

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal, MP)

CIVIL ENGINEERING DEPARTMENT

Flexible Scheme: Course Outcomes (COs)

The course outcomes of the courses of **2021 admitted batch** of postgraduate course of Civil Engineering Program (**Master of Engineering in Construction Technology & Management**) are given below:

Courses	Course Outcome's	
After the completion of this course, students will be able to:		
510121: Construction Materials, Machines & Techniques	CO1	Define the relevant characteristics of concrete and its ingredients.
	CO2	Explain the details of various stages in concrete production.
	CO3	Design concrete mix for specific requirements using codal provisions.
	CO4	Determine the suitability of special concretes for specific requirements.
	CO5	Evaluate the suitability of various equipments for a construction site
	CO6	Apply shop and insitu methods and the pre-stressing concepts for a construction project.
510113: Contract Management	CO1	Write the specifications and perform rate analysis of various construction items
	CO2	Prepare estimate of building/road works and valuation.
	CO3	Differentiate between rights and responsibilities of Architect, Engineer, Contractor and Owner in a construction project.
	CO4	Apply the provisions of various acts and laws applicable in construction.
	CO5	Draft tender document for construction project.
	CO6	Identify the role of project participants and financing of infrastructure projects.
510114: Maintenance Management	CO1	Identify various services required in a building.
	CO2	Carry out planning of fire fighting system for a building.
	CO3	Develop a management strategy for maintenance of building services in a building.
	CO4	Design a sustainable building services plan for a building.
510115: Infrastructure	CO1	Develop plan for infrastructure considering operation, maintenance, sustainability and life cycle cost.
	CO2	Identify various risks in Infrastructure projects.

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Development	CO3	Illustrate management and disaster management needs for Infrastructure systems
	CO4	Apply I. T. Tools in various phases of Infrastructure system.
510116: Formwork for Concrete Structures	CO1	Explain the concept of formworks.
	CO2	Explain various types of formworks.
	CO3	Evaluate the use of formworks in various structures.
	CO4	Assess the failure issues in formworks.
800108: Organizational Behaviour & Management	CO1	Explain the environment levels in management
	CO2	Analyse the organizational structure and its design.
	CO3	Apply the stress management and communication in organization
	CO4	Develop the leadership quality for updating the organisation structure
	CO5	Evaluate the existing management activity in the world
800109: Safety & Quality Management	CO1	Explain the quality management systems and utilize the ISO 9000 family of standards.
	CO2	Improve the quality of the project through tools and techniques.
	CO3	Perform the environmental impact assessment (EIA) for construction projects towards quality.
	CO4	Analyse the quality assurance and quality control, quality improvement tools and techniques;
	CO5	Evaluate the contract and inspection procedures
	CO6	Identify the safety management practices in construction industry.
510119: Construction Lab	CO1	Check physical properties of soil, aggregate, and concrete.
	CO2	Check strength properties of soil, aggregate, and concrete.
	CO3	Differentiate the flow properties and stresses of soil.
	CO4	Apply various non-destructive testing method on concrete.
510120: Self Learning / Presentation	CO1	Analyze contemporary issues in civil engineering & its allied areas through literature survey
	CO2	Distinguish state of art & relevance of the topic in national & international
	CO3	Demonstrate good oral & written communication skills
	CO4	Develop poster and power point presentations for effective communication
	CO5	Display lifelong learning
530211 Project Economics & Financing	CO1	Apply principles of managerial economics.
	CO2	Perform demand analysis in construction sector.
	CO3	Workout time value of money and cost of capital

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	CO4	Analyze break-even point and appraisal of projects.
	CO5	Determine appropriate means of financing a project.
	CO6	Monitor the various cost components of construction projects by using accounting procedures.
510212: Construction Cost Management	CO1	Explain the concept of trade-off in construction.
	CO2	Analyze the trade-off phenomenon in construction using MCDM.
	CO3	Evaluate the multi-objective trade-off problems using metaheuristic methods.
	CO4	Apply the value engineering and LCC in construction projects.
	CO5	Evaluate the labour, material and equipment in construction productivity.
510213: Construction Project Management	CO1	Identify the various approaches of project management and organization structure.
	CO2	Classify the various project network techniques and its applicability in project management.
	CO3	Analysis and schedule the project using PERT and PN method.
	CO4	Determine the applicability of resources and finding the optimum cost and optimum project duration.
	CO5	Apply the concepts of material, inventory and risk management tools in construction project
510219: Computational Laboratory for Construction Management	CO1	Apply MATLAB in Construction Projects
	CO2	Apply Primavera and MS project in Construction Projects.
	CO3	Apply BIM 4D in Construction Projects.
. 800208: Sustainable Materials and Green Buildings	CO1	Explain the properties of various types of sustainable materials used in construction industry accordingly.
	CO2	Distinguish the suitability of sustainable and green practices in construction sector
	CO3	Perform the environmental impact assessment (EIA) for construction projects towards quality.
	CO4	Assess an existing building on the norms available by GRIHA for transforming existing buildings to sustainable buildings.
	CO5	Examine the impact of building materials choices by auditing the resources used to maintain the materials in their building and discussing the economic, environmental, and health impacts
	CO6	Identify the potential of construction and demolition wastes in order to meet the sustainable development goals.
530218: Self Learning /	CO1	Analyze contemporary issues in civil engineering & its allied areas through literature survey
	CO2	Distinguish state of art & relevance of the topic in national & international
	CO3	Demonstrate good oral & written communication skills
	CO4	Develop poster and power point presentations for effective communication

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Presentation	CO5	Display lifelong learning
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