Course Outcomes

Academic Year–2024-2025 **Semester: III**

Student will be able to

CO. No.	Description
CourseOutcomes:C31- Mathematics-III (U23MA302)	
C31.1	Solve the first order linear and nonlinear partial differential equations.
C31.2	Grasp the knowledge of second order PDE and its method of solution.
C31.3	Determine Probabilities with respect to Random variables and in probability distributions.
C31.4	Compute the statistical parameters of some standard discrete and continuous probability distributions and moments
C31.5	calculate the parameters related to correlation, regression and obtain the knowledge of sampling Theory with context to test of hypothesis
CO. No.	**Description**
Course Outcomes:C32–Strength of Materials-I (U23CE301))	
C32.1	Determine the values of stresses and strains, elastic constants for various members of different materials
C32.2	Draw the shear force and bending moment diagrams for determinate beams and determine the bending stresses for beams.
C32.3	Evaluate the shear stresses for various sections , direct and bending stresses for columns, hoops and longitudinal stresses using lame's equations.
C32.4	Find torque, power transmitted by solid and hollow shaft, deflection of various springs.
C32.5	Determine the stresses on oblique planes by the graphical and analytical methods.
CO. No.	**Description**
Course Outcomes:C33–Engineering Geology (U23CE302)	
C33.1	To understand the role of engineering geology in civil engineering, including the classification and properties of minerals and rocks.
C33.2	To assess rock weathering processes and evaluate soil formation and classification, focusing on their engineering applications.
C33.3	To analyze geomorphological features and their engineering implications, and apply rock mechanics principles to site investigations.
C33.4	To evaluate geological considerations for selecting construction materials, including aggregates and stones for various engineering projects.
C33.5	To identify geological hazards such as earthquakes, tsunamis, and landslides, and assess their impact on engineering designs and safety.

CO. No.	Description
Course Outcomes:C34–Surveying and Geomatics (U23CE303)	
C34.1	Understand the basic principles of Surveying
C34.2	Computation of lengths, areas, bearings of given field work
C34.3	Understand the basic working principles of theodolite and total station
C34.4	Computation of setting out data for horizontal and vertical curves by various methods.
C34.5	Understand the basic concepts related to Photogrammetry, RS and GPS
C34.6	Application of various methods of surveying.

CO. No.	Description
Course Outcomes:C35 –Fundamentals of Electrical Engineering(U23EE305)	
C35.1	Analyze Electrical circuits to compute and measure the parameters of Electrical Energy.
C35.2	Apply the concepts of AC circuits to various elements and combinations.
C35.3	Explore the working principles and construction of DC machines and transformers.
C35.4	Understand the working principles and construction of both synchronous and asynchronous machines.
C35.5	Understand the different types of electrical installations, it's important to explore their unique purposes, components, and applications.
CO. No.	**Description**
Course Outcomes:C36–Strength of Materials Lab (U21IT4L1)	
C36.1	Determine the tensile strength of mild steel and draw the stress – strain curve by performing tension test
C36.2	Evaluate the compressive strength of bricks and find out the hardness of various metals.
C36.3	Find the impact value of steel specimen by Izod and Charpy test.
C36.4	Determine the value of Young's modulus of a simply supported steel beam and wooden beam by performing a deflection test.
C36.5	Determine the value of Young's modulus of a cantilever beam and shear strength of steel specimen of different diameters.
CO.No.	**Description**
CourseOutcomes:C37–Engineering Geology Lab(U23CE3L2)	
C37.1	Identify the physical and engineering properties of minerals and rocks.
C37.2	Analyze and measure structural aspects of rocks using models
C37.3	Carryout field experiment and studies such as VES
C37.4	Perform studies such as Stereoscopic study of photographs, seismic refraction survey and Slake durability test
C37.5	Understand the topographical and GSI maps
CO.No.	**Description**

CourseOutcomes:C38–Surveying and Geomatics Lab (U23CE3L3)	
C38.1	Compute lengths, areas and bearings of the given field work
C38.2	Understand the basic working principles of theodolite and total station.
C38.3	Compute setting out data for setting out of horizontal curves by various methods
C38.4	Computation of setting out data for horizontal and vertical curves by various methods
C38.5	Understand the basic concepts related to Photogrammetry, RS and GPS

CO.No.	Description
CourseOutcomes:C39–Programming Language–I (U23CS3L1)	
C39.1	Understanding the Fundamentals of programming and problem-solving Using a programming language.
C39.2	Develop Python programs stepwise by defining functions and calling them.
C39.3	Use Python lists, tuples, dictionaries for representing compound data.
C39.4	Develop the ability to identify, debug, and correct syntax, runtime, and logical errors in a program to ensure accurate program execution.
C39.5	Understand the basic principles of python.

