

IDEAL SCHOOL OF ENGINEERING,RETANG-752054

DISCIPLINE: CIVIL ENGINEERING	SEMESTER: 6 TH SEM	NAME OF THE TEACHING FACULTY: ER. PADMINI PRAGYANSINI BARAL & ER.SUPRIYA SAHOO
SUBJECT: ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT (Th-3)	No of Days/Per week class allotted: 4 Class P/W(60)	Semester From Date: 13/02/2023 To Date: 23/05/2023 No. Of Weeks: 15
WEEK	CLASS DAY	THEORY
1 st	1 st	1.Advanced construction materials : Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers,
	2 nd	Use of fibers as construction material,
	3 rd	Properties of Fibers.
	4 th	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets.
2 nd	1 st	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material
	2 nd	Artificial Timbers – Properties and uses of artificial timber.
	3 rd	Types of artificial timber available in market, strength of artificial timber.
	4 th	Miscellaneous materials – Properties and uses of acoustics materials,
3 rd	1 st	Miscellaneous materials – wall claddings, plaster boards, micro-silica
	2 nd	Miscellaneous materials – artificial sand, bonding agents, adhesives etc
	3 rd	2.Prefabrication : Introduction, necessity and scope of prefabrication of buildings
	4 th	History of prefabrication, current uses of prefabrication
4 th	1 st	Types of prefabricated systems
	2 nd	Classification of prefabrication
	3 rd	Classification of prefabrication
	4 th	Advantages and disadvantages of prefabrication
	1 st	The theory and process of prefabrication, design principle of prefabricated systems

5 th	2 nd	Types of prefabricated elements, modular coordination
	3 rd	Indian standard recommendation for modular planning.
	4 th	3.Earthquake Resistant Construction : Building Configuration
6 th	1 st	Lateral Load resisting structures
	2 nd	Building characteristics
	3 rd	Effect of structural irregularities-vertical irregularities, plan configuration problems
	4 th	Safety consideration during additional construction and alteration of existing Buildings.
7 th	1 st	Additional strengthening measures in masonry building- corner reinforcement
	2 nd	Lintel band, sill band, plinth band, roof band, gable band etc.
	3 rd	Tutorial Class
	4 th	4.Retrofitting of Structures : Seismic retrofitting of reinforced concrete buildings :
8 th	1 st	Seismic retrofitting of reinforced concrete buildings
	2 nd	Sources of weakness in RC frame building
	3 rd	Sources of weakness in RC frame building
	4 th	Classification of retrofitting techniques
9 th	1 st	Classification of retrofitting techniques
	2 nd	Uses of retrofitting techniques
	3 rd	Tutorial Class
	4 th	5.Building Services : Cold Water Distribution in high rise building, lay out of installation
10 th	1 st	Hot water supply – General principles for central plants- layout
	2 nd	Sanitation –soil and waste water installation in high rise buildings
	3 rd	Electrical Services- iii) Fuses and their types iv) Earthing and their uses
	4 th	Electrical Services- iii) Fuses and their types iv) Earthing and their uses
11 th	1 st	Lighting – Requirement of lighting, Measurement light intensity
	2 nd	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation

	3 rd	Mechanical Services- Lifts, Escalator, Elevators – types and uses.
	4 th	6.Construction and earth moving equipments – Planning and selection of construction equipments
12 th	1 st	Planning and selection of construction equipments
	2 nd	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers
	3 rd	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers
	4 th	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers
13 th	1 st	Pneumatic tired rollers and vibrating compactors
	2 nd	Owning and operating cost – problems
	3 rd	Owning and operating cost – problems
	4 th	Tutorial Class
14 th	1 st	7.Soil reinforcing techniques : Necessity of soil reinforcing.
	2 nd	Necessity of soil reinforcing.
	3 rd	Use wire mesh and geo-synthetics
	4 th	Use wire mesh and geo-synthetics
15 th	1 st	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	2 nd	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	3 rd	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	4 th	Tutorial Class