NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT : ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT(TH-3)

Name Of The Faculty :- Er.SATYAJIT PANDA
Branch :- Civil Engineering
Session :- 2024-25
Semester :- 6th
Examination :- 2025 (S)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Advanced construction materials	10	10
2	Prefabrication	8	8
3	Earthquake Resistant Construction	8	8
4	Retrofitting of Structures	8	8
5	Building Services	8	8
6	Construction and earth moving equipments	10	10
7	Soil reinforcing techniques	8	8
	Total Period:	60	60

S. Panda 01/02/2025
Sign of Faculty

01.02.2025
Sign of H.O.D.

Discipline: CIVIL ENGINEERING	Semester: 6th	Name of the Teaching Faculty: Er.SATYAJIT PANDA	
		SESSION : 2024-25	EXAMINATION : 2025 (S)
Week	**Class Day**	**Topics to be Covered**	
1st	1st	1.0 Introduction to Advanced construction materials.	
	2nd	1.1 Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.	
	3rd	1.1 Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.	
	4th	1.1 Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.	
2nd	1st	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.	
	2nd	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.	
	3rd	1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.	
	4th	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc	
3rd	1st	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc	
	2nd	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc	
	3rd	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc	
	4th	1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding	
4th	1st	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,	
	2nd	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,	

4th	3rd	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,
	4th	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,
5th	1st	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination
	2nd	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination
	3rd	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination
	4th	2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination
6th	1st	2.3 Indian standard recommendation for modular planning.
	2nd	2.3 Indian standard recommendation for modular planning.
	3rd	3.1 Building Configuration
	4th	3.1 Building Configuration
7th	1st	3.2 Lateral Load resisting structures
	2nd	3.2 Lateral Load resisting structures
	3rd	3.3 Building characteristics
	4th	3.3 Building characteristics
8th	1st	3.4 Effect of structural irregularities-vertical irregularities, plan configuration problems.
	2nd	3.5 Safety consideration during additional construction and alteration of existing Buildings
	3rd	3.6 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.
	4th	4.1 Seismic retrofitting of reinforced concrete buildings
9th	1st	4.1 Seismic retrofitting of reinforced concrete buildings
	2nd	4.2 -Sources of weakness in RC frame building

9th	3rd	4.2 -Sources of weakness in RC frame building
	4th	4.3 -Classification of retrofitting techniques and their uses
10th	1st	4.3 -Classification of retrofitting techniques and their uses
	2nd	4.3 -Classification of retrofitting techniques and their uses
	3rd	4.3 -Classification of retrofitting techniques and their uses
	4th	5.1 Cold Water Distribution in high rise building, lay out of installation
11th	1st	5.2 Hot water supply – General principles for central plants-layout
	2nd	5.3 Sanitation –soil and waste water installation in high rise buildings
	3rd	**INTERNAL ASSESSMENT.**
	4th	**INTERNAL ASSESSMENT.**
12th	1st	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 .
	2nd	5.5 Lighting – Requirement of lighting, Measurement of light intensity.
	3rd	5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation)
	4th	5.7 Mechanical Services- Lifts, Escalator, Elevators – types and uses.
13th	1st	6.1 Planning and selection of construction equipments
	2nd	6.1 Planning and selection of construction equipments
	3rd	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel
	4th	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel
14th	1st	6.3 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
	2nd	6.4 Owning and operating cost – problems
	3rd	7.1 Necessity of soil reinforcing.
	4th	7.2 Use wire mesh and geo-synthetics.
15th	1st	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	2nd	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	3rd	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.
	4th	REVISION

S. Panda 01/02/2025.

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