Course Outcomes

Academic Year–2024-2025 **Semester: V**

Student will be able to

CO. No.	Description
Course Outcomes:C51 – Concrete Technology (U21CE501)	
C51.1	To analyze the manufacturing process of Ordinary Portland Cement and its hydration principles.
C51.2	To identify the properties and tests on Hardened Concrete.
C51.3	To perform concrete mix design using the IS method and evaluate quality control importance.
C51.4	To classify types of chemical and mineral admixtures and assess their influence on self-compacting and fiber-reinforced concrete.
C51.5	To differentiate various types of special concrete and evaluate their unique properties and applications in construction
CO. No.	**Description**
Course Outcomes:C52 – Environmental Engineering (U21CE502)	
C52.1	Aptitude to plan for protected water supply system need and requirements.
C52.2	Ability to design sequential unit operations in water treatment plants.
C52.3	Design for the safe disposal of waste water and its reuse.
C52.4	Analyze sustainable development of the society.
C52.5	Execute and maintain standards for sustainable development of the society.
CO. No.	**Description**
Course Outcomes: C53 – Structural Analysis-I (U21CE503)	
C53.1	Apply slope deflection method for indeterminate beams with and without sinking of supports subjected to point loads and udl on the entire span.
C53.2	Analyze the indeterminate beams and frames by moment distribution method due to point loads and UDL load system.
C53.3	Analyze the indeterminate beams and frames by Kani's method due to point loads and UDL load system.
C53.4	Analyze two hinged arches for point loads and uniformly distributed loads
C53.5	Analyze cables and suspension bridges with three hinged stiffened girder.

CO.No.	Description
Course Outcomes: C54 – Hydrology and Water Management (U21CE504)	
C54.1	Understand the basic concepts of Hydrology and its applications.
C54.2	Explain the importance of infiltration, factors affecting infiltration, measurement of infiltration.
C54.3	Analyze the importance of direct runoff hydrograph, unit hydrograph, definition, and limitations applications of unit hydrograph.
C54.4	Determination of design discharge for a water course. Depth and frequency of irrigation, irrigation efficiencies, water logging.
C54.5	Calculate by using IS standards for a canal design canal lining. Design discharge over a catchment, computation of design discharge, rational formula.

CO. No.	Description
Course Outcomes:C55 Air and Noise Pollution (U21CE508)	
C55.1	To know the basics of air pollution, its effects and to learn methods of monitoring with special reference to sampling and analysis techniques.
C55.2	To know factors that influence air pollution and to study plume behaviour for atmospheric stability conditions.
C55.3	To study properties of particulate pollution, its particle size distribution and get acquainted with the operation of settling chambers and wet dust scrubbers.
C55.4	To design air pollution controlling devices like settling chambers, wet dust scrubbers and fabric filters.
C55.5	To study the basics of acoustics, specification of various sound parameters along with indoor and outdoor noise propagation coupled with its effects on human health.
CO.No.	**Description**
Course Outcomes:C56 – Basics of Mechanical Engineering (U21ME509)	
C56.1	understand different sources of energy and their conversion process.
C56.2	Explain the working principle of steam boiler, hydraulic turbines, pumps, IC engines.
C56.3	Recognize the use and Working Principle of internal combustion engines.
C56.4	Understand the properties of common engineering materials and their applications in the engineering industry.
C56.5	Describe the power transmission system like belt drives and gear drives.
CO.No.	**Description**
Course Outcomes:C57 – Survey Camp(U21CE5L1)	
C57.1	Develop knowledge of field exposure.
C57.2	Apply surveying knowledge and tools effectively for projects.
C57.3	Develop knowledge of practical application of different survey works.
C57.4	Develop knowledge of practical application of different surveying equipments.
C57.5	Develop field constraints and also documentation of technical report.

CO.No.	Description
Course Outcomes:C58– Concrete Technology Laboratory (U21CE5L2)	
C58.1	To ascertain the properties of various ingredients of concrete by performing laboratory tests prescribed by Indian Standard Codes.
C58.2	To ascertain workability of fresh concrete and its influence on RCC structural works.
C58.3	To determine the strengths of hardened concrete in compression, bending and tension.
C58.4	To perform sieve analysis to study aggregate grain size distribution.
C58.5	To study the practical influence of bulking of sand by performing lab and field testing.
CO.No.	**Description**
Course Outcomes:C319-Environmental Engineering Lab(U21CE5L3)	
C59.1	Understand the compile and the use of experimental information.
C59.2	Ability to perform experiments on water sample for physical and chemical tests.
C59.3	Understand the turbidity in water sample.
C59.4	Assess the suitability Total hardness and Alkalinity.
C59.5	Ability to critically analyze and interpret data and present results on water samples.

