

**DEPARTMENT OF CIVIL ENGINEERING GANAPATI
INSTITUTE OF ENGINEERING AND TECHNOLOGY,
JAGATPUR, CUTTACK**

LESSON PLAN OF 6TH SEMESTER(2023-24) CIVIL ENGINEERING

| DISCIPLINE- CIVIL ENGG. | SEMESTER-6 TH | NAME OF THE TEACHING FACULTY- SWAGATIKA SAMAL |
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| SUBJECT- ACT&E (Th.3) | NO. OF DAYS PER WEEK CLASS ALLOTTED- 03 | SEMESTER FROM DATE-16/01/24 TO DATE-26/04/24 NO. OF WEEKS-15 |
| WEEK | CLASS DAY | THEORY TOPICS |
| 1 ST | 1 st | Advanced construction materials 1.1 Fibers and Plastics- |
| | 2 nd | Types of fibers- Steel, Carbon, glass fibers, |
| | 3 rd | use of fibers as construction material |
| 2 ND | 1 st | properties of Fibers. Types of plastics- PVC, RPVC,. |
| | 2 nd | HDPE, FRP, GRP,etc |
| | 3 rd | Colored plastic sheets. Use of plastic as construction material. |
| 3 RD | 1 st | 1.2 Artificial Timbers – Properties and uses of artificial timber. |
| | 2 nd | Types of artificial timber available in market, strength of artificial timber. |
| | 3 rd | 1.3 Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, |
| 4 TH | 1 st | micro-silica, artificial sand, bonding agents, adhesives etc. |
| | 2 nd | Prefabrication 2.1 Introduction, necessity and scope of prefabrication of buildings |
| | 3 rd | history of prefabrication, current uses of prefabrication |
| 5 TH | 1 st | types of prefabricated systems |
| | 2 nd | advantages and disadvantages of prefabrication |
| | 3 rd | classification of prefabrication |
| 6 TH | 1 st | 2.2 The theory and process of prefabrication, design principle of prefabricated systems |
| | 2 nd | types of prefabricated elements, modular coordination |
| | 3 rd | 2.3 Indian standard recommendation for modular planning |
| 7 TH | 1 st | Earthquake Resistant Construction 3.1 Building Configuration |
| | 2 nd | 3.2 Lateral Load resisting structures |
| | 3 rd | 3.3 Building characteristics |
| 8 TH | 1 st | 3.4 Effect of structural irregularities-vertical irregularities, plan configuration problems |
| | 2 nd | 3.5 Safety consideration during additional construction and alteration of existing Buildings |
| | 3 rd | 3.6 Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band, etc. |
| 9 TH | 1 st | Retrofitting of Structures 4.1 Seismic retrofitting of reinforced concrete buildings : |
| | 2 nd | 4.2 -Sources of weakness in RC frame building |
| | 3 rd | 4.3 -Classification of retrofitting techniques and their uses |

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| 10 TH | 1 st | 5.1 Cold Water Distribution in high rise building, lay out of installation |
| | 2 nd | 5.2 Hot water supply – General principles for central plants-layout |
| | 3 rd | 5.3 Sanitation –soil and waste water installation in high rise buildings |
| 11 TH | 1 st | 5.4 Electrical services – i) requirements in high rise buildings ii) Layout of wiring |
| | 2 nd | types of wiring iii) Fuses and their types iv) Earthing and their uses |
| | 3 rd | 5.5 Lighting – Requirement of lighting, Measurement of light intensity |
| 12 TH | 1 st | 5.6 Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation |
| | 2 nd | 5.7 Mechanical Services- Lifts, Escalator, Elevators – types and uses. |
| | 3 rd | Construction and earth moving equipments – 6.1 Planning and selection of construction equipments , |
| 13 TH | 1 st | 6.2 Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel |
| | 2 nd | 6.3 Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors |
| | 3 rd | 6.4 Owning and operating cost – problems |
| 14 TH | 1 st | Soil reinforcing techniques 7.1 Necessity of soil reinforcing |
| | 2 nd | 7.2 Use wire mesh and geo-synthetics |
| | 3 rd | 7.3 Strengthening of embankments |
| 15 TH | 1 st | Slope stabilization in cutting and embankments by soil reinforcing techniques. |
| | 2 nd | Discussion of important questions and answers |

S. Samal
13.01.24
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