

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2024-2025

Semester: 6th Discipline: Civil Engg.

Subject: Advanced Construction Techniques & Equipment

Name of the Teaching Faculty: Bikramaditya Bagh

Subject: Advanced Construction Technique & Equipment No. of Days/per week class allotted : 4

Semester From Date : 04/02/2025 To Date: 17/05/2025 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1	1 st	Advance Construction Material Fibres, Types of fibres, steel, carbon, glass fibre
	2 nd	Uses of fibres as construction material properties of fibre
	3 rd	Plastics, Types of plastic, PVC, RPVC, FRP, GFRP etc. coloured plastic sheets
	4 th	Use of plastics as construction material
2	1 st	Artificial timber - properties and uses of artificial timber
	2 nd	Types of artificial timber available in market
	3 rd	strength of artificial timber
	4 th	Miscellaneous materials - properties and uses of acoustic materials
3	1 st	Wall cladding, plaster board, micro silica
	2 nd	artificial sand, bonding agents, adhesive
	3 rd	Prefabrication Introduction, necessity and scope of prefabrication of building
	4 th	history of prefabrication, current uses of prefabrication

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Subject: Advanced Construction Techniques & Equipment No. of Days/per week class allotted : 9

Semester From Date : 04/02/2025 To Date: 17/05/2025 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
4	1 st	Types of prefabrication systems, classification of prefabrication
	2 nd	Advantages and disadvantages of prefabrication Theory and process of prefabrication
	3 rd	Design principle of prefabricated system
	4 th	Class test
5	1 st	Types of prefabricated elements, modular coordination
	2 nd	Indian standard Recommendation for modular planning
	3 rd	Earthquake Resistant Construction Building configuration
	4 th	Lateral load resisting structures
6	1 st	Building characteristics
	2 nd	Effect of structural irregularities - Vertical irregularities
	3 rd	Plan configuration problems
	4 th	Safety consideration during additional construction and alteration of existing building

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Semester From Date : 04/02/2025 To Date: 17/05/2025 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
7	1 st	Additional strengthening measure in masonry building corner reinforcement, lintel band, sill band
	2 nd	plinth band, roof band, gable band
	3 rd	Retrofitting structures seismic retrofitting of reinforced concrete building
	4 th	seismic retrofitting of reinforced concrete building
8	1 st	Sources of weakness in RC frame building
	2 nd	Sources of weakness in RC frame building
	3 rd	Classification of retrofitting techniques and their uses
	4 th	Classification of retrofitting techniques and their uses
9	1 st	Classification of retrofitting techniques and their uses
	2 nd	Building Services Cold water distribution in high rise building layout of installation
	3 rd	Hot water supply General principles for central plants layout
	4 th	sanitation-soil and waste water installation in high rise building

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Semester From Date : 04/02/2025 To Date: 17/05/2025 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
10	1st	Electricals services i) requirements in high rise building ii) Layout of wirings - types of wiring
	2nd	iii) Fuses and their uses iv) Earthing and their uses
	3rd	Lighting: Required of lighting, Measurement of light intensity
	4th	Ventilation - Methods of ventilation (Natural and artificial system of ventilation) problems on ventilation
11	1st	Mechanical services - Lifts, Escalator, Elevator type and uses
	2nd	construction and earth moving equipment planning and selection of construction equipment
	3rd	study on earth moving equipment like dragline, tractor, bulldozer, power shovel
	4th	study on earth moving equipment like dragline, tractor bulldozer, power shovel
12	1st	study on earth moving equipment like dragline, tractor bulldozer, power shovel
	2nd	study on earth moving equipment like dragline, tractor bulldozer, power shovel
	3rd	class fest
	4th	study and uses of compacting equipment like tamping rollers

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Semester From Date : 01/02/2025 To Date: 17/05/2025 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
13	1 st	Smooth wheel rollers, Pneumatic tired rollers
	2 nd	Vibrating compactors
	3 rd	owning and operating cost problems
	4 th	owning and operating cost problem
14	1 st	Soil reinforcing techniques Necessity of soil reinforcing
	2 nd	Use wire mesh and geo-synthetics
	3 rd	Use wire mesh and geo-synthetic
	4 th	Use wire mesh and geo-synthetic
15	1 st	strengthening of embankment
	2 nd	strengthening of embankment
	3 rd	slope stabilization in cutting
	4 th	embankment by soil reinforcing techniques

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