Madhav Institute of Technology & Science, Gwalior- 474 005
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department :	B.Tech (Information Technology)	
Year	**2021-2025**	
		Course Outcome

Semester	Course	CO	Course Outcome
Semester I	100015: Energy Environment, Ecology & Society	CO1	describe various energy resources, their conversion to electrical power and role in technological & economic development.
		CO2	update with national/international power status and renewable power development targets & missions.
		CO3	recognize the impact of pollution on the ecosystem and control policies adopted at national/international levels.
		CO4	illustrate the concepts of ecosystems and their conservation.
		CO5	solve practical problems of society in a sustainable and ethical manner.
		CO6	fulfill professional duties keeping in mind the environmental safety, health, and welfare of public.
	230102:Introduction to Computer Programming	CO1	Identify situations where computational methods and computers would be useful.
		CO2	Describe the basic principles of imperative and structural programming.
		CO3	Develop a pseudo-code and flowchart for a given problem.
		CO4	Analyze the problems and choose suitable programming techniques to develop solutions.
		CO5	Design, implement, debug and test programs.
		CO6	Design computer programs to solve real world problems.
	100203: Basic Computer Engineering LAB	CO1	Demonstrate the fundamentals of computer programming
		CO2	Read, understand and trace the execution of program
		CO3	Develop Conditional and Iterative Statements
		CO4	Design the program using functions
		CO5	Implement the programs using Derived and User defined data types
		CO6	Design program for a given problem using computer programming

Semester II	160211: Data Structure	CO1	outline the basics of Algorithms and their performance criteria's.
		CO2	explain the working of linear/Non Linear data structures.
		CO3	identify the appropriate data structure to solve specific problems.
		CO4	analyze the performance of various Data Structures & their applications.
		CO5	evaluate the time/space complexities of various data structures & their applications
		CO6	design the optimal algorithmic solutions for various problems.
	160311: Digital Electronics	CO1	explain the basic components and functional units to define computer architecture
		CO2	explain the basic components and functional units to define computer architecture
		CO3	develop the understanding of combinational circuits
		CO4	analyse the basic concept of sequential circuits
		CO5	analyse the basic concept of sequential circuits
		CO6	reduce the Boolean functions to mitigate hardware complexity issues
	160304: Object Oriented Programming LAB	CO1	Select proper arithmetic, logical, relational, and string manipulation expressions to process data.
		CO2	Demonstrate the use of various OOPs concepts with the help of programs.
		CO3	Apply validation techniques to build a reliable solution to a given problem.
		CO4	Analyze and write programs to solve more complicated problems using the concepts of Object Oriented Methodology.
		CO5	Choose appropriate programming concepts as and when required in the future application development.
		CO6	Construct a complete class definition with in the class definition, write class and instance methods including the constructor and overloaded methods.
	160303: Computer Graphics LAB	CO1	Demonstrates the fundamental concepts of Computer Graphics and its applications.
		CO2	Explain and use hardware's and software's component of computer graphics
		CO3	Apply various image generation, manipulations and color model techniques in coding.
		CO4	Implement algorithms for create and manipulate image in programs.
		CO5	Develop the ability to write computer programs for create image and animation using graphics concepts.
		CO6	Develop application programs and projects in terms of image and animation using computer graphics.
	160313: Database management system	CO1	Demonstrate the concepts of different type of database system.
		CO2	Apply Relational algebra concepts to design database system.
		CO3	Make use of queries to design and access database system.
		CO4	Analyze the evaluation of transaction processing and concurrency control.
		CO5	Determine the optimize database for real world applications.
		CO6	Design a database system for a real world application.

Semester III	160312: Design and Analysis of Algorithm	CO1	Tell the basic features of an Algorithms
		CO2	Demonstrate a familiarity with major Algorithms and Data Structures
		CO3	Apply important algorithmic design paradigms and methods of analysis
		CO4	Analyze the asymptotic performance of Algorithms
		CO5	Compare different design techniques to develop algorithms for computational problems.
		CO6	Design algorithms using greedy strategy, divide and conquer approach, dynamic programming, backtracking, branch and bound approach.
	160314: Operating system	CO1	Outline the basic concept of operating systems
		CO2	Analyze the working of operating system
		CO3	Examine the working of various scheduling/allocation approaches
		CO4	Measure the performance of various scheduling/allocation approaches
		CO5	Compare the various operating system problems/issues
		CO6	Develop the Solution of various operating system problems/issues
	160311: Computer System Organization	CO1	Demonstrate the computer architecture for defining basic component and functional unit.
		CO2	Recall different number system and solve the basic arithmetic operations of signed and unsigned numbers.
		CO3	Develop the fundamental concept to understand the working of microprocessor.
		CO4	Explain the basic concept of input output organization.
		CO5	Compare various memory and mapping techniques.
		CO6	Develop the skill of writing assembly language programming.
	160312: DESIGN & ANALYSIS OF ALGORITHMS LAB	CO1	relate the principles of algorithm design in solving problems.
		CO2	demonstrate basic algorithms and different problem solving strategies.
		CO3	build creativeness and confidence to solve non-conventional problems.
		CO4	analyze running times of algorithms using asymptotic analysis.
		CO5	compare various algorithm design approaches for solving real world problems.
		CO6	design and implement optimization algorithms in specific applications.
	160313: DATABASE MANAGEMENT SYSTEM Lab	CO1	construct database schema for a given problem domain.
		CO2	apply integrity constraints on a database schema using a state-of-the-art RDBMS.
		CO3	apply SQL queries using DDL and DML to design and access database systems.
		CO4	make use of operators and functions used in query.
		CO5	distinguish Tables and Views for database systems.
		CO6	develop a small project for a real world scenario.
	160315: JAVA PROGRAMMING LAB	CO1	tell the available features in Java programming language.
		CO2	illustrate Java programming concepts for solving problems.
		CO3	make use of the Java programming methods for connecting the various databases.
		CO4	test for bugs in a software application written in the Java programming language.
		CO5	determine different ways for handling exceptions, memory management, file handling,i/o management and internet based application development.
		CO6	build a project for application development using Java programming language.