Course Outcomes

Academic Year–2025-2026 **Semester: III**

Student will be able to

CO. No.	Description
Course Outcomes:C31- Mathematics-III (U24MA302)	
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	Compute the statistical parameters of some standard discrete and continuous probability distributions and moments.
C31.4	calculate the parameters related to correlation, regression and obtain the knowledge of sampling Theory with context to test of hypothesis
C31.5	Analyze and check the validity of statement using testing of hypothesis for various parameters and goodness of fit

CO. No.	Description
Course Outcomes:C32 –Fundamentals of Electrical Engineering(U24EE305)	
C32.1	Apply Kirchhoff's laws and network theorems to analyze and solve basic DC electrical circuits.
C32.2	Analyze single-phase and three-phase AC circuits to determine voltage, current, and power parameters under various conditions.
C32.3	Describe the construction, operating principles, and applications of transformers, DC generators, and DC motors.
C32.4	Explain the construction, operation, and applications of synchronous and asynchronous machines used in electrical systems.
C32.5	Identify major components of electrical installations and perform basic calculations for energy usage and power factor correction.

CO. No.	Description
Course Outcomes:C33–Strength of Materials-I (U24CE301))	
C33.1	Determine the stresses, strains, various elastic constants and strain energy stored in a body.
C33.2	Analyze the different types of beams when subjected to various types of loads.
C33.3	Evaluate shearing stress, direct and bending stresses, circumferential and longitudinal stresses across thin and thick cylinders.
C33.4	Analyse the solid and hollow circular shaft, the types of springs.
C33.5	Determine the major and minor principal stresses across the oblique planes by using analytical and graphical solutions.

CO. No.	Description
Course Outcomes:C34–Engineering Geology (U24CE302)	
C34.1	Identify various minerals, rocks and analyze geological structures.
C34.2	Describe rock weathering, classify various soils and understand hydrogeology.
C34.3	Classify landforms based on their geomorphology and describe stress-strain behavior of rocks
C34.4	Compare and identify different types of stones and aggregate for any construction purpose
C34.5	Analyze the stability of cuts and slopes in various construction applications. Investigate and identify the geological problems in dams, reservoirs and tunnels, and explain the geological causes of earthquakes, tsunamis and landslides.

CO. No.	Description
Course Outcomes:C35–Building Materials and Construction Practices(U24CE303)	
C35.1	Identify and explain the properties, classification, and applications of basic construction materials such as stones, bricks, and concrete block
C35.2	Demonstrate knowledge of concrete constituents, cement chemistry, manufacturing, hydration, and Indian Standards.
C35.3	Classify and prepare mortars; explain the applications of timber and reinforcing steel in construction.
C35.4	Analyze the properties and applications of paints, varnishes, distempers, and emerging building materials.
C35.5	Apply methods of formwork, flooring, plastering, and waterproofing using advanced and sustainable construction materials.

CO.No.	Description
Course Outcomes:C36–Fluid Mechanics (U24CE304)	
C36.1	Understand and apply fundamental fluid properties and hydrostatic principles to measure pressure and analyze forces on submerged surfaces.
C36.2	Analyze various types of fluid flow using kinematic concepts and apply the continuity equation to flow problems.
C36.3	ApplyEuler's, Bernoulli's, and momentum equations to understand fluid motion and solve practical flow problems
C36.4	Use appropriate instruments and techniques to measure fluid pressure, velocity, and discharge in closed and open channel systems.
C36.5	Evaluate laminar and turbulent flows in pipes, calculate head losses, and analyze pipe networks using empirical relations and diagrams.

CO. No.	Description
Course Outcomes:C37–Strength of Materials Lab(U24CE3L1)	
C37.1	Determine the tensile strength of a steel specimen and draw the stress-strain curve.
C37.2	Determine the hardness of various metals using brinell's hardness testing machine.
C37.3	Evaluate the compressive strength of brick using UTM.
C37.4	Determine the modulus of elasticity of steel and timber by conducting bending test.
C37.5	Assess the modulus of rigidity of steel specimen by using torsion testing machine.

CO.No.	Description
CourseOutcomes:C38–Engineering Geology Lab(U24CE3L2)	
C38.1	Identify the Physical and Engineering properties of Minerals and Rocks.
C38.2	Analyze and measure Structural aspects of rocks using models.
C38.3	Carryout field experiment and studies such as VES
C38.4	Study the Topographical and GIS maps.
C38.5	Perform studies such as the Slake durability test.

CO. No.	Description
CourseOutcomes:C39–Design Thinking Lab (U24EP3L1)	
C39.1	Listen and interpret spoken language productively.
C39.2	Understand and apply the design thinking process.
C39.3	Conduct field research and empathize with user needs
C39.4	Define clear and relevant problem statements.
C39.5	Generate and evaluate innovative ideas collaboratively
C39.6	Create and test functional prototypes.
C39.7	Gather feedback and refine solutions iteratively.
C39.8	Communicate project outcomes through storyboards and pitches.
C39.9	Contribute to community development through ethical, sustainable design.

CO. No.	Description
Course Outcomes:C310–Programming Language–I (U24IT3L1)	
C310.1	Apply the principles of Object-Oriented Programming and demonstrate usage of classes and objects in Java.
C310.2	Apply conditional and loop control statements to solve real-time problems through structured Java programs.
C310.3	Implement static polymorphism using method overloading and understand its practical utility
C310.4	Work with arrays and perform various operations such as sorting, summing, and matrix manipulation in Java.
C310.5	Develop simple Java applications integrating programming logic, constructors, and modular functions for practical use.

