

GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Discipline: Civil Engg	Semester: 6th	Name of the Teaching faculty: Er. Shibasis Panda
Subject: Advanced construction Technology & Equipment Th-3	No of Days/Week class allotted: 4	Semester from Date: 14/02/2023 To Date: 23/05/2023 No of weeks: 15
Week	Class Day	Topics
1st	1st	Advanced construction materials Fibers and Plastics
	2nd	Use of fibers as construction material
	3rd	properties of Fibers
	4th	PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets.
2nd	1st	Use of plastic as construction material
	2nd	Artificial Timbers – Properties
	3rd	uses of artificial timber
	4th	Types of artificial timber available in market, strength of artificial timber
3rd	1st	Properties and uses of acoustics materials
	2nd	wall claddings, plaster boards, micro-silica, artificial sand
	3rd	bonding agents, adhesives
	4th	Introduction, necessity and scope of prefabrication of buildings
4th	1st	history of prefabrication, current uses of prefabrication
	2nd	Types of prefabricated systems, classification of prefabrication
	3rd	advantages and disadvantages of prefabrication
	4th	The theory and process of prefabrication
5th	1st	design principle of prefabricated systems
	2nd	types of prefabricated elements
	3rd	modular coordination, Indian standard recommendation for modular planning
	4th	Earthquake Resistant Construction, Building Configuration
6th	1st	Lateral Load resisting structures
	2nd	Building characteristics
	3rd	Effect of structural irregularities-vertical irregularities
	4th	plan configuration problems
7th	1st	Safety consideration during additional construction and alteration of existing Buildings
	2nd	Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band
	3rd	plinth band, roof band, gable band
	4th	Retrofitting of Structures

8th	1st	Seismic retrofitting of reinforced concrete buildings
	2nd	Seismic retrofitting of reinforced concrete buildings
	3rd	Seismic retrofitting of reinforced concrete buildings
	4th	Sources of weakness in RC frame building
9th	1st	Classification of retrofitting techniques and their uses
	2nd	Classification of retrofitting techniques and their uses
	3rd	Building Services, Cold Water Distribution in high rise building, lay out of installation
	4th	Hot water supply – General principles for central plants-layout
10th	1st	Sanitation –soil and waste water installation in high rise buildings
	2nd	Electrical services – i) requirements in high rise buildings ii) Layout of wiring
	3rd	types of wiring
	4th	Fuses and their types
11th	1st	Earthing and their uses
	2nd	Lighting – Requirement of lighting, Measurement of light intensity
	3rd	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation
	4th	Mechanical Services- Lifts, Escalator, Elevators – types and uses
12th	1st	Construction and earth moving equipment, Planning and selection of construction equipment
	2nd	Construction and earth moving equipment, Planning and selection of construction equipment
	3rd	Study on earth moving equipment like drag line, tractor, bulldozer, Power shovel
	4th	Study and uses of compacting equipment like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
13th	1st	Owning and operating cost – problems
	2nd	Owning and operating cost – problems
	3rd	Owning and operating cost – problems
	4th	Owning and operating cost – problems
14th	1st	Necessity of soil reinforcing
	2nd	Use wire mesh and geo-synthetics
	3rd	Use wire mesh and geo-synthetics
	4th	Strengthening of embankments
15th	1st	Strengthening of embankments
	2nd	Slope stabilization in cutting and embankments by soil reinforcing techniques
	3rd	Slope stabilization in cutting and embankments by soil reinforcing techniques
	4th	Slope stabilization in cutting and embankments by soil reinforcing techniques
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ

LearningResources:

SI No.	Author Name	Name of the Book
1	Agrawal & Shrikhande	Earthquake Resistant Design of Structures
2	Swami Saran	Reinforced Soil and its Engineering applications
3	M.R. Samal	Advance Construction and Equipment

Er. Shibasis Panda
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