LESSON PLAN

Name of the Faculty : ER. TANUJ

Discipline : CIVIL

Semester : 4TH

Subject : S.A-II (CE-202N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	Introduction, Static and Kinematic Indeterminacies,
	2nd	Castigliano's theorems
	3rd	Castigliano's theorems
2nd	1st	Strain energy method
	2nd	Analysis of frames with one or two redundant members using Castigliano's 2nd theorem.
	3rd	Analysis of frames with one or two redundant members using Castigliano's 2nd theorem.
3rd	1st	**Slope deflection** - introduction
	2nd	Analysis of continuous beams
	3rd	portal frames
4th	1st	Numerical related slope deflection method

4th	**2nd**	Numerical related slope deflection method
	3rd	Numerical related slope deflection method
5th	**1st**	**moment Distribution Methods**: introduction
	2nd	Portal frames with inclined members.
	3rd	Numerical related moment distribution method
6th	**1st**	Numerical related moment distribution method
	2nd	Numerical related moment distribution method
	3rd	**Assignment : above topic**
7th	**1st**	**Column Analogy Method:** Elastic centre
	2nd	Properties of analogous column,
	3rd	Applications to beam & frames.
8th	**1st**	Related numerical of above topic
	2nd	Related numerical of above topic
	3rd	**Analysis of Two hinged Arches: introduction**
9th	**1st**	Parabolic and circular Arches,
	2nd	Bending Moment Diagram for various loadings,
	3rd	Temperature effects, Rib shortening,
10th	**1st**	Axial thrust and Radial Shear force diagrams.
	2nd	Related numerical of above topic
	3rd	**Assignment of above topic**
11th	**1st**	**Unsymmetrical Bending : Introduction**
	2nd	Centroidal principal axes of sections,

	3rd	Bending stresses in beam subjected to unsymmetrical bending,
12th	**1st**	shear centre, shear centre for channel
	2nd	Angles and Z sections.
		Related numerical of above topic
13th	**1st**	**Cable and suspension Bridges: introduction**
	2nd	uniformly loaded cables,
	3rd	Temperature stresses,
14th	**1st**	three hinged stiffening Girder
	2nd	Related numerical of above topic
	3rd	Related numerical of above topic
15th	**1st**	two hinged stiffening Girder
	2nd	Related numerical of above topic
	3rd	Assignment of above topic

LESSON PLAN

Name of the Faculty : ER. ROHIT

Discipline : CIVIL

Semester : 4TH

Subject : D.S.S –I (CE-204N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Introduction:** Loads, structural steels and their specifications, structural elements, steel vs. concrete and timber
	2nd	Design specifications as per IS: 800, structural layout, strength and stiffness considerations, efficiency of cross-section, safety and serviceability considerations.
	3rd	**RIEVTED CONNECTION: Riveting and bolting their types , failures of riveting joint, efficiency of a joint, ,**
2nd	1st	**Design of riveted joint , advantages and disadvantages of riveted joint, Stress in bolts**
	2nd	**Welded connection, types of welded joints, design of welded joint , subjected to axial loads, welded joints subjected to eccentric loads**
	3rd	**Semi rigid and rigid connections.**
3rd	1st	**Design of tension members, introduction, types of tension**

3rd		**members, net sectional areas.**
	2nd	Design of tension members. Lug angles and splices.
	3rd	strength and stiffness considerations, efficiency of cross-section, safety and serviceability considerations.
4th	**1st**	**advantages and disadvantages of riveted joint, Stress in bolts**
	2nd	**subjected to axial loads, welded joints subjected to eccentric Loads**
	3rd	structural elements, steel vs. concrete and timber.
5th	**1st**	**Design of compression meters:**
	2nd	Introduction, effective length and slenderness ratio , various types of section used for columns
	3rd	Design of built up columns.
6th	**1st**	**Numerical**
	2nd	**Numerical**
	3rd	**Lacing and battens**
7th	**1st**	Numerical
	2nd	**Numerical**
	3rd	**Columns basis and footings**
8th	**1st**	Introduction types of columns basis
	2nd	**Design of slab base and gusted base**
	3rd	Design of grillage foundation
9th	**1st**	**Numerical**
	2nd	**Numerical**
	3rd	**Numerical**

10th	**1st**	**Design of beams**
	2nd	**Introduction: types of section, supported and unsupported beams.**
	3rd	**Design of built up beams**
11th	**1st**	**Web buckling and web crippling**
	2nd	Diagonal buckling
	3rd	**Numerical**
12th	**1st**	**Numerical**
	2nd	**Numerical**
		Numerical
13th	**1st**	**Gantry girder**
	2nd	Design and types
	3rd	**Design steps**
14th	**1st**	**Numerical**
	2nd	Eccentric loading and concentric clouding
	3rd	**Crane load**
15th	**1st**	**Plate girder**
	2nd	**Stiffeners**
	3rd	Necessity of plate girder

LESSON PLAN

Name of the Faculty : ER. ROHIT

Discipline : CIVIl

Semester : 4TH

Subject : FM-II (CE-206N) & FM-II (P) (CE-212N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY		PRATICAL	
	LECTURE DAY	TOPIC (including assignment / test)	PRACTICAL DAY	TOPIC
1st	1st	LAMINAR FLOW	1	To determine the coefficient of drag by Stoke's law for spherical bodies.
	2nd	NAVIER STOCK EQUATION, LAMINAR FLOW BETWEEN PARELLAL PLATES.		
	3rd	Coutte' flow laminar flow through pipes, laminar flow around a sphere,		
2nd	1st	Stock' law	2	To study the phenomenon of cavitations in pipe flow.
	2nd	flow through pipes:- types of flow		
	3rd	Reynolds experiment, shear stress on turbulent flow, boundary layer in pipes		
3rd	1st	Establishment of flow , velocity distribution through rough and		

3rd		**smooth pipes**		
	2nd	Resistance	**3**	To determine the critical Reynolds's number for flow through commercial pipes.
	3rd	Station and moody diagram		
4th	**1st**	Darcy weisbach equation , energy looses in pipes	**4**	To determine the coefficient of discharge for flow over a broad crested weir.
	2nd	**Loss due to sudden expansion**		
	3rd	**Total energy line , pipes in series and in parallel .branched pipe, pipe networks, hardy cross method, water hammer.**		
5th	**1st**	**Drag and lift force, types of drag**	**5**	**Copy check and viva voce**
	2nd	Drag on a sphere,		
	3rd	Flat plate		
6th	**1st**	**Cylinder**	**6**	To study the characteristics of a hydraulic jump on a horizontal floor and sloping glacis including friction blocks.
	2nd	**And airfoil development of lift on immersed bodies likes circular cylinder and airfoil.**		
	3rd	**Open channel flow**		
7th	**1st**	Types of flow in open channels	**7**	To study the scouring phenomenon around a bridge pier model.
	2nd	**Geometric parameters of channels section**		
	3rd	**Uniform flow**		
8th	**1st**	Most economical section	**8**	To study the scouring phenomenon for flow past a spur.
	2nd	**Rectangular and trapezoidal specific energy and critical**		

		depth		
	3rd	Momentum in open channel		
9th	**1st**	**Specific force**	**9**	**Copy check and viva voce**
	2nd	**Critical flow in rectangular channel**		
	3rd	**Applications of specific energy and discharge diagram**		
10th	**1st**	**Surges in channel**	**10**	To determine the characteristics of a centrifugal pump.
	2nd	**Compressible flow**		
	3rd	**Basic relationship of thermodynamics of continuity momentum and energy equation.**		
11th	**1st**	**Mach no and its signification**	**11**	To study the momentum characteristics of a given jet.
	2nd	Subsonic and supersonic flows		
	3rd	**Stagnation pressure**		
12th	**1st**	**Pumps and turbines**	**12**	To determine head loss due to various pipe fittings.
	2nd	**Reciprocating and centrifugal pumps**		
		Single and double acting reciprocating pumps.		
13th	**1st**	**Parts and working**	**13**	**Final copies check**
	2nd	Types of turbines		
	3rd	**Peloton wheel turbine**		
	1st	**Kaplan turbines**		

