

PROGRAMME : CIVIL ENGINEERING	NAME OF THE FACULTY: AMIT KUMAR SAHU
COURSE NAME : ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENTS	SESSION : 2020-2021
COURSE CODE : TH-3	DATE : 05-04-2021 to 30.06.2021
SEMESTER : 6 TH	
PERIODS/WEEK: 4	
TOTAL PERIODS: 60	

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

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