

**Course Outcomes**

Academic Year–2024-2025

Semester: IV

Student will be able to

CO.No.	Description
Course Outcomes:C41- English For Technical Communication(U23EN401)	
C41.1	Apply technical communication skills effectively.
C41.2	Adapt different types of official correspondence successfully.
C41.3	Construct report writing productively using various techniques.
C41.4	Develop the skills of manual writing adequately.
C41.5	Interpret the information transfer from verbal to non-verbal data and vice-versa completely.
CO.No.	Description
Course Outcomes:C42–Strength of Materials-II (U23CE401)	
C42.1	Recall and explain different methods for determining the slope and deflection of beams.
C42.2	Illustrate shear force and bending moment diagrams for propped cantilever, fixed, and continuous beams.
C42.3	Apply Euler’s and Rankine’s theories to analyze column stability under various loading conditions.
C42.4	Analyze deflections in beams, frames, and trusses using energy methods such as Castigliano’s theorem and the unit load method.
C42.5	Evaluate stresses in beams subjected to unsymmetrical bending and determine the shear center for different cross-sections.
CO.No.	Description
Course Outcomes:C43–Hydraulics and Hydraulic Machinery (U23CE402)	
C43.1	Evaluate the various properties of fluid, analyse fluid flow and forces.
C43.2	Apply Euler’s, Bernoulli’s and Momentum equation to solve fluid dynamic problems
C43.3	Apply laws related to laminar and turbulent flow in pipes.
C43.4	Apply the concepts of open channel flow and design the efficient channel cross section.
C43.5	Design the impulse turbines, run the turbines under efficient conditions.

CO.No.	Description
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Course Outcomes:C44–Building Materials and Construction Practices (U23CE403)	
C44.1	Understand and describe the properties and types of materials commonly used in construction, such as cement, concrete, bricks, steel, timber, and plastics.
C44.2	Assess the impact of local environmental conditions on the choice of building materials.
C44.3	Able to understand different types of mortars, manufacturing process of concrete and steel
C44.4	Engage in hands-on activities or projects to apply knowledge of materials and construction practices
C44.5	Understand the importance of sustainable construction practices, including the use of eco-friendly materials and energy-efficient construction techniques

CO.No.	Description
Course Outcomes:C45 –Transportation Engineering (U23CE404)	
C45.1	To understand the importance of transportation and characteristics of road transport.
C45.2	To know about the history of highway development, surveys and classification of roads.
C45.3	To study about the geometric design of highways
C45.4	To study about traffic characteristics and design of intersections.
C45.5	To know about the pavement materials and design

CO.No.	Description
Course Outcomes:C46–Soft Skills & Employability Skills Lab (U23EN4L1)	
C46.1	Utilize soft skills at professional level effectively.
C46.2	Function efficiently in multidisciplinary settings by using leadership skills.
C46.3	Build confidence through interpersonal skills utterly.
C46.4	Write Resume/CV and cover letter comprehensively.
C46.5	Enhance the skills of group discussion and interview perfectly.

CO.No.	Description
CourseOutcomes:C47–Hydraulics and Hydraulic Machinery Lab(U23CE4L1)	
C47.1	Competence in understanding flow phenomenon in open channels.
C47.2	Ability to analyze the force acting due to jets concept and its application in hydraulic machines
C47.3	Competence in working principles of hydraulic pumps and turbines.
C47.4	To interpret the results obtained in the laboratory for various experiments.
C47.5	Get the knowledge on different hydraulic machinery and write a technical laboratory report
CO.No.	Description

Course Outcomes: C48–Transportation Engineering Lab (U23CE4L2)	
C48.1	Understand the characteristics of Bitumen by performing basic tests.
C48.2	Understand the characteristics of Coarse Aggregate used in pavements by performing basic tests.
C48.3	Collect traffic data by conducting traffic volume studies at intersections and sections of roads
C48.4	Analyze traffic flow characteristics from the collected traffic data
C48.5	Select suitable software to analyze the level of service and delays for peak hour.
CO.No.	Description
Course Outcomes: C49–Programming Language–II (U23CS4L3)	
C49.1	Present a Comprehensive Overview of a fundamental principals and concepts that from the basis of Python Programming, emphasizing its syntax and key Features.
C49.2	Create a Comprehensive outline of a control statements and functions in Python by writing an illustrative program that demonstrates their practical application.
C49.3	Demonstrate file handling operations, including reading from and writing to files, while also showcasing the use of relevant packages to enhance functionality.
C49.4	Interpret and explain the principals of object - oriented programming in Python.
C49.5	Apply the most suitable libraries in Python to effectively solve simple programming challenges , showcasing how these libraries can streamline the development process.

