**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 6th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Amit Raheja

Designation : Assistant Professor

Subject with code : DSS-II (CE-302N)

Objective of Course : To Impart knowledge and ability to design various steel structures.

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ Assignment** |
| January | Elementary Plastic Analysis and Design | Teaching |  |
| January | Introduction, Scope of plastic analysis | Teaching |  |
| January | ultimate load carrying capacity of tension members and compression members | Teaching |  |
| January | flexural members | Teaching |  |
| January | shape factor  | Teaching | Assignment 1 |
| January | Mechanisms | Teaching |  |
| January | plastic collapse | Teaching |  |
| January |  Analysis of plastic collapse | Teaching |  |
| January | plastic analysis applied to steel beams and simple portal frames and design.  | Teaching | Assignment 2 |
| February | Numerical | Teaching |  |
| February | Design of Water Tanks | Teaching |  |
| February | Introduction of Water Tanks | Teaching |  |
| February | permissible stresses | Teaching |  |
| February | design of circular tank | Teaching |  |
| February |  Design of rectangular tank | Teaching |  |
| February | pressed steel tanks including staging | Teaching |  |
| February | Design of Steel Stacks | Teaching | Test 1 |
| February | Introduction | Teaching |  |
| March | various loads to be considered for the design of steel stacks | Teaching |  |
| March | design of steel stacks including foundation | Teaching |  |
| March | Numerical | Teaching | Test 2 |
| March | Transmission line towers | Teaching | Assignment 3 |
| March | microwave towers | Teaching |  |
| March | Design loads | Teaching |  |
| March | Classification | Teaching |  |
| March | design procedure and specification | Teaching |  |
| March | Cold Formed Sections: | Teaching |  |
| March | Introduction and brief description of various types of cold formed sections | Teaching |  |
| April | local buckling | Teaching |  |
| April | concepts of effective width and effective sections,.  | Teaching |  |
| April | elements with stiffeners | Teaching |  |
| April | design of compression and bending elements.  | Teaching |  |
| April | Industrial Buildings | Teaching |  |
| April | Loads | Teaching |  |
| April | general arrangement and stability | Teaching |  |
| April | design considerations | Teaching | Test 3 |
| April | design of purlins | Teaching |  |
| April | design of roof trusses | Teaching |  |
| April | industrial building frames, bracings and stepped columns.  | Teaching | Assignment 4 |

**Outcome of Course:**

1. Students will be able to familiar with the Elementary Plastic Analysis and Design of steel structures.
2.  Students will be able to design steel water tank and steel stacks and their stability checks.
3. Students will be able to design steel water tank and steel stacks and their stability checks.
4. Students will be able to design steel industrial building and their stability checks.

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

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 6th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Gaurav Dhiman

Designation : Assistant Professor 

Subject with code : Irrigation II (CE-304 N)

Objective of Course : To Impart knowledge irrigation water requirement and ability to

 understand the hydraulic structures.

