**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 8th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Sandeep Singh Charak

Designation : Assistant Professor

Subject with code : Bridge Engg (CE-402N)

Objective of Course: Students will acquire the knowledge about the design of Railway, R.C.C and Steel Bridge and its foundation.

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Introduction | Teaching |  |
| January | Definition, components of bridge,  | Teaching |  |
| January | classification of bridge | Teaching | Assignment |
| January | selection of site | Teaching |  |
| January | economical span | Teaching |  |
| January | aesthetics consideration | Teaching |  |
| January | Necessary investigations and essential design data.  | Teaching |  |
| January | Standard Specifications for Roads and Railways Bridges | Teaching |  |
| January | General, Indian Road Congress Bridge Code | Teaching |  |
| February | width of carriage way, clearance | Teaching | Test2 |
| February | various loads to be considered for the design of roads and railway bridges | Teaching |  |
| February | detailed explanation of IRC standard live loads | Teaching |  |
| February | Design Consideration for R. C. C. Bridges | Teaching | Assignment |
| February | Various types of R.C.C. bridge | Teaching |  |
| February | Design of R.C.C. culvert and T-beam bridges.  | Teaching |  |
| February | T-beam bridges | Teaching |  |
| February | Design Consideration for Steel Bridges | Teaching |  |
| March | Various types of steel bridges | Teaching |  |
| March | design of truss | Teaching |  |
| March | Plate girder bridges | Teaching |  |
| March | Numerical | Teaching |  |
| March | Hydraulic & Structural Design | Teaching | Assignment  |
| March | Piers | Teaching |  |
| March | Abutment | Teaching | Test2 |
| March | wing-wall | Teaching |  |
| March | approaches  | Teaching |  |
| April | Numerical | Teaching |  |
| April | Bearings | Teaching | Assignment |
| April | Joints, articulation and other details.  | Teaching |  |
| April | Bridge Foundation | Teaching |  |
| April | Articulation and other details.  | Teaching |  |
| April | Various types of foundation | Teaching |  |
| April | Necessary investigations | Teaching |  |
| April | Numerical | Teaching |  |
| April | Design criteria of well foundation.  | Teaching | Test 3 |
| April | Numerical | Teaching |  |
| April | Detail of well foundation | Teaching | Assignment |
| April | Test | Teaching |  |
| April | Detail of bridge foundation | Teaching |  |

**Outcome of Course:**

1. Students will be able to study Specifications for Roads and Railways Bridges.

2. Students will be able to design consideration for R. C. C. Bridges.

3. Students will be able to design consideration for Steel Bridges

4. Students will be able to Hydraulic & Structural design of Bridge

(Sign. of Teacher Concerned with date) (Sign. of HOD)

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 8th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Rajesh Sagwal

Designation : Assistant Professor

Subject with code :Railway and airport (CE-404 N)

Objective of Course :Students will acquire the knowledge about the design of Railways and Airport



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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Permanent Way And Rails Rail transportation and its importance in | Teaching |  |
| January | Permanent way: requirements and components. | Teaching |  |
| January | Gauges in India and abroad Selection of gauge Coning of wheels Adzing of sleepers | Teaching | Assignment |
| January | Rails: functions composition of rail steeltypes of rail sections | Teaching |  |
| January | Requirements of an ideal rail section  | Teaching |  |
| January | Defects in rails. Creep of rails. Long welded rails and continuously welded rails.  | Teaching |  |
| January | Sleepers, Fastenings And Ballast  | Teaching |  |
| January | functions, requirements of an ideal sleeper | Teaching |  |
| January | Types of sleepers wooden, cast iron, steel and concrete sleepers advantages, disadvantages and suitability of each type.  | Teaching | Assignment |
| February | Sleeper density. Fastenings for various types of sleepers: fish plates, spikes, bolts, bearing plates, keys, chairs, jaws, tie bars Elastic fastenings. Ballast: functions, requirements, types of ballast and their suitability.  | Teaching | Test 1 |
| February | Points And Crossings, Necessity. Turnout: various components, working principle. Switch: components, types. Crossing: components and types | Teaching |  |
| February | Design elements of a turnout, Design of a simple turnout.  | Teaching |  |
| February | Layout plan of track junctions: crossovers, diamond crossing, single-Double slips, throw switch, turn table, triangle. | Teaching | Assignment |
| February | Signaling, Interlocking And Train Control Signals | Teaching |  |
| February | Signals Semaphore signal: components, working principle. | Teaching |  |
| February | Requirements / principles of a good interlocking system. Brief introduction to devices used in interlocking | Teaching |  |
| February | centralized train control and automatic train control systems.  | Teaching |  |
| March | Geometric Design Of The Track Gradients, grade compensation. Super elevation, cant deficiency | Teaching | Test2 |
| March | negative super elevation. Maximum permissible speed on curves. Tractive resistances, types. Hauling capacity of a locomotive.  | Teaching |  |
| March | Stations, Yards And Track Maintenance Stations: functions and classification. Junction, non-junction and terminal stations.  | Teaching |  |
| March | Types of maintenance. Brief introduction to mechanized maintenance, M.S.P and D. T.M Yards: functions, types. Marshalling yard: functions, types. Maintenance of railway track: necessity.  | Teaching |  |
| March |  Introduction And Airport Planning Air transportation, its importance and characteristics, status in India | Teaching | Assignment  |
| March |  Layout plan of an airport and its basic elements: terminal area,apron, taxiway, runway, hanger | Teaching |  |
| March | Aircraft Characteristics | Teaching |  |
| March | Their effect on elements of an airport. Site selection of an airport. classification of airports.  | Teaching |  |
| March | Runway Layout And Pavement Design  | Teaching |  |
| April | Runway orientation | Teaching |  |
| April | Wind Rose diagram | Teaching |  |
| April | Basic runway length. | Teaching |  |
| April | Corrections to basic runway length | Teaching |  |
| April | Runway patterns | Teaching |  |
| April | Difference between highway and runway pavement.  | Teaching |  |
| April | Test | Teaching |  |
| April | Types of runway pavements | Teaching |  |
| April | Design factors for runway pavement. | Teaching | Test 3 |
| April | Detail | Teaching |  |
| April | Brief introduction to design of thickness of a runway pavement | Teaching | Assignment |
| April | terminal area,apron, taxiway, runway, hanger | Teaching |  |
| April | Detail | Teaching |  |

