



LESSON PLAN : TH-3. ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT, SESSION 1
2023-2024 (SUMMER 2023) BATCH-2020-2023 (6th Semester)

Discipline: Civil Engineering Subject: TH-3 ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT		Semester: 6TH	Name of the Teaching Faculty: Rupell Kumari Patra (PTGF)	
No. of days/ per week class allotted: 4		Semester From Date : 14/02/2023	to Date: 21-05-2023.	
		No. of Weeks: 15		
Week	Class Day	Theory/ Practical Topics		
		1 Advanced construction materials		
1ST	1	1.1 Fibers and Plastics-Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.		
	2	1.1 Fibers and Plastics-Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.		
	3	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.		
	4	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.		
2ND	1	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.		
	2	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.		
	3	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.		
	4	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.		
3RD	1	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.		
	2	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.		
		2 Prefabrication		
	3	2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication , types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication,		
4TH	4	2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication , types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication,		
	1	2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication , types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication,		
	2	2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication , types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication,		
	3	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination		
5TH	4	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination		
	1	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination		
	2	2.3 Indian standard recommendation for modular planning.		
	3	3 Earthquake Resistant Construction		
6TH	4	3.1 Building Configuration		
		3.2 Lateral Load resisting structures		
	1	3.3 Building characteristics		
	2	3.4 Effect of structural irregularities-vertical irregularities, plan configuration problems.		
7TH	3	3.5 Safety consideration during additional construction and alteration of existing Buildings.		
	4	3.5 Safety consideration during additional construction and alteration of existing Buildings.		
	1	3.6 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.		
	2	3.6 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.		
		4 Retrofitting of Structures		
	3	4.1 Seismic retrofitting of reinforced concrete buildings :		
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Prepared by: Dr. Jyoti Chandra
 Checked by: Dr. Jyoti Chandra
 Date: 21/05/2023

8TH	1	4.2 -Sources of weakness in RC frame building
	2	4.2 -Sources of weakness in RC frame building
	3	4.2 -Sources of weakness in RC frame building
	4	4.3 -Classification of retrofitting techniques and their uses
9TH	1	4.3 -Classification of retrofitting techniques and their uses
	2	4.3 -Classification of retrofitting techniques and their uses
	3	5 Building Services
	4	5.1 Cold Water Distribution in high rise building, lay out of installation
10TH	1	5.2 Hot water supply – General principles for central plants-layout
	2	5.3 Sanitation –soil and waste water installation in high rise buildings
	3	5.4 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
	4	5.4 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	1	5.5 Lighting – Requirement of lighting, Measurement of light intensity
	2	5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation
	3	5.7 Mechanical Services- Lifts, Escalator, Elevators – types and uses.
	4	6 Construction and earth moving equipments –
12TH	1	6.1 Planning and selection of construction equipments
	2	6.1 Planning and selection of construction equipments
	3	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel
	4	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel
13TH	1	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel
	2	6.3 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
	3	6.3 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
	4	6.3 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
14TH	1	6.4 Owning and operating cost – problems
	2	6.4 Owning and operating cost – problems
	3	7 Soil reinforcing techniques
	4	7.1 Necessity of soil reinforcing.
15TH	1	7.1 Necessity of soil reinforcing.
	2	7.2 Use wire mesh and geo-synthetics.
	3	7.2 Use wire mesh and geo-synthetics.
	4	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.

Pratibha
14/02/2023
(PTGF in civil Engg.)

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