

LESSON PLAN

Subject- Advanced Construction Techniques & Equipments (Th.03)

Name of the Faculty- Bijayalaxmi Hembram and Smitarani Patel

Semester- 6th

Year- 2025-26

MONTH	CHAPTER /UNIT	COURSE TO BE COVERED	CLASSES REQUIRED	REMARKS (IF ANY)
	Chapter-1	Advanced construction materials	10	
	1.1	Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers. (b) Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.	04	
	1.2	Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.	03	
	1.3	Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc	03	
	Chapter-2	Prefabrication	08	
	2.1	Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication, the theory and process of prefabrication, types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication,	03	
	2.2	The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination	03	
	2.3	Indian standard recommendation for modular planning.	02	
	Chapter-3	3.0 Earthquake Resistant Construction	08	
	3.1	Building Configuration, Lateral Load resisting structures, Building characteristics.	03	

	3.2	Effect of structural irregularities-vertical irregularities, plan configuration problems,Safety consideration during additional construction and alteration of existing Buildings	03	
	3.3	Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.	02	
	Chapter-4	Retrofitting of Structures	08	
	4.1	Seismic retrofitting of reinforced concrete buildings	02	
	4.2	Sources of weakness in RC frame building	02	
	4.3	Classification of retrofitting techniques and their uses.	04	
	Chapter-5	Building Services	08	
	5.1	Cold Water Distribution in high rise building, lay out of installation.	01	
	5.2	Hot water supply – General principles for central plants-layout	01	
	5.3	Sanitation –soil and waste water installation in high rise buildings.	01	
	5.4	Electrical services – (i) requirements 9in high rise buildings (ii) Layout of wiring - types of wiring (iii) Fuses and their types (iv) Earthing and their uses	02	
	5.5	Lighting – Requirement of lighting, Measurement of light intensity.	01	
	5.6	Ventilation • Methods of ventilation – Natural and artificial	01	

	<ul style="list-style-type: none"> • Systems of ventilation, problems on ventilation 		
5.7	Mechanical Services- Lifts, Escalator, Elevators – types and uses.	01	
Chapter-6	Construction and earth moving equipments	10	
6.1	Planning and selection of construction equipments	03	
6.2	Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel.	03	
6.3	Study and uses of compacting equipments like tamping rollers Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors	02	
6.4	Owning and operating cost – problems	02	
Chapter-7	Soil reinforcing techniques	08	
7.1	Necessity of soil reinforcing.	02	
7.2	Use wire mesh and geo-synthetics.	03	
7.3	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques	03	


 Signature of Faculty
 12/12/25


 Signature of HOD
 12/12/25