

LESSON PLAN (SUMMER-2026)

VENUS GROUP OF EDUCATIONAL & RESEARCH INSTITUTE,BAHANAGA,BALASORE-756042

Discipline: Civil Engg.	Semester: 6th	Name of the Teaching Faculty:Er. Saroj ku. Das
Subject: Advance Construction Techniques & Equipment	No. of days per week class allotted: 5 nos	Semester From date :22/12/2025 To 18/04/2026
Week No.	Class Day	Theory/Practical Topic
1st	1st	Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.
	2nd	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.
	3rd	Artificial Timbers – Properties and uses of artificial timber
	4th	Types of artificial timber available in market, strength of artificial timber.
	5th	Miscellaneous materials – Properties and uses of acoustics materials.
2nd	1st	Wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.
	2nd	Introduction, necessity and scope of prefabrication of buildings, history of prefabrication.
	3rd	Current uses of prefabrication , types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication.
	4th	The theory and process of prefabrication, design principle of prefabricated systems.
	5th	Indian standard recommendation for modular planning.
3rd	1st	Building Configuration.
	2nd	Lateral Load resisting structures.
	3rd	Building characteristics.
	4th	Effect of structural irregularities-vertical irregularities, plan configuration problems.
	5th	Safety consideration during additional construction.
4th	1st	Alteration of existing Buildings.
	2nd	Additional strengthening measures in masonry building-corner reinforcement.
	3rd	Lintel band, sill band.
	4th	Plinth band, roof band, gable band etc.
	5th	Seismic retrofitting of reinforced concrete buildings.
5th	1st	Sources of weakness in RC frame building.
	2nd	Sources of weakness in RC frame building.
	3rd	Classification of retrofitting techniques and their uses.

5th	4th	Retrofitting techniques and their uses.
	5th	Cold Water Distribution in high rise building, lay out.
6th	1st	Cold Water Distribution in high rise building installation.
	2nd	Hot water supply – General principles for central plants.
	3rd	Hot water supply – layout.
	4th	Sanitation –soil and waste water installation in high rise buildings.
	5th	Sanitation –soil and waste water installation in high rise buildings.
7th	1st	Electrical services – i) requirements in high rise buildings.
	2nd	Electrical services – i) requirements in high rise buildings.
	3rd	Layout of wiring.
	4th	Types of wiring.
	5th	Fuses and their types.
8th	1st	Earthing and their uses.
	2nd	Lighting – Requirement of lighting.
	3rd	Measurement of light intensity.
	4th	Ventilation.
	5th	Methods of ventilation.
9th	1st	Mechanical Services- Lifts.
	2nd	Mechanical Services-Escalator.
	3rd	Mechanical Services-Elevators.
	4th	Types and uses.
	5th	Planning and selection of construction equipments.
10th	1st	Planning and selection of construction equipments.
	2nd	Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel.
	3rd	Study on earth moving equipments like drag line, Power shovel.
	4th	Study and uses of compacting equipments like tamping rollers.
	5th	Study and uses of compacting equipments like tamping rollers.
11th	1st	Smooth wheel rollers.
	2nd	Pneumatic tired rollers and vibrating compactors.
	3rd	Owning and operating cost.
	4th	Problems.
	5th	Necessity of soil reinforcing.
12th	1st	Necessity of soil reinforcing.
	2nd	Use wire mesh.
	3rd	Geo-synthetics.
	4th	Strengthening of embankments.
	5th	Strengthening of embankments.
13th	1st	Slope stabilization in cutting and embankments by soil reinforcing
	2nd	Slope stabilization in cutting and embankments by soil reinforcing techniques.
	3rd	Revision.
	4th	Revision.
	5th	Revision.