LORDS INSTITUTE OF ENGINEERING &TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

DEPARTMENT OF CIVIL ENGINEERING

Estd. 2002

COURSE OUTCOMES (COS)

Course Name: C211 Environmental Sciences **Year: II-I Sem** **A.Y: 2020-21**

C211.1	Create environmental ethics to attain sustainable development.
C211.2	Develop an attitude of concern for the environment.
C211.3	Conserve the natural resources and biological diversity.
C211.4	Create awareness of green technologies for nation's security.
C211.5	Create awareness for environmental laws and regulations
C211.6	Create awareness of technologies for security purposes.

Course Name: C212 Essence of Indian Traditional Knowledge **Year: II-I Sem** **A.Y: 2020-21**

C212.1	Recite vocabulary and use it contextually
C212.2	Listen and speak effectively
C212.3	Develop proficiency in academic reading and writing
C212.4	Increase possibilities of job prospects
C212.5	Communicate confidently in formal and informal contexts
C212.6	Adopt professional behavior and develop team spirit

Course Name: C213 Overview of Civil Engineering **Year: II-I Sem** **A. Y: 2020-21**

C213.1	Discuss the relevance of civil engineering in the society & describe the uses of various construction materials.
C213.2	Explain the new technology/concepts of architecture in planning
C213.3	Describe the basics of surveying and transportation systems
C213.4	Describe the basics of environmental, water resources and structural engineering systems
C213.5	Describe the various software used in the field of civil engineering
C213.6	Summarize the basics of geotechnical systems

Course Name: C214 Industrial Psychology **Year: II-I Sem** **A.Y: 2020-21**

C214.1	Summarize the key concepts, theoretical perspectives, and trends in industrial psychology.
C214.2	Evaluate the problems thorough and systematic competency model.
C214.3	Analyze the problems present in environment and design a job analysis method.
C214.4	Create a better work environment for better performance.
C214.5	Design a performance appraisal process and form for the human behavior.
C214.6	Describe the working of the union, state and local levels

Course Name: C215 Biology For Engineers **Year: II-I Sem** **A.Y: 2020-21**

C215.1	Apply biological engineering principles, procedures needed to solve real world problems.
C215.2	Explain the fundamentals of living things, their classification, cell structure and biochemical constituents.
C215.3	Apply the concept of plant, animal and microbial systems and growth in real life situations.
C215.4	Explain genetics and the immune system.
C215.5	Tell the cause, symptoms, diagnosis and treatment of common diseases.
C215.6	Apply basic knowledge of the applications of biological systems in relevant industries.

Course Name: C216 Engineering Mechanics **Year: II-I Sem** **A.Y: 2020-21**

C216.1	Apply the fundamental concepts of forces, equilibrium conditions for static loads.
C216.2	Determine the centroid, Centre of gravity and moment of inertia for various sections.
C216.3	Analyze forces in members of the truss by method of joints and sections.
C216.4	Analyze the friction for single and connected bodies,
C216.5	Apply the basic concepts of dynamics, their behavior, analysis and motion of bodies.
C216.6	Solve problems by using work energy method and impulse momentum method for singe and connected bodies.

Course Name: C217 Energy Sciences and Engineering **Year: II-I Sem** **A.Y: 2020-21**

C217.1	Explain the basics of various sources of energy
C217.2	Analyze the present status of conventional energy sources.
C217.3	Describe the working principles of Renewable Energy systems
C217.4	Design and develop waste heat recovery systems.
C217.5	Explain energy economics, standards and future challenges.
C217.6	Analyze the present status of non-conventional energy sources.

