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

DEPARTMENT OF CIVIL ENGINEERING

COURSE OUTCOMES (COs)

Semester:II

Course Name: Engineering Physics	**Course Code: BT-201**
Students will be able to:	
CO1:	Understand the principles of modern physics and explain their applications using the basic concepts of quantum mechanics.
CO2:	Apply the concepts of matter waves and wave-particle duality to understand physical phenomena and their applications in everyday life.
CO3:	Understand semiconductor materials, distinguish between different types of semiconductors, and explain how charge carrier concentration affects electrical conductivity using band theory.
CO4:	Explain the working principles and applications of lasers in engineering, scientific research, medicine, and optical fiber communication systems.
CO5:	Understand the fundamentals of electrostatics and electromagnetics, including dielectrics and Maxwell's equations, and apply these concepts to solve basic engineering problems.

Course Name: Mathematics-II	**Course Code: BT-202**
Students will be able to:	
CO1:	Understand the fundamental concepts of Ordinary Differential Equations (ODEs) and their importance in solving engineering and scientific problems.
CO2:	Apply appropriate methods to solve first-order and higher-order differential equations arising in mathematics, science, and engineering.
CO3:	Classify and formulate linear and non-linear Partial Differential Equations (PDEs) and use characteristic methods to solve first- and second-order PDEs encountered in engineering applications.
CO4:	Understand the basic principles and techniques of Complex Function Theory and apply them to solve mathematical and engineering problems.
CO5:	Develop a strong foundation in Vector Calculus and apply vector differentiation and integration concepts to analyze engineering and physical systems.

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

ESTD. : 2007

DEPARTMENT OF CIVIL ENGINEERING

Course Name: Basic Mechanical Engineering		**Course Code: BT-203**
Students will be able to:		
CO1:	Classify engineering materials based on their properties and understand their mechanical behavior through standard material testing methods.	
CO2:	Understand the principles of measurement and metrology and use different measuring instruments commonly employed in manufacturing and industrial engineering.	
CO3:	Explain the properties and characteristics of fluids and apply these concepts to understand the operation of machine components and engineering systems.	
CO4:	Analyze the behavior of fluids in motion and apply the fundamental laws of fluid flow and heat transfer in engineering and thermal systems.	
CO5:	Understand the working principles of fuel- and air-based engines and evaluate their performance and efficiency using appropriate diagrams and engine characteristics.	

Course Name: Basic Civil Engineering & Mechanics		**Course Code: BT-204**
Students will be able to:		
CO1:	Identify and classify construction materials and understand their properties, testing methods, applications, and construction techniques used in building works.	
CO2:	Understand the fundamental principles of surveying and apply different methods of linear and angular measurements for civil engineering projects.	
CO3:	Apply surveying and mapping techniques, including the basic concepts of remote sensing, for planning and execution of civil engineering works.	
CO4:	Understand the principles of force systems and analyze their application in solving engineering mechanics problems.	
CO5:	Explain the behavior of structures under different types of loads and perform basic structural analysis to ensure safety and stability.	

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

ESTD. : 2007

DEPARTMENT OF CIVIL ENGINEERING

Course Name: Basic Computer Engineering	**Course Code: BT-205**
Students will be able to:	
CO1:	Understand the fundamentals of computers and explain their applications in modern technology and engineering.
CO2:	Develop basic programming skills to solve computational problems and apply programming concepts in engineering applications.
CO3:	Understand the principles of Object-Oriented Programming (OOP) and apply data structure concepts to design efficient software solutions.
CO4:	Explain the fundamentals of computer networking, identify networking devices, and understand the importance of network security.
CO5:	Understand the concepts of Database Management Systems (DBMS) and cloud computing, and explain their role in data storage, management, and real-world applications.

Course Name: Language Lab & Seminars	**Course Code: BT-206**
Students will be able to:	
CO1:	Develop the ability to introduce oneself confidently in professional and academic environments.
CO2:	Communicate effectively in public speaking and extempore activities, demonstrating confidence and clarity of expression.
CO3:	Enhance reading comprehension skills and improve the ability to understand and interpret written texts.
CO4:	Express ideas effectively in writing by preparing book reviews, summaries, and critical comments on reading materials.
CO5:	Develop effective conversational and interpersonal communication skills through role plays and interactive activities.

Approved By: -
Head of Department