plasters, techniques of plastering and curing		
	52	Pointing - different types of pointing and their methods Painting - preparation of surface,		
14	53	primer coat and application of paints on wooden, steel and plastered wall surfaces	14	viva-voice

	54	Application of white washing, colour washing and		
	55	distempering, polishing,		
	56	application of cement and plastic paints		
15	57	Selection of appropriate paints/finishes for interior and	15	viva-voice
	58	exterior surfaces		
	59	Importance of preparation of surfaces such as hacking,		
	60	grooving etc before application of surface finishes		
16	57	Anti Termite Treatment to Foundation, Masonary, RCC, Floors, Junction of walls and Floors.	16	viva-voice
	58	Treatment to wooden joinery		
	59	Treatment to existing building		
	60	Revision		