Course Name: C218 Solid Mechanics **Year: II-I Sem** **A.Y: 2020-21**

C218.1	Apply the fundamental concepts of stress and strain in the analysis and design of axially loaded members.
C218.2	Analyze determinate beams to determine shear forces, bending moments and determine the bending stress distribution in beams.
C218.3	Determine the shear stress distribution in a beams and also the stresses in beams subjected to combined axial and bending loads.
C218.4	Evaluate the stresses and strains of circular members subjected to torsion and calculate the power required for torsional revolutions of shafts.
C218.5	Analyze the combined stresses at a point to evaluate principal stresses.
C218.6	Analyze the applications in evaluating failure criteria in various materials and pressure vessels

Course Name: C219 Engineering Geology **Year: II-I Sem** **A.Y: 2020-21**

C219.1	Describe the role of geology in the design and construction process.
C219.2	Identify and classify rock using basic geologic classification systems.
C219.3	Identify various types of Indian solids
C219.4	Use the geologic literature to establish the geotechnical framework needed to properly design and construct heavy civil works rock projects
C219.5	Explain the design and construction procedures required to safely control rock behavior in underground openings
C219.6	Analyze the topographical and GSI maps

Course Name: C2110 Surveying and Geomatics **Year: II-I Sem** **A.Y: 2020-21**

C2110.1	Describe the different methods involved in survey field work
C2110.2	Calculate lengths, areas and bearings of the given field work
C2110.3	Explain the basic working principles of theodolite
C2110.4	Explain the basic working principles of total station
C2110.5	Evaluate setting out data for setting out of horizontal curves by various methods
C2110.6	Discuss the basic concepts related to GPS

Course Name: C2111 Engineering Geology Lab **Year: II-I Sem** **A.Y: 2020-21**

C2111.1	Identify the physical and engineering properties of minerals and rocks
C2111.2	Analyze and measure structural aspects of rocks using models
C2111.3	Perform field experiment and studies such as VES
C2111.4	Perform studies such as Stereoscopic study of photographs, seismic refraction survey and Slake durability test
C2111.5	Explain the topographical and GSI maps

Course Name: C2112 Surveying Lab **Year: II-I Sem** **A.Y: 2020-21**

C2112.1	Calculate lengths, areas and bearings of the given field work
C2112.2	Explain the basic working principles of theodolite.
C2112.3	Evaluate setting out data for setting out of horizontal curves by various methods
C2112.4	Explain the basic concepts related to GPS
C2112.5	Describe the basic working principles of total station

Coordinator **HoD**

LORDS INSTITUTE OF ENGINEERING &TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

DEPARTMENT OF CIVIL ENGINEERING

Estd. 2002

COURSE OUTCOMES (COS)

Course Name: C221 Indian Constitution — Year: II-II Sem — A.Y: 2020-21

C221.1	Explain the significance of Indian Constitution as the fundamental law of the land
C221.2	Describe fundamental rights in proper sense at the same time identifies his responsibilities in national building
C221.3	Analyze the Indian political system, the powers and functions of the Union, State and Local Governments in detail.
C221.4	Explain Electoral Process, Emergency provisions and Amendment procedure
C221.5	Discuss the functioning of Union, State and Local Governments in Indian federal system
C221.6	Identify the importance of fundamental rights as well as fundamental duties

Course Name: C222 Effective Technical Communication in English — Year: II-II Sem — A.Y: 2020-21

C222.1	Apply vocabulary and use it contextually
C222.2	Listen and speak effectively
C222.3	Develop proficiency in academic reading and writing
C222.4	Increase possibilities of job prospects
C222.5	Communicate confidently in formal and informal contexts
C222.6	Adopt professional behavior and develop team spirit

Course Name: C223 Finance and Accounting — Year: II-II Sem — A.Y: 2020-21

C223.1	Explain the basic concepts of financial accounting, cost accounting and management accounting
C223.2	Discuss Accounting Standards and their Importance in Global Accounting Environment, to prepare, understand, interpret and analyze financial statements.
C223.3	Describe the procurement of Finance in Financial Markets for Strengthening countries economy.
C223.4	Discuss Capital budgeting techniques
C223.5	Explain the different types of Ratios like Liquidity, Turn over, Profitability, Leverage and Structural Ratios.
C223.6	Discuss on Finance and Accounting.

Course Name: C224 Mathematics – III (PDE, P&S) — Year: II-II Sem — A.Y: 2020-21

C224.1	Solve real life and Engineering Problems through mathematics.
C224.2	Apply logical thinking and creativity.
C224.3	Solve Probability, Random Variables, distributions and its applications.
C224.4	Explain the concepts of discrete and continuous distributions.
C224.5	Evaluate curve fitting, regression and testing of hypothesis for various parameters.
C224.6	Explain the Concepts of F-distribution and chi-square distribution, goodness of fit and test for dependence.