14th	**2nd**	Reaction turbines		
	3rd	**Cavitations**	**14**	**Internal viva**
15th	**1st**	**Numerical**	**15**	**Internal viva**
	2nd	**Numerical**		
	3rd	Numerical		

LESSON PLAN

Name of the Faculty : ER. NEELAZ

Discipline : Civil

Semester : 4TH

Subject : soil mechanics (CE-208N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	Soil formation and composition
	2nd	Origin , weathering, soil formation major soil deposits of India
	3rd	Principle clay minerals
2nd	1st	Basic soil properties
	2nd	Three phase system, wt vol. relationship, sil grain properties, soil aggregate properties, grain size analysis, sieve analysis, consistency of soil, consistency limits , sedimentation
	3rd	Activity of clays, relative density of sands
3rd	1st	Classification of soil
	2nd	Purpose of classification , classification on te basis of plasticity , plasticity cart, Indian standard ,classification system

	3rd	Permeability of soil
4th	**1st**	Introduction , Darcy law and its validity discharge velocity and seepage velocity, factors affecting permeability
	2nd	**Coefficient of permeability and its determination.**
	3rd	**Effective stress concept:- principle, hydrostatic condition, capillary rise in soil and its zones.**
5th	**1st**	**2 D flow, seepage force, Laplace ' Eqn PROPERTIES and utilize of flow net, graphical method of constriction of flow nets in piping, protective filter compaction.**
	2nd	Role of moisture , moisture density relationship, compaction in field, compaction of cohesive soil.
	3rd	Compaction of cohesion less soil . Field control of compaction.
6th	**1st**	**Vertical stress below applied load**
	2nd	**Bousinezq Eqn, VERTICAL STRESS**
	3rd	**Distribution diagrams, vertical stress loaded areas , new marks influence chart , approximate stress distribution method for loaded areas.**
7th	**1st**	Westergaurd analysis.
	2nd	**Contact pressure .**
	3rd	**Compressibility and consolidation**
8th	**1st**	Components of total settlement, consolidation process
	2nd	**1D,consolidation test**
	3rd	Terzaghi's one dimensional consolidation eqn.
9th	**1st**	**Determination of coefficients of consolidation, consolidation settlements.**
	2nd	**Construction periods settlement , secondary consolidation**

	3rd	**Shear strength :-introduction, Mohr' stress circle, Mohr coulomb failure, relationship between principle stresses at failure**
10th	**1st**	**Shear test, direct shear test, vane shear test, unconfined compression test, triaxial compression test, drainage condition and parameters,**
	2nd	**Shear strength characteristic of strength**
	3rd	**Normally consolidation**
11th	**1st**	**Sensitivity and thixotropy**
	2nd	Earth pressure
	3rd	**Earth pressure at rest**
12th	**1st**	**Rankin's theory**
	2nd	**Active and passive pressure**
		Numerical
13th	**1st**	**Numerical**
	2nd	Cullman Graphical construction
	3rd	**Rebhanns constriction**
14th	**1st**	**Numerical**
	2nd	Numerical
	3rd	**Numerical**
15th	**1st**	**Numerical**
	2nd	**Active and passive pressure**
	3rd	**Plastic equilibrium**
		Coulombs earth pressure theory

LESSON PLAN

Name of the Faculty : ER. ASHMINDER SINGH

Discipline : civil

Semester : 4TH

Subject : surveying-II (CE-210N) & surveying – II (P) (CE-216N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures – 03, Practical - 04

WEEK	THEORY		Practical	
	LECTURE DAY	TOPIC (including assignment / test)	Practical day	Topic
1st	1st	TRIGNOMETRY LEVELING:- introduction	1	. To study the functions of various parts of theodolite.
	2nd	Height and distance, base of the object accessible		
	3rd	Numerical		
2nd	1st	Numerical	2	To carry out permanent adjustments of a transit theodolite.
	2nd	Base is inaccessible		
	3rd	Geoadatical observation		
3rd	1st	Refraction and curvature	3	To measure horizontal and vertical angles using a theodolite.
	2nd	Axis signal correction		
	3rd	Difference in elevation between two points		

4th **4th**	**1st**	Triangulation:- systems, classification strength of figure, selection of triangulation stations , grade of triangulation, field work of triangulation, EDM	4	
	2nd	**NUMERICAL**		To determine the constants of a given tachometer.
	3rd	**NUMERICAL**		
5th	**1st**	**NUMERICAL**	**5**	To determine the horizontal distance & elevations of a given traverse with the help of a tachometer.
	2nd	Survey adjustment and treatment of observations		
	3rd	Types of errors		
6th	**1st**	**Definition of weight of an observation, law of accidental errors.**	**6**	**Copy check and viva voce**
	2nd	**Law of weights**		
	3rd	**Most probable values**		
7th	**1st**	Determination of probable errors	7	To set out simple curves by offsets from tangents.
	2nd	**Different cases with examples**		
	3rd	**Numerical**		
8th	**1st**	Numerical	8	To set out curves by offsets from chords produced.
	2nd	**Principle of least square**		
	3rd	Adjustment of triangulation figures by methods of least squares.		
9th	**1st**	**types of Arial photograph, Arial camera, and height**		

9th	**2nd**	**displacements in verticals photographs**	**9**	To set out simple curves by offsets from long chords.
	3rd	**Stereoscopic vision, stereoscopies, height determination from parallax.**		
10th	**1st**	**Flight planning**	**10**	To set out simple curves by Rankine's method of tangential deflection angles.
	2nd	**Introduction of remote sensing and its system:-GIS**		
	3rd	**Concept of G.I.S and G.P.S**		
11th	**1st**	**Components , data input and output.**	**11**	**Copy checks and viva**
	2nd	Astronomy :-study of stars.		
	3rd	**Definitions of astronomical terms**		
12th	**1st**	**Star at elongation.**	**12**	To measure the length of base line in triangulation survey.
	2nd	**Star at prime vertical**		
		Star at horizon		
13th	**1st**	**Star culmination**	**13**	Triangulation with total station.
	2nd	Celestial co-ordinates systems,		
	3rd	**Napier's rule**		
14th	**1st**	**Various time systems:- sidereal , apparent , solar and mean solar times.**	**14**	**Final copy check of all practicals**
	2nd	Equation of time its causes		

	3rd	Total station		
15th	1st	Working Principle	15	Internal viva
	2nd	Survey with total station		
	3rd	Numerical		

LESSON PLAN

Name of the Faculty : ER. NEELAZ

Discipline : CIVIL

Semester : 4TH

Subject : SOIL MECHANICS (P) (CE-214N)

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

Work Load (Lecture/Practical) per week (in hours): practical -04

	PRACTICAL	
WEEK	**PRACTICAL DAY**	**TOPIC**
1st	**1st and2nd**	Visual Soil Classification and water content determination.
2nd	**1st and2nd**	Determination of specific gravity of soil solids.
3rd	**1st and2nd**	Grain size analysis-sieve analysis.
4th	**1st and2nd**	**Copies check and viva voce**
5th	**1st and2nd**	Liquid limit and plastic limit determination.
6th	**1st and2nd**	Field density by: Sand replacement method
7th	**1st and2nd**	Field density by: Core cutter method
8th	**1st and2nd**	Proctor's compaction test.
9th	**1st and2nd**	**Copies check and viva voce**
10th	**1st and2nd**	Coefficient of permeability of soils.
11th	**1st and2nd**	Unconfined compressive strength test.

