

**GOVERNMENT POLYTECHNIC JAIPUR**

A/P: Ragadi, Block: Korei, Dist.: Jaipur, Odisha-755019

Website: <https://www.gpjajpur.org> E-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107**DEPARTMENT OF CIVIL ENGINEERING****LESSON PLAN**

<b>Discipline:</b> Civil Engg.	<b>Semester</b> : 3rd	<b>Name of the Teaching faculty:</b> Shibasis Panda
<b>Subject:</b> Building Construction  CEPC201	<b>No of Days/ Week class allotted:</b> 3	<b>Semester from Date:</b> 14.07.2025 <b>To Date:</b> 15.11.2025 <b>No of weeks:</b> 15
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>
1st	1st	Overview of Building Component
	2nd	Classification of Buildings as per National Building Code Group A to I, as per Types of Constructions- Load Bearing Structure, Framed Structure, Composite Structure.
	3rd	Building Components – Functions of Building Components, substructure– Foundation, Plinth.
2nd	1st	Superstructure– Walls, Partition wall, Cavity wall, Sill, Lintel, Doors and Windows, Floor, Mezzanine floor, Roof, Columns, Beams, Parapet
	2nd	Construction of Substructure Job Layout: Site Clearance, Layout for Load Bearing Structure and Framed Structure by Center Line and Face Line Method, Precautions.
	3rd	Earth work: Excavation for Foundation, Timbering and Strutting, Earth work for embankment, Material for plinth Filling, Tools and plants used for earthwork. Foundation: Functions of foundation.
3rd	1st	Types of foundation – Shallow Foundation.
	2nd	Stepped Footing, Wall Footing.
	3rd	Column Footing, Isolated and Combined Column,
4th	1st	Footing, Raft Foundation, Grillage ,Foundation.
	2nd	Deep Foundation – Pile Foundation, Well foundation and Caissons & Pumping Methods of Dewatering.
	3rd	Foundation Deep wells, Well points, Cofferdams (Introduction only).
5th	1st	Construction of Super structure Stone Masonry: Terms used in stone masonry- facing, backing, hearting, through stone, corner stone, cornice.
	2nd	Types of stone masonry: Rubble masonry, Ashlar Masonry and their types. Joints in stone masonry and their purpose.
	3rd	Selection of Stone Masonry, Precautions to be taken in Stone Masonry Construction.
6th	1st	Brick masonry: Terms used in brick masonry- header, stretcher, closer, quoins, course, face, back, hearting, bat bond, joints, lap, frog line, level and plumb.
	2nd	Bonds in brick masonry- header bond, stretcher bond, English bond and Flemish bond. Requirements of good brick masonry.

	3rd	Junctions in brick masonry and their purpose and procedure. Precautions to be observed in Brick Masonry Construction.
7th	1st	Comparison between stone and Brick Masonry. Tools and plants required for construction of stone and brick masonry. Hollow concrete block masonry and composite masonry.
	2nd	Scaffolding and Shoring
	3rd	Purpose, Types of Scaffolding, Process of Erection and Dismantling.
8th	1st	Purpose and Types of Shoring, Underpinning.
	2nd	Formwork: Definition of Formwork, Requirements of Formwork,
	3rd	Materials used in Formwork, Types of Formwork, Removal of formwork.
9th	1st	Building Communication and Ventilation Horizontal Communication: Doors –Components of Doors, Full Paneled Doors, Part ly Paneled and Glazed Doors, Flush Doors, Collapsible Doors, Rolling Shutters, Revolving Doors, Glazed Doors. Sizes of Door recommended by BIS.
	2nd	Windows: Component of windows, Types of Windows – Full Paneled, Partly Paneled and Glazed, wooden, Steel, Aluminum windows, Sliding Windows, Louvered Window,
	3rd	Bay win- dow, Corner window, clear storey window, Gable and Dormer window, Skylight. Sizes of Windows recommended by BIS. Ventilators.
10th	1st	Fixtures and fastenings for doors and windows Material used and functions of Window Sill and Lintels, Shed / Chajja.
	2nd	Vertical Communication: Means of Vertical Communication- Stair Case, Ramps ,Lift, Elevators and Escalators. Terms used in staircase steps, tread, riser, nosing,
	3rd	soffit, waist slab, baluster, balustrade, scotia, handrails, newel post, landing, headroom, winder.
	1st	Types of staircase (On the basis of shape): Straight, dog-legged, open well, Spiral, quarter turn, bifurcated, Three quarter turn and Half turn, (On the basis of Material): Stone, Brick, R.C.C., wooden and Metal.
	2nd	Types of staircase (On the basis of shape): Straight, dog-legged, open well, Spiral, quarter turn, bifurcated, Three quarter turn and Half turn, (On the basis of Material): Stone, Brick, R.C.C., wooden and Metal.
	3rd	Building Finishes Floors and Roofs: Types of Floor Finishes and
12th	1st	its suitability- Kota, Marble, Granite, Ceramic Tiles, Vitrified, Chequered Tiles.
	2nd	Paver Blocks, Concrete Floors, wooden Flooring, Skirting and Dado
	3rd	Process of Laying and Construction
13th	1st	Finishing and Polishing of Floors, Roofing Materials- RCC, Mangalore Tiles, AC Sheets, G.I. sheets, Corrugated G.I. Sheets, Plastic and Fibre Sheets.
	2nd	Types of Roof: Flat roof, Pitched Roof- King Post truss, Queen Post Truss, terms used in roofs.
	3rd	Wall Finishes: Plastering – Necessity of Plastering.

14th	1st	Procedure of Plastering, SingleCoat Plaster, DoubleCoat Plaster, Rough finish, Neeru Finishing and Plaster of Paris (POP).
	2nd	Special Plasters- Stucco plaster, sponge finish, pebble finish.
	3rd	Plaster Board and Wall Claddings. Precautions to be taken in plastering, defects in plastering. Painting – Necessity,
15th	1st	Types of painting and procedure of Painting.
	2nd	Painting –Necessity, Surface Preparation for painting,
	3rd	Methods of Application.

#### Learning Resources:

SINo.	Author Name	Name of the Book
1	Ghose,D.N.	Construction Materials, TataMcGrawHill
2	S.K.Sharma	Civil Engineering Construction Materials, Khanna Publishing House,
3	Rangwala,S.C.	Engineering Materials, Charatorpublisher, Ahemdabad

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