

Madhav Institute of Technology & Science, Gwalior- 474 005				
Department :		Information Technology		
Year	2020-2024			
			Course Outcome	
Semester I	100203:Basic Computer Engineering	CO1	Define the fundamentals of computer system.	
		CO2	Outline the various components of computer system.	
		CO3	Design, implement, test and debug the computer programs using programming language.	
		CO4	Analyze the usage of various system & application softwares to manage computer system and data.	
		CO5	Develop the ability to design computer programs to solve real world problems.	
		CO6	Elaborate the working of Internet.	
			100203:Basic Computer Engineering	
	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	
			100203: Basic Computer Engineering LAB	
		CO1	Relate the concepts and significance of OOPs in real world.	

	160304: OOPs and methodology	CO2	Demonstrate adeptness of object oriented programming to solve problems using Object oriented concepts
		CO3	Apply object oriented programming to develop solutions of problems using standard language constructs.
		CO4	Analyze data flow diagrams and flow charts for small/ moderate problems
		CO5	Determine how to simulate the problem in field of Operating system, Computer networks and real world problems.
		CO6	Develop software using concepts of objects, associations and integrity constraint.
			160304: OOPs and methodology
	160303: Computer Graphics and Multimedia	CO1	Illustrate the fundamental concepts of Computer Graphics, hardware & software components and its applications.
		CO2	Explain various graphical image generation & manipulation methods and algorithms.
		CO3	Apply various methods of generation & manipulation of images for creating graphical images and color models.
		CO4	Explain various rendering, illumination and color models of realistic image or pictures using image processing techniques.
		CO5	Discuss various methods to create natural seen & realistic images in 2D &3D space.
		CO6	Design & analysis of various graphical image processing techniques and animation.
		160303: Computer Graphics and Multimedia	
	160302: Data Structure LAB	CO1	Outline the basics of algorithms and their performance criteria.
		CO2	Explain the working of linear and non-linear data structures.
		CO3	Identify the appropriate data structure to solve the specific problems.
		CO4	Analyse the performance of various data structures and their applications.
		CO5	Evaluate the time and space complexities of various data structures and their applications.
CO6		Design the optimal algorithmic solutions for various problems	

Semester III

		160302: Data Structure LAB
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.
		160303: Computer Graphics LAB
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.
		160304: Object Oriented Programming LAB
: Hardware LAB	CO1	Explain basics of different computer peripherals and interfaces.
	CO2	Demonstrate architecture of various computer hardware devices and their functioning.
	CO3	Demonstrate the details of system buses, memory system, and I/O interfaces.
	CO4	Identify the existing configuration of the computers peripherals and creating wireless network through the access point.

	160305	CO5	Analyze progress in contemporary peripherals and bus systems.	
		CO6	construct a networking based on IPv4 address scheme.	
			160305: Hardware LAB	
	160301: Digital Electronics	CO1	Illustrate various number systems, Binary codes and its application in digital design.	
		CO2	Identify the logic functions, circuits, truth tables and also apply the laws of Boolean algebra to simplify circuits and expressions.	
		CO3	Develop the formal procedures for the analysis and design of combinational circuits.	
		CO4	Analyse sequential circuit's components and their usability in digital circuits.	
		CO5	Compare the concept of memories, programmable devices and digital ICs.	
		CO6	Design and analyze circuits for digital arithmetic.	
			160301: Digital Electronics	
	160302: Data Structures	CO1	Outline the basics of algorithms and their performance criteria.	
		CO2	Explain the working of linear and non-linear data structures.	
		CO3	Identify the appropriate data structure to solve the specific problems.	
		CO4	Analyse the performance of various data structures and their applications.	
		CO5	Evaluate the time and space complexities of various data structures and their applications.	
		CO6	Design the optimal algorithmic solutions for various problems	
			160302: Data Structures	
n and orithm	CO1	Tell the basic features of an Algorithms		
	CO2	Demonstrate a familiarity with major Algorithms and Data Structures		

Semester IV

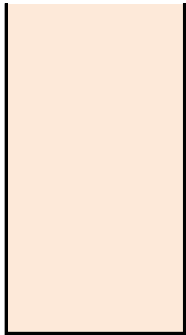
160401: Design Analysis of Algor	CO3	Apply important algorithmic design paradigms and methods of analysis
	CO4	Analyze the asymptotic performance of Algorithms
	CO5	Compare different design techniques to develop algorithms for computational problems.
	CO6	Design algorithms using greedy strategy, divide and conquer approach, dynamic programming, backtracking, branch and bound approach.
		160401: Design and Analysis of Algorithm
160402: 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.
		160402: Database management system
160403: 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
		160403: Operating system

