ACADEMIC SESSION : SUMMER-2026

Discipline : CIVIL ENGG	Semester :6TH	Name of the Teaching Faculty : Sri Padma Lochan Behera, Sr.Lect.(Civil)
Subject : ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT	No. of days / week class allotted: 4	Semester From date: 22/12/2025 to 18/04/2026 Nos. of Weeks per semester : 15
Week	**Class Day**	**Theory/ Practical Topics**
1ST	1st	Types of fibers- Steel, Carbon,,
	2nd	glass fibers ,Use of fibers as construction material, properties of Fibers.
	3rd	properties of Fibers., Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.
	4th	Use of plastic as construction material.,
2ND	1st	HDPE, FRP, GRP etc. Colored plastic sheets
	2nd	Use of plastic as construction material.
	3rd	Properties and uses of acoustics materials
	4th	-DO-
3RD	1st	wall claddings, plaster boards
	2nd	micro-silica, artificial sand, bonding agents, adhesives etc.
	3rd	Introduction, necessity and scope of prefabrication of buildings, history of prefabrication,
	4th	current uses of prefabrication , types of prefabricated systems
4TH	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	1st	modular coordination
	2nd	Indian standard recommendation for modular planning.
	3rd	Building Configuration
	4th	Lateral Load resisting structures
6TH	1st	Building characteristics
	2nd	Effect of structural irregularities-vertical irregularities
	3rd	plan configuration problems.
	4th	Safety consideration during additional construction and alteration of existing Buildings
7TH	1st	Additional strengthening measures in masonry building-corner reinforcement,
	2nd	lintel band, sill band, plinth band, roof band, gable band etc
	3rd	Introduction on Retrofitting of Structures
	4th	Seismic retrofitting of reinforced concrete buildings :
8TH	1st	Seismic retrofitting of reinforced concrete buildings :
	2nd	Seismic retrofitting of reinforced concrete buildings :

	3rd	Sources of weakness in RC frame building
	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	Introduction on Building Services
	4th	Cold Water Distribution in high rise building, lay out of installation
10TH	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
	4th	Lighting – Requirement of lighting, Measurement of light intensity
11TH	1st	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation
	2nd	Mechanical Services- Lifts, Escalator, Elevators – types and uses
	3rd	Intoduction on Construction and earth moving equipments ,
	4th	Planning and selection of construction equipments
12th	1st	Study on earth moving equipments
	2nd	tractor, bulldozer
	3rd	Power shovel
	4th	Study and uses of compacting equipments
13th	1st	tamping rollers, Smooth wheel rollers
	2nd	tamping rollers, Smooth wheel rollers
	3rd	Pneumatic tired rollers and vibrating compactors
	4th	Owning and operating cost – problems
14th	1st	Introduction on Soil reinforcing techniques
	2nd	Necessity of soil reinforcing
	3rd	Necessity of soil reinforcing
	4th	Use wire mesh and geo-synthetics
15th	1st	Use wire mesh and geo-synthetics
	2nd	Strengthening of embankments
	3rd	Slope stabilization in cutting and embankments by soil reinforcing techniques
	4th	Previous Year Question Discussion

Prepared By :

Padmalochan Behera

Approved By:

22/12/25

HOD(Civil)