12th	**1st and2nd**	Direct shear test on granular soil sample.
13th	**1st and2nd**	Unconsolidated undrained (UU) triaxial shear test of fine grained soil sample.
14th	**1st and2nd**	**Final copies check**
15th	**1st and2nd**	**Internal viva**

Lesson Plan

Name of faculty : **DR. POONAM KAMBOJ**

Discipline : **MANAGEMENT**

Semester : **4th**

Subject : **Fundamentals of Management**

Lesson Plan during : **15 Weeks (From January 2018 to April, 2018)**

**** Work load (Lecture / practical) per week (In hours): lectures-03, practical – 00**

WEEK	THEORY	
	LECTURE DAY	TOPIC (INCLUDING ASSIGNMENT/ TEST)
1.	1.	Meaning, Definition, Nature Of FOM
	2.	Importance & Functions Of FOM
	3.	Management As Art, Science & Profession
2.	4.	Management As Social System
	5.	Concepts Of Management-Administration
	6.	Evolution Of Management Thought
3.	7.	Development Of Management Thought
	8.	Scientific Management
	9.	Administrative Theory Of Management
4.	10.	Bureaucratic Organization, Behavioral Approach
	11.	Human Relations Movement
	12.	Behavioral Science Approach
5.	13.	Modern Approach To Management
	14.	Systems Approach And Contingency Approach
	15.	Nature, Purpose And Functions, Types Of Plans
6.	16.	Planning Process
	17.	Strategies And Policies

	18.	Concept Of Corporate Strategy, Formulation Of Strategy
7.	19.	Types Of Strategies
	20.	Management By Objectives (MBO)
	21.	SWOT Analysis, Types Of Policies
8.	22.	Principles Of Formulation Of Policies
	23.	Nature, Importance, Process, Organization Structure
	24.	Line And Staff Organization
9.	25.	Delegation Of Authority And Responsibility
	26.	Centralization And Decentralization
	27.	Decision Making Process & Models
10.	28.	Departmentalization: Concept And Types
	29.	Formal & Informal Organizations
	30.	Concept, Process, Features; Manpower Planning; Job Analysis: Concept And Process
11.	31.	Recruitment And Selection: Concept, Process, Sources Of Recruitment
	32.	Performance Appraisal, Training And Development
	33.	Communication- Nature, Process, Formal And Informal, Barriers To Effective Communication
12.	34.	Theories Of Motivation-Maslow, Herzberg, McGregor
	35.	Concept And Theories, Managerial Grid, Situational Leadership
	36.	Transactional And Transformational Leadership
13.	37.	Concept, Process, Types, Barriers To Controlling, Controlling Techniques:
	38.	Budgetary Control, Return On Investment
	39.	Management Information System-MIS , TQM-Total Quality Management, Network Analysis- PERT And CPM

14.	40.	Social Responsibility Of Management–Management Of Crisis, Total Quality Management, Stress Management
	41.	Concept Of Corporate Social Responsibility (CSR) And Business Ethics.
	42.	Functional Aspects Of Business Conceptual Framework Of Functional Areas Of Management
15.	43.	Finance
	44.	Marketing
	45.	Human Resources

Lesson Plan

Name of the Faculty : **ER BRIJ BHUSHAN**

Discipline : **Mechanical Engineering**

Semester : **4th**

Subject : **E.S (MPC-202N)**

Lesson plan : **15 Weeks(From January, 2018 to April, 2018)**

Lecture per Week (in Hours) : **Lectures-03**

Week	Theory	
	Lecture Day	Topic(including assignment/test)
1st	1.	**UNIT-I** Types of energy, Conversion of various forms of energy, Conventional and Non
	2.	Conversion of various forms of energy
	3.	Conventional and Non
	4.	Conventional and Non-conventional sources
2nd	5.	Need for Non-Conventional Energy based power generation.
	6.	General Principles of Energy Management
	7.	Energy Management Strategy
	8.	Energy Audit & Tariffs
3rd	9.	Methodology and Approach
	10.	**Assignment-I**Need for Non-Conventional Energy based power generation.
	11.	**TEST-I**
	12.	Selection of site
4th	13.	working of Thermal
	14.	Hydro, Nuclear and Diesel
	15.	power plants and their schematic diagrams
	16.	their comparative advantages
5th	17.	**Assignment-II** power plants and their schematic diagrams
	18.	**TEST-II**
	19.	Non Conventional Energy sources
	20.	Basicprinciple
6th	21.	site selection
	22.	power plant layout of Solar

	23.	energy, photovoltaic technologies,
	24.	PV Systems and their components
7th	25.	power plant layout
	26.	PV Systems and their components
	27.	Wind energy
	28.	layout of Bio energy plants
8th	29.	Geothermal energy plants
	30.	tidal energy plants.
	31.	**Assignment III** PV Systems and their components, Wind energy
	32.	**TEST-III**
9th	33.	Energy Scenario
	34.	Lay out of power system,
	35.	Role of Energy in Economic development
	36.	Lay out of power system,
10th	37.	energy demand
	38.	availability and consumption
	39.	Commercial and Non-commercial energy
	40.	Indian energy scenario
11th	41.	long term energy scenario
	42.	energy pricing
	43.	energy sector reforms in India
	44.	energy strategy
12th	45.	**TEST-IV**

LESSON PLAN

Name of the Faculty : ER. ROHIT

Discipline : CIVIL

Semester : 6TH

Subject : DCS-II (CE-302N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 04

WEEK	**THEORY**	
	LECTURE DAY	**TOPIC (including assignment / test)**
1st	**1st**	Elementary Plastic Analysis and Design: Introduction
	2nd	Scope of plastic analysis
	3rd	ultimate load carrying capacity of tension members
	4th	**Numerical on tension member**
2nd	**1st**	**Numerical on tension member**
	2nd	ultimate load carrying capacity of compression members
	3rd	**Numerical of compression member**
	4th	**Numerical of compression member**
3rd	**1st**	flexural members
	2nd	shape factor
	3rd	mechanisms, plastic collapse

	4th	plastic analysis applied to steel beams
4th	**1st**	Simple portal frames and design.
	2nd	**Numerical related to above topic**
	3rd	**Numerical related to above topic**
	4th	**Assignment of Unit-I**
5th	**1st**	Design of Water Tanks: Introduction,
	2nd	permissible stresses
	3rd	design of circular tanks
	4th	Design of rectangular tanks
6th	**1st**	Design of pressed steel tanks including staging
	2nd	**Numerical related to above topic**
	3rd	**Numerical related to above topic**
	4th	**Numerical related to above topic**
7th	**1st**	Design of Steel Stacks: Introduction
	2nd	various loads to be considered for the design of steel stacks
	3rd	design of steel stacks including foundation
	4th	**Numerical related to above topic**
8th	**1st**	**Numerical related to above topic**
	2nd	**Numerical related to above topic**
	3rd	**Numerical related to above topic**
	4th	Assignment of Unit -II
9th	**1st**	Towers: Introduction

