

SYNERGY SCHOOL OF ENGINEERING, DHENKANAL

LESSON PLAN

SESSION: 2024-25

Discipline: Civil Engineering	Semester: 6 th , S/2025	Name of the Faculty: Kiranabala Behera E-mail ID: kiranbalabehera5@gmail.com
Subject: Advanced Construction Techniques and Equipment	No. of days/week: 04	Start Date: End Date:

Week	Class Day	Theory/Practical Topics
1st	1st	Introduction, Building Configuration,
	2nd	Building characteristics
	3rd	Lateral Load resisting structure
	4th	Effect of structural irregularities-vertical irregularities,
2nd	1st	plan configuration problems
	2nd	Additional strengthening measures in masonry building
	3rd	lintel band, sill band, plinth band, roof band, gable band etc.
	4th	lintel band, sill band, plinth band, roof band, gable band repeat and description
3rd	1st	Seismic retrofitting of reinforced concrete buildings
	2nd	Sources of weakness in RC frame building
	3rd	Classification of retrofitting techniques and their uses
	4th	Classification of retrofitting techniques and their description
4th	1st	Cold Water Distribution in high rise building,
	2nd	lay out of installation and types
	3rd	Hot water supply – General principles for central plants-layout
	4th	Expected questions discussion and Practice test
5th	1st	Sanitation in high rise buildings
	2nd	soil and waste water installation in high rise buildings
	3rd	Electrical services – i) requirements in high rise buildings
	4th	Layout of wiring - types of wiring Fuses and their types
6th	1st	iv) Earthing and their uses
	2nd	Lighting – Requirement of lighting, Measurement of light intensity
	3rd	Ventilation (i) Methods of ventilation
	4th	ii) Systems of ventilation,
7th	1st	Mechanical Services- Lifts, Escalator, Elevators – types and uses
	2nd	Types of fibers, steel carbon and glass.
	3rd	Uses of fibers as construction materials
	4th	Properties of fibers. Types of plastics PVC, RPVC, HDPE,

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8th	1st	FRP, GRP etc. Colored plastic sheets and uses
	2nd	Artificial timbers-properties and uses
	3rd	Types and strength of artificial timbers
	4th	Miscellaneous materials
9th	1st	properties and uses of acoustic materials
	2nd	Wall cladding, plaster boards,
	3rd	micro silica, artificial sand
	4th	Bonding agents as construction materials
10th	1st	adhesives as construction materials
	2nd	Introduction and scope of prefabrication in building
	3rd	history of prefabrication, current uses of prefabrication
	4th	Theory and process of prefabrication
11th	1st	types of prefabricated systems, classification of prefabrication,
	2nd	advantages and disadvantages of prefabrication
	3rd	design principle of prefabricated systems
	4th	types of prefabricated elements,
12th	1st	modular coordination Indian standard recommendation for modular planning
	2nd	Revision and Practice
	3rd	Expected questions discussion and Practice test
	4th	Planning and selection of Construction equipment
13th	1st	Study on earth moving equipment: drag line
	2nd	Study on earth moving equipment: tractor
	3rd	Study on earth moving equipment: bulldozer
	4th	Study on earth moving equipment: power shovel,
14th	1st	Study and uses of compacting equipment like tamping rollers
	2nd	wheel rollers Pneumatic tired rollers
	3rd	vibrating compactors
	4th	Owning and operating cost
15th	1st	Necessity of soil reinforcing, Use wire mesh and geo-synthetics. Slope stabilization in cutting and embankments by soilreinforcing techniques.
	2nd	Expected questions discussion and Practice test
	3rd	Expected questions discussion and Practice test
	4th	Expected questions discussion and Practice test

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