LORDSINSTITUTEOF ENGINEERING&TECHNOLOGY

Department of Civil Engineering

Course Outcomes

Academic Year–2024-2025 **Semester: VII**

Student will be able to

CO. No.	Description
Course Outcomes:C71 – Estimation Costing and Specifications(U21CE701)	
C71.1	Estimate the quantities of materials prepare a detailed estimate for different types of structures.
C71.2	Prepare a detailed estimate for roads, culvert ant canals.
C71.3	Compute and prepare bar bending schedules.
C71.4	Prepare rate analysis for various quantities
C71.5	Assess the value of land and buildings
CO. No.	**Description**
Course Outcomes:C72 –Pre-stressed Concrete(U21CE702)	
C72.1	Explain the basic properties of Pre-stressed concrete constituents and concept of prestressing.
C72.2	Calculate pre-stress losses for simple pre-stressed concrete beams
C72.3	Analyze stresses developed in pre-stressed concrete members
C72.4	Design pre-stressed concrete beam to resist flexure and shear
C72.5	Estimate deflections of pre-stressed concrete member
CO. No.	**Description**
CourseOutcomes:C73–Foundation Engineering	
C73.1	Evaluate the bearing capacity of soil and allowable settlement.
C73.2	Analyze the stability of finite and infinite slopes using various methods
C73.3	Examine the earth pressure theories and stability of retaining walls.
C73.4	Analyze the capacity and settlement of shallow foundations.
C73.5	Analyze the capacity and settlement of pile foundations.
CO. No.	**Description**
Course Outcomes:C74 –Design of Steel Structures(U21CE704)	
C74.1	To know composition, types of structural steel with a sound understanding of various load combinations and design bolted and welded connections and detail.
C74.2	To understand various types of tension members in practice by focussing on factors affecting them with their modes of failure and also design tension members and its splicing.
C74.3	To have an understanding of various types of beams clearly distinguishing between laterally supported and unsupported beams with special reference to its shear strength, deflection , web buckling and web crippling.
C74.4	To study behavior of compression members, its failure modes and to design single and built-up compression members its connections and column bases.
C74.5	To study various types of trusses, purlins used for load transfer and to estimate loads acting on it including wind effects along with design of I-section purlin.

CO. No.	Description
Course Outcomes:C75–Contracts Management (U21CE705)	
C75.1	Learn the fundamentals of legal systems in construction.
C75.2	Decide suitable contracts for a given project scenario and stakeholders of contract
C75.3	Judge best form of contract for a specific project and design performance parameters
C75.4	Summarize tender processing and assess various contractual provisions in a tender documents and develop bidding strategy
C75.5	Formulate contract management processes involved in construction projects
CO. No.	**Description**
Course Outcomes:C76–Management of startup(U21CE705)	
C76.1	Understand Indian Industrial Environment, Entrepreneurship and Economic growth, Small, medium and Large-Scale Industries and types of Enterprises.
C76.2	Identify the Characters of Successful Entrepreneurs, Emergence of first-generation Entrepreneurs Conception and Evaluation of Ideas and their sources.
C76.3	Practice the Principles of Project Formulation, Analysis of Market Demand, Financial, Profitability and Technical analysis.
C76.4	Understand the concept of Intellectual Property Rights and Patent.
C76.5	Comprehend the Aspects of Start-Ups.
CO. No.	**Description**
Course Outcomes:C77–Mini Project(U21CE7P1)	
C77.1	Formulate a specific problem and give valuable and economical solution
C77.2	Develop model/models either theoretical/practical/numerical form
C77.3	Solve, interpret/correlate the results and discussions
C77.4	Conclude the results obtained
C77.5	Write the documentation in standard format
CO. No.	**Description**
Course Outcomes:C78–Computer Applications Lab(U21CE7L1)	
C78.1	Understand and apply basic commands and features in STAAD.Pro for structural analysis and design.
C78.2	Analyze and design fixed and continuous beams for various loading conditions using STAAD.Pro.
C78.3	Perform analysis and design of residential buildings considering all relevant loads (DL, LL, wind loads (WL), and earthquake loads (EL)).
C78.4	Demonstrate knowledge of administrator settings in GeoStudio, including user permissions and project management features.
C78.5	Develop proficiency in using STAAD.Pro and GeoStudio for structural analysis and design.