Madhav Institute of Technology & Science, Gwalior (M.P.), INDIA
Deemed University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC ACCREDITED WITH A++ GRADE
Department of Computer Science & Engineering

CO attainment with Gap Analysis and action taken for July-Dec 2023

Sem	Faculty Name	Brabch & Section	Cource code & name		Course Outcome Statements	CO attainment from Quiz (%age)	CO attainment from Assignment (%age	CO attainment from Mid Sem (%age) Avg. of mid sem I & II	CO attainment from End Sem (%age)	CO direct attainment (%age)	CO direct attainment level	CO indirect attainment (%age) (Calculated using CO f/b, End Sem Seminar, 1 min Paper writing)	CO indirect attainment level	Overall CO attainment	Target (To be set for Overall CO Attainment)	Attained/not attained	Action taken for Not Attained
I	Ms. Kratika	CSE	2150121-Digital	CO1	Explain the computer architecture for defining basic	80.00	88.39	73.55	80.65	79.75806452	3	82	3	3	2.5	Attained	
				CO2	Recall different number system and solve the basic	67.74	83.23	73.55	87.10	80.80645161	3	74	3	3	2.5	Attained	
				CO3	Develop the understanding of combinational circuits	74.19	72.90	87.10	92.90	86.61290323	3	79	3	3	2.5	Attained	
				CO4	Analyze the basic concept of sequential circuits	69.68	65.16	64.52	81.94	73.9516129	3	71	3	3	2.5	Attained	
				CO5	Compare various memories	67.10	65.16	75.48	76.77	73.79032258	3	70	3	3	2.5	Attained	
				CO6	Solve the boolean functions using logic gates	67.74	83.23	72.90	76.77	75.48387097	3	75	3	3	2.5	Attained	
I	Dr. Kuldeep	CSE	3150122-Computer	CO1	identify situations where computational methods and	72.34	82.39	84.93	62.34	71.74376381	3	65.66	2.6	2.9	2.4	Attained	
				CO2	describe the basic principles of procedural programming.	68.23	73.23	86.30	64.21	71.36231827	3	64.35	2.4	2.9	2.4	Attained	
				CO3	develop algorithms and flowchart for a given problem.	73.45	78.39	72.60	59.56	66.91032203	2.7	66.23	2.6	2.7	2.4	Attained	
				CO4	analyze the problems and choose suitable programming	65.71	71.16	57.81	65.47	64.29596608	2.4	59.43	1.9	2.3	2.4	Not Attained	questions can be added under this
				CO5	design, implement, debug and test programs.	71.23	73.16	61.10	68.23	67.43788389	2.7	63.45	2.3	2.6	2.4	Attained	
				CO6	design computer programs to solve real world problems.	77.89	76.90	62.90	57.57	63.86018062	2.4	65.34	2.5	2.4	2.4	Attained	
I	Dr. Smita parte	CSE	3150123- Emerging	CO1	1. Illustrate concepts & applications of Artificial	38.99	55.97	78.71	77.99	70.5425	3	55.57	1.6	2.7	2.5	Attained	
				CO2	2. Describe the fundamental ideas behind Cloud	52.20	52.20	79.35	75.47	70.6225	3	52.99	1.3	2.7	2.5	Attained	
				CO3	3. Understand the basics of Cyber Security and working	52.83	54.09	83.23	74.84	71.5925	3	52.99	1.3	2.7	2.5	Attained	
				CO4	4. Analyze various Cyber Security Threats and	45.91	53.46	96.13	76.73	74.81875	3	54.85	1.5	2.7	2.5	Attained	
				CO5	5. Understand the Internet of Things and its hardware	40.88	55.97	90.97	77.99	73.84375	3	52.14	1.2	2.6	2.5	Attained	
				CO6	6. Define the concept and challenges of Big Data, along	41.51	40.25	80.65	76.73	68.7475	2.9	47.86	1	2.5	2.5	Attained	
I	Dr. Jaimala Jha	CSD	2290121-Introduction	CO1	Analyze the problems and choose suitable programming technique	56.32	89.66	46.15	71.05	65.3109625	2.5	90	3	2.6	2.5	Attained	
				CO2	To Develop a pseudo-code and flowchart for a given problem	85.06	89.66	41.03	81.58	72.88641	3	85	3	3	2.5	Attained	
