LESSON PLAN

Name of the Institute:	C.V. RAMAN POLYTECHNIC, BHUBANESWAR
Department:	CIVIL ENGINEERING
Semester/Division/Branch:	6th SEM /CIVIL
Subject Name with code:	ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT / Th-3
Total No. of Class (Required):	60
Faculty Name:	DEBI PRASAD PANDA

Class No.	Brief Description of the Topic/Chapter to be taught	Remarks
1	Advanced construction materials:Fibers and Plastics- Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.	
2	.....DO.....	
3	.....DO.....	
4	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. Use of plastic as construction material.	
5	.....DO.....	
6	.....DO.....	
7	Artificial Timbers – Properties and uses of artificial timber. Types of artificial timber available in market, strength of artificial timber.	
8	.....DO.....	
9	Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc.	
10	.....DO.....	
11	**Prefabrication:** 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.	
12	.....DO.....	
13	.....DO.....	
14	The theory and process of prefabrication, design principle of prefabricated systems, types of prefabricated elements, modular coordination	
15	.....DO.....	
16	.....DO.....	

17	Indian standard recommendation for modular planning.	
18	.....DO.....	
19	**Earthquake Resistant Construction:**Building Configuration	
20	Lateral Load resisting structures	
21	Building characteristics	
22	Effect of structural irregularities-vertical irregularities, plan configuration problems.	
23	Safety consideration during additional construction and alteration of existing Buildings.	
24	.....DO.....	
25	Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc.	
26	.....DO.....	
27	**Retrofitting of Structures:**Seismic retrofitting of reinforced concrete buildings	
28	.....DO.....	
29	.....DO.....	
30	Sources of weakness in RC frame building	
31	.....DO.....	
32	Classification of retrofitting techniques and their uses	
33	.....DO.....	
34	.....DO.....	
35	**Building Services:**Cold Water Distribution in high rise building, lay out of installation	
36	Hot water supply – General principles for central plants-layout	
37	Sanitation –soil and waste water installation in high rise buildings	
38	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	
39	.....DO.....	
40	Lighting – Requirement of lighting, Measurement of light intensity	
41	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation	
42	Mechanical Services- Lifts, Escalator, Elevators – types and uses.	
43	**Construction and earth moving equipments** –Planning and selection of construction equipments	
44	.....DO.....	
45	Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel	

46	.....DO.....	
47	.....DO.....	
48	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors	
49	.....DO.....	
50	.....DO.....	
51	Owning and operating cost – problems	
52	.....DO.....	
53	**Soil reinforcing techniques:**Necessity of soil reinforcing.	
54	.....DO.....	
55	Use wire mesh and geo-synthetics.	
56	.....DO.....	
57	.....DO.....	
58	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques.	
59	.....DO.....	
60	.....DO.....	

D. Panda

Signature of the Faculty

Signature of the H.O.D