Course Name: C225 Elements of Mechanical Engineering — Year: II-II Sem — A.Y: 2020-21

C225.1	Explain the working, functions and applications of engines and explaining the different parts of the engines and classifying the different parts and explaining the concepts of Turbines and their applications.
C225.2	Analyze the governing equations of heat exchangers, and their applications of heat exchangers and solving the problems
C225.3	Demonstrate the hydraulic turbines problems with calculations.
C225.4	classify the power transmission with the mechanisms.
C225.5	Discuss Different types of manufacturing processes and advance machining and additive manufacturing processes
C225.6	Demonstrate the centrifugal and multistage pumps with calculations.

Course Name: C226 Mechanics of Materials and Structures Year: II-II Sem A.Y: 2020-21

C226.1	Evaluate the crippling load of columns for various end conditions using different formulas
C226.2	Calculate the deflection of determinate beams due to transverse loads by various methods.
C226.3	Analyze statically determinate beams such as propped cantilevers, fixed beams and continuous beams and draw the shear force and bending moment diagrams.
C226.4	Analyze the beams and frames and find deflections by energy principle.
C226.5	Analyze the three hinged and two hinged arches.
C226.6	Analyze the cables and suspension bridges.

Course Name: C227 Fluid Mechanics Year: II-II Sem A.Y: 2020-21

C227.1	Describe principles of fluid statics, kinematics and dynamics
C227.2	Define the basic terms used in fluid mechanics and characteristics of fluids and its flow
C227.3	Discuss classifications of fluid flow
C227.4	Apply the continuity, momentum and energy principles
C227.5	Discuss how to build a good fundamental background useful in the application-intensive courses covering hydraulics, hydraulic machinery and hydrology.
C227.6	Solve problems in uniform, gradually and rapidly varied flows in open channel in steady state conditions

Course Name: C228 Materials Testing and Evaluation Year: II-II Sem A.Y: 2020-21

C228.1	Tell types, uses, advantages and disadvantages of basic construction materials, Stone, Brick, Wood and Steel
C228.2	Discuss the composition, properties, types, manufacturing process, IS standards and tests on cement, classification, types, properties, IS standards and tests on fine and coarse aggregates.
C228.3	Summarize the requirements and quality of mixing water, types of chemical and mineral admixtures their dosage and functions in concrete, IS standards and specifications
C228.4	Explain the concept and steps of mix design, casting, transporting, placing, compacting, curing, and finishing of concrete. Properties and tests on fresh concrete.
C228.5	Design concrete mixes as per requirement using IS codes specifications. Understand properties and various tests on hardened concrete including NDT
C228.6	Describe other building materials, their uses and limitations.

Course Name: C229 Solid Mechanics Lab Year: II-II Sem A.Y: 2020-21

C2209.1	Assess uncertainty in mechanical measurements and describe its causes.
C2209.2	Operate and collect data using standard and non-standard experimental apparatus and procedures.
C2209.3	Interpret, organize and present the results of acquired data, and discuss the outcome of experiments.
C2209.4	Discuss the basic concepts related to GPS
C2209.5	Use computational techniques and tools necessary for simulating physical experiments, gain confidence with and explore boundaries of these tools.

Course Name: C2210 Material Testing and Evaluation Lab Year: II-II Sem A.Y: 2020-21

C2210.1	Identify the different engineering materials, properties, manufacturing process of materials.
C2210.2	Describe the mechanical behaviour and characteristics, elastic and plastic deformation of metals, strength properties and background of fracture mechanics
C2210.3	Conduct mechanical testing of various metals like iron, steel and various non-ferrous metals, impact testing, background of fracture toughness of different materials, creep, fatigue
C2210.4	Explain the standard testing procedure of bricks, sand, concrete, soils, bitumen and bitumen mixes
C2210.5	Describe the properties, mechanical behaviour of polymers, metals, composites, cementitious materials and special materials.