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| Month | Topic/Chapter covered | Academic activity | Test/Assignment |
| January | Introduction to subject Definition, Need and Purposes | Lecture |  |
| January | Benefits, ill-effects and scope | Lecture |  |
| January | Adv. Dis-adv. Of Irrigation, water requirements of crops and factors | Lecture |  |
| January | Consumptive use, delta, duty, base period & its relation | Lecture |  |
| January | Soil crop relationship and soil fertility | Lecture |  |
| January | Methods of application of water, System of Flow irrigation | Lecture |  |
| January | Methods of application of water, System of Flow irrigation | Lecture |  |
| January | Canal irrigation- Introduction | Lecture | Assignment 1 |
| January | Canal classification and alignment Design | Lecture |  |
| January | Adv. Disadv. Of Bhandhara Irrigation | Lecture |  |
| February | Silt Theories + Drawbacks | Lecture | Assignment 2 |
| February | Design of unlined canal | Lecture |  |
| February | Introduction + Advantages and functions | Lecture |  |
| February | Selection of Types of lining | Lecture | Test 1 |
| February | Selection of material of lining | Lecture |  |
| February | Economics of lining | Lecture |  |
| February | Maintenance of canals + Discharge measurement | Lecture |  |
| February | Repair works + Lined canals: Design | Lecture | Assignment 3 |
| February | Losses in canals + Introduction to water logging | Lecture |  |
| March | Causes & ill- effects of water-logging | Lecture |  |
| March | Land Drainage & classification + Design | Lecture |  |
| March | River Training works, Groynes and Spurs | Lecture |  |
| March | Design of Guide banks | Lecture | Test 2 |
| March | Artificial cut-off objects & design considerations | Lecture |  |
| March | River Control- Objectives & Methods | Lecture |  |
| March | Different Modes of bank failures | Lecture | Assignment 4 |
| March | Rigid Armour Technique | Lecture |  |
| March | Flexible mattens | Lecture |  |
| March | Principle of Ground water flow | Lecture |  |
| April | Ground water flow equations under steady state | Lecture |  |
| April | Steady Flow to a Well: Confined Aquifer | Lecture |  |
| April | Types of tube wells | Lecture |  |
| April | Management of water resources | Lecture |  |
| April | Tube-Well and its Types | Lecture |  |
| April | Type of strainers | Lecture | Test 3 |
| April | Aquifer, porosity, uniformity coefficient, specific yield & specific retention, coefficients of permeability, transmissibility and storage | Lecture |  |
| April | Yield or discharge of a tube well, Assumptions | Lecture |  |
| April | Theim's & Dupuit’s formulae, Limitations of Theim's and Dupuit's formulae | Lecture | Assignment 5 |
| April | Interference of tube wells with canal or adjoining tube-wells, causes of failure of tubewells | Lecture |  |
| April | optimum capacity, Duty and delta of a tube well. Rehabilitation of tubewell. | Lecture |  |

**Outcome of Course:**

1. Students will be able to understand water requirement of crops and methods of irrigation.
2. Students will be able to study the canals, its types and also design of lined canals.
3. Students will be able to study about losses and water logging and its techniques.
4. Students will be able to study about canal outlet, its design and ground water irrigation.

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

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 6th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Sandeep Charak

Designation : Assistant Professor

Subject with code : Disaster Managment (CE-306N)

Objective of Course : To Impart knowledge about Disaster management and design & planning to control the accidents.

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| Month | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Introduction to Disaster Management: Define and describe disaster | Teaching |  |
| January | hazard, emergency, vulnerability, risk and disaster management; | Teaching |  |
| January | Identify and describe the types of natural and non-natural disasters | Teaching |  |
| January | Important phases of Disaster Management Cycle. | Teaching |  |
| January | Disaster Mitigation and Preparedness: Natural Hazards: causes, distribution pattern | Teaching |  |
| January | consequences and mitigation measures for earth quake, | Teaching |  |
| January | tsunami, cyclone, flood, landslide drought etc. Man-made hazards: causes | Teaching |  |
| January | consequences mitigation measures for various industrial hazards/disasters,  | Teaching | Assignment 1 |
| February | Preparedness for natural disasters in urban areas. | Teaching |  |
| February | Hazard and Risk Assessment: Assessment of capacity | Teaching |  |
| February | vulnerability and risk | Teaching |  |
| February | vulnerability and risk mapping | Teaching |  |
| February | stages in disaster recovery and associated problems. | Teaching |  |
| February | Emergency Management Systems (EMS): Emergency medical and essential public health services | Teaching | Assignment 2  |
| February | response and recovery operations, reconstruction and rehabilitation. | Teaching | Test 1 |
| February | Capacity Building: Gender sensitive disaster management approach | Teaching |  |
| March | inculcate new skills and sharpen existing skills of government officials, | Teaching |  |
| March | voluntary activists, development of professional and elected representative for effective disaster management | Teaching |  |
| March | role of media in effective disaster management, overview of disaster management in India | Teaching |  |
| March | role of media in effective disaster management, overview of disaster management in India | Teaching |  |
| March | role of agencies like NDMA, SDMA and other International agencies, | Teaching | Assignment 3 |
| March | organizational structure, role of insurance sector, DM act and NDMA guidelines. | Teaching |  Test 2 |
| March | Application of Geo-informatics and Advanced Techniques: Use of Remote Sensing Systems (RSS) | Teaching |  |
| March | GIS in disaster Management, role of knowledge based expert systems in hazard scenario | Teaching |  |
| March | GIS in disaster Management, role of knowledge based expert systems in hazard scenario | Teaching | Assignment 4 |
| April | using risks-time charts to plan for the future, early warning systems | Teaching |  |
| April | Integration of public policy: Planning and design of infrastructure for disaster management | Teaching |  |
| April | Integration of public policy: Planning and design of infrastructure for disaster management | Teaching |  |
| April | Community based approach in disaster management, | Teaching | Assignment 5 |
| April | methods for effective dissemination of information, | Teaching |  |
| April | ecological and sustainable development models for disaster management | Teaching | Test 3 |
| April | Case Studies: Lessons and experiences from various important disasters with specific reference to Civil Engineering | Teaching |  |

