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| Name of the Institute: | **R.K. INSTITUTE OF ENGG. & TECH.** | |
| Department: | **Civil Engineering** | |
| Semester: | 6th SEM. | |
| Subject Name with code: | Th 3. ADVANCED CONSTRUCTION TECHNIQUES & EQUIPMENT | |
| Total No. of Class (Required): | 60 | FROM-22/12/2025 TO-18/04/2026 |
| **Faculty Name:** | **Mrs. Arnapurna Sethy** | |

| **Class** No. | **Brief Description of the Topic/Chapter to be taught** | **Remarks** |
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| 1 | Advanced construction materials | |
| 2 | Fibers and Plastics | |
| 3 | Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers | |
| 4 | Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets. | |
| 5 | Use of plastic as construction material. | |
| 6 | Artificial Timbers – Properties and uses of artificial timbe | |
| 7 | Types of artificial timber available in market, strength of artificial timber | |
| 8 | Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc. | |
| 9 | Miscellaneous materials – Properties and uses of acoustics materials, wall claddings, plaster boards, micro-silica, artificial sand, bonding agents, adhesives etc. | |
| 10 | Prefabrication | |
| 11 | necessity and scope of prefabrication of buildings | |
| 12 | history of prefabrication | |
| 13 | current uses of prefabrication | |
| 14 | types of prefabricated systems | |
| 15 | classification of prefabrication | |
| 16 | advantages and disadvantages of prefabrication | |
| 17 | The theory and process of prefabrication | |
| 18 | design principle of prefabricated systems | |
| 19 | types of prefabricated elements | |
| 20 | modular coordination | |
| 21 | Indian standard recommendation for modular planning. | |
| 22 | Earthquake Resistant Construction | |
| 23 | Building Configuration | |

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| 24 | Lateral Load resisting structures | |
| 25 | Building characteristics | |
| 26 | Effect of structural irregularities-vertical irregularities, plan configuration problems. | |
| 27 | Safety consideration during additional construction and alteration of existing Buildings. | |
| 28 | Additional strengthening measures in masonry building-corner reinforcement, lintel band, sill band, plinth band, roof band, gable band etc. | |
| 29 | Retrofitting of Structures | |
| 30 | Seismic retrofitting of reinforced concrete buildings | |
| 31 | Sources of weakness in RC frame building | |
| 32 | Classification of retrofitting techniques and their uses | |
| 33 | Building Services | |
| 34 | Cold Water Distribution in high rise building, lay out of installation | |
| 35 | Hot water supply – General principles for central plants-layout | |
| 36 | Sanitation –soil and waste water installation in high rise buildings | |
| 37 | Requirements Of Electrical Services in high rise buildings | |
| 38 | Layout of wiring - types of wiring | |
| 39 | Fuses and their types | |
| 40 | Earthing and their uses | |
| 41 | Lighting – Requirement of lighting | |
| 42 | Measurement of light intensity | |
| 43 | Ventilation - Methods of ventilation | |
| 44 | problems on ventilation | |
| 45 | Mechanical Services- Lifts, Escalator, Elevators – types and uses | |
| 46 | Construction and earth moving equipments | |
| 47 | Planning and selection of construction equipments | |
| 48 | Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel. | |
| 49 | Study on earth moving equipments like drag line, tractor, bulldozer, Power shovel | |
| 50 | Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors | |
| 51 | Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors | |
| 52 | Owning and operating cost – problem | |
| 53 | Soil reinforcing techniques | |
| 54 | Necessity of soil reinforcing | |
| 55 | Use wire mesh and geo-synthetics | |
| 56 | Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques. | |

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| 57 | Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques. | |
| 58 | Revision | |
| 59 | Revision | |
| 60 | Question Discussion | |

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