Coordinator **HoD**

LORDS INSTITUTE OF ENGINEERING &TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

DEPARTMENT OF CIVIL ENGINEERING

Estd. 2002

COURSE OUTCOMES (COS)

Course Name: C311 Structural Analysis II **Year: III-I Sem** **A.Y: 2020-21**

C311.1	Analyse the two hinged arches
C311.2	Solve statically indeterminate beams and portal frames using classical methods.
C311.3	Sketch the shear force and bending moment diagrams for indeterminate structures.
C311.4	Formulate the stiffness matrix and analyse the beams using by matrix methods.
C311.5	Sketch the shear and bending moment diagrams when a moving load passes on indeterminate structure.
C311.6	Determine response of structures by classical, iterative and matrix methods

Course Name: C312 Geotechnical Engineering **Year: III-I Sem** **A.Y: 2020-21**

C312.1	Explain the basic properties of soil formation.
C312.2	Describe the index properties of soils.
C312.3	Calculate the properties and factors of permeability by conducting simple tests.
C312.4	Analyse the effective stress and seepage through soils.
C312.5	Demonstrate the properties of flow nets and uses.
C312.6	Evaluate the various stress distribution of soils.

Course Name: C313 Structural Engineering-I (RCC) **Year: III-I Sem** **A.Y: 2020-21**

C313.1	Apply Concepts of RC. Design - Limit State method - Working Stress Method.
C313.2	Analyse and designing of Beams. Apply the concept of bond, and development length
C313.3	Design of one-way, two-way slab, and continuous slabs using IS coefficients Design the doglegged Stair case.
C313.4	Design of short and long columns using limit state method for uni-axial and bi axial bending
C313.5	Design different types of footing.
C313.6	Analyse and design of singly reinforced, doubly reinforced, T and L beam sections.

Course Name: C314 Transportation Engineering **Year: III-I Sem** **A.Y: 2020-21**

C314.1	Apply the knowledge of mathematics, science and engineering in the areas of traffic engineering, highway development and maintenance
C314.2	Design and conduct experiments to assess the suitability of the highway materials like soil, bitumen, aggregates and a variety of bituminous mixtures.
C314.3	Design flexible and rigid highway pavements for varying traffic compositions as well as soil subgrade and environmental conditions using the standards stipulated by Indian Roads Congress
C314.4	Evaluate the structural and functional conditions of in-service highway pavements and provide solution in the form of routine maintenance measures or designed overlays using Indian Roads congress guidelines
C314.5	Assess the issues related to road traffic and provide engineering solutions supported with an understanding of road user psychological and behavioural patterns.
C314.6	Explain the Bridge engineering & Components parts of a bridge

Course Name: C315 Concrete Technology **Year: III-I Sem** **A.Y: 2020-21**

C315.1	Tell the use of supplement cementitious in concrete, use of different admixture and its application as per requirement.
C315.2	Describe the special concrete, its properties and application as per requirement.
C315.3	Perform concrete mix design for required strength of concrete with different approach.
C315.4	Describe the details of ready-mix concrete plant.
C315.5	Analyse the durability of concrete, assessment and inspection of hardened concrete.
C315.6	Identify the properties of hardened concrete by conducting destructive and non-destructive tests

Course Name: C316 Engineering Economics & Accountancy Year: III-I Sem A.Y: 2020-21

C316.1	Apply the knowledge of economic concepts
C316.2	Apply the tools and techniques
C316.3	Explain accounting systems and analyse financial statement using ratio analysis
C316.4	Apply the concepts of financial management for project appraisal
C316.5	Describe an accounting system and analyse financial statements using ratio analysis
C316.6	Discuss the market structures and integration concepts

Course Name: C317 Highway Engineering & Concrete Technology Lab Year: III-I Sem A.Y: 2020-21

C317.1	Perform the test on materials used Civil Engineering Building and Pavement constructions
C317.2	Perform the tests on concrete for it characterization.
C317.3	Design Concrete Mix Proportioning by Using Indian Standard Method.
C317.4	Evaluate the tests results performed for Bitumen mixes.
C317.5	Explain the test procedures for characterization of Concrete and bituminous mixes

Course Name: C318 Geotechnical Engineering Lab Year: III-I Sem A.Y: 2020-21

C318.1	Determine index properties of soils
C318.2	Classify the different types of soils.
C318.3	Determine engineering properties of soils.
C318.4	Discuss the principles of compaction and its control.
C318.5	Identify shear strength parameters for field conditions