**Outcome of Course:**

1. Students will be able to study about Disaster and their types.
2. Students will be able to study about assessment of disaster and management of its control.
3. Students will be able to understand the building structures and their efficiency to control hazard.
4. Students will be able to study the efficient structures and analysis of Hazard by case study.

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

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 6th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Rajesh Sagwal

Designation : Assistant Professor

Subject with code : Geotechnology-2 (CE-308N)

Objective of Course : To Impart knowledge of earth soil and its structures and also the stability of earth structures. 

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| **Month** | Topic/ Chapter covered | **Academic activity** | **Test/ assignment** |
| January | Earth Dams: Introduction, types of sections, earth dam foundations, causes of failure and criteria for safe design | Teaching |  |
| January | control of seepage through the embankment, | Teaching |  |
| January | control of seepage through the foundation, drainage of foundations, and criterion for filter design. Introduction to rock fill dams. | Teaching |  |
| January | Stability of slopes: Causes of failure, factors of safety, stability analysis of slopes-total stress analysis, | Teaching |  |
| January | effective stress analysis, stability of infinite slopes types of failures of finite slopes, | Teaching | Assignment1 |
| January | analysis of finite slopes-mass procedure, method of slices, effect of pore pressure, | Teaching |  |
| January | Fellinius method to locate center of most critical slip circle, friction circle method | Teaching |  |
| January | Tayler's stability number, slope stability of earth dam during steady seepage | Teaching |  |
| January | during sudden draw down and during and at the end of construction. | Teaching | Assignment 2 |
| February | Braced Cuts: Depth of unsupported vertical cut, sheeting and bracing for deep excavation | Teaching |  |
| February |  movements associated with sheeting and bracing, | Teaching |  |
| February | modes of failure of braced cuts, | Teaching |  |
| February | pressure distribution behind sheeting. | Teaching |  |
| February | Cofferdams: Introduction, types of cofferdams | Teaching |  |
| February | design and lateral stability of braced cofferdams | Teaching |  |
| February | design data for Cellular cofferdams, | Teaching |  |
| February | stability analysis of cellular cofferdams on soil and rock | Teaching | Test1 |
| March | inter-lock stresses. | Teaching |  |
| March | Cantilever Sheet Piles: Purpose of sheet piles, cantilever sheet piles, | Teaching |  |
| March | depth of embedment in granular soils-rigorous method | Teaching | Test 2 |
| March | simplified procedure, cantilever sheet pile | Teaching |  |
| March | penetrating clay and limiting height of wall | Teaching | Assignment 3 |
| March | Anchored Bulkheads: Methods of design, free earth support method in cohesionless and cohesive soils | Teaching |  |
| March | Numerical | Teaching |  |
| March | fixed earth support method in cohesionless soils-Blum's equivalent beam method. | Teaching |  |
| March | Numerical | Teaching |  |
| April | Soil Stabilization: Soil improvement, shallow compaction, | Teaching |  |
| April | mechanical treatment, use of admixtures, lime stabilization, cement stabilization, | Teaching |  |
| April | lime fly ash stabilization, dynamic compaction and consolidation | Teaching |  |
| April | bituminous stabilization, chemical stabilization, pre-compression, | Teaching |  |
| April | lime pile and column, stone column, grouting, reinforced earth. | Teaching |  |
| April | Basics of Machine Foundations: Terminology, characteristics elements of a vibratory systems | Teaching |  |
| April | analysis of vibratory motions of a single degree freedom system-undamped free vibrations, | Teaching |  |
| April | undamped forced vibrations, criteria for satisfactory action of a machine foundation, | Teaching |  |
| April | degrees of a freedom of a block foundation | Teaching | Test 3 |
| April | Barken's soil spring constant,  | Teaching |  |
| April | Barken's method of a determining natural frequency  | Teaching | Assignment 4 |
| April | block foundation subjected to vertical oscillations | Teaching |  |
| April | analysis of vibratory motions of a single degree freedom system-undamped free vibrations, | Teaching |  |