	160404: 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.	
			160404: Computer System Organization	
	100004: Cyber Security	CO1	Tell the basic terminologies of cyber security	
		CO2	Explain the basic concepts of Networking and Internet	
		CO3	Apply various methods used to protect data in the internet environment in real world situations	
		CO4	Discover the Concepts of IP security and Architecture	
		CO5	Compare various types of Cyber Security Threats/ Vulnerabilities	
CO6		Develop the understanding of Cyber Crime Investigation and IT Act 2000		
		100004: Cyber Security		
160501: Discrete Structures	CO1	understand the basic concepts of set theory, propositional logic, graph theory, discrete numeric function and algebraic structure.		
	CO2	Illustrate the knowledge of course content and distinguish between them in terms of their applications.		
	CO3	Implement the course content to solve the problems.		
	CO4	Apply the concept of studied topics with suitable technique faced in engineering problems.		
	CO5	Analyze the basic concepts of set theory, propositional logic, graph theory, discrete numeric function and algebraic structure to examine the real world problems		

ster V

	CO6	Design the analytical skill and interpret applications of engineering beneficial in real time troubleshooting.
		160501: Discrete Structures
160503: Theory of Computation LAB	CO1	Judge various model of computation.
	CO2	Construct abstract models of computing.
	CO3	Infer the power of abstract models in computing to recognize the languages.
	CO4	Demonstrate analytical thinking and intuition for problem solving situations in related areas of theory of computation.
	CO5	Explain the limitations of computation in solving problems.
	CO6	Define set of rules for syntax verification
		160503: Theory of Computation LAB
160502: Software Engineering LAB	CO1	Define basic concepts of UML.
	CO2	Illustrate the software development process using different tools.
	CO3	Apply the UML to solve different common modeling problems.
	CO4	Utilize the knowledge of Software engineering and project management.
	CO5	Analyze the vocabulary, rules, and idioms of the UML and learn how to model it effectively.
	CO6	Design the systems, from concept to executable artifact, using object oriented techniques.
		160502: Software Engineering LAB
processor acing LAB	CO1	Explain types of instructions and addressing modes.
	CO2	Make use of Hex code needed in assembly language
	CO3	Experiment with various peripheral devices to interface with microprocessor.

Seme	160504: Mic and interf:	CO4	Simplify the arithmetic, Logical, etc. problems using instruction set of 8086/8051 microprocessor.	
		CO5	Determine the process required in interfacing with 8086/8051.	
		CO6	Develop the assembly language programs in 8086/8051 to solve a real world problem.	
			160504: Microprocessor and interfacing LAB	
	160503: Theory of Computation	CO1	Explain the basic concepts of switching and finite automata theory and languages.	
		CO2	Relate practical problems to languages, automata, computability, and complexity.	
		CO3	Construct abstract models of computing and analyse their power to recognize the languages.	
		CO4	Construct and analyze the grammar.	
		CO5	Apply mathematical models and descriptors in various computing theories	
		CO6	Solve problems in computer science using mathematical and formal techniques.	
			160503: Theory of Computation	
	160502: Software Engineering	CO1	List various software models with respect to their accuracy and needs of the customer requirement.	
		CO2	Explain the real world problems using software engineering concepts.	
		CO3	Develop the technique and results with customer expectations.	
		CO4	Identify and how to use various cost estimation techniques used in software engineering.	
		CO5	Compare design of a system, component, or process to meet desired needs within realistic constraints	
		CO6	Develop the techniques, skills and software engineering tools necessary for engineering domain.	
			160502: Software Engineering	
	isor	CO1	Classify the concepts of different advanced microprocessors and microcontroller.	



**160504: Microproces
& Interfacing**

CO2	Illustrate the various peripheral interfaces, controllers and bus standards.
CO3	Build a system using peripheral devices and controllers for 8086 microprocessor.
CO4	Distinguish the interface with various devices to the microprocessor.
CO5	Design an interface for various devices on 8086/8051 based systems.
CO6	Develops skills in assembly language programming for 8051 & 8086 applications.