

Lesson Plan

Name of the Faculty:

Discipline: CIVIL ENGINEERING

Semester: 3rd SEM

Subject: CONSTRUCTION MATERIALS

Work Load (Lecture/Practical) per week (in hours): Lectures- , Practicals-

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	About subject	1 st	To identify the stones used in building works by visual examination
	2 nd	Building Stones: Classification of Rocks:		
	3 rd	Geological classification: Igneous, sedimentary and metamorphic Rocks Chemical classification;		
	4 th	Physical classification: Unstratified, stratified and foliated rocks		
2 nd	5 th	Marble, Kota stone, Granite, Sand, Trap, Basalt stone, Lime stone and Slate	2 nd	To determine the crushing strength of bricks
	6 th	Requirements of good building stones		
	7 th	Identification of common building stones		
	8 th	Various uses of stones in construction		
3 rd	9 th	Quarrying of stones by blasting and its effect on environment	3 rd	To determine the water absorption of bricks and efflorescence of bricks
	10 th	Introduction to bricks		
	11 th	Raw materials for brick manufacturing and properties of good brick making earth		
	12 th	Manufacturing of bricks		
4 th	13 th	Preparation of clay (manual/mechanically)	4 th	To identify various types of timbers such as: Teak, Sal, Chir, Sissoo, Deodar, Kail & Hollock by visual examination only
	14 th	CH. 1,2,3 TEST		
	15 th	Moulding: hand moulding and machine moulding brick table; drying of bricks, burning of bricks, types of kilns (Bull's Trench Kiln and Hoffman's Kiln), process of burning, size and weight of standard brick		
	16 th			

5 th	17 th	traditional brick, refractory brick, clay-flyash bricks, sun dried bricks, only line diagram of kilns	5 th	To determine fineness (by sieve analysis) of cement
	18 th	Classification and specifications of bricks as per BIS: 1077		
	19 th	Testing of common building bricks as per BIS: 3495		
	20 th	Compressive strength, water absorption – hot and cold water test, efflorescence, Dimensional tolerance, soundness		
6 th	21 st	Building tiles; Types of tiles-wall, ceiling, roofing and flooring tiles	6 th	To conduct field test of cement.
	22 nd	Ceramic, terrazo and PVC tiles, : their properties and uses,		
	23 rd	Vitrified tiles, Paver blocks.		
	24 th	Stacking of bricks and tiles at site		
7 th	25 th	Introduction, raw materials, flow diagram of manufacturing of cement	7 th	To determine normal consistency of cement
	26 th	Various types of Cements, their uses and testing: Ordinary portland cement, rapid hardening cement, low heat cement, high alumina cement		
	27 th	blast furnace slag cement, white and coloured cement, portland pozzolana cement, super sulphate cement,		
	28 th	Tests of cement – fineness, soundness, initial and final setting time etc.as per B.I.S. Code.		
8 th	29 th	A field visit	8 th	To determine initial and final setting times of cement
	30 th	Introduction: Lime as one of the cementing materials		
	31 st	Classification and types of lime as per BIS Code		
	32 nd	Calcination and slaking of lime		
9 th	33 rd	Introduction, purpose and use of paints	9 th	AT SITE
	34 th	Types, ingredients, properties and uses of oil paints, water paints and cement paints		
	35 th	Covering capacity of various paints		
	36 th	Types, properties and uses of varnishes		

10 th	37 th	CH. 4,5,6 TEST	10 th	To determine compressive strength of cement
	38 th	Ferrous metals: Composition, properties and uses of cast iron, mild steel		
	39 th	HYS steel, high tension steel as per BIS.		
	40 th	Commercial forms of ferrous, metals.		
11 th	41 st	Aluminium & Stainless Steel.	11 th	The students should submit a report work on the construction materials, covering water proofing material, cements, steel, paints and timber products available in the local market. They will also show the competitive study based upon the cost, brand name, sizes available in the local market
	42 nd	Plastics – Introduction and uses of various plastic products in buildings such as doors, water tanks and PVC pipes		
	43 rd	Fibre Sheets and their manufacture process.		
	44 th	Types and uses of insulating materials for sound and thermal insulation		
12 th	45 th	Construction chemicals like water proofing compound, epoxies, polymers	12 th	AT SITE
	46 th	Water proofing, termite proofing and fire resistance materials – types and uses		
	47 th	Materials used in interior decoration works like POP		
	48 th	A field visit		
13 th	49 th	methods of doing POP	13 th	To determine soundness of cement
	50 th	types and uses Water proofing, termite proofing		
	51 st	Commercial forms of ferrous, metals.		
	52 nd	types of lime		
14 th	53 rd	CH. 7,8,9 TEST	14 th	AT SITE
	54 th	Types, properties varnishes		
	55 th	manufacturing of cement		
	56 th	low heat cement,		
15 th	57 th	high alumina cement	15 th	AT SITE
	58 th	1 ST SESIONAL REVISION		
	59 th	2 ND SESIONAL REVISION		
	60 th	3 RD SESIONAL REVISION		