

Department of Civil Engineering

Program: M.Tech- Construction Technology & Management

Academic Year 2024-25

Course Code	Name of the Course	No. of CO	CO Description
23MT5003	NM	CO1	Apply numerical methods like bisection, Newton Raphson methods to find root of the transcendental equations . Using Numerical Techniques finding Solution of Linear equations
		CO2	Apply Optimality Criteria, and Bracketing methods - Exhaustive Search Method, Bounding Phase Methods to solve the real world problems.
		CO3	Applying interpolation methods like Newton forward and backward interpolation, Newton divided difference interpolation, Lagrange interpolation to find missing information of real data
		CO4	Apply Numerical approach to solve Partial Differential Equations and their applications like one and Two dimensional equations.
		CO5	Applying numerical techniques to solve real world problems and their applicability and discussing their related project problems
23CE5104	ASC	CO1	Gain a solid understanding of the basic components of concrete including cement, aggregates, water, and their interactions.
		CO2	Identify and describe the various types of chemical and mineral admixtures used in concrete, such as superplasticizers, air-entrainers, retarders, accelerators, and silica fume.
		CO3	Understand the implications of admixture interactions with other concrete ingredients and environmental conditions

		CO4	Explore various types of special concretes including high-performance concrete, self-compacting concrete, lightweight concrete, and fiber-reinforced concrete.
		CO5	Acquire the skills to design concrete mixes using both traditional methods and newer approaches that include admixtures and special ingredients.
		CO6	Learn the design principles and construction techniques of special concrete.
23CE5121	CPSC	CO1	Understand the concepts of project management for practical application
		CO2	Apply mathematical logic in the planning and scheduling of a project
		CO3	Apply concepts to estimate the project cost by using tools
		CO4	Apply concepts to maintain the construction documents in the project
		CO5	Apply and demonstration about the construction planning and scheduling and control of the civil engineering projects
23CE5123	PECT	CO1	understand about the prefabrication techniques and methodology

		CO2	understand the knowledge of the construction methods involved in these PES elements as for the present usage
		CO3	Understand the prefabricated units with comparison of normal analysis for general elements
		CO4	Apply the various joints for the connections
		CO5	Evaluate the different emerging construction technologies
23CE5224	MCM	CO1	Understanding Mechanized Construction
		CO2	Application of Machinery in Construction Projects
		CO3	Machinery Selection and Utilization
		CO4	Operation and Maintenance of Construction Machinery
		CO5	Safety Procedures and Regulations

		CO6	Cost Analysis and Optimization
		CO7	Environmental Impact Assessment
23CE5225	BIMCA	CO1	Explain the Fundamentals of BIM: Describe the core principles and benefits of Building Information Modeling (BIM) in construction projects.
		CO2	Classify BIM Uses: Identify and classify different uses of BIM, explaining their purposes and objectives within a construction project.
		CO3	Design the BIM Project Execution Process: Develop a detailed plan for executing BIM in a project, outlining the necessary stages and tasks for successful implementation.
		CO4	Outline Project Information and BIM Goals: Describe the essential project information and BIM goals required for successful implementation, explaining their impact on overall project outcomes.
		CO5	Developing BIM Model using Revit Software and submission of project report
23IE5149	TP	CO1	Understand Literature Review and Problem Identification
		CO2	Understand Methodology and Implementation

23IE5201	ERD	CO1	Analyze existing research to identify a focused and answerable research question or develop a well-defined hypothesis
		CO2	Evaluate different research designs based on their strengths and weaknesses in relation to the chosen research question and data needs.
		CO3	Apply appropriate data collection methods considering the chosen research design and data characteristics.
		CO4	Analyze and interpret data using relevant data analysis methods to address the research question
23IE6150	DIS	CO1	Identify and articulate research problems within their field of study, demonstrating an understanding of current research gaps.
		CO2	Design and execute research methodologies, employing relevant techniques for data collection, analysis, and interpretation.
		CO3	Demonstrate advanced critical thinking skills, analyzing research findings within the context of existing literature to draw meaningful conclusions.
23IE6250	DIS	CO1	Demonstrate a comprehensive understanding of a chosen research topic and its significance in the broader field.
		CO2	Apply appropriate research methodologies to address research questions

		CO3	Analyze and interpret data effectively, drawing meaningful conclusions
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