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 **2022 admitted batch** from 1st year of the undergraduate course of Civil Engineering Program are given below:

Courses	Course Outcome's	
After the completion of this course, students will be able to:		
110122: Engineering Mechanics	**CO1**	Apply basic laws of Mechanics for different types of force systems.
	CO2	Apply the Laws of friction in engineering problems.
	CO3	Apply the concept of equilibrium in statically determinate beams and trusses.
	CO4	Determine the properties of areas for different shapes.
	CO5	Apply the basics of Kinematics and Kinetics of particles in motion and undamped free vibration.
110121: Building Materials & Construction	**CO1**	**Explain** the basic elements of buildings, engg. materials & construction.
	CO2	**Evaluate** the properties of various materials like cement, aggregate, concrete, admixture, brick , stone etc.
	CO3	**Distinguish** the suitability of building materials in the construction of elements of buildings.
	CO4	**Evaluate** various types of concrete in building construction accordingly.
	CO5	**Apply** various techniques for finishing & protection works of various elements of building.
110121 (P): Building Materials & Construction	**CO1**	**Determine** the properties of cement, sand & aggregate as per IS code
	CO2	**Determine** the workability of concrete for suitability of concrete mix in different construction works
	CO3	**Evaluate** compressive strength of various concrete mixes
	CO4	**Determine** physical properties of brick by experiment and practice accordingly
	CO5	**Examine** the properties of the cement mortar for various elements of the buildings
3000003: Environmental Engineering	**CO1**	Explain the fundamental concepts of energy, ecosystems & environment
	CO2	Recognize various environmental problems and their effects.
	CO3	Apply various air & water remediation methods.
	CO4	Apply waste management techniques.
	CO5	Apply the concepts of sustainability

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110221: Surveying	**CO1**	**Explain** the techniques used for linear & angular measurements in surveying.
	CO2	Explain the various concepts of leveling, contours and its application.
	CO3	Apply various methods of surveying
	CO4	Analyse various techniques of controlling points
	CO5	Evaluate various methods for curve setting.
110222 (P): Survey Practice Lab	**CO1**	**Follow** the guidelines for field surveying
	CO2	**Follow** the working principles of survey instruments for measurements
	CO3	**Measure** horizontal & vertical angle by theodolite for traversing and leveling
	CO4	**Determine** tachometric constants for linear measurements by tachometry
	CO5	**Create** a simple circular curve by using Rankine's method for alignment
	CO6	**Develop** contour map by using tachometer & total station.
110222: Strength of Materials	**CO1**	**Apply** the concepts of stress and strain.
	CO2	Apply theory of simple bending in beams.
	CO3	Apply the concept of pure torsion in shaft and determine the stresses in pressure vessels.
	CO4	Evaluate columns & struts with different end conditions.
	CO5	Analyse the structure using geometrical methods and virtual work to determine the deflection.
110222 (P): Strength of Materials	**CO1**	**Evaluate** properties of material by impact test
	CO2	**Evaluate** properties of material by hardness test
	CO3	**Evaluate** properties of material by tensile test
	CO4	**Determine** compressive & flexural strength of materials