

LESSON PLAN

NAME OF THE FACULTY : SH. HARISH GUPTA
DISIPLINE : ARCHITECTURAL ASSISTANTSHIP
SEMESTER : 1st Year
SUBJECT : BUILDING MATERIALS
LESSION PLAN DURATION : 32 WEEKS
WORK LOAD PER WEEK : 03

Week	Theory	
	Lecture Day	Topic
1 ST	1.	Introduction to BUILDING MATERIALS
	2.	Utility of stones
	3.	Classification of rocks
2 ND	4.	Characteristics of good building stones
	5.	Testing of stones
	6.	Natural bed of stones
3 RD	7.	Common building stones
	8.	Prevailing market rates and sizes
	9.	Transportation costs
4 TH	10.	Standard measurements in the carriage transport
	11.	Storage systems/stacking system
	12.	Classification of bricks – properties and uses of first class, second- class, third class and over

		burnt bricks.
5 TH	13.	Characteristics of good brick
	14.	Size and weight of a standard brick and commonly available brick
	15.	Composition of brick earth
6 TH	16.	Test for burnt clay bricks – Compressive strength test, Water absorption test and Efflorescence Test
	17.	Fire bricks, its properties
	18.	SESSIONAL TEST - 1
7 TH	19.	Fire bricks uses and availability
	20.	Availability of various types of bricks in the market e.g. machine made bricks, handmade firebricks.
	21.	Transportation cost with different modes of transportation and staking of bricks on the site.
8 TH	22.	Brick Tiles
	23.	Introduction of Lime
	24.	Uses of lime requirements with respect to its use as mortar since ancient times; structural strength and economics; classification of lime.

9 TH	25.	Uses of lime requirements with respect to its use as mortar since ancient times; economics
	26.	Uses of lime requirements with respect to its use as mortar since ancient times; classification of lime.
	27.	Setting action of fat lime and hydraulic lime
10 TH	28.	Storing of lime
	29.	Present day use of lime, its strength and curing segments with respect to its use as mortar since ancient times; structural strength and economics
	30.	Introduction of Cement
11 TH	31.	Uses of cement
	32.	Composition of Portland cement
	33.	Setting and hardening of cement
12 TH	34.	Types of cement, their properties and uses
	35.	Storage of cement – transportation
	36.	SESSIONAL TEST - 2
13 TH	37.	Storage of cement – carriage capacities Aggregates (types, uses and transportation)
	38.	Course Aggregates

		Fine Aggregates
	39.	Introduction of Motar Different types of sand and other Puzzolona material
14 TH	40.	Functions of Mortar Preparation of cement mortar, lime mortar, lime cement mortar and their uses.
	41.	Preparation of lime cement mortar and their uses Proportion of mortar for different building works
	42.	Introduction of Concrete
15 TH	43.	Definition of concrete, workability of concrete
	44.	Water - Cement Ratio
	45.	Compaction of concrete
16 TH	46.	Curing of concrete
	47.	Mixing, placing and uses of lime concrete and cement concrete,
	48.	Mixing, placing and uses of aggregate and its grading including Flyash and cement concrete

17 TH	49.	Reinforced cement concrete (RCC), M15, M20
	50.	Necessity of providing reinforcement
	51.	Properties of RCC
18 TH	52.	Handling on site, quality and quantity checking/testing and taking measurement
	53.	Introduction to Ready Mix Concrete (RMC),
	54.	Self-comparing concrete and Light-weight concrete.
19 TH	55.	Introduction of Timber
	56.	Characteristics and uses of common Indian timbers i.e. Sal, Deodar, Kali,
	57.	Characteristics and uses of common Indian timbers i.e. Tali, Chir, and Teak etc.
20 TH	58.	Characteristics of hard wood and soft wood
	59.	Defects in timber
	60.	Characteristics of good timber

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21 TH	61.	Defects in timber Characteristics of good timber
	62.	Different methods of seasoning of timber Preservation of timber/preservative materials for timber
	63.	Availability of different types of timber and their comparative market prices
22 TH	64.	Natural (Shellac, casein and cellulose) and synthetic plastics Thermosetting and thermoplastics and their
	65.	Thermosetting and thermoplastics and their uses Plastics used as materials in building, industry e.g. flooring, roofing, wall paneling, pipes, doors etc
	66.	Alloys and Metals