Course Outcomes

Academic Year–2025-2026 **Semester: V**

Student will be able to

CO. No.	Description
Course Outcomes:C51 – Concrete Technology (U23CE501)	
C51.1	List the major constituents, types, and manufacturing methods of Portland cement.
C51.2	Explain the hydration process, chemical reactions, and the development of microstructure in cement paste.
C51.3	Perform standard physical tests on cement and fresh concrete as per IS codes (e.g., fineness, consistency, slump test, compaction factor).
C51.4	Analyze the effects of temperature, time, and admixtures on workability and setting time of concrete.
C51.5	Evaluate the appropriate mixing, placing, compaction, and curing techniques to enhance concrete performance at site conditions.

CO. No.	Description
Course Outcomes:C52 – Environmental Engineering (U23CE502)	
C52.1	Aptitude to plan for protected water supply system needs 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 (U23CE503)	
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 three hinged and 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 (U23CE504)	
C54.1	Compute mean Rainfall, Develop Intensity-Duration-Duration curves
C54.2	Estimate Design flood for Water Resources structures
C54.3	Compute drawdown and yield in aquifers
C54.4	Apply Principles of probability to hydrological problems and develop Rainfall – Runoff relationship
C54.5	Describe irrigation methods, soil-water-plant relationships, and crop water requirements

CO. No.	Description
Course Outcomes:C55 Construction Project and Planning (U23CE508)	
C55.1	Implement construction practices and management systems in construction projects.
C55.2	Utilize various resource management techniques in construction projects.
C55.3	Leverage project management software for optimizing resources in construction projects
C55.4	Apply optimization techniques in the monitoring and control of construction projects.
C55.5	Employ current construction practices in managing infrastructure projects.

CO. No.	Description
Course Outcomes:C56 – Basics of Mechanical Engineering (U23ME509)	
C56.1	Recall and list various energy sources, thermodynamic laws, types of boilers, turbines, pumps, IC engines, and engineering materials
C56.2	Explain the principles of thermodynamics, steam formation, turbine operations, IC engine cycles, material properties, and joining processes.
C56.3	Apply thermodynamic concepts, steam properties, and mechanical principles to solve simple numerical problems on energy conversion systems like boilers, turbines, engines, and belt/gear drives
C56.4	Analyze the performance of IC engines, pump systems, belt and gear drives using efficiency calculations, and evaluate material suitability for industrial applications
C56.5	Evaluate the environmental impact of different energy sources and propose appropriate materials, power transmission systems, and joining processes for sustainable mechanical applications

CO. No.	Description
Course Outcomes:C57 – Survey Camp(U23CE5L1)	
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 equipment's
C57.5	Develop field constraints and also documentation of technical report.

CO. No.	Description
Course Outcomes:C58– Concrete Technology Laboratory (U23CE5L2)	
C58.1	Assess the suitability of different ingredients of concrete by conducting various test prescribed by relevant IS codes
C58.2	Assess the work ability of concrete and recommend its suitability for structural works
C58.3	Determine the strengths of hardened concrete in compression, flexure and split tensile tests
C58.4	Determine the fineness of fine aggregate
C58.5	Assess the suitability of Bulk and compact densities of fine and coarse aggregates

CO. No.	Description
Course Outcomes:C59-Environmental Engineering Lab(U23CE5L3)	
C59.1	Understand the compile and 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

Course Outcomes

Academic Year–2025-2026 **Semester: VII**

Student will be able to

CO. No.	Description
Course Outcomes:C71 – Estimation Costing and Specifications(U21CE701)	
C71.1	Acquire knowledge on specification and detailed estimation of buildings used in construction.
C71.2	To equip the students with current practice in detailed estimation of roads, culvert and canals.
C71.3	To learn the estimation of reinforcement quantities.
C71.4	Learn to prepare rate analysis for various items of works in construction.
C71.5	Evaluate the actual value of land and building.

CO. No.	Description
Course Outcomes:C72 –Pre-stressed Concrete(U21CE702)	
C72.1	Apply the concept of prestressing and determine the losses of prestress.
C72.2	Analyze the prestressed concrete beam and suggest the cable profile for the beam.
C72.3	Analyze the prestressed continuous beam and determine the concordant cable profile.
C72.4	Design the prestressed concrete beam for flexure and shear.
C72.5	Estimate the deflection of a prestressed concrete beam and design the end block.

CO. No.	Description
CourseOutcomes:C73–Foundation Engineering (U21CE703)	
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 learn how to design simple and eccentric bolted and welded connection
C74.2	To understand types of tension members, its failure modes and to learn design of tension members and its splices.
C74.3	To differentiate between laterally supported and unsupported beams and to learn design of various types of beams following the codal provisions.
C74.4	To learn design of compression members in the form of simple and built up along columns along with lacing, battening and column bases.
C74.5	To develop an understanding of various types of loads that act on a roof truss estimating their magnitude and learn design of purlins along with end bearings.

CO. No.	Description
Course Outcomes:C75–Contracts Management (U21CE705)	
C75.1	Understand the fundamentals of legal systems in construction Contracts
C75.2	Develop a comprehensive contract management plan incorporating contract selection, stakeholder identification, and risk management strategies.
C75.3	Analyze complex project requirements to determine the optimal contract form and performance parameters.
C75.4	Administer construction contracts to manage and resolve disputes through effective negotiation and mediation techniques.
C75.5	Analyze and apply contract law principles to ensure effective construction contract management and minimize potential disputes.

CO. No.	Description
Course Outcomes:C76–Management of startup(U21CE705)	
C76.1	Understand Indian Industrial Environment, Entrepreneurship and Economic growth, Small and Large Industries, Types and forms of enterprises.
C76.2	Identify the characteristics of 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 and profitability analysis and technical analysis.
C76.4	Understand the concept of Intellectual Property Rights and Patents
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 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.