



**BANSAL INSTITUTE OF RESEARCH & TECHNOLOGY,
BHOPAL
Kokta Anand Nagar, Bhopal**



DEPARTMENT OF CIVIL ENGINEERING

COURSE OUTCOMES (COs)

Semester: III

Course Name: Mathematics-III		Course Code: BT-301
Students will be able to:		
CO1:	Apply numerical methods to solve algebraic, transcendental, simultaneous linear equations, and ordinary differential equations encountered in engineering.	
CO2:	Understand and apply interpolation techniques to estimate unknown values and solve engineering and scientific problems.	
CO3:	Use appropriate numerical techniques to obtain solutions of ordinary differential equations arising in engineering applications.	
CO4:	Apply integral transform methods, such as Laplace and Fourier transforms, to solve ordinary and partial differential equations.	
CO5:	Analyze engineering problems using probability theory by applying discrete and continuous probability distributions to mathematical models.	

Course Name: Construction Materials		Course Code: CE-302
Students will be able to:		
CO1:	Classify traditional, conventional, and modern construction materials and explain their characteristics and applications in civil engineering.	
CO2:	Understand the properties and practical uses of construction materials used in various building and infrastructure projects.	
CO3:	Perform and interpret standard tests on construction materials to evaluate their quality and suitability for engineering applications.	
CO4:	Explain the properties, types, and applications of finishing materials such as paints, varnishes, enamels, and related products used in construction.	
CO5:	Identify the properties and applications of miscellaneous construction materials, including bitumen, asphalt, and similar materials, and explain their role in different construction works.	



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Course Name: Surveying		Course Code: CE-303
Students will be able to:		
CO1:	Understand the working principles of surveying instruments and select appropriate instruments for different surveying applications.	
CO2:	Perform linear and angular measurements using various surveying methods such as triangulation, traversing, and tacheometry.	
CO3:	Apply surveying principles in fieldwork to collect accurate data and solve practical surveying problems.	
CO4:	Use specialized surveying techniques for the planning, design, and construction of roads, highways, and railway projects.	
CO5:	Understand and apply topographical, hydrographical, and aerial surveying techniques for mapping and civil engineering applications.	

Course Name: Building Planning & Architecture		Course Code: CE-304
Students will be able to:		
CO1:	Identify the major components of buildings, such as foundations, doors, windows, roofs, and stairs, and understand their functions in building construction.	
CO2:	Prepare and interpret architectural drawings for residential, commercial, and public buildings by applying basic planning and design principles.	
CO3:	Understand the importance of building services such as water supply, drainage, electrical systems, fire safety, and sustainable features in different types of buildings.	
CO4:	Develop the ability to read, prepare, and interpret building drawings while applying the principles of architectural planning and design in professional practice.	
CO5:	Understand the concepts of perspective drawing and apply them for the visualization, planning, and presentation of buildings and town planning projects.	



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Course Name: Strength of Material		Course Code: CE-305
Students will be able to:		
CO1:	Understand the fundamental concepts of solid mechanics, including stress, strain, strain energy, torsion, and related mechanical properties of materials.	
CO2:	Analyze structural members by determining shear force, bending moment, torsion, buckling, and crushing effects under different loading conditions.	
CO3:	Apply design principles to evaluate the strength, stability, and failure of structural members subjected to various types of loads.	
CO4:	Determine the slope and deflection of beams and other structural members under point loads, uniformly distributed loads, and applied moments.	
CO5:	Identify different types of beams, columns, and shafts and select suitable structural members based on loading conditions and engineering requirements.	

**Approved By: -
Head of Department**