9th	**2nd**	Transmission line towers
	3rd	microwave towers
	4th	Design loads
10th	**1st**	Classification of towers
	2nd	Design procedure and specification.
	3rd	**Numerical related to above topic**
	4th	**Numerical related to above topic**
11th	**1st**	Cold Formed Sections: Introduction
	2nd	brief description of various types of cold formed sections
	3rd	local buckling
	4th	concepts of effective width and effective sections
12th	**1st**	elements with stiffeners
	2nd	design of compression and bending elements
	3rd	**Numerical related to above topic**
	4th	**Numerical related to above topic**
13th	**1st**	**Numerical related to above topic**
	2nd	**Numerical related to above topic**
	3rd	Assignment of Unit -III
	4th	Industrial Buildings: Introduction
14th	**1st**	Loads
	2nd	general arrangement and stability
	3rd	design considerations
	4th	design of purlins

15th	**1st**	design of roof trusses
	2nd	industrial building frames
	3rd	bracings and stepped columns
	4th	**Numerical related to above topic**

LESSON PLAN

Name of the Faculty : Er. TANUJ

Discipline : CIVIL

Semester : 6TH

Subject : I.E-I (CE-304N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Introduction:** Irrigation-necessity
	2nd	advantages, disadvantages
	3rd	impact of irrigation on human environment
2nd	1st	need and development of irrigation in India
	2nd	crops and crop seasons
	3rd	ideal cropping pattern and high yielding varieties of crops
3rd	1st	**Soil-water relationship and irrigation methods:** Soil-water relationship
	2nd	root zone soil water, infiltration
	3rd	Consumptive use, field capacity, wilting point
4th	1st	available moisture in soil, GCA, CCA, intensity of irrigation, delta, base period, Kor depth,

4th		core period, frequency of irrigation, duty of water, relation between delta
	2nd	duty and base period, irrigation requirement, flooding methods, border strip method, check basin and furrow method
	3rd	assessment of irrigation water, sprinkler irrigation, favorable conditions, sprinkler systems
5th	**1st**	hydraulics of sprinkler irrigation, planning, design and maintenance of sprinkler systems
	2nd	drip irrigation-components parts, advantages and limitations, suitability of drip irrigation
	3rd	**Canal irrigation**: Classifications of canals
6th	**1st**	canal alignment, Inundation canals
	2nd	Bandhara irrigation, advantages and disadvantages
	3rd	Silt theories-Kennedy's theory
7th	**1st**	Lacey's theory, Drawbacks in Kennedy's & Lacey's theories
	2nd	comparison of Lacey's and Kennedy's theories
	3rd	Design of unlined canals based on Kennedy & Lacey's theories.
8th	**1st**	**Lined canals**: Types of lining
	2nd	selection of type of lining
	3rd	Economics of lining, maintenance of lined canals, silt removal
9th	**1st**	strengthening of channel banks, measurement of discharge in channels
	2nd	Design of lined canals, methods of providing drainage behind lining.
	3rd	**Losses in canals, water logging and drainage**: Losses in canals-Evaporation and seepage
10th	**1st**	water logging, causes and ill effects of water logging anti water logging measures
	2nd	Drainage of land, classification of drains - surface and subsurface drains
	3rd	Design considerations for surface drains, Advantages and maintenance of tile drains.

11th	**1st**	**River Training work:** Classification of rivers
	2nd	river training and its objectives, classification of river training works
	3rd	Methods of river training, marginal embankments
12th	**1st**	guide banks, spurs, cutoffs, bank pitching and launching apron
	2nd	**Canal outlets:** Classification
	3rd	requirements of a good outlet, design of pipe, APM and open flume outlet
13th	**1st**	Flexibility proportionality, setting and sensitivity of outlet
	2nd	**Tube-well irrigation**: Types of tube wells - strainer type, cavity type and slotted type
	3rd	Type of strainers, Aquifer, porosity
14th	**1st**	uniformity coefficient, specific yield & specific retention
	2nd	coefficients of permeability, transmissibility and storage
	3rd	Yield or discharge of a tube well, Assumptions
15th	**1st**	Theim's & Dupuit's formulae, Limitations of Theim's and Dupuit's formulae
	2nd	Interference of tube wells with canal or adjoining tube-wells, causes of failure of tube wells
	3rd	Optimum capacity, Duty and delta of a tube well. Rehabilitation of tube well.

LESSON PLAN

Name of the Faculty : ER. NEELAZ

Discipline : CIVIL

Semester : 6TH

Subject : DISASTER MANAGEMENT (CE-306N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Introduction to Disaster Management**:
	2nd	Define and describe disaster, hazard,
	3rd	emergency, vulnerability, risk and disaster management
2nd	1st	Identify and describe the types of natural and non-natural disasters
	2nd	Important phases of Disaster Management Cycle
	3rd	**Disaster Mitigation and Preparedness:** Natural Hazards
3rd	1st	causes, distribution pattern, consequences
	2nd	Mitigation measures for earth quake, tsunami
	3rd	cyclone, flood, landslide drought etc
4th	1st	Man-made hazards: causes
	2nd	Consequences mitigation measures for various industrial hazards/disasters

	3rd	Preparedness for natural disasters in urban areas
5th	**1st**	**Hazard and Risk Assessment: A**ssessment of capacity
	2nd	vulnerability and risk
	3rd	vulnerability and risk mapping
6th	**1st**	stages in disaster recovery and associated problems
	2nd	**Emergency Management Systems (EMS): introduction**
	3rd	Emergency medical and essential public health services
7th	**1st**	response and recovery operations
	2nd	reconstruction and rehabilitation
	3rd	**Assignment of above topic**
8th	**1st**	**Capacity Building:** Gender sensitive disaster management approach and inculcate new skills and sharpen existing skills of government officials
	2nd	voluntary activists, development of professional and elected representative for effective disaster management
	3rd	role of media in effective disaster management
9th	**1st**	overview of disaster management in India
	2nd	role of agencies like NDMA, SDMA and other International agencies
	3rd	organizational structure, role of insurance sector
10th	**1st**	DM act and NDMA guidelines..
	2nd	**Application of Geo-informatics and Advanced Techniques: Introduction**
	3rd	Use of Remote Sensing Systems (RSS) in disaster management
11th	**1st**	Use of GIS in disaster Management
	2nd	role of knowledge based expert systems in hazard scenario

	3rd	Using risks-time charts to plan for the future, early warning systems.
12th	**1st**	**Assignment of above topic**
	2nd	**Integration of public policy**: Introduction
	3rd	Planning and design of infrastructure for disaster management
13th	**1st**	Community based approach in disaster management
	2nd	methods for effective dissemination of information
	3rd	ecological and sustainable development models for disaster management
14th	**1st**	**Case Studies:** Lessons and experiences from various important disasters with specific reference to Civil Engineering
	2nd	
	3rd	
15th	**1st**	**Case studies**
	2nd	**Case studies**
	3rd	Assignment of above topic