**Course Outcomes**

Academic Year–2024-2025

Semester: VI

Student will be able to

CO.No.	Description
Course Outcomes:C61 – Geotechnical Engineering (U21CE601)	
C61.1	Identify and classify the soil and their index properties.
C61.2	Describe the mechanisms of the process of compaction and consolidation of soils,
C61.3	Evaluate the characteristics of compaction and consolidation of soils
C61.4	Analyze the soils for their shear strength and predict the stability of slopes
C61.5	Evaluation of maximum dry density at optimum moisture content
CO.No.	Description
Course Outcomes:C62 – Design of Reinforced Concrete Structures (U21CE602)	
C62.1	To analyze and design singly reinforced beams by using limit state method
C62.2	To analyze and design doubly reinforced beams and T-beams by using limit state method.
C62.3	To analyze and design beams for shear, torsion and development length
C62.4	To analyze and design one-way and two-way slabs by using limit state method.
C62.5	To design columns subjected to axial load, uniaxial and biaxial bending and also various types of footings.
CO.No.	Description
Course Outcomes: C63 – Structural Analysis-II (U21CE603)	
C63.1	The concept of influence lines, moving loads is explained to assess the maximal S.F. and B.M. for the same section
C63.2	Analysis of indeterminate structures by stiffness matrix method.
C63.3	Analysis of indeterminate structures by flexibility matrix method
C63.4	Analysis of indeterminate structures by direct element method.
C63.5	Analysis of Building frames subjected to Lateral loads,
CO.No.	Description
Course Outcomes: C64 – CONSTRUCTION PROJECT AND PLANNING(U21CE604)	
C64.1	Understand the significance, objectives, and functions of construction project planning.
C64.2	Define and differentiate between various types of events, activities, dummies, and networks in construction management.
C64.3	Understand the components of project costs, distinguishing between direct and indirect costs.
C64.4	Comprehend the conditions of contracts and related labor laws like the Workmen Compensation Act and Contract Labor Act.
C64.5	Understand the safety management function and the role of safety responsibility and accountability in construction projects.

CO.No.	Description
Course Outcomes:C65. Basics Of 3-D Printing(U21ME608)	
C65.1	Define the fundamentals of 3D printing, its historical development, process chain, advantages, and classification.
C65.2	Explain and compare liquid-based, solid-based, and powder-based 3D printing systems with their working principles, applications, and limitations.
C65.3	Apply knowledge of different 3D printing processes to select suitable techniques for various industrial applications.
C65.4	Analyze the impact of automated 3D printing technologies and their advantages over conventional machining processes.
C65.5	Create innovative solutions using 3D printing for applications in design, engineering, medical, aerospace, automotive, and other industries.
CO.No.	Description
Course Outcomes:C66 – Computer Aided Civil Engg Drafting Lab (U21CE6L1)	
C66.1	Comprehend the basic principles of building planning and drawings as per codal provisions
C66.2	Apply the tools of AUTOCAD software to prepare structural drawings of various building components
C66.3	Prepare plan, elevation and sectional drawings of residential buildings in AutoCAD software
C66.4	Execute plan, elevation and sectional drawings of hostel, hospital, school buildings in AutoCAD software.
C66.5	Develop any type of building drawing using CADD software
CO.No.	Description
Course Outcomes:C67– Geotechnical Engg Laboratory (U21CE6L2)	
C67.1	Understand the broad principles of Soil Mechanics in Laboratory.
C67.2	Characterize and classify the soils in Laboratory
C67.3	Able to estimate seepage stresses under various loading conditions and compaction characteristics in Laboratory.
C67.4	Analyse the compressibility of the soils in Laboratory
C67.5	Understand the strength of soils under various drainage conditions in Laboratory
CO.No.	Description
Course Outcomes:C68– Research Paper Writing Lab (U21EN6L1)	
C68.1	Demonstrate the ethics and nuances of plagiarism
C68.2	Construct the topic of research and formulate hypothesis
C68.3	Analyze the research process elaborately
C68.4	Organize and rephrase the data in a sequential order as per forma
C68.5	Interpret the data by the use of methodology and discussion
CO.No.	Description

