Madhav Institute of Technology and Science, Gwalior

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Computer Science & Engineering and Information Technology

CO Attainment of B. Tech. Computer Science & Engineering (Session: July-Dec. 2019 Semester)

Course Name		Course outcomes	Direct Attainment %	Indirect Attainment %	Total Attainment %	Target	Gap	Action Taken/Required
150301: Digital Electronics	CO1	Illustrate various number systems, Binay codes and its application in digital design.	67	60.87	**65.774**	60	-	Proper coverage & assignment of COs in the question paper is required. Arrangement of Extra classes
	CO2	Identify the logic functions, circuits, truth tables and also apply the laws of Boolean algebra to simplify circuits and expressions.	48	70.45	**52.49**	60	**7.51**	
	CO3	Develop the formal procedures for the analysis and design of combinational circuits.	52	71.59	**55.918**	60	**4.082**	
	CO4	Analyse sequential circuit's components and their usability in digital circuits.	43	72.86	**48.972**	60	**11.03**	
	CO5	Compare the concept of memories, programmable devices and digital ICs.	38	63.38	**43.076**	60	**16.92**	
	CO6	Design and analyze circuits for digital arithmetic.	19	74.38	**30.076**	60	**29.92**	
150302: Data Structures	CO1	Outline the basics of algorithms and their performance criteria.	86	77.03	**84.206**	60	-	Proper coverage & assignment of COs in the question paper is required. Arrangement of Remedial classes
	CO2	Explain the working of linear and non-linear data structures.	78	79.71	**78.342**	60	-	
	CO3	Identify the appropriate data structure to solve the specific problems.	78	72.65	**76.93**	60	-	
	CO4	Analyse the performance of various data structures and their applications.	15	72.11	**26.422**	60	**33.58**	
	CO5	Evaluate the time and space complexities of various data structures and their applications.	23	70.68	**32.536**	60	**27.46**	
	CO6	Design the optimal algorithmic solutions for various problems	20	66.84	**29.368**	60	**30.63**	
150304: OOPs and methodology	CO1	Relate the concepts and significance of OOPs in real world.	70	78.62	**71.724**	60	-	Arrangement of Extra classes
	CO2	Demonstrate adeptness of object oriented programming to solve problems using Object oriented concepts	71	76.04	**72.008**	60	-	
	CO3	Apply object oriented programming to develop solutions of problems using standard language constructs.	47	74.08	**52.416**	60	**7.584**	
	CO4	Analyze data flow diagrams and flow charts for small/ moderate problems	46	74.44	**51.688**	60	**8.312**	
	CO5	Determine how to simulate the problem in field of Operating system, Computer networks and real world problems.	65	73.55	**66.71**	60	-	
	CO6	Develop software using concepts of objects, associations and integrity constraint.	74	67.42	**72.684**	60	-	

