

**GOVT. POLYTECHNIC BOLANGIR**  
**LESSON PLAN**

<b>Discipline : Civil Engineering</b>	<b>Semester: 5th</b>	<b>Name of the Teaching Faculty : Yashobanta Naik</b>
<b>Subject : Advanced Construction Techniques and Equipment</b>	<b>No. of Days / per week class allotted : 4</b>	<b>Semester From date : 10.03.2022 To Date : 10.06.2022</b> <b>No. of Weesks : 12</b>
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>
<b>2ND MARCH</b>	1st	Introduction
	2nd	Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers
	3rd	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.
	4th	Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber
<b>3RD MARCH</b>	1st	Miscellaneous materials – Properties and uses of acoustics materials, wall claddings,
	2nd	plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.
	3rd	PrefabricationIntroduction, necessity and scope of prefabrication of buildings, history of prefabrication,
	4th	current uses of prefabrication , types of prefabricated systems, classification of prefabrication, advantages and disadvantages of prefabrication
<b>4TH MARCH</b>	1st	The theory and process of prefabrication, design principle of prefabricated systems,
	2nd	types of prefabricated elements, modular coordination
	3rd	Indian standard recommendation for modular planning.
	4th	Earthquake Resistant Construction,Building Configuration Lateral Load resisting structures
<b>1ST APRIL</b>	1st	Building characteristics
	2nd	Effect of structural irregularities-vertical irregularities, plan configuration problems.
	3rd	Safety consideration during additional construction and alteration of existing Buildings.
	4th	Additional strengthening measures in masonry building-corner reinforcement
<b>2ND APRIL</b>	1st	lintel band, sill band, plinth band, roof band, gable band etc.
	2nd	Seismic retrofitting of reinforced concrete buildings
	3rd	

	4th	Sources of weakness in RC frame building
<b>3RD APRIL</b>	1st	Classification of retrofitting techniques and their uses
	2nd	Building Services, Cold Water Distribution in high rise building, layout of installation
	3rd	Hot water supply – General principles for central plants-layout
	4th	Sanitation –soil installation in high rise buildings
<b>4TH APRIL</b>	1st	waste water installation in high rise buildings
	2nd	Electrical services
	3rd	i) requirements in high rise buildings
	4th	ii) Layout of wiring - types of wiring
<b>1ST MAY</b>	1st	iii) Fuses and their types
	2nd	iv) Earthing and their uses
	3rd	Lighting – Requirement of lighting,
	4th	Measurement of light intensity
<b>2ND MAY</b>	1st	Ventilation and its method
	2nd	Mechanical Services- Lifts, Escalator
	3rd	Elevators – types and uses
	4th	Construction and earth moving equipments
<b>3RD MAY</b>	1st	Planning and selection of construction equipments
	2nd	Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel
	3rd	Study and uses of compacting equipments like tamping rollers
	4th	Smooth wheel rollers
<b>4TH MAY</b>	1st	Pneumatic tired rollers and vibrating compactors
	2nd	Owning and operating cost – problems
	3rd	Soil reinforcing techniques
	4th	Necessity of soil reinforcing.
<b>1ST JUNE</b>	1st	Use wire mesh and geo-synthetics.
	2nd	Use wire mesh and geo-synthetics.
	3rd	Strengthening of embankments, Slope stabilization in cutting
	4th	Strengthening of embankments, Slope stabilization in cutting
<b>2ND JUNE</b>	1st	Slope stabilization in embankments by soil reinforcing techniques.
	2nd	Slope stabilization in embankments by soil reinforcing techniques.
	3rd	question practice
	4th	question practice