Course Outcomes:C69-Seminar (U21CE6P4)	
C69.1	Understand the current needs of the industry.
C69.2	Understand techniques, processes and tools used in the industry
C69.3	Prepare technical report on an industrial project
C69.4	Present the technical experience at an industry or through the mini-project
C69.5	Present the importance of delivering the content

CO.No.	Description
Course Outcomes:C610-Aptitude and Reasoning Skills Lab (U21MA6L4)	
C610.1	Acquire the knowledge of Data analysis and its interpretation through percentages and measures of central tendency.
C610.2	Calculate the problems related to number series and reasoning ability
C610.3	Analyze the number system pattern and determine profit and losses.Evaluate proportions and understand time framework situations
C610.4	Compute problems based on combinatorics, clock and calendar
C610.5	Determine the parameters related to plane figures and solid figures



Course Outcomes

Academic Year–2024-2025

Semester: VIII

Student will be able to

CO. No.	Description
Course Outcomes:C81 – Repair and Rehabilitation of Structures (U21CE803)	
C81.1	Identify and evaluate the causes of deterioration in structures and factors affecting durability
C81.2	Analyze structural damages and recommend appropriate diagnostic techniques
C81.3	Apply suitable materials and repair techniques for restoring damaged structures.
C81.4	Develop sustainable maintenance strategies to improve the service life of structures.
C81.5	Integrate advanced repair materials and modern methods to address complex structural issues.
CO.No.	Description
Course Outcomes:C82 –GIS and Remote Sensing(U21CE904)	
C82.1	Describes basic concepts of GIS, including data models, coordinate systems, and spatial data creation techniques.
C82.2	Illustrates the components of GIS, including hardware, software, data structures, and input/output methods.
C82.3	Utilize spatial data analysis, remote sensing principles, and terrain modelling for geospatial interpretation.
C82.4	Evaluate and interpret remote sensing data using satellite classifications, sensor types, and visual techniques for terrain and environmental analysis.
C82.5	Design and evaluate GIS and Remote Sensing-based solutions for urban, water resources, and environmental management through advanced image processing and classification techniques.
CO.No.	Description
CourseOutcomes:C83–E - Marketing	

C83.1	Analyse the influence of marketing, operations and human resources in real-time delivery.
C83.2	Demonstrate cognitive knowledge of the skills required in conducting online research and research on online markets, as well as in identifying, assessing and selecting digital market opportunities.
C83.3	Explain emerging trends in E-marketing and critically assess the use of E-marketing tools by applying relevant marketing theories and frameworks.
C83.4	Examine and evaluate issues in adapting to globalised markets that are constantly changing and increasingly networked.
C83.5	Summarize the traditional marketing mix within the context of a changing and extended range of digital strategies and tactics.

CO.No.	Description
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Course Outcomes:C84 –Project(U21CE8P1)

C84.1	Conduct literature survey/industrial visits to identify real-world problems, Develop innovative project ideas that contribute to infrastructure and industrial growth.
C84.2	Apply basic engineering fundamentals to practical applications, Focus on sustainable solutions in civil and structural and environmental engineering projects.
C84.3	Work effectively in a team to foster innovation and research
C84.4	Develop problem-solving skills using advanced tools and methodologiesUtilize cutting-edge software (such as Revit, AutoCAD, and ANSYS) to improve project feasibility.
C84.5	Correlate theoretical and experimental/simulation results to derive meaningful inferencesEnsure that research findings support climate-resilient and sustainable construction techniques.

CO.No.	Description
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Course Outcomes:C85 –Comprehensive viva-voce (U21CE8P2)

C85.1	Face interview both in the academic and the industrial sector.
C85.2	Apply theoretical knowledge to solve real-world engineering problems and case studies effectively
C85.3	Integrate knowledge from multiple subjects to develop a holistic approach to problem-solving
C85.4	Analyze complex engineering problems and provide logical, well-structured explanations.
C85.5	Exhibit professional ethics, teamwork, and a commitment to continuous learning and self-improvement.