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Semester3	**150303: Computer Graphics and Multimedia**	**CO1**	Illustrate the fundamental concepts of Computer Graphics, hardware & software components and its applications.	91	71	**87**	60	-	-
		CO2	Explain various graphical image genration & manipulation methods and algorithms.	74	75	**74.2**	60	-	
		CO3	Apply various methods of generation & manipulation of images for creating graphical images and color models.	65	74	**66.8**	60	-	
		CO4	Explain various rendering, illumination and color models of realistic image or pictures using image processing techniques.	77	68	**75.2**	60	-	
		CO5	Discuss various methods to create natural seen & realistic images in 2D &3D space.	53	69	**56.2**	60	**3.8**	
		CO6	Design & analysis of various graphical image processing techniques and animation.	70	66	**69.2**	60	-	
	150302: Data Structure LAB	**CO1**	Outline the basics of algorithms and their performance criteria.	62	87	**67**	60	-	-
		CO2	Explain the working of linear and non-linear data structures.	71	85	**73.8**	60	-	
		CO3	Identify the appropriate data structure to solve the specific problems.	82	74	**80.4**	60	-	
		CO4	Analyse the performance of various data structures and their applications.	75	75	**75**	60	-	
		CO5	Evaluate the time and space complexities of various data structures and their applications.	91	72	**87.2**	60	-	
		CO6	Design the optimal algorithmic solutions for various problems	88	69	**84.2**	60	-	
	150303: Computer Graphics LAB	**CO1**	Demonstrates the fundamental concepts of Computer Graphics and its applications.	62	78	**65.2**	60	-	-
		CO2	Explain and use hardware's and software's component of computer graphics	100	75	**95**	60	-	
		CO3	Apply various image generation, manipulations and color model techniques in coding.	72	85	**74.6**	60	-	
		CO4	Implement algorithms for create and manipulate image in programs.	100	95	**99**	60	-	
		CO5	Develop the ability to write computer programs for create image and animation using graphics concepts.	96	75	**91.8**	60	-	
		CO6	Develop application programs and projects in terms of image and animation using computer graphics.	88	72	**84.8**	60	-	
	Object Oriented amming LAB	**CO1**	Select proper arithmetic, logical, relational, and string manipulation expressions to process data.	60	85	**65**	60	-	-
		CO2	Demonstrate the use of various OOPs concepts with the help of programs.	76	74	**75.6**	60	-	
		CO3	Apply validation techniques to build a reliable solution to a given problem.	92	75	**88.6**	60	-	
		CO4	Analyze and write programs to solve more complicated problems using the concepts of Object Oriented Methodology.	84	76	**82.4**	60	-	

	150304: C Progra	CO5	Choose appropriate programming concepts as and when required in the future application development.	92	72	**88**	60	-	
		CO6	Construct a complete class definition with in the class definition, write class and instance methods including the constructor and overloaded methods.	92	66	**86.8**	60	-	
	150503: Theory of Computation	CO1	Explain the basic concepts of switching and finite automata theory and languages.	60	63.56	**60.712**	60	-	Proper coverage & assignment of COs in the question paper is required. Arrangement of Remedial classes
		CO2	Relate practical problems to languages, automata, computability, and complexity.	57	61.89	**57.978**	60	**2.022**	
		CO3	Construct abstract models of computing and analyse their power to recognize the languages.	44	71.04	**49.408**	60	**10.59**	
		CO4	Construct and analyze the grammar.	67	69.03	**67.406**	60	-	
		CO5	Apply mathematical models and descriptors in various computing theories	36	63.78	**41.556**	60	**18.44**	
		CO6	Solve problems in computer science using mathematical and formal techniques.	18	72.71	**28.942**	60	**31.06**	
	150502: Software Engineering	CO1	List various software models with respect to their accuracy and needs of the customer requirement.	60	76.34	**63.268**	60	-	Arrangement of Remedial Classes
		CO2	Explain the real world problems using software engineering concepts.	55	71.57	**58.314**	60	**1.686**	
		CO3	Develop the technique and results with customer expectations.	49	69.92	**53.184**	60	**6.816**	
		CO4	Identify and how to use various cost estimation techniques used in software engineering.	57	70.46	**59.692**	60	**0.308**	
		CO5	Compare design of a system, component, or process to meet desired needs within realistic constraints	53	69.38	**56.276**	60	**3.724**	
		CO6	Develop the techniques, skills and software engineering tools necessary for engineering domain.	74	71.75	**73.55**	60	-	
	croprocessor & Interfacing	CO1	Classify the concepts of different advanced microprocessors and microcontroller.	52	87	**59**	60	**1**	Arrangement of Extra Classes
		CO2	Illustrate the various peripheral interfaces, controllers and bus standards.	49	88	**56.8**	60	**3.2**	
		CO3	Build a system using peripheral devices and controllers for 8086 microprocessor.	52	86	**58.8**	60	**1.2**	
		CO4	Distinguish the interface with various devices to the microprocessor.	68	75	**69.4**	60	-	

