

GOVERNMENT POLYTECHNIC JAIPUR

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DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Discipline: Civil Engg	Semester: 3rd	Name of the Teaching faculty: Pradeep Kumar Sahoo
Subject: Building materials and construction technology Th-3	No of Days/Week class allotted: 5 days	Semester from Date: 01.08.2023 To Date: 30.11.2023 No of weeks: 15
Week	Class Day	Topics
1st	1st	Classification of rock.
	2nd	Uses of stone, natural bed of stone
	3rd	Qualities of good building stone
	4th	Dressing of stone
	5th	Characteristics of different types of stone and their uses
2nd	1st	Brick earth-its composition
	2nd	Brick making- preparation of brick earth
	3rd	Moulding, Drying
	4th	Burning in kilns (Continuous process)
	5th	Classification of bricks, size of traditional and modular bricks.
3rd	1st	Qualities of good building bricks
	2nd	Cement types of cement, properties of cements, manufacturing of cement.
	3rd	Importance and application of blended cement with fly ash and blast furnace slag
	4th	Mortar : Definition and types of mortar
	5th	Sources and classification of sand, bulking of sand.
4th	1st	Use of gravel, morrum and fly ash as different building material.
	2nd	Concrete: Definition and composition –Water cement ratio- workability, Mechanical properties.
	3rd	Grading of aggregates, mixing, placing, compacting and curing of concrete
	4th	Timber classification and structure of timber
	5th	seasoning of timber- Importance
5th	1st	Characteristics of good timber
	2nd	Clay products and refractory materials- Definition and classification.
	3rd	Properties and uses of refractory materials like-tiles, terracotta
	4th	Porcelain glazing , Iron and steel uses of cast iron.
	5th	Wrought iron, mild steel and tor steel
6th	1st	Composition of paints, enamels
	2nd	Composition of varnishes
	3rd	Types and uses of surface protective materials like paints

	4th	Enamels, Varnishes, Distempers
	5th	Emulsion, French polish and Wax polish Tutorial class.
7th	1st	Building and classification of buildings based on occupancy, different components of buildings site
	2nd	investigation objective, Site reconnaissance and explorations
	3 rd	Concept of foundation and its purpose
	4 th	Types of foundation – shallow and deep, shallow foundation - constructional details of Spread foundation of walls.
	5th	Thumb rules for depth and width of foundation and thickness of concrete block.
8th	1st	Deep foundations : Pile foundation their suitability, classification of piles based on materials, function and method of installation
	2nd	Purpose of walls, Classification of walls load bearing, non-load bearing walls, retaining walls
	3rd	Classification of walls as per materials of construction : brick stone, reinforced brick , reinforced concrete, pre cast, hollow and solid concrete block and composite masonry walls
	4th	Partition walls suitability and uses of brick and wooden partition walls, brick masonry, Definition of different terms
	5th	Bond- meaning and necessity; English bond for I and I -1/2 brick thick walls
9th	1st	Stone Masonry string course, corbel, Cornices block in course
	2nd	Grouting, mouldings, templates, throating through stones, parapet, coping, pilaster and buttress
	3rd	Grouting, mouldings, templates, throating through stones, parapet, coping, pilaster and buttress
	4th	Glossary of terms used in doors and windows doors- different types of doors
	5th	Glossary of terms used in doors and windows doors- different types of doors
10th	1st	Doors- different types of doors
	2nd	Doors- different types of doors
	3rd	Windows – different types of windows
	4th	Windows – different types of windows
		Purpose of use of arches and lintels
11th	1st	Purpose of use of arches and lintels
	2nd	Floors, types of floor finishes-cast – situ, concrete flooring, terrazzo tile flooring cast in situ terrazzo flooring, timber flooring.
	3rd	Floors, types of floor finishes-cast – situ, concrete flooring, terrazzo tile flooring cast in situ terrazzo flooring, timber flooring.
	4th	Roofs types concept and function of flat pitched and slopped roofs
	5th	Roofs types concept and function of flat pitched and slopped roofs
12th	1st	stair case, landing, winder, stringer, newel, baluster, rise, tread , width
	2nd	stair case, landing, winder, stringer, newel, baluster, rise, tread , width
	3rd	Hand rail, nosing, head room, mumty room, various types of stair case – straight flight, dog legged open well
	4th	Hand rail, nosing, head room, mumty room, various types of stair case – straight flight, dog legged open well

	5th	Quarter turn, half turn, bifurcated stair, spiral stair, cantilever stair, tread riser stair
13th	1st	Plastering – purpose- types of plastering types of plaster finishes.
	2nd	Plastering – purpose- types of plastering types of plaster finishes.
	3rd	Proportions of mortar of plaster, pre parathion techniques and curing.
	4th	Painting purpose types, paining
	5th	Painting purpose types, paining
14th	1st	White washing –colour washing- distempering internal and external walls
	2nd	Damp and termite proofing – materials and method
	3rd	Concept of green building, introduction to energy management and audit of building
	4th	Aims of energy management of buildings
	5th	Types of energy audit, response energy audit questionnaire
15th	1st	Energy Surveying and audit report
	2nd	Types of energy audit, response energy audit questionnaire
	3rd	Energy Surveying and audit report
	4th	PREVIOUS YEAR QUESTIONS
	5th	PREVIOUS YEAR QUESTIONS
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ

LearningResources:

Sl No.	Author Name	Name of the Book
1	N. Subramanian Building materials & Construction	N. Subramanian Building materials & Construction
2	Rangwala Engineering Materials	Rangwala Engineering Materials
3	Rangwala Building Construction	Rangwala Building Construction

Pradeep Kumar Sahoo
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