

<b>PROGRAMME : CIVIL ENGINEERING</b> <b>COURSE NAME : ADVANCED CONSTRUCTION TECHNIQUES &amp; EQUIPMENTS</b> <b>COURSE CODE : TH-3</b> <b>SEMESTER : 6<sup>TH</sup></b> <b>PERIODS/WEEK: 4</b> <b>TOTAL PERIODS: 60</b>	<b>NAME OF THE FACULTY: UTKALIKA PRADHAN</b>
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WEEK	CLASS	TOPICS
1	1	Advanced construction materials: Introduction
	2	Fibers: Types of fibers- Steel, Carbon, glass fibers,
	3	Use of fibers as construction material, properties of Fibers. .
	4	Plastics: Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Coloured plastic sheet
2	1	Use of plastic as construction material.
	2	Artificial Timbers – Properties and uses of artificial timber
	3	Types of artificial timber available in market, strength of artificial timber
	4	Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.
3	1	Prefabrication: Introduction, necessity and scope of prefabrication of buildings, History of prefabrication,
	2	Current uses of prefabrication, advantages and disadvantages of prefabrication
	3	Types of prefabricated systems, Classification of prefabrication,
	4	The theory and process of prefabrication
4	1	Design principle of prefabricated systems
	2	Types of prefabricated elements, modular coordination
	3	Indian standard recommendation for modular planning.
	4	Earthquake Resistant Construction: Building Configuration
5	1	Lateral Load resisting structures
	2	Building characteristics
	3	Effect of structural irregularities-vertical irregularities, plan configuration problems.
	4	Safety consideration during additional construction and alteration of existing Buildings.
6	1	Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.
	2	Retrofitting of Structures: introduction
	3	Seismic retrofitting of reinforced concrete buildings
	4	Sources of weakness in RC frame building
7	1	Classification of retrofitting techniques
	2	Uses of various retrofitting techniques
	3	Building Services: introduction
	4	Cold Water Distribution in high rise building, lay out of installation
8	1	Hot water supply – General principles for central plants-layout
	2	Sanitation –soil and waste water installation in high rise buildings
	3	Electrical services – requirements in high rise buildings
	4	Layout of wiring - types of wiring
	1	Fuses and their types

<b>9</b>	<b>2</b>	Earthing and their uses
	<b>3</b>	Lighting – Requirement of lighting, Measurement of light intensity
	<b>4</b>	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation
<b>10</b>	<b>1</b>	Mechanical Services- Lifts, Escalator, Elevators – types and uses.
	<b>2</b>	Construction equipments: Planning & Selection
	<b>3</b>	Study on earth moving equipments like drag line, tractor
	<b>4</b>	Study on earth moving equipments like bulldozer, Power shovel
<b>11</b>	<b>1</b>	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers
	<b>2</b>	Study and uses of compacting equipments like Pneumatic tired rollers and vibrating compactors
	<b>3</b>	Owning and operating cost- problems
	<b>4</b>	Soil reinforcing techniques: Necessity of soil reinforcing.
<b>12</b>	<b>1</b>	Use of wire mesh
	<b>2</b>	Use of geo-synthetics
	<b>3</b>	Strengthening of embankments
	<b>4</b>	Slope stabilization in cutting and embankments by soil reinforcing techniques
<b>13</b>	<b>1</b>	Revision of chapter-1
	<b>2</b>	Revision of chapter-2
	<b>3</b>	Revision of chapter-3
	<b>4</b>	Revision of chapter-4
<b>14</b>	<b>1</b>	Revision of chapter-5
	<b>2</b>	Revision of chapter-6
	<b>3</b>	Revision of chapter-7
	<b>4</b>	Probable Questions discussion
<b>15</b>	<b>1</b>	Probable Questions discussion
	<b>2</b>	Probable Questions discussion
	<b>3</b>	Probable Questions discussion
	<b>4</b>	Probable Questions discussion