

<b>Discipline:</b> Civil Engineering	<b>Name of Teaching Faculty: SHAKTI SWARUP PANI</b>	
<b>Subject:</b> Advanced Construction Techniques & Equipment	<b>Semester From Date : 14-02-2023 To Date 23-05-2023</b> <b>No. of Weeks: 15</b>	
<b>Week</b>	<b>Class day</b>	<b>Topics to be covered</b>
1ST	1	<b>1 Advanced construction Materials</b> 1.1 Fibers and plastic:-Types of fibers-steel, carbon, glass fibers as construction materials, properties of fibers
	2	1.1 Types of plastics-PVC, RPVC, HDPE, FRP, GRP, etc. Colored plastic sheets. Use of plastic as construction material
2ND	1	1.2 Artificial Timber-Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.
	2	1.3 Miscellaneous materials-Properties and uses of acoustics materials, wall cladding
3RD	1	1.3 plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.
	2	<b>2 Prefabrication</b> 2.1 Introduction, necessity and scope of prefabrication

	3	2.1 History of prefabrication, current uses of prefabrication, types of prefabricated systems
	4	Monthly Class Test -1
4TH	1	2.1 Classification of prefabrication, advantages and disadvantages of prefabrication
	2	2.2 The theory and process of prefabrication
5TH	1	2.2 Design principle of prefabricated systems, types of prefabricated elements 2.2 modular coordination 2.3 Indian standard recommendation for modular planning
6TH	1	<b>3 Earthquake Resistant Construction</b> 3.1 Building configuration
	2	3.2 Lateral load resisting structures 3 Building characteristics
	3	3.3 Building characteristics
	4	3.4 Effect of structural irregularities-vertical irregularities, plan configuration problems.
7TH	1	3.5 Safety consideration during additional construction and alteration of existing buildings.
	2	3.6 Additional strengthening measures in masonry building-corner reinforcement ,intel band, sill band etc.
	3	<b>4 Retrofitting of Structure</b> 4.1 Seismic retrofitting of reinforced concrete buildings

8TH	1	4.2 Sources of weakness in RC frame building 4.3 classification of retrofitting techniques and their uses
	2	<b>5 Building Services</b> .5.1 Cold water distribution in high rise building, layout of installation
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	4	5.2 Hot water supply -general principles for central plants- layout
9TH	1	5.3 Sanitation-soil and waste water installation in high rise buildings
	2	5.4 Electrical services-i)requirements in high rise buildings
	3	5.4 ii)layout of wiring
	4	Monthly Class Test-2
10TH	1	iii)fuses and their types iv) earthing
	2	5.5 Lighting 5.6 Ventilation
	3	5.7 Mechanical services-lift , escalator, elevators-types and uses.
11TH	1	INTERNAL ASSESSMENT
	2	5.7 Mechanical services-lift , escalator, elevators-types and uses.
	3	<b>6 Construction and earth moving equipments</b> 6.1 Planning and selection of construction equipments
	4	6.2 Study on earth moving equipments
12TH	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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	3	Monthly Class Test 3
13TH	1	6.4 Owning and operating cost-problems
	2	<b>7 Soil reinforcing techniques</b> 7.1 Necessity of soil reinforcing
	3	7.2 Use wire mesh and geo-synthetics
	4	7.3 Strengthening of embankments
14TH	1	Strengthening of embankments
	2	7.3 Slope stabilization in cutting 7.3 embankments by soil reinforcing techniques.
	3	Revision
16TH	1	Revision
	2	Previous Year Questions & Answer Discussion
	3	Previous Year Questions & Answer Discussion