

**JHARSUGUDA ENGINEERING SCHOOL,
JHARSUGUDA**

Department of Civil Engineering

6th Sem (3rd Year) Summer 2023

Course Code: 3

**Course Name: ADVANCED CONSTRUCTION
TECHNIQUES & EQUIPMENT**

Name Of The Faculty: Sri Soubhagya mohanty

Sl No	Week No	No. Of classes	Topics to be covered	Remarks
1	W1	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	
2		1	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets	
3		1	Use of plastic as construction material.	
4		1	Use of plastic as construction material.	
5		1	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber	
6		1	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.	

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7	W2	1	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, advantages and disadvantages of prefabrication,
8		1	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, advantages and disadvantages of prefabrication,
9	W3	1	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination
10		1	2.3 Indian standard recommendation for modular planning.
11		1	2.3 Indian standard recommendation for modular planning.
12		1	Earthquake Resistant Construction 3.1 Building Configuration
13	W4	1	3.2 Lateral Load resisting structures
14		1	3.3 Building characteristics
15		1	3.4 Effect of structural irregularities- vertical irregularities, plan configuration problems.
16		1	3.5 Safety consideration during additional construction and alteration of existing Buildings.
17	W5	1	3.6 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.
18		1	Retrofitting of Structures 4.1 Seismic retrofitting of reinforced concrete buildings :

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19		1	4.2 -Sources of weakness in RC frame building	
20		1	4.3 -Classification of retrofitting techniques and their uses	
21	W6	1	Building Services 5.1 Cold Water Distribution in high rise building, lay out of installation	
22		1	5.2 Hot water supply – General principles for central plants-layout	
23		1	5.3 Sanitation –soil and waste water installation in high rise buildings	
24		1	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	
25	W7	1	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	
26		1	5.5 Lighting – Requirement of lighting, Measurement of light intensity	
27		1	5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation	
28		1	5.7 Mechanical Services- Lifts, Escalator, Elevators – types and uses.	
29	W8	1	Construction and earth moving equipments – 6.1 Planning and selection of construction equipments	
30		1	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel	
31		1	6.3 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors	

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32		1	6.4 Owning and operating cost – problems	
33	W9	1	6.4 Owning and operating cost – problems	
34		1	6.4 Owning and operating cost – problems	
35		1	6.4 Owning and operating cost – problems	
36		1	Soil reinforcing techniques 7.1 Necessity of soil reinforcing.	
37		W10	1	Soil reinforcing techniques 7.1 Necessity of soil reinforcing.
38	1		Soil reinforcing techniques 7.1 Necessity of soil reinforcing.	
39	1		7.2 Use wire mesh and geo-synthetics.	
40	1		7.2 Use wire mesh and geo-synthetics.	
41	W11	1	7.2 Use wire mesh and geo-synthetics.	
42		1	7.2 Use wire mesh and geo-synthetics.	
43		1	7.3 Strengthening of embankments	
44		1	7.3 Strengthening of embankments	
45	W12	1	7.3 Strengthening of embankments	
46		1	Slope stabilization in cutting and embankments by soil reinforcing techniques.	
47		1	Slope stabilization in cutting and embankments by soil reinforcing techniques.	
48		1	Slope stabilization in cutting and embankments by soil reinforcing techniques.	
49	W13	1	2.3 Indian standard recommendation for modular planning.	
50		1	2.3 Indian standard recommendation for modular planning.	
51		1	2.3 Indian standard recommendation for modular planning.	
52			1	Revision
53	W14	1	Revision	
54		1	Revision	

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55	W15	1	Revision	
56		1	Revision	
57	W15	1	Revision	
58		1	PYQ	
59		1	PYQ	
60		1	Revision	
Total		60		


 13/2/23
 Signature of Faculty


 13/2/23
 Signature of H.O.D