LESSON PLAN

Name of the Faculty : ER. NEELAZ

Discipline : CIVIL

Semester : 6TH

Subject : G.T-II (CE-308N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Earth Dams:** Introduction
	2nd	types of sections, earth dam foundations
	3rd	causes of failure and criteria for safe design
2nd	1st	Control of seepage through the embankment
	2nd	control of seepage through the foundation, drainage of foundations
	3rd	criterion for filter design. Introduction to rock fill dams.
3rd	1st	**Stability of slopes:** Causes of failure
	2nd	factors of safety, stability analysis of slopes-total stress analysis
	3rd	effective stress analysis, stability of infinite slopes types of failures of finite slopes
4th	1st	analysis of finite slopes-mass procedure, method ofslices
	2nd	effect of pore pressure, Fellinius method to locate center of most critical slip

		circle
	3rd	friction circle method, Tayler's stability number
5th	1st	slope stability of earth dam during steady seepage
	2nd	During sudden draw down and during and at the end of construction.
	3rd	**Braced Cuts:** Depth of unsupported vertical cut
6th	1st	sheeting and bracing for deep excavation
	2nd	movements associated with sheeting and bracing, modes of failure of braced cuts
	3rd	Pressure distribution behind sheeting.
7th	1st	**Cofferdams:** Introduction
	2nd	types of cofferdams, design and lateral stability of braced cofferdams
	3rd	design data for Cellular cofferdams
8th	1st	Stability analysis of cellular cofferdams on soil and rock, inter-lock stresses.
	2nd	**Assignment of above topic**
	3rd	**Cantilever Sheet Piles:** Purpose of sheet piles
9th	1st	cantilever sheet piles
	2nd	depth of embedment in granular soils-rigorous method, simplified procedure
	3rd	cantilever sheet pile, penetrating clay and limiting height of wall
10th	1st	**Anchored Bulkheads:** Methods of design
	2nd	free earth support method in cohesion less soil
	3rd	free earth support method in cohesive soil
11th	1st	fixed earth support method in cohesion less soils-Blum's equivalent beam method
	2nd	Assignment of unit-III
	3rd	

12th	**1st**	**Soil Stabilization:** Soil improvement
	2nd	shallow compaction, mechanical treatment, use of admixtures
	3rd	lime stabilization, cement stabilization, lime fly ash stabilization,
13th	**1st**	dynamic compaction and consolidation, bituminous stabilization
	2nd	Chemical stabilization, pre-compression, lime pile and column
	3rd	stone column, grouting, reinforced earth
14th	**1st**	**Basics of Machine Foundations:** Terminology
	2nd	characteristics elements of a vibratory systems,
	3rd	analysis of vibratory motions of a single degree freedom system-undamped free vibrations, undamped forced vibrations
15th	**1st**	criteria for satisfactory action of a machine foundation
	2nd	degrees of a freedom of a block foundation, Barken's soil spring constant
	3rd	Barken's method of a determining natural frequency of a block foundation subjected to vertical oscillations

LESSON PLAN

Name of the Faculty : ER VIKRAM

Discipline : CIVIL

Semester : 6TH

Subject : T.E-I (CE-310N)& TRANSPORTATION ENGG-I (P) (CE-314N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures – 03, Practical - 04

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment / test)	PRACTICAL DAY	TOPIC
1st	1st	**Introduction:** Transportation and its importance	1st and2nd	1. To determine the toughness of the aggregate by aggregate Impact Test.
	2nd	Different modes of transportation		
	3rd	Brief review of history of road development in India and abroad: Roman, Tresagne, Telford and Macadam constructions		
2nd	1st	Road patterns. Classification of roads	1st and2nd	2. To determine the hardness of the aggregate by Los-Angeles Abrasion Test.
	2nd	Objectives of highway planning, Planning surveys		
	3rd	Saturation system of planning		
3rd	1st	**Highway Plans, Highway Alignment and Surveys: Introduction**	1st and2nd	3. To determine the hardness of the aggregate by Dorry's Abrasion Test on Aggregates.
	2nd	Main features of 20 years road development plans in India.		

	3rd	Requirements of an ideal highway alignment		
4th	**1st**	Factors affecting alignment.	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
	2nd	Surveys for highway alignment		
	3rd	**Assignment of Unit-I**		
5th	**1st**	**Cross Section Elements and Sight Distance Considerations:** Cross section elements	**1st and2nd**	4. To determine the hardness of the aggregate by Deval Attrition Test on Aggregates.
	2nd	friction, carriageway, formation width, land width, camber		
	3rd	IRC recommended values. Types of terrain Design speed		
6th	**1st**	Sight distance, stopping sight distance	**1st and2nd**	5. To determine the Crushing Strength Test on Aggregates.
	2nd	overtaking sight distance, overtaking zones,		
	3rd	intermediate sight distance, sight distance at intersections		
7th	**1st**	Head light sight distance, set back distance	**1st and2nd**	6. To determine the grade and hardness of the bitumen by Penetration Test.
	2nd	Critical locations for sight distance		
	3rd	**Design of Horizontal and Vertical Alignment:** Effects of centrifugal force		
8th	**1st**	Design of super-elevation	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
	2nd	Providing super elevation in the field. Radius of circular curves		
	3rd	Extra-widening. Type and length of transition curves		
9th	**1st**	Gradient, types, values. Summit curves and valley curves	**1st and2nd**	7. To determine the elastic property of the bitumen by Ductility Test.
	2nd	Their design criterion. Grade		

		compensation on curves		
	3rd	**Assignment of unit-II**		
10th	**1st**	**Traffic Characteristics and Traffic Surveys:** Road user and vehicular characteristics.	**1st and2nd**	8. To determine the grade and hardness of the bitumen by Viscosity Test.
	2nd	Traffic studies such as volume, speed and O & D study		
	3rd	Parking and accident studies. Fundamental diagram of traffic flow.		
11th	**1st**	Level of service. PCU. Capacity for non-urban roads	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
	2nd	Causes and preventive measures for road accidents		
	3rd	**Traffic Control Devices:** Traffic control devices: signs, signals, markings and islands.		
12th	**1st**	Intersections at grade and grade separated intersections.	**1st and2nd**	9. To determine the Softening Point Test on Bitumen.
	2nd	Design of a rotary.		
	3rd	Types of grade separated intersections		
13th	**1st**	Design of an isolated fixed time signal by IRC method.	**1st and2nd**	10. To determine the Flash and Fire Point Test on Bitumen.
	2nd	Types of signals. Types of signs.		
	3rd	**Highway Materials: Soil and Aggregates:** Sub grade soil evaluation: CBR test,.		
14th	**1st**	plate bearing test	**1st and2nd**	**Final copies check**
	2nd	Desirable properties of aggregates. Various tests, testing procedures and IRC/IS specification for suitability of aggregates.		

	3rd	Proportioning of aggregates for road construction by trial and error and Routhfuch method.		
15th	**1st**	**Bituminous Materials and Bituminous Mixes:** Types of bituminous materials: bitumen, tar, cutback and emulsions.	**1st and2nd**	**Internal viva**
	2nd	Various tests, testing procedures and IRS/IS specifications for suitability of bituminous materials in road construction. Bituminous mix, desirable properties.		
	3rd	Marshall' method of mix design. Basic concept of use of polymers and rubber modified bitumen in bituminous mixes.		

