

LESSON PLAN

Discipline:

Civil Engg. ,UGMIT Rayagada

Semester:

6TH

Subject:

Advanced construction techniques & equipment (Th-3)

Class allotted:

04P/Week

Session:

2024(15)

Week	Class Day	Theory	Remarks
1	1-4	D. COURSE CONTENT 1. Advanced construction materials 1.1 Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers. Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material	
2	5-8	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber. 1.3 Miscellaneous materials – Properties and uses of acoustics materials,	
3	9-12	wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc 2 Prefabrication 2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication types of prefabricated systems, classification of prefabrication,	
4	13-16	advantages and disadvantages of prefabrication, 2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements	
5	17-20	coordination 2.3 Indian standard recommendation for modular planning 3 Earthquake Resistant Construction 3.1 Building Configuration 3.2 Lateral Load resisting structures 3.3 Building characteristics	
6	21-24	3.4 Effect of structural irregularities-vertical irregularities, plan configuration problems. 3.5 Safety consideration during additional construction and alteration of existing Buildings.	
7	25-28	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 4.1 Seismic retrofitting of reinforced concrete buildings :	
8	29-32	4.2 - Sources of weakness in RC frame building	

		4.3 -Classification of retrofitting techniques	
9	33-36	4.3 -Classification of retrofitting techniques and their uses Building Services 5.1 Cold Water Distribution in high rise building, lay out of installation 5.2 Hot water supply – General principles for central plants-layout	2022
10	37-40	5.3 Sanitation –soil and waste water installation in high rise buildings 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 5.5 Lighting – Requirement of lighting, Measurement of light intensity 5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation	
11	41-44	5.7 Mechanical Services- Lifts, Escalator, Elevators – types and uses. 6. Construction and earth moving equipments – 6.1 Planning and selection of construction equipment	
12	45-48	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel 6.3 Study and uses of compacting equipments like tamping rollers	
13	49-52	rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors 6.4 Owning and operating cost – problems	
14	53-56	7 Soil reinforcing techniques 7.1 Necessity of soil reinforcing. 7.2 Use wire mesh and geo-synthetics.	
15	57-60	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques	

Signature of Faculty: *Chinnmaya Maharana*
D-13/1/24

Signature of HOD: *[Signature]*
13/1/2024