**Outcome of Course:**

1. Students will be able to study about earth dams and stability of slopes.
2. To study about braced cuts and coffer dams, their design and stability.
3. To study about stabilization of soil masses by using sheet piles.
4. To study the methods of Soil Stabilization and machine tools

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

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 6th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Meghav Gupta

Designation : Assistant Professor

Subject with code : Transportation Engg-II (CE-310N)

Objective of Course : The study of safe & optimum geometric design of highways & fundamental parameters of highway materials.

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test/ assignment** |
| January | Introduction: Transportation and its importance. Different modes of transportation | Teaching |  |
| January | Brief review of history of road development in India and abroad: | Teaching |  |
| January | Roman, Tresagne, Telford and Macadam constructions | Teaching |  |
| January | Road patterns and Classification of roads | Teaching |  |
| January |  Objectives of highway planning, Planning surveys. Saturation system of planning. | Teaching | Assignment1 |
| January | Highway Plans, Highway Alignment and Surveys | Teaching |  |
| January | Main features of 20 years road development plans in India | Teaching |  |
| January | Requirements of an ideal highway alignment. Factors affecting alignment. | Teaching |  |
| January | Surveys for highway alignment. | Teaching |  |
| February | Cross Section Elements and Sight Distance Considerations: Cross section elements: friction | Teaching |  |
| February |  Carriageway, Formation Width, Land width | Teaching |  |
| February | Camber, IRC recommended values. | Teaching |  |
| February | Types of terrain Design speed. Sight distance, stopping sight distance, overtaking sight distance | Teaching | Test 1 |
| February | Overtaking zones, intermediate sight distance, sight distance at intersections, head light sight distance, | Teaching |  |
| February | Set back distance. Critical locations for sight distance. | Teaching | Assignment2 |
| February | Design of Horizontal and Vertical Alignment: Effects of centrifugal force. | Teaching |  |
| February |  Design of super-elevation. Providing super-elevation in the field. Radius of circular curves. | Teaching |  |
| March | Extra-widening. Type and length of transition curves. Gradient, types, values. | Teaching |  |
| March | Summit curves and valley curves, their design criterion. Grade compensation on curves. | Teaching | Test 2 |
| March | Traffic Characteristics and Traffic Surveys: Road user and vehicular characteristics | Teaching |  |
| March | Traffic studies such as volume, speed and O & D study | Teaching |  |
| March | Parking and accident studies. Fundamental diagram of traffic flow | Teaching |  |
| March | Level of service. PCU. Capacity for non-urban roads. Causes and preventive measures for road accidents. | Teaching | Assignment3 |
| March | Traffic Control Devices: Traffic control devices: signs, signals, markings and islands. Types of signs. Types of signals. | Teaching |  |
| March |  Design of an isolated fixed time signal by IRC method. Intersections at grade and grade separated intersections | Teaching | Test3 |
| March |  Numerical and Design of a rotary. | Teaching |  |
| April | Types of grade separated intersections. | Teaching |  |
| April | Numerical | Teaching |  |
| April | Highway Materials: Soil and Aggregates: Subgrade soil evaluation: CBR test, plate bearing test. Desirable properties of aggregates. | Teaching |  |
| April | Various test testing procedures and IRC/IS specification for suitability of aggregates | Teaching | Assignment4 |
| April | Various tests, testing procedures and IRS/IS specifications for suitability of bituminous materials in road construction. | Teaching |  |
| April | Basic concept of use of polymers and rubber modified bitumen in bituminous mixes | Teaching | Test 4 |
| April | Marshall' method of mix design | Teaching |  |
| April |  Tar, cutback and emulsions | Teaching |  |
| April | Bituminous Materials and Bituminous Mixes: Types of bituminous materials: bitumen,  | Teaching |  |
| April | Proportioning of aggregates for road construction by trial and error and Routhfuch method. | Teaching | Assignment5 |