Course Name: C319 Advanced English Communication Skills Lab Year: III-I Sem A.Y: 2020-21

C319.1	Apply vocabulary and use it contextually.
C319.2	Listen and speak effectively
C319.3	Develop proficiency in academic reading and writing
C319.4	Increase possibilities of job prospects
C319.5	Communicate confidently in formal and informal contexts

Course Name: C3110 Intellectual Property Rights Year: III-I Sem A.Y: 2020-21

C310.1	Distinguish and explain various forms of IPRs.
C310.2	Identify criteria to fit one's own intellectual work in particular form of IPRs.
C310.3	Analyse rights and responsibilities of holder of Patent, Copyright, Trademark, Industrial Design etc.
C310.4	Identify procedure to protect different forms of IPRs national and international level.
C310.5	Develop skill of making search using modern tools and technics

Coordinator **HoD**

LORDS INSTITUTE OF ENGINEERING &TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

DEPARTMENT OF CIVIL ENGINEERING

Estd. 2002

COURSE OUTCOMES (COS)

Course Name: C321 Hydrology & Water Resources Engineering Year: III-II Sem A.Y: 2020-21

C321.1	Explain the basic concepts of Hydrology and its applications.
C321.2	Explain concepts of Runoff and its applications.
C321.3	Analyse the importance of direct runoff hydrograph, unit hydrograph, definition, and limitations applications of unit hydrograph.
C321.4	Determine the design discharge for a water course. Depth and frequency of irrigation, irrigation efficiencies, water logging.
C321.5	Calculate by using IS standards for a canal design canal lining. Design discharge over a catchment, computation of design discharge, rational formula.
C321.6	Assess the Knowledge and Skills for employability and to succeed in national and international level competitive examinations.

Course Name: C322 Environmental Engineering Year: III-II Sem A.Y: 2020-21

C322.1	Analyse the basic quality and quantity parameters of water by some prescribed methods
C322.2	Analyse the different types of treatment methods and water distribution
C322.3	Explain the characters of sewage, plumbing and sanitary
C322.4	Explain the different stages of treatment methods
C322.5	Describe the concepts of air pollution and its effects
C322.6	Discuss the various gaseous pollutants and its control

Course Name: C323 Foundation Engineering Year: III-II Sem A.Y: 2020-21

C323.1	Explain the principles and methods of Geotechnical Exploration
C323.2	Design basic elements of steel structure like tension members, compression members.
C323.3	Tell the suitability of soils and check the stability of slopes.
C323.4	Calculate lateral earth pressures and check the stability of retaining walls
C323.5	Analyse and design the shallow and deep foundations.
C323.6	Determine the Bearing capacity of Soil. To design pile group foundation

Course Name: C324 Structural Analysis-II (Steel) Year: III-II Sem A.Y: 2020-21

C324.1	Explain the concepts of structural steel design conforming to the IS 800 design code. Evaluate the bolted and welded connections.
C324.2	Design basic elements of steel structure like tension members, compression members.
C324.3	Analyse the bending and shear strength of laterally supported beams.
C324.4	Design the welded plate girders and optimum depth of girder. Analyze the connection between web and flange and design of flange splice and web splice.
C324.5	Design of a purlin.
C324.6	Design of truss, joints and end bearings.

Course Name: C325 Prestressed Concrete **Year: III-II Sem A. Y: 2020-21**

C325.1	Describe the basic properties of pre-stressed concrete Constituents
C325.2	Calculate pre-stress losses for simple pre-stressed concrete beams
C325.3	Design pre-stressed concrete beam to resist shear
C325.4	Analyse flexural forces in pre-stressed concrete beams
C325.5	Describe the concept of transfer of pre-stress in pre-tensioned members
C325.6	Analyse for deflection of pre-stressed concrete member

Course Name: C326 Renewable Energy Sources **Year: III-II Sem A.Y: 2020-21**

C326.1	Explain various types of renewable energy sources.
C326.2	Describe the concepts solar energy collection, storage & application.
C326.3	Explain the principals of wind energy and Biomass.
C326.4	Discuss the concept of geothermal energy.
C326.5	Explain the theory of OTEC.
C326.6	Explain direct energy conversion.

