

LESSON PLAN

| Name of the Institute : | | C.V. RAMAN POLYTECHNIC, BHUBANESWAR |
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| Department : | | CIVIL ENGINEERING |
| Semester/Division/Branch : | | 4 TH / CIVIL |
| Subject Name with code : | | HIGHWAY ENGINEERING (TH.4) |
| Total No. of Class (Required) : | | 75 |
| Faculty Name : | | SUMITRA PARIDA |
| Class No. | Brief Description of the Topic/Chapter to be taught | Remarks |
| 1 | Introduction of Highway, Importance of Highway transportation, Functions of Indian Roads Congress, IRC classification of roads. | |
| 2 |DO..... | |
| 3 |DO..... | |
| 4 | Road Geometric Design | |
| 5 |DO..... | |
| 6 |DO..... | |
| 7 | Design and average running speed, stopping & passing sight distance | |
| 8 |DO..... | |
| 9 |DO..... | |
| 10 | Necessity of curves, horizontal and vertical curves including transition curves and super elevation. | |
| 11 |DO..... | |
| 12 | Methods of providing super – elevation | |
| 13 |DO..... | |
| 14 | Road Materials-Difference types of road materials in use | |
| 15 |DO..... | |
| 16 | California Bearing Ratio | |
| 17 |DO..... | |
| 18 | Testing aggregates : Abrasion test, impact test, crushing strength test, water absorption test & soundness test. | |
| 19 |DO..... | |
| 20 |DO..... | |
| 21 | Aggregates : Availability of road aggregates in India, Requirements of road aggregates as per IS specifications | |
| 22 |DO..... | |
| 23 | Binders : common binders : cement, bitumen and Tar, properties as per IS specifications, penetration and viscosity test of bitumen | |
| 24 |DO..... | |
| 25 |DO..... | |

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| 26 | Road Pavement : Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components | |
| 27 |DO..... | |
| 28 |DO..... | |
| 29 | Sub-grade preparation | |
| 30 |DO..... | |
| 31 |DO..... | |
| 32 | Flexible pavements : necessity of sub base, stabilized sub bade: purpose of stabilization | |
| 33 |DO..... | |
| 34 | Base Course | |
| 35 |DO..... | |
| 36 | Surfacing | |
| 37 |DO..... | |
| 38 |DO..... | |
| 39 | Rigid Pavements | |
| 40 |DO..... | |
| 41 |DO..... | |
| 42 | Hill Roads :Introduction : Typical cross-sections showing all details of a typical hill road in cut. | |
| 43 |DO..... | |
| 44 |DO..... | |
| 45 | partly in cutting and partly in filling | |
| 46 |DO..... | |
| 47 | Breast Walls, Retaining walls, different types of bends | |
| 48 |DO..... | |
| 49 | Road Drainage :Necessity of road drainage work, cross drainage works | |
| 50 |DO..... | |
| 51 | Surface and sub-surface drains and storm water drains | |
| 52 |DO..... | |
| 53 | Location, spacing and typical details of side drains, side ditches for surface drainage | |
| 54 |DO..... | |
| 55 | pipe drains in hill roads, details of drains in cutting embankment, typical cross sections. | |
| 56 |DO..... | |
| 57 |DO..... | |
| 58 | Road Maintenance | |
| 59 |DO..... | |
| 60 |DO..... | |
| 61 |DO..... | |
| 62 |DO..... | |
| 63 |DO..... | |
| 64 | Construction equipments | |
| 65 |DO..... | |
| 66 |DO..... | |
| 67 |DO..... | |
| 68 | Traffic studies | |

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| 69 |DO..... | |
| 70 |DO..... | |
| 71 |DO..... | |
| 72 | Landscaping and Arboriculture | |
| 73 |DO..... | |
| 74 |DO..... | |
| 75 |DO..... | |


Signature of the Faculty


Signature of the H.O.D