**Outcome of Cou****rse:**



1. Students will able to study the history review of roads and development of their concern authorities
2. Students will study about geometric design and their cross sectional elements of highways.
3. Students will study about regulation and safe movements of the traffic.
4. Students will study about different fundamental parameters of highway materials.

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

**JMIETI, Radaur**

Lesson Planning of Civil Engg.Deptt. 6th Semester w.e.f. 1st Jan, 2020

Name of Teacher : Saurav Jain

Designation : Assistant Professor

Subject with code : Water Supply and Treatment (CE-312N)

Objective of Course : The aim of study is the water requirement, quantity, its properties and its distribution.

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| **Month** | **Topic/ Chapter covered** | **Academic activity** | **Test / assignment** |
| January | Importance and necessity of water supply scheme. | Teaching |  |
| January | Importance and necessity of water supply scheme. | Teaching |  |
| January | Water demands and its variations.  | Teaching |  |
| January | Water demands and its variations.  | Teaching |  |
| January | Estimation of total quantity of water requirement  | Teaching | Assignment 1 |
| January | Estimation of total quantity of water requirement.  | Teaching |  |
| January | Population forecasting. | Teaching |  |
| January | Numerical Problems | Teaching |  |
| January | Numerical Problems | Teaching |  |
| February | Quality and quantity of surface and ground water sources  | Teaching |  |
| February | Selection of a source of water supply. Types of intakes.  | Teaching | Assignment 2 |
| February | Types of intakes.  | Teaching |  |
| February | Types of intakes.  | Teaching |  |
| February | Impurities in water and their sanitary significance  | Teaching | Test 1 |
| February | Impurities in water and their sanitary significance  | Teaching |  |
| February | Physical, chemical and bacteriological analysis of water  | Teaching |  |
| February | Water quality standards.  | Teaching |  |
| March | Objectives of Water Treatment , treatment processes  | Teaching |  |
| March | Sedimentation – plain and aided with coagulation  | Teaching |  |
| March | Types, features and design aspects  | Teaching |  |
| March | Types, features and design aspects  | Teaching | Assignment 3 |
| March | Numerical Problems | Teaching |  |
| March | Mixing basins and Flocculation units  | Teaching |  |
| March | Mixing basins and Flocculation units  | Teaching |  |
| March | Filtration – mechanism involved  | Teaching |  |
| March | Types of filters  | Teaching |  |
| April | Slow and rapid sand filtration units (features and design aspects)  | Teaching |  |
| April | Slow and rapid sand filtration units (features and design aspects)  | Teaching |  |
| April | Numerical Problems | Teaching |  |
| April | Disinfection principles and aeration  | Teaching |  |
| April | Introduction to Distribution system  | Teaching |  |
| April | Gravity system, Pumping System  | Teaching |  |
| April | Dual system, Layout of Distribution System  | Teaching | Test 3 |
| April | Dead End System, Grid Iron System, Ring System, Radial System  | Teaching |  |
| April | Layout of Distribution System  | Teaching |  |
| April | Merits and demerits of distribution system  | Teaching |  |
| April | Distribution Reservoir-functions  | Teaching |  |
| April | Determination of storage capacity.  | Teaching | Assignment 4 |
| April | Numerical Problems | Teaching |  |

**Outcome of Course:**

1. Students will study the quantity requirement of the water for supply.
2. Students will study the physical, chemical and bacteriological properties of water.
3. Students will study the methods of treatment of water.
4. Students will study the methods to supply the water for different purpose.

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