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Semester5	150504: Mic	CO5	Design an interface for various devices on 8086/8051 based systems.	50	74	**54.8**	60	**5.2**	
		CO6	Develops skills in assembly language programming for 8051 & 8086 applications.	36	72	**43.2**	60	**16.8**	
	150501: Discrete Structures	CO1	understand the basic concepts of set theory, propositional logic, graph theory, discrete numeric function and algebraic structure.	69	78.8	**70.96**	60	-	Proper coverage & assignment of COs in the question paper is required. Arrangement of Remedial classes
		CO2	Illustrate the knowledge of course content and distinguish between them in terms of their applications.	84	67.59	**80.718**	60	-	
		CO3	Implement the course content to solve the problems.	87	62.33	**82.066**	60	-	
		CO4	Apply the concept of studied topics with suitable technique faced in engineering problems.	11	66.39	**22.078**	60	**37.92**	
		CO5	Analyze the basic concepts of set theory, propositional logic, graph theory, discrete numeric function and algebraic structure to examine the real world problems	94	69.36	**89.072**	60	-	
		CO6	Design the analytical skill and interpret applications of engineering beneficial in real time troubleshooting.	17	59.73	**25.546**	60	**34.45**	
	150503: Theory of Computation LAB	CO1	Judge various model of computation.	84	84	**84**	60	-	-
		CO2	Construct abstract models of computing.	84	85	**84.2**	60	-	
		CO3	Infer the power of abstract models in computing to recognize the languages.	56	88	**62.4**	60	-	
		CO4	Demonstrate analytical thinking and intuition for problem solving situations in related areas of theory of computation.	80	75	**79**	60	-	
		CO5	Explain the limitations of computation in solving problems.	56	74	**59.6**	60	**0.4**	
		CO6	Define set of rules for syntax verification	92	73	**88.2**	60	-	
	150502: Software Engineering LAB	CO1	Define basic concepts of UML.	88	85	**87.4**	60	-	-
		CO2	Illustrate the software development process using different tools.	88	74	**85.2**	60	-	
		CO3	Apply the UML to solve different common modeling problems.	96	75	**91.8**	60	-	
		CO4	Utilize the knowledge of Software engineering and project management.	92	85	**90.6**	60	-	
		CO5	Analyze the vocabulary, rules, and idioms of the UML and learn how to model it effectively.	96	86	**94**	60	-	
		CO6	Design the systems, from concept to executable artifact, using object oriented techniques	92	82	**90**	60	-	
	r and	CO1	Explain types of instructions and addressing modes.	64	88	**68.8**	60	-	

	150504: Microprocesso interfacing LAB	**CO2**	Make use of Hex code needed in assembly language	100	85	**97**	60	-	-
		CO3	Experiment with various peripheral devices to interface with microprocessor.	68	74	**69.2**	60	-	
		CO4	Simplify the arithmetic, Logical, etc. problems using instruction set of 8086/8051 microprocessor.	88	85	**87.4**	60	-	
		CO5	Determine the process required in interfacing with 8086/8051.	64	72	**65.6**	60	-	
		CO6	Develop the assembly language programs in 8086/8051 to solve a real world problem.	80	71	**78.2**	60	-	
	BCSL-701: Artificial Intelligence and Expert Systems	**CO1**	Tell the fundamental concepts of Artificial Intelligence and its real-world applications.	26	73.33	**35.466**	60	**24.53**	Proper coverage & assignment of COs in the question paper is required. Arrangement of Remedial classes
		CO2	Illustrate the various seraching algorithms used to solve AI problems.	24	66.64	**32.528**	60	**27.47**	
		CO3	Utilize the several techniques of Knowledge Representation to deal with AI problems.	24	64.99	**32.198**	60	**27.8**	
		CO4	Analyze the performance of various algorithm used in AI.	21	66.07	**30.014**	60	**29.99**	
		CO5	Evaluate programming methods and algorithmic principles in puzzle solving techniques.	14	67.75	**24.75**	60	**35.25**	
		CO6	Formulate an strategy to solve the real-world problems by various applications of AI.	10	66.28	**21.256**	60	**38.74**	
	BCSL702: Distributed System	**CO1**	Demonstrate knowledge of the basic elements and concepts related to distributed system technologies	64	84	**68**	60	-	Proper coverage & assignment of COs in the question paper is required. Arrangement of Extra classes
		CO2	Explain various architectures used to design distributed systems, such as client-server and peer to peer.	26	85	**37.8**	60	**22.2**	
		CO3	Build distributed systems using various interprocess communication techniques, such as remote method invocation, remote events, and tuple spaces.	49	74	**54**	60	**6**	
		CO4	Analyze a problem and form a plan on how to work towards a solution.	22	72	**32**	60	**28**	
		CO5	Explain various distributed algorithms, such as logical clocks and leader election.	27	68	**35.2**	60	**24.8**	
		CO6	Propose own reflections and attitudes in regard to the area of research	45	69	**49.8**	60	**10.2**	
	CSL703: Digital Forensics	**CO1**	List various cyber Crimes and various categories.	26	93.52	**39.504**	60	**20.5**	Proper coverage & assignment of COs in the question paper is required.
		CO2	Explain different cybercrime issues and investigation techniques.	57	78.29	**61.258**	60	-	
		CO3	Identify various tools used in digital forensics.	25	75.8	**35.16**	60	**24.84**	
		CO4	Discover Cyber Laws and Acts.	23	73.43	**33.086**	60	**26.91**	
		CO5	Determine the limitations imposed by data privacy laws.	49	70.16	**53.232**	60	**6.768**	