Course Name: C327 Environmental Engineering Lab **Year: III-II Sem A.Y: 2020-21**

C327.1	Determine common environmental experiments relating to water and wastewater quality
C327.2	Identify use the water and wastewater sampling procedures and sample preservations
C327.3	Describe the impact of water and wastewater treatment on people and the environment
C327.4	Apply the laboratorial results to problem identification, quantification, and basic environmental design
C327.5	Engage in research and life-long learning to adapt to changing environment.

Course Name: C328 Computer Aided Design Lab **Year: III-II Sem A.Y: 2020-21**

C328.1	Apply the command of AutoCAD for Detailing of reinforcement in Cantilever, simply supported, Continuous Beams, canopy & columns.
C328.2	Apply the command of AutoCAD for Detailing of reinforcement in RC isolated footings square, rectangular, circular and combined footings, RC one-way, two-way slabs and dog-legged staircases.
C328.3	Use the AutoCAD software Drawing of Steel bolted and welded connections.
C328.4	Apply AutoCAD software for Drawing of steel compression and tension members
C328.5	Apply the commands of Auto Drafting of steel beams-built-up sections, Drafting of steel plate girder, steel roof truss

Course Name: C329 Environmental Sciences **Year: III-II Sem A.Y: 2020-21**

C329.1	Adopt environmental ethics to attain sustainable development.
C329.2	Develop an attitude of concern for the environment.
C329.3	Convert the natural resources and biological diversity.
C329.4	Create awareness of green technologies for nation's security.
C329.5	Create awareness for environmental laws and regulations
C329.6	Create awareness of technologies for security purposes.

Coordinator **HoD**

LORDS INSTITUTE OF ENGINEERING &TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

DEPARTMENT OF CIVIL ENGINEERING

Estd. 2002

COURSE OUTCOMES (COS)

Course Name: C411 Transportation Engineering **Year: IV-I Sem** **A.Y: 2020-21**

C411.1	Apply the knowledge of mathematics, science and engineering in the areas of traffic engineering, highway development and maintenance.
C411.2	Design conduct experiments to assess the suitability of the highway materials like soil, bitumen, aggregates and a variety of bituminous mixtures. Also, the students will develop the ability to interpret the results and assess the suitability of these materials for construction of highways.
C411.3	Design flexible and rigid highway pavements for varying traffic compositions as well as soil subgrade and environmental conditions using the standards stipulated by Indian Roads Congress.
C411.4	Evaluate the structural and functional conditions of Inservice highway pavements and provide solution in the form of routine maintenance measures or designed overlays using Indian Roads congress guidelines.
C411.5	Assess the issues related to road traffic and provide engineering solutions.
C411.6	Explain the road user psychological and behavioural patterns.

Course Name: C412 Estimation Quantity Surveying and Valuation **Year: IV-I Sem** **A.Y: 2020-21**

C412.1	Describe the preparation of an Abstract Estimate and detailed estimate of building.
C412.2	Determine earth work quantity for roads and canals.
C412.3	Describe the preparation of Notice inviting tender document for bidding, tendering process and examining rate analysis of civil works.
C412.4	Design bar bending schedule for reinforcement works, identify specifications and tendering process for contracts and create various tender documents for bidding purpose.
C412.5	Evaluate the valuation of building for different specifications.
C412.6	Create new technologies to develop concrete estimating methods.

Course Name: C413 Rehabilitation and Retrofitting of Structures. **Year: IV-I Sem** **A.Y: 2020-21**

C413.1	Recognize the mechanisms of degradation and distress of concrete in structures
C413.2	Explain the mechanism of corrosion of steel reinforcement. Fire basics
C413.3	Analyse the structure failures by following appropriate Inspection procedures and non-destructive evaluation.
C413.4	Analysis of deterioration and use of repair strategies for deteriorated concrete structures
C413.5	Explain the importance of health monitoring of structures.
C413.6	Evaluate the health of structures by using relevant sensors and design of SHM.