LESSON PLAN

Name of the Faculty : ER. TEJINDER SINGH

Discipline : CIVIL

Semester : 6TH

Subject : W.S.T (CE-312E)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Water Quantity:Introdction**
	2nd	Importance and necessity of water supply scheme requirement....
	3rd	Water demands and its variations
2nd	1st	Estimation of total quantity of water
	2nd	Population forecasting
	3rd	Quality and quantity of surface and ground water sources
3rd	1st	Selection of a source of water supply
	2nd	Types of intakes.
	3rd	Assignment of Unit- I
4th	1st	**Water Quality:Introduction**

4th	**2nd**	Impurities in water and their sanitary significance
	3rd	Physical, chemical and bacteriological analysis of water
5th	**1st**	**Numerical of above topic**
	2nd	**Numerical of above topic**
	3rd	Assignment of Unit- II
6th	**1st**	**Water Treatment: Introduction**
	2nd	Objectives, treatment processes and their sequence in conventional treatment plant
	3rd	sedimentation – plain and aided with coagulation
7th	**1st**	Types, features and design aspects
	2nd	Mixing basins and Flocculation units
	3rd	**Numerical of above topic**
8th	**1st**	**Numerical of above topic**
	2nd	Filtration – mechanism involved
	3rd	types of filters
9th	**1st**	slow and rapid sand filtration units (features and design aspects
	2nd	Disinfection principles and aeration
	3rd	**Numerical of above topic**
10th	**1st**	**Numerical of above topic**
	2nd	**Numerical of above topic**
	3rd	Assignment of Unit- III
11th	**1st**	**Water Distribution: Introduction**
	2nd	Distribution system – Gravity system

	3rd	Pumping System
12th	**1st**	Dual system
	2nd	Layout of Distribution System
	3rd	Dead End System
13th	**1st**	Grid Iron System
	2nd	Ring System
	3rd	Radial System
14th	**1st**	their merits and demerits
	2nd	Distribution Reservoir-functions
	3rd	Determination of storage capacity
15th	**1st**	**Numerical of above topic**
	2nd	**Numerical of above topic**
	3rd	Assignment of Unit- IV

LESSON PLAN

Name of the Faculty : ER TEJINDER SINGH

Discipline : CIVIL

Semester : 6TH

Subject : ENVIRONMENTAL ENGINEERING-I (P) (CE-316N)

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

Work Load (Lecture/Practical) per week (in hours): practical -04

	PRACTICAL	
WEEK	**PRACTICAL DAY**	**TOPIC**
1st	**1st and2nd**	1. To determine the pH value of a given sample of water waste water.
2nd	**1st and2nd**	2. To determine the turbidity in given water waste water sample.
3rd	**1st and2nd**	3. To determine the acidity of given sample of water waste water
4th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
5th	**1st and2nd**	4. To determine the alkalinity of given sample of water waste water.
6th	**1st and2nd**	5. To determine temporary and permanent hardness in a given water sample.
7th	**1st and2nd**	6. To determine the chlorine does required for a given water sample.
8th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
9th	**1st and2nd**	7. To determine total suspended, suspended, dissolved settable solids in a sewage sample.
10th	**1st and2nd**	8. To determine the chloride concentration in a given sample of waste water.
11th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
12th	**1st and2nd**	9. To determine the sulphate concentration in given water sample.

13th	**1st and2nd**	**Final copies check**
14th	**1st and2nd**	**Final copies check**
15th	**1st and2nd**	**Internal viva**

LESSON PLAN

Name of the Faculty : ER TANUJ

Discipline : CIVIL

Semester : 6TH

Subject : CAD Lab (CE-318N)

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

Work Load (Lecture/Practical) per week (in hours): practical -06

	PRACTICAL	
WEEK	**PRACTICAL DAY**	**TOPIC**
1st	1st and2nd,3rd	**Detailed drawing of the following reinforced concrete structures:** 1. Footings: Isolated footings**,** combined footings, rectangular, trapezoidal, strip, strap, raft footings
2nd	1st and2nd,3rd	2. Domes: Spherical and conical domes.
3rd	1st and2nd,3rd	**COPY CHECK AND VIVA VOCE**
4th	1st and2nd,3rd	3. Water tanks: rectangular, cylindrical, Intz type overhead water tank.
5th	1st and2nd,3rd	4. RCC Flat slabs
6th	1st and2nd,3rd	5. Masonry columns, bearing walls, retaining walls.
7th	1st and2nd,3rd	**COPY CHECK AND VIVA VOCE**
8th	1st and2nd,3rd	**Detailed design and drawing of the following steel structures:** 6. Columns, base plates and their foundations
9th	1st and2nd,3rd	7. Plate Girder (welded)
10th	1st and2nd,3rd	**COPY CHECK AND VIVA VOCE**

11th	**1st and2nd ,3rd**	8. Gantry Girder
12th	**1st and2nd ,3rd**	9. Simple roof trusses
13th	**1st and2nd ,3rd**	**Final copies check**
14th	**1st and2nd ,3rd**	**Final copies check**
15th	**1st and2nd ,3rd**	**Internal viva**

LESSON PLAN

Name of the Faculty : ER AJAY KUMAR

Discipline : CIVIL

Semester : 8TH

Subject : B.E (CE-402E)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Introduction:** Definition
	2nd	components of bridge, , , ,
	3rd	classification of bridges
2nd	1st	selection of site
	2nd	economical span, aesthetics consideration
	3rd	Necessary investigations and essential design data.
3rd	1st	**Standard Specifications for Roads and Railways Bridges:** General
	2nd	Indian Road Congress Bridge Code
	3rd	width of carriage way, clearance
4th	1st	various loads to be considered for the design of roads and railway bridges

	2nd	detailed explanation of IRC standard live loads
	3rd	Assignment of unit-I
5th	**1st**	**Design Consideration for R. C. C. Bridges: Introduction**
	2nd	Various types of R.C.C. bridges(brief description of each type)
	3rd	Various types of R.C.C. bridges(brief description of each type)
6th	**1st**	Various types of R.C.C. bridges(brief description of each type)
	2nd	design of R.C.C. culvert
	3rd	**Numerical of culvert**
7th	**1st**	**Numerical of culvert**
	2nd	**Numerical of culvert**
	3rd	Design of T-beam bridges.
8th	**1st**	**Numerical of T-beam**
	2nd	**Numerical of T-beam**
	3rd	**Numerical of T-beam**
9th	**1st**	**Numerical of L-beam**
	2nd	**Design Consideration for Steel Bridges:** Various types of steel bridges (brief description of each),
	3rd	design of truss and
10th	**1st**	plate girder bridges.
	2nd	**NUMERICAL**
	3rd	**NUMERICAL**
11th	**1st**	**NUMERICAL**
	2nd	**Hydraulic & Structural Design:** Piers,

		Abutments,.
	3rd	NUMEICAL BASED on piers and abutments.
12th	**1st**	NUMEICAL BASED on piers and abutments.
	2nd	wing-wall and approaches
	3rd	**NUMERICAL based on wing wall**
13th	**1st**	Numerical
	2nd	**Brief Description:** Bearings, joints, articulation and other details.
	3rd	**Numerical based on bearings**
14th	**1st**	**Roller bearing**
	2nd	Steel rock bearing
	3rd	**Bridge Foundation:** Various types, necessary investigations and
15th	**1st**	Design criteria of well foundation.
	2nd	**Numerical on bridge foundation**
	3rd	Design of pile foundation