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**Outcome of Course:**

1. Students will be able to study different types of Rails,Sleepers and Ballast

2. Students will be able to design different components of Railways

3. Students will be able to know Geometric design of track

4. Students will be able to analyze the frames structures

(Sign. of Teacher Concerned with date) (Sign. of HOD)

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 8th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Gaurav Dhiman

Designation : Assistant Professor

Subject with code : Industrial Waste water treatment (CE-406N)

Objective of Course : The aim of study is to understand the effect of Industrial waste water on  environment and its treatment.

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Introdution on Effects of industrial wastes  | Teaching |  |
| January | Effects of industrial wastes on streams | Teaching |  |
| January | Effects of industrial wastes sewerage system | Teaching |  |
| January | Treatment of industrial waste by various method | Teaching |  |
| January | Minimizing the effects of industrial effluents on waste water treatment plants  | Teaching |  |
| January | Numerical and test | Teaching | Test 1 |
| January | Receiving streams-conservation of water | Teaching |  |
| January | Process change waste  | Teaching | Assignment 1 |
| January | reuse of waste water | Teaching |  |
| February | volume reduction  | Teaching |  |
| February | Strength reduction of waste  | Teaching |  |
| February | Neutralization of wastes  | Teaching |  |
| February | Neutralization of wastes  | Teaching |  |
| February | Equalization and proportioning of waste | Teaching |  |
| February | Numerical problems | Teaching |  |
| February | Population equivalent | Teaching | Assignment 2 |
| February | Industrial effluent standards for disposal into inland surface  | Teaching |  |
| March | Industrial effluent standards for disposal into water sources | Teaching | Test2 |
| March | Industrial effluent standards for disposal on land for irrigation. | Teaching |  |
| March | Numerical problems | Teaching |  |
| March | Raw material, Process, waste material treatment for **Textile**  | Teaching |  |
| March | Raw material, Process of manufacture, waste material treatment for **Tannery** | Teaching |  |
| March | Raw material, Process of manufacture, waste material treatment for **Sugar mill** | Teaching |  |
| March | Raw material, Process of manufacture, waste material treatment for **Dairy** | Teaching | Assignment 3 |
| March | Raw material, Process of manufacture, waste material treatment for **Pulp & paper** | Teaching |  |
| March | Numerical problems & Test on various topics | Teaching | Test 1 |
| April | Raw material, Process of manufacture, waste material treatment for **Pulp & paper** | Teaching |  |
| April | Raw material, Process of manufacture, waste material treatment for **Fertilizers** | Teaching |  |
| April | Raw material, Process of manufacture, waste material treatment for **Oil refinery** | Teaching | Assignment 4  |
| April | Numerical problems | Teaching |  |
| April | Raw material, Process of manufacture, waste material treatment for **Radio active wastes.** | Teaching |  |
| April | Raw material, Process of manufacture, waste material treatment for thermal power plants | Teaching |  |
| April | Numerical problems | Teaching |  |
| April | Study of the following Industries from waste generation | Teaching | Assignment5 |
| April | quality and its treatment including brief overview of manufacturing process. | Teaching |  |



**Outcome of Course:**

1. Students will study the effect of waste water on streams

2. Students will study the working process of treatment plant

3. Students will study about the standard for disposal

4. Students will study the types of industry responsible for waste generation

(Sign. of Teacher Concerned with date) (Sign. of HOD)

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 8th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Meghav Gupta

Designation : Assistant Professor

Subject with code : EIA (CE-422N)

Objective of Course :The aim of study is to understand the environment and impact on environment due to activities in surrounding and its assessment.****

