



GOVT. POLYTECHNIC KORAPUT

ACADEMIC SESSION 2020-2021

SEMESTER- 6<sup>th</sup>

BRANCH - CIVIL ENGINEERING

SUBJECT – ADVANCE CONSTRUCTION TECHNIQUE AND  
EQUIPMENT

FACULTY NAME – SUCHITRA LENKA



Week no	Topic to be covered
1	<p><b>Advanced construction materials</b></p> <p>1.1 Fibers and Plastics-</p> <p>Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.</p> <p>Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets.</p> <p>Use of plastic as construction material.</p>
2	<p>1.2 Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.</p> <p>Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.</p>
3	<p><b>Prefabrication</b></p> <p>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,</p> <p>2.2 The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination</p> <p>Indian standard recommendation for modular planning</p>
4	<p><b>Earthquake Resistant Construction</b></p> <p>3.1 Building Configuration</p> <p>3.2 Lateral Load resisting structures</p>
5	<p>3.1 Building characteristics</p> <p>3.2 Effect of structural irregularities-vertical irregularities, plan configuration problems.</p>
6	<p>3.1 Safety consideration during additional construction and alteration of existing Buildings.</p>

	<p>3.2 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.</p>
7	<p><b>Building Services</b></p> <p>5.1 Cold Water Distribution in high rise building, lay out of installation Hot water supply – General principles for central plants-layout</p> <p>5.3 Sanitation –soil and waste water installation in high rise buildings</p>
8	<p>5.3 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</p> <p>5.4 Lighting – Requirement of lighting, Measurement of light intensity</p>
9	<p>5.3 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation</p> <p>Mechanical Services- Lifts, Escalator, Elevators – types and uses.</p>
10	<p><b>Construction and earth moving equipments –</b></p> <p>6.1 Planning and selection of construction equipments</p> <p>6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel</p>
11	<p>6.1 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors</p> <p>Owning and operating cost – problems</p>
12	<p><b>Soil reinforcing techniques</b></p> <p>7.1 Necessity of soil reinforcing.</p> <p>7.2 Use wire mesh and geo-synthetics.</p> <p>Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.</p>