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

LESSON PLAN

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

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods	No. of periods
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

Discipline: CIVIL ENGINEERI	Semester: 6th	**Name of the Teaching Faculty:** ER.SATYAJIT PANDA
		SESSION : 2023-24 **EXAMINATION :** 2024 (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 agents, adhesives etc
4th	**1st**	2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication , types of prefabricated
	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
	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
Week	**Class Day**	**Topics to be Covered**

	4th	2.1 Introduction, necessity and scope of prefabrication of buildings, history of prefabrication, current uses of prefabrication , types of prefabricated
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
	3rd	4.2 -Sources of weakness in RC frame building
	4th	4.3 -Classification of retrofitting techniques and their uses
Week	**Class Day**	**Topics to be Covered**
10th	**1st**	4.3 -Classification of retrofitting techniques and their uses
	2nd	4.3 -Classification of retrofitting techniques and their uses

10	**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 ASSESMENT.**
	4th	**INTERNAL ASSESMENT.**
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) problems on 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.
	4th	6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power.
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
	2nd	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments
	3rd	7.3 Strengthening of embankments, Slope stabilization in cutting and embankments
	4th	REVISION