Lesson Plan

Name of the faculty : Mr. Yogendra Rajput

Discipline : Civil Engg.

Semester : 6th Semester

Subject : Railways, Bridges and Tunnels

Lesson Plan Duration : 15 weeks (from January, 2018 to April, 2018)

Work Load (Lecture) per week (in hours): Lectures-05

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| Week |  Lecture Day | Theory |
| 1st | Topic (Including Assignment / Test) |
| 1 | Introduction to Indian Railways |
| 2 | Railway Surveys, Factors influencing the railway route |
| 3 | Brief description of various types of railway survey |
| 4 | Classification of permanent way, its component parts |
| 5 | Rail gauge definition, types, practice in India |
| 2nd | 6 | Revision of previous topics |
| 7 | Rails and types of rails |
| 8 | Rail Fastenings |
| 9 | Rail joints, types of rail joints |
| 10 | Fastenings for Rails |

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| 3rd | 11 | Fish plates and bearing plates |
| 12 | Revision of previous topics |
| 13 | Assignment |
| 14 | Sleepers definition |
| 15 | Function of sleepers |
| 4th | 16 | Types of Sleepers |
| 17 | Requirements of an ideal material for sleepers |
| 18 | Revisions of previous tropics |
| 19 | Definition of ballast |
| 20 | Function of ballast |
| 5th | 21 | Test |
| 22 | Requirement of an ideal material for ballast |
| 23 | Revision of previous topics |
| 24 | Assignment |
| 25 | Crossings and signals |
| 6th | 26 | Brief Description regarding diff. Types of crossing/signals |
| 27 | Revision of previous topics  |
| 28 | Maintenance of track definition |
| 29 | Necessity maintenance of track |
| 30 | Inspection of soil, track and fixtures |

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|  7th | 31 | Maintenance and boxing of ballast maintenance gauge |
| 32 | Revision of previous topics |
| 33 | Earth work and drainage definition |
| 34 | Features of rail road, bed level, width of formation |
| 35 | Side slopes, drains method of construction |
| 8th | 36 | Requirement of drainage system |
| 37 | Assignment |
| 38 | Bridge Introduction |
| 39 | Bridge function and component parts |
| 40 | Difference between a bridge and a culvert |
| 9th | 41 | Classification of bridge |
| 42 | According to life-permanent and temporary  |
| 43 | According to deck level-Deck, through and semi-through |
| 44 | According to material-timber, masonry, steel, RCC, pre-stressed  |
| 45 | According to structural form |
| 10th | 46 | IRC Classification |
| 47 | Revision of previous topics |
| 48 | Assignment |
| 49 | Test |
| 50 | Bridge foundation Introduction |
| 11th | 51 | Introduction to open foundation |
| 52 | Pile foundation and its type |
| 53 | Well Foundation and its type |
| 54 | Revision of previous topics |
| 55 | Introduction of piers |
| 12th | 56 | Types of piers |
| 57 | Abutments and wing walls definition |
| 58 | Types of abutments |
| 59 | Types of wing wall |
| 60 | Revision of previous topics |
| 13th | 61 | Bridge bearings, purpose of bearings |
| 62 | Types of bearings |
| 63 | Assignment |
| 64 | Maintenance of bridge |
| 65 | Inspection of bridges |
| 14th | 66 | Routine maintenance |
| 67 | Revision of previous topics |
| 68 | Definition of tunnels |
| 69 | Necessity of tunnels |
| 70 | Test |

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| 15th | 71 | Typical section of tunnel for a national Highway |
| 72 | Cross-section of single and broad gauge railway track |
| 73 | Ventilation definition |
| 74 | Necessity and methods of ventilation |
| 75 | Drainage methods and lighting of tunnels |