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Semester7	BC	CO6	Design tools for faithful preservation of data on disks for analysis.	45	63.04	**48.608**	60	**11.39**	
	BCSL704: Adhoc Networks	CO1	List various design and implementation issues, and available solutions of mobile ad hoc networks.	65	84.65	**68.93**	60	-	-
		CO2	Summarize the basics of Infrastructure less networks and their importance in the future directions for wireless communications	87	75.57	**84.714**	60	-	
		CO3	Model different adhoc networks.	84	69.74	**81.148**	60	-	
		CO4	Analyze various technologies associated with Ad Hoc networks.	70	71.17	**70.234**	60	-	
		CO5	Explain and analyze adhoc networks and compute various parameters associated with it.	79	69.3	**77.06**	60	-	
		CO6	Develop various security mechanisms for Ad hoc networks.	54	69.26	**57.052**	60	**2.948**	
	BCSL-705: E-Commerce	CO1	Recall basics of HTML, HTML tags, Javascript and concepts of computer Networks.	85	88.03	**85.606**	60	-	Arrangement of Extra Classes
		CO2	Demonstrate and unserstand the foundations and importance of E-commerce.	80	80.02	**80.004**	60	-	
		CO3	Compare different buisness models for E-commerce.	82	74.82	**80.564**	60	-	
		CO4	Illustrate the working and usability of Electronic Data Interchange.	75	72.13	**74.426**	60	-	
		CO5	Utilize applied cryptographic technology and web security protocols.	54	71.18	**57.436**	60	**2.564**	
		CO6	Elaborate different types of E-commerce payment systems, legal issues and Privacy.	41	66.89	**46.178**	60	**13.82**	
	BCSP706: Artificial Intelligence LAB	CO1	Find out the real-world problems based on AI.	100	88	**97.6**	60	-	-
		CO2	Demonstarte the knowledge of the building blocks of AI.	92	75	**88.6**	60	-	
		CO3	Apply the concepts of Natural Language Processing to solve AI problems.	88	76	**85.6**	60	-	
		CO4	Inspect intelligent system for Game palying.	100	85	**97**	60	-	
		CO5	Choose different search or game based techniques to solve real world problems.	88	75	**85.4**	60	-	
		CO6	Develop intelligent algorithms for constraint satisfaction problem.	96	68	**90.4**	60	-	
	BCSP707: Distributed system Lab	CO1	Find the real world problems on Distributed systems.	100	85	**97**	60	-	-
		CO2	Demonstrate the knowledge of the building blocks of Distributed systems.	100	84	**96.8**	60	-	
		CO3	Apply basic concepts of distributed systems to solve real world problems.	84	66	**80.4**	60	-	
		CO4	Inspect and implement a distributed file server using sockets on Linux.	100	56	**91.2**	60	-	
		CO5	evaluate the performance of distributed systems	84	55	**78.2**	60	-	
		CO6	Develop various systems containing distributed algorithms.	100	67	**93.4**	60	-	