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Introduction of Environment | Teaching |  |
| January | Human activity | Teaching |  |
| January | Resources of Environment | Teaching | Assignment1 |
| January | Pollution of Environment | Teaching |  |
| January | Reuse and Environmental Management | Teaching |  |
| January | Introduction of Management of aquatic environment | Teaching | Test 1 |
| January | Water quality control | Teaching |  |
| January | Drainage basic activities | Teaching |  |
| January | Water pollution | Teaching |  |
| February | Impact of human activities on aquatic resources | Teaching |  |
| February | Control method | Teaching |  |
| February | Regional planning | Teaching |  |
| February | Introduction of air quality management | Teaching | Assignment2 |
| February | Meaning of atmosphere | Teaching |  |
| February | Effect of human activity on air quality | Teaching |  |
| February | Different method of waste disposal | Teaching |  |
| February | Meaning of optimization | Teaching | Test 2 |
| March | Planning of waste disposal | Teaching |  |
| March | Introduction of waste management | Teaching |  |
| March | Impact of waste disposal of human activities | Teaching | Assignment3 |
| March | Introduction of Land use management | Teaching |  |
| March | Impact of land use on human life | Teaching | Test3 |
| March | Control of Hazard in land use | Teaching |  |
| March | Management of land use | Teaching |  |
| March | Introduction of Environment Assessment | Teaching |  |
| March | National Environmental policy | Teaching |  |
| April | Implication of Environment Assessment | Teaching | Assignment4 |
| April | Design process of Environment Assessment | Teaching |  |
| April | Preparation of Assessment | Teaching |  |
| April | Quantification of Assessment | Teaching |  |
| April | General Requirement of Environment standard | Teaching |  |
| April | Technique of setting standard | Teaching |  |
| April | Case study of EIA | Teaching |  |
| April | Case study of EIA of River Valley | Teaching |  |
| April | Case study of EIA project | Teaching |  |
| April | Case study of Thermal power project | Teaching | Assignment5 |

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**Outcome of Course:**

1. Students will study about environment and Pollution of Environment.
2. Students will study the Impact of human activities and management of aquatic resources.
3. Students will study about waste management and Land use management
4. Students will study about Environment Assessment and case studies.

(Sign. of Teacher Concerned with date) (Sign. of HOD)

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 8th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Amit Raheja

Designation : Assistant Professor

Subject with code : GYOSYNTHETICS ENGINEERING (CE-412N)

Objective of Course : The aim of study is to understand the application of Geosynthetic material, types of material.

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Basic Description of Geosynthetics | Teaching |  |
| January | Historical Development | Teaching |  |
| January | The Nomenclature, Function | Teaching | Assignment1 |
| January | Use around the World, Applications | Teaching |  |
| January | Applications, Development in India | Teaching |  |
| January | Raw Materials – Their Durability and Ageing | Teaching | Test 1 |
| January | Raw Materials – Their Durability and Ageing | Teaching |  |
| January | Polymers, Biological Resistance | Teaching |  |
| January | Chemical Resistance, Weathering Resistance | Teaching |  |
| February | Manufacutinr Methods | Teaching |  |
| February | Fibres | Teaching |  |
| February | Yarn, Nonwoven Geotextiles | Teaching |  |
| February | Woven Geotextiles | Teaching | Assignment2 |
| February | D.S.F. Fabrics | Teaching |  |
| February | Geogrids- Testing and Evaluation | Teaching |  |
| February | Factors influencing Testing | Teaching |  |
| February | Sampling | Teaching | Test 2 |
| March | Physical Properties, and Mechanical Properties under Uniaxial loading | Teaching |  |
| March | Physical Properties, and Mechanical Properties under Uniaxial loading | Teaching |  |
| March | Creep Testing | Teaching | Assignment3 |
| March | Erosion Control with Geogrids | Teaching |  |
| March | Wind Erosion | Teaching |  |
| March | Rain Water Erosion | Teaching |  |
| March | Erosion Control Measures | Teaching |  |
| March | Placement of Geogrid | Teaching |  |
| March | Bearing Capacity Improvement with Geogrid | Teaching |  |
| April | Advantages of Geogrid | Teaching | Assignment4 |
| April | Mechanism | Teaching |  |
| April | Modes of Failure | Teaching |  |
| April | Modes of Failure | Teaching | Test3 |
| April | Friction Coefficient | Teaching |  |
| April | Experimental Studies | Teaching |  |
| April | Application of Geosynthetics in Water Resource Projects | Teaching |  |
| April | Application of Geosynthetics in Water Resource Projects | Teaching |  |
| April | Dharoidam,Hiran II Dam | Teaching |  |
| April | Meda Creek Irrigation Scheme | Teaching | Assignment5 |

**Outcome of Course:**

1. Students will study the Historical Development, The Nomenclature, Function
2. Students will study the Manufacturing Methods.
3. Students will study about Erosion Control with Geogrids.
4. Students will study about ApplicationofGeosyntheticsinWaterResourceProject

(Sign. of Teacher Concerned with date) (Sign. of HOD)