Course Name: C414 Prestressed Concrete **Year: IV-I Sem** **A.Y: 2020-21**

C414.1	Describe the basic properties of pre-stressed concrete Constituents.
C414.2	Calculate pre-stress losses for simple pre-stressed concrete beams.
C414.3	Design pre-stressed concrete beam to resist shear.
C414.4	Analyse flexural forces in pre-stressed concrete beams.
C414.5	Explain the concept of transfer of pre-stress in pretensioned members.
C414.6	Analyse for deflection of pre-stressed concrete member.

Course Name: C415 Irrigation and Hydraulic Structures Year: IV-I Sem A.Y: 2020-21

C415.1	Apply different terminology related to water resources engineering.
C415.2	Identify various types of reservoirs and their design aspects
C415.3	Design various channel systems.
C415.4	Design head and cross regulator structures.
C415.5	Explain the understanding of cross drainage works and its design.
C415.6	Design various Irrigation and Hydraulic structures.

Course Name: C416 Transportation Engineering Lab Year: IV-I Sem A.Y: 2020-21

C416.1	Explain the Highway construction properties of highway materials.
C416.2	Describe the properties of Highway materials and surveys.
C416.3	Perform the tests on Road Aggregates.
C416.4	Perform the tests on Bituminous Materials.
C416.5	Perform the tests on Traffic Studies.

Course Name: C417 Environmental Engineering Lab Year: IV-I Sem A.Y: 2020-21

C417.1	Determine common environmental experiments relating to water and wastewater quality.
C417.2	Identify use the water and wastewater sampling procedures and sample preservations.
C417.3	Explain the impact of water and wastewater treatment on people and the environment.
C417.4	Apply the laboratorial results to problem identification, quantification, and basic environmental design.
C417.5	Excel in research and life-long learning to adapt to changing environment.

Course Name: C418 Industrial oriented mini–Project Year: IV-I Sem A.Y: 2020-21

C418.1	practice acquired knowledge within the chosen area of technology for project development.
C418.2	Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach
C418.3	Reproduce, improve and refine technical aspects for engineering projects.
C418.4	Work as an individual or in a team in development of technical projects.
C418.5	Communicate and report effectively project related activities and findings

Coordinator **HoD**

LORDS INSTITUTE OF ENGINEERING &TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

DEPARTMENT OF CIVIL ENGINEERING

Estd. 2002

COURSE OUTCOMES (COS)

Course Name: C421 Disaster Management **Year: IV-I Sem** **A.Y: 2020-21**

C422.1	Explain the types and categories of Disasters.
C422.2	Describe the man-made Hazards and Vulnerabilities.
C422.3	Explain disaster management mechanism.
C422.4	Apply Disaster Concepts to Management.
C422.5	Explain the capacity building concepts.
C422.6	Explain the Realization of Responsibilities to Society and Planning of disaster managements.

Course Name: C422 Waste Management **Year: IV-I Sem** **A.Y: 2020-21**

C422.1	Identify the physical and chemical components of wastes.
C422.2	Analyse the functional elements for solid waste management.
C422.3	Analyse the functional elements of liquid waste management.
C422.4	Analyse the functional elements of liquid waste from different industries.
C422.5	Interpret the effects and treatment methods from different industries.
C422.6	Analyse the effluent treatment plant and disposal.

Course Name: C423 Industrial waste water treatment **Year: IV-I Sem** **A.Y: 2020-21**

C422.1	Identify the characteristics of industrial waste waters.
C422.2	Describe pollution effects of disposal of industrial effluent.
C422.3	Identify and design treatment options for industrial waste water.
C422.4	Formulate environmental management plan.
C422.5	Explain the information of waste water generation from various industries.
C422.6	Design the treatment options for industrial waste water.

Course Name: C424 Major Project **Year: IV-I Sem** **A.Y: 2020-21**

C424.1	Classify the projects and describe the phases involved in project formulation with feasibility studies and SWOT (strengths, weaknesses, opportunities, and threats) analysis.
C424.2	Devise a projects development cycle and get acquainted with the different appraisals in the process of deciding the worthiness of project.
C424.3	Apply the managerial skills and knowledge of financial aspects required during the implementation of project.
C424.4	Identify sources for project finance and select the method of project implementation which is best suited for a particular project.

Coordinator **HoD**