LESSON PLAN

Name of the Faculty : Er. TEJINDER SINGH

Discipline : CIVIL

Semester : 8TH

Subject : I.WWT-I (CE-404N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	Effects of industrial wastes on streams,
	2nd	sewerage systems
	3rd	Wastewater treatment plants.
2nd	1st	equalization
	2nd	proportioning.
	3rd	neutralization,
3rd	1st	strength reduction,
	2nd	volume reduction,

	3rd	reuse of waste water,
4th	**1st**	, process change,
	2nd	conservation of water
	3rd	Minimizing the effects of industrial effluents on receiving streams
5th	**1st**	Industrial effluent standards for disposal into on land for irrigation.
	2nd	Population equivalent
	3rd	Numerical based population equivalent
6th	**1st**	**Numerical of dairy waste**
	2nd	Numerical of tannery waste
	3rd	Radioactive wastes.
7th	**1st**	thermal power plants
	2nd	nitrogenous fertilizers
	3rd	oil refinery
8th	**1st**	metal plating,
	2nd	pulp & paper
	3rd	dairy
9th	**1st**	tannery,
	2nd	sugar mill,
	3rd	distillery
10th	**1st**	Flow diagram of sugar mill
	2nd	**Flow diagram of dairy waste**
	3rd	**Flow diagram of textile waste**

11th	**1st**	**Numerical**
	2nd	Numerical
	3rd	Numerical
12th	**1st**	**Numerical**
	2nd	**Numerical**
	3rd	Industrial effluent standards for disposal into inland surface water sources .
13th	**1st**	Study of the following Industries from waste generation, quality and its treatment including brief overview of manufacturing process: Textile.
	2nd	Minimizing the effects of industrial effluents on waste water treatment plants .
	3rd	**Numerical**
14th	**1st**	Numerical
	2nd	Numerical
	3rd	**Numerical**
15th	**1st**	**Numerical**
	2nd	**Numerical**
	3rd	Numerical

LESSON PLAN

Name of the Faculty : **ER. TANUJ**

Discipline : CIVIL

Semester : **8TH**

Subject : RAILWAY AND AIRPORT (CE-406N)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**Introduction, Permanent Way And Rails** Rail transportation and its importance in India..
	2nd	Permanent way: requirements and components. Gauges in India and abroad.
	3rd	Selection of gauge. Coning of wheels. Adzing of sleepers.
2nd	1st	Rails: functions, composition of rail steel, types of rail sections,
	2nd	requirements of an ideal rail section, length of rails. Defects in rails
	3rd	Creep of rails. Long welded rails and continuously welded rails.
3rd	1st	**Sleepers, Fastenings And Ballast** Sleepers: functions, requirements of an ideal sleeper.
	2nd	Types of sleepers: wooden, cast iron, steel and concrete sleepers, advantages, disadvantages and suitability of each type

	3rd	. Sleeper density. Fastenings for various types of sleepers: fish plates, spikes, bolts, bearing plates, keys, chairs, jaws, tie bars
4th	**1st**	. Elastic fastenings. Ballast: functions, requirements, types of ballast and their suitability.
	2nd	**Points And Crossings** Necessity. Turnout: various components, working principle. Switch: components, types
	3rd	Crossing: components and types. Design elements of a turnout, design of a simple turnout.
5th	**1st**	Layout plan of track junctions: crossovers,
	2nd	Diamond crossing, single-ouble slips, throw switch, turn table, triangle. **Signaling, Interlocking And Train Control** Signals: objects, types and classification.
	3rd	Semaphore signal: components, working principle
6th	**1st**	Requirements / principles of a good interlocking system. Brief introduction to devices used in interlocking
	2nd	Methods of control of train movements: absolute block system, automatic block system,
	3rd	centralized train control and automatic train control systems.
7th	**1st**	**Geometric Design Of The Track** Gradients, grade compensation. Super elevation, cant deficiency
	2nd	, negative super elevation. Maximum permissible speed on curves
	3rd	Tractive resistances, types. Hauling capacity of a locomotive. **Stations, Yards And Track Maintenance**
8th	**1st**	Stations: functions and classification. Junction, non-junction and terminal stations.
	2nd	Yards: functions, types. Marshalling yard: functions, types
	3rd	. Maintenance of railway track: necessity, types of maintenance.
	1st	Brief introduction to mechanized maintenance, M.S.P and D.T.M.

9th		
	2nd	**Introduction And Airport Planning** Air transportation
	3rd	its importance and characteristics, status in India. Layout plan of an airport
10th	**1st**	its basic elements: terminal area, apron, taxiway, runway, hanger
	2nd	Aircraft characteristics, their effect on elements of an airport
	3rd	Site selection of an airport. lassification of airports.
11th	**1st**	**Runway Layout And Pavement Design** Runway orientation, Wind Rose diagram
	2nd	. Basic runway length. Corrections to basic runway length. Runway patterns.
	3rd	Difference between highway and runway pavement.
12th	**1st**	Types of runway pavements.
	2nd	Design factors for runway pavement
	3rd	Brief introduction to design of thickness of a runway pavement
13th	**1st**	NUMERICAL
	2nd	NUMERICAL
	3rd	NUMERICAL
14th	**1st**	NUMERICAL
	2nd	
	3rd	
15th	**1st**	NUMERICAL
	2nd	NUMERICAL
	3rd	NUMERICAL

LESSON PLAN

Name of the Faculty : **ER. AJAY KUMAR**

Discipline : CIVIL

Semester : 8TH

Subject : **E&A** (CE-408E)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	Estimate: Principles of estimation, units, items of work
	2nd	different kinds of estimates, different methods of estimation,
	3rd	Estimation of materials in single room building
2nd	1st	Two roomed building with different sections of walls
	2nd	Foundation, floors and roofs
	3rd	R.B. and R.C.C. works
3rd	1st	Plastering, White-washing,
	2nd	Distempering and painting
	3rd	Doors and windows, lump sum items
4th	1st	Estimates of canals, roads etc
	2nd	Specification of Works

		Necessity of specifications, types of specifications, general specifications
	3rd	Specification for bricks, cement,
5th	**1st**	sand, water, lime, reinforcement
	2nd	Detailed specifications for Earthwork, Cement.
	3rd	Detailed specifications for concrete, brick work.
6th	**1st**	Detailed specifications for floorings, D.P.C., R.C.C
	2nd	Cement plastering
	3rd	White and color washing.
7th	**1st**	Distempering, painting.
	2nd	**Numerical**
	3rd	**numerical**
8th	**1st**	numerical
	2nd	Rate Analysis :Purpose, importance and requirements of rate analysis,
	3rd	Units of measurement,
9th	**1st**	. preparation of rate analysis
	2nd	Procedure of rate analysis for items:- Earthwork, concrete works
	3rd	Procedure of rate analysis for items:- R.C.C. works, reinforced brick work.
10th	**1st**	Procedure of rate analysis for items:- plastering.
	2nd	Procedure of rate analysis for items:- painting, finishing(white-washing, distempering).
	3rd	**Numerical**

