



**BANSAL INSTITUTE OF RESEARCH & TECHNOLOGY,
BHOPAL**

Kokta Anand Nagar, Bhopal



DEPARTMENT OF CIVIL ENGINEERING

COURSE OUTCOMES (COs)

Semester: I

Course Name: Engineering Chemistry		Course Code: BT-101
Students will be able to:		
CO1:	Develop an understanding of water hardness, water quality analysis, boiler water problems, and water softening techniques for industrial applications.	
CO2:	Acquire knowledge of the functions, lubrication mechanisms, properties, and engineering applications of lubricants.	
CO3:	Understand the principles of polymer chemistry and the major chemical reactions involved in polymer synthesis.	
CO4:	Gain an understanding of corrosion processes, corrosion control, phase equilibria of one- and two-component systems, and the use of spectroscopic techniques for organic compound identification.	
CO5:	Develop a clear understanding of periodic trends, including ionization energy, electronegativity, oxidation states, and their influence on the chemical properties of elements.	

Course Name: Mathematics-I		Course Code: BT-102
Students will be able to:		
CO1:	Develop a comprehensive understanding of the fundamental concepts and techniques of differential calculus.	
CO2:	Apply the principles of double and triple integration to determine the area of surfaces and the volume of solids.	
CO3:	Analyze the convergence and divergence of infinite series using standard convergence tests.	
CO4:	Understand vector algebra, vector geometry, and matrix operations for solving mathematical and engineering problems.	
CO5:	Apply matrix methods to solve systems of linear equations and interpret their solutions in engineering applications.	



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



DEPARTMENT OF CIVIL ENGINEERING

Course Name: English for Communication		Course Code: BT-103
Students will be able to:		
CO1:	Develop a strong foundation in English grammar and apply language skills effectively in written and spoken communication.	
CO2:	Enhance writing proficiency by using appropriate vocabulary, sentence structures, and coherent expression for different types of writing.	
CO3:	Build effective verbal and non-verbal communication skills to improve professional competence and employability.	
CO4:	Apply technical communication skills in preparing reports, documentation, presentations, and other professional documents.	
CO5:	Develop the ability to draft clear, concise, and professional business correspondence suitable for academic and workplace environments.	

Course Name: Basic Electrical & Electronics Engineering		Course Code: BT-104
Students will be able to:		
CO1:	Develop an understanding of the fundamental laws of DC circuits and apply network theorems to analyze electrical networks.	
CO2:	Understand the principles of single-phase and three-phase AC circuits and analyze the performance of R–L, R–C, R–L–C, star, and delta connected circuits under different load conditions.	
CO3:	Acquire knowledge of magnetic circuits and the construction, operating principles, and performance characteristics of single-phase transformers.	
CO4:	Understand the construction, working principles, and performance of various electrical machines used in engineering applications.	
CO5:	Develop a fundamental understanding of basic electronics, semiconductor devices, number systems, and digital electronic circuits for engineering applications.	



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



DEPARTMENT OF CIVIL ENGINEERING

Course Name: Engineering Graphics		Course Code: BT-105
Students will be able to:		
CO1:	Develop an understanding of geometric construction, dimensioning, scaling, and engineering drawing standards for technical drafting.	
CO2:	Apply the principles of orthographic projection to prepare and interpret the projections of planes and solids in two- and three-dimensional spaces.	
CO3:	Understand and construct sectional views of engineering solids to visualize and represent internal features accurately.	
CO4:	Develop the ability to prepare and interpret isometric and orthographic views by applying standard projection techniques.	
CO5:	Utilize CAD software to create accurate two-dimensional and three-dimensional models of engineering components for industrial applications.	

Course Name: Manufacturing Practices		Course Code: BT-106
Students will be able to:		
CO1:	Develop practical skills in fitting operations to manufacture and assemble basic engineering components.	
CO2:	Acquire hands-on experience in carpentry by preparing simple wooden jobs using standard tools and techniques.	
CO3:	Apply appropriate sheet metal fabrication methods to produce engineering components with the required accuracy and finish.	
CO4:	Understand and perform basic cold smithy operations to manufacture simple tools and components, such as a chisel.	
CO5:	Gain practical knowledge of wax casting techniques for producing simple cast components and understanding the fundamentals of the casting process.	



**BANSAL INSTITUTE OF RESEARCH & TECHNOLOGY,
BHOPAL**

Kokta Anand Nagar, Bhopal



DEPARTMENT OF CIVIL ENGINEERING

Course Name: Swach Bharat/ Rural Outreach		Course Code: BT-108
Students will be able to:		
CO1:	Develop awareness about the importance of sanitation, hygiene, and cleanliness for improving public health and quality of life.	
CO2:	Understand the significance of universal sanitation and the measures required to promote sustainable sanitation practices.	
CO3:	Explain the relationship between sanitation, health, environmental protection, and socio-economic development.	
CO4:	Identify and analyze the major sanitation issues and challenges faced in India and evaluate possible solutions.	
CO5:	Gain knowledge of the objectives, components, and implementation of the Swachh Bharat Mission in both rural and urban areas.	

**Approved By: -
Head of Department**