

DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
CIVIL ENGINEERING	6TH	MRS. PRANATI PANDA, GF (CIVIL)
SUB - ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT		NO. OF DAYS PER WEEK CLASS ALLOTTED : - 04
NO. OF WEEKS:- 15 NOS.		Commencement date - FEB-14, 2023(SUMMER)
WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1ST	Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers
	2nd	Use of Fibers as construction material
	3rd	properties of Fibers
	4th	Types of plastics- PVC, R PVC, HDPE, FRP, GRP etc
2ND WEEK	1ST	Colored plastic sheets. Use of plastic as construction material
	2nd	Artificial Timbers – Properties and uses of artificial timber.
	3rd	Types of artificial timber available in market
	4th	strength of artificial timber
3RD WEEK	1ST	Miscellaneous materials – Properties and uses of acoustics materials, wall claddings
	2nd	plaster boards, micro-silica, artificial sand, bonding agents, adhesives
	3rd	Introduction, necessity and scope of prefabrication of buildings, history of prefabrication
	4th	current uses of prefabrication , types of prefabricated systems
4TH WEEK	1ST	classification of prefabrication, advantages and disadvantages of prefabrication
	2nd	The theory and process of prefabrication
	3rd	design principle of prefabricated systems
	4th	types of prefabricated elements
5TH WEEK	1ST	modular coordination
	2nd	Indian standard recommendation for modular planning
	3rd	Earthquake Resistant Construction
	4th	Building Configuration
6TH WEEK	1ST	Lateral Load resisting structures
	2nd	Building characteristics
	3rd	Effect of structural irregularities-vertical irregularities
	4th	plan configuration problems
7TH WEEK	1ST	Safety consideration during additional construction and alteration of existing Buildings.
	2nd	6Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band
	3rd	Retrofitting of Structures
	4th	Seismic retrofitting of reinforced concrete buildings
8TH WEEK	1ST	Seismic retrofitting of reinforced concrete buildings
	2nd	-Sources of weakness in RC frame building
	3rd	-Sources of weakness in RC frame building
	4th	-Classification of retrofitting techniques and their uses
9TH WEEK	1ST	-Classification of retrofitting techniques and their uses
	2nd	-Classification of retrofitting techniques and their uses
	3rd	Building Services
	4th	Cold Water Distribution in high rise building, lay out of installation
10TH WEEK	1ST	Hot water supply – General principles for central plants-layout
	2nd	Sanitation –soil and waste water installation in high rise buildings
	3rd	Electrical services – i) requirements in high rise buildings ii) Layout of wiring - types of wiring iii) Fuses and their types iv) Earthing and their uses

11TH WEEK	4th	Lighting – Requirement of lighting, Measurement of light intensity
	1ST	Ventilation - Methods of ventilation (Natural and artificial systems of ventilation) problems on ventilation
	2nd	Mechanical Services- Lifts, Escalator, Elevators – types and uses.
	3rd	Construction and earth moving equipments
12TH WEEK	4th	Planning and selection of construction equipments
	1ST	Study on earth moving equipments like drag line
	2nd	tractor, bulldozer, Power shovel
	3rd	Study and uses of compacting equipments like tamping rollers
13TH WEEK	4th	Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
	1ST	Owning and operating cost – problems
	2nd	Owning and operating cost – problems
	3rd	Owning and operating cost – problems
14TH WEEK	4th	Owning and operating cost – problems
	1ST	Soil reinforcing techniques
	2nd	Necessity of soil reinforcing.
	3rd	Use wire mesh and geo-synthetics.
15TH WEEK	4th	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	1ST	Revision
	2ND	Revision
	3RD	Question answer session
	4TH	Previous years question discussion & Numerical problem solve

Panda
14/02/2023

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14/02/23