		Ferrous and non-ferrous metals (Aluminum, copper, lead, zinc, tin etc) their uses and applications in buildings
23 TH	67.	Glass Types, thickness, various uses in building. Basic characteristics visual and physical. Availability, sizes,
	68.	Usage, measurements systems and market prices transportation cost application in the construction industry.
	69.	Sheet Glass Wired glass Laminated safety glass Plate glass Insulating glass Obscured glass

24 TH	70.	<p>Coloured glass</p> <p>Tinted glass</p> <p>Absorbing glass</p> <p>Glass block</p> <p>Float glass</p> <p>Toughened glass</p> <p>Structural glass</p> <p>Etched glass</p> <p>Stained glass</p> <p>Mirrors</p> <p>E- glass</p>
	71.	<p>Paints and Varnishes, Drying Oil, Pigment, Drier, Thinner , Adhesives</p> <p>Synthetic resins (their trade names, uses of synthetic resins, costs, application in various situations as compared to traditional materials and methods . Packing sizes</p>
	72.	<p>Paints and Varnishes, Drying Oil, Pigment, Drier, Thinner , Adhesives</p> <p>Rates, brands, performance guarantees as given by the manufacturer and collection of</p>

		catalogues and their covering capacity, uses and availability of paints and varnishes.
25 TH	73.	Water based paints Distempers Oil based paints and emulsions Cement paints Acrylic emulsions
	74.	Melamine finishes Varnishes Spirit polish, wax polish Lacquers Stucco Tar and Bitumen paint Glazing putty
	75.	Floor Finishes (Laying sizes, availability, popular brand names, quality of polish, uses and current market rates) Terrazzo Tiles and Flooring

		<p>Glazed terracotta and ceramic tiles</p> <p>Cement Concrete Tiles</p>
26 TH	76.	<p>Marble stone, Kota stone, slate, red sand stone, granite – their tiles and slabs</p> <p>Parquet (Wooden)</p> <p>Linoleum tiles and rolls</p> <p>PVC</p> <p>Heavy duty flooring for industrial building</p>
	77.	<p>Wall Finishes (along with application method)</p> <p>Wall board homogeneous</p> <p>Laminated fiber boards – types</p> <p>Plastic wall tiles – tiles available</p>
	78.	<p>Wall papers</p> <p>Cork sheets and tile</p> <p>Thermocoal</p>
27 TH	79.	<p>Foam rubber tiles and rolls</p> <p>Textured paint finishes</p>

	80.	<p>Ceiling Materials (Size, quality, their availability, types of finishes, uses, trade names, market rate and application methods.</p> <p>Hession cloth</p> <p>Gypsum plaster boards plaster of Paris board</p> <p>Plain AC sheets – E board etc.</p> <p>Plywood</p> <p>Hard Board</p>
	81.	<p>Cellotex</p> <p>Fibre Boards</p>
28 TH	82.	Fibre glass
	83.	<p>Asbestos tiles</p> <p>Thermocoal</p>
	84.	Medium density fibre board (MDF)
29 TH	85.	<p>Roofing Materials</p> <p>Asbestos sheets</p>
	86.	GI sheets

		Shingles
	87.	Ferro-cement sheets Fibre sheets Slates
	88.	Manglore tiles Pan tiles Corrugated PVC sheets
30 TH	89.	Their standard sizes, uses, availability, prices and knowledge about supporting system
	90.	Additives and Admixtures Water repellants and water proofing agents Accelerators
31 TH	91.	Air entraining agents
	92.	Hardeners Workability increasing agents Fly ash

	93.	Their availability, uses, costs, performance specifications, and properties used under various conditions.
32 TH	94.	Kitchen and Toilet Fixtures
	95.	Market survey of various materials and collection of data with reference to their properties
	96.	sizes, costs, designs etc. (Specifications of kitchen and toilet fittings and fixtures, their popular brand names, shapes and sizes)