11th	**1st**	**Numerical**
	2nd	Numerical
	3rd	**Numerical**
12th	**1st**	Public Works Account: Introduction,
	2nd	function of P.W. department
	3rd	contract, guidelines
13th	**1st**	Types of contracts
	2nd	Their advantages and disadvantages
	3rd	Tender and acceptance of tender
14th	**1st**	Earnest money, security money, retention money
	2nd	Measurement book, cash book.
	3rd	Preparation, examination and payment of bills
15th	**1st**	First and final bills
	2nd	Administrative sanction, technical sanction.
	3rd	**numerical**

LESSON PLAN

Name of the Faculty : **ER VIKRAM**

Discipline : CIVIL

Semester : 8TH

Subject : **GEOSYNTHETICS** (CE-414E)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	THEORY	
	LECTURE DAY	TOPIC (including assignment / test)
1st	1st	**INTRODUCTION:- Historical Development,The Nomenclature**
	2nd	Function ,use around the world
	3rd	**Applications, Development in India**
2nd	1st	**Raw materials, Durability,**
	2nd	**Degrading Agencies,polymers,Biological Resistance**
	3rd	**Chemical Resistance,Weathering Resistance**
3rd	1st	**Manufacturing Method: Fiber, Yarn**
	2nd	Nonwoven Geotextiles, Woven Textile
	3rd	D.S.F , Fabric Material

4th	**1st**	Geogrid-Testing and Evaluation:Factor affecting Testing
	2nd	**Sampling , physical properties**
	3rd	**Mechanical properties under Uniaxial Loading,Creep testing**
5th	**1st**	**Creep testing**
	2nd	Erosion control with Giogrid:Wind Erosion
	3rd	Rain water Erosion
6th	**1st**	**Control measures, Placement of Giogrid**
	2nd	**Bearing capacity improvement with Giogrid:Advantage**
	3rd	Mechanism,Mode of failure
7th	**1st**	**Numerical**
	2nd	**Numerical**
	3rd	**Friction coefficient,experiment studies**
8th	**1st**	**Numerical**
	2nd	**Numerical**
	3rd	**Numerical**
9th	**1st**	Introduction of Application of Giosynthetic inWater Resources projects:
	2nd	**Case studies: Dharoidam ,**
	3rd	**Hiran-2 Dam**
10th	**1st**	**Meda creek**
	2nd	**Irrigation scheme**
	3rd	**Class Test**

11th	**1st**	**Lining of Kakarapar canal**
	2nd	Rivision of Dharoidam
	3rd	Numerical
12th	**1st**	Class test
	2nd	Revise the Unit-1
	3rd	Class test of unit-1
13th	**1st**	Revision of Unit-2
	2nd	Class test of Unit-2
	3rd	Revise unit-3
14th	**1st**	Class test of unit-3
	2nd	Revise unit-4
	3rd	Class test of unit-4
15th	**1st**	**numerical**
	2nd	**numerical**
	3rd	**Class test of whole syllabus**

LESSON PLAN

Name of the Faculty : ER. ASHMINDER SINGH

Discipline : CIVIL

Semester : 8TH

Subject : **EIA** (CE-422E)

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

Work Load (Lecture/Practical) per week (in hours): Lectures - 03

WEEK	**THEORY**	
	LECTURE DAY	**TOPIC (including assignment / test)**
1st	**1st**	**ENVIRONMENT AND HUMAN ACTIVITY**
	2nd	RESOURCES
	3rd	**Pollution**
2nd	**1st**	**Reuse**
	2nd	**Environment management**
	3rd	**Management of aquatic environment**
3rd	**1st**	**Water quality control**
	2nd	Drainage basin activity
	3rd	Impact of human activity on aquatic resources.
4th	**1st**	The control measure
	2nd	**Regional planning**

	3rd	**Air quality management**
5th	**1st**	**Atmosphere**
	2nd	Effect of human activity on air quality
	3rd	Waste management
6th	**1st**	**Disposal alternative**
	2nd	**Optimization**
	3rd	Planning of waste disposal
7th	**1st**	Waste management
	2nd	**Waste disposal methods**
	3rd	**Impact of waste disposal of human activity**
8th	**1st**	Land use management
	2nd	**Impact of land use on human life**
	3rd	Control of hazardous in land use
9th	**1st**	**Management of land use**
	2nd	**Environment assessment:- national environment policy**
	3rd	**Implication of environment**
10th	**1st**	**Assessment in design process.prepration of assessment**
	2nd	**General requirement of environmental standards.**
	3rd	**Technique of setting standards**
11th	**1st**	**Case studies of EIA**
	2nd	River valley projects
	3rd	**Thermal power projects**
12th	**1st**	**Matrix methods**

	2nd	**Numerical**
	3rd	**Pollution control**
13th	**1st**	**Water pollutions control**
	2nd	Assignments based on matrix methods
	3rd	**Assignment checked**
14th	**1st**	**Air quality management**
	2nd	**Atmosphere**
	3rd	Effect of human activity on air quality
15th	**1st**	Waste management
	2nd	**Disposal alternative**
	3rd	**Optimization**

LESSON PLAN

Name of the Faculty : ER VIKRAM

Discipline : CIVIL

Semester : 8TH

Subject : TRANSPORTATION ENGINEERING – II (P) (CE-426E)

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

Work Load (Lecture/Practical) per week (in hours): practical -04

	PRACTICAL	
WEEK	**PRACTICAL DAY**	**TOPIC**
1st	**1st and2nd**	Flakiness and Elongation Index of aggregates.
2nd	**1st and2nd**	Specific gravity and water absorption test on aggregates.
3rd	**1st and2nd**	Specific gravity of bitumen.
4th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
5th	**1st and2nd**	Proportioning of aggregates.
6th	**1st and2nd**	Marshall's stability test.
7th	**1st and2nd**	Stripping test on aggregates.
8th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
9th	**1st and2nd**	Determination of bitumen content
10th	**1st and2nd**	CBR lab test on soil.
11th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
12th	**1st and2nd**	Traffic volume study using videography technique.

13th	**1st and2nd**	Traffic speed study using videography technique.
14th	**1st and2nd**	**Final copies check**
15th	**1st and2nd**	**Internal viva**

LESSON PLAN

Name of the Faculty : ER ASHMINDER SINGH

Discipline : CIVIL

Semester : **8**TH

Subject : ENVIRONMENTAL ENGINEERING-II (P) (CE-428E)

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

Work Load (Lecture/Practical) per week (in hours): practical -04

	PRACTICAL	
WEEK	**PRACTICAL DAY**	**TOPIC**
1st	**1st and2nd**	To determine the acidity of a sewage sample.
2nd	**1st and2nd**	To determine the alkanity of a sewage sample.
3rd	**1st and2nd**	To determine total, suspended, dissolved and settable solids in a sewage sample.
4th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
5th	**1st and2nd**	To determine volatile and fixed solids in a sewage sample.
6th	**1st and2nd**	To determine oil and grease in a sewage sample
7th	**1st and2nd**	To determine the chloride concentration in a sewage sample
8th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
9th	**1st and2nd**	To determine the sulphate concentration in a sewage sample.

10th	**1st and2nd**	To determine the B.O.D. of a given sewage sample
11th	**1st and2nd**	**COPY CHECK AND VIVA VOCE**
12th	**1st and2nd**	To determine the C.O.D. of a given sewage sample
13th	**1st and2nd**	To determine the T.O.C. of a given sewage sample
14th	**1st and2nd**	To determine the fecal count of a given sewage sample
15th	**1st and2nd**	Microscopic studies of a sewage