				CO3	To Design, implement, debug and test programs.	78.16	54.02	42.53	72.37	63.339685	2.3	85	3	2.4	2.5	Not Attained	questions can be added under this
				CO4	To Implement the basic principles of imperative and structural pro	83.91	65.52	40.80	65.79	61.7749	2.2	80	3	2.4	2.5	Not Attained	questions can be added under this
				CO5	To Design computer programs to solve real world problems.	82.76	89.66	40.23	73.68	68.4499725	2.8	80	3	2.8	2.5	Attained	
I	Prof. Khushboo Agarwal	CSD	2290122-Computer Programming	CO1	identify situations where computational methods and computers would be useful.	80.00	88.39	20.65	86.33	33.55	3	82	3	3	2.5	Attained	
				CO2	describe the basic principles of procedural programming.	67.74	83.23	16.13	33.55	39.67846774	3	74	3	3	2.5	Attained	
				CO3	develop algorithms and flowchart for a given problem.	82.32	88.39	20.65	25.81	39.4058871	3	79	3	3	2.5	Attained	
				CO4	analyze the problems and choose suitable programming	69.68	65.16	16.13	14.19	27.98233871	3	77	3	3	2.5	Attained	
				CO5	design, implement, debug and test programs.	67.10	65.16	20.65	7.10	25.24475806	3	78	3	3	2.5	Attained	
				CO6	design computer programs to solve real world problems	80.22	72.90	16.13	0.00	23.17290323	1	80	3	1.4	2.5	Not Attained	questions can be added under this
III	Ms. Manisha	CSE	2150302-Operating	CO1	Outline the basic concept of operating systems	84	84	88	60.65	73.32258065	3	73	3	3	2.5	Attained	
				CO2	Analyze the working of operating system	80	72	72	74.19	74.09677419	3	75	3	3	2.5	Attained	
				CO3	Examine the working of various scheduling/allocation	72	64	66	61.94	64.46774194	2.4	68	2.8	2.5	2.5	Attained	
				CO4	Measure the performance of various	80	84	84	61.94	72.46774194	3	82	3	3	2.5	Attained	
				CO5	Analyze the various operating system problems/issues	80	72	88	60.65	71.32258065	3	85	3	3	2.5	Attained	
				CO6	Develop the Solution of various operating system	76	80	72	63.23	69.11290323	2.9	78	3	2.9	2.5	Attained	
III	Ms. Mona	CSE	2150303-Design &	CO1	Tell the basic features of Algorithms.	76	68	76	84	79	3	83	3	3	2.5	Attained	
				CO2	Outline major Algorithms and Data Structures.	76	68	78	88	81.5	3	87	3	3	2.5	Attained	
				CO3	Apply various algorithmic design paradigms.	68	68	88	80	79	3	91	3	3	2.5	Attained	
				CO4	Analyze the asymptotic performance of Algorithms.	84	68	88	84	83	3	91	3	3	2.5	Attained	
				CO5	Compare different design techniques to develop algorithms for computational problems.	88	64	88	84	83	3	83	3	3	2.5	Attained	
				CO6	Design algorithms using greedy strategy, divide and conquer approach, dynamic programming, backtracking, branch and bound approach.	84	64	88	80	80.5	3	80	3	3	2.5	Attained	
III	Dr. Kuldeep	CSE	2150304-Database	CO1	Define the terminology, features, classifications, and	91.04	82.44	78.32	68.23	75.38	3	87.65	3	3	2.5	Attained	
				CO2	Identify different issues involved in the design and	82.36	78.28	74.57	70.43	73.9375	3	86.36	3	3	2.5	Attained	
				CO3	Analyse database schema for a given problem domain.	88.47	78.65	75.14	72.34	75.845	3	91.67	3	3	2.5	Attained	
				CO4	Justify principles for logical design of databases,	86.29	82.52	76.07	71.34	75.78875	3	85.38	3	3	2.5	Attained	
				CO5	Apply transaction processing concepts and recovery	84.52	88.26	78.94	68.34	75.5025	3	87.47	3	3	2.5	Attained	
				CO6	Formulate, using relational algebra and SQL, solutions to	89.64	86.83	82.37	73.43	79.36625	3	88.54	3	3	2.5	Attained	

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III	Ms. Jigyasa Mishra	CSE	2150305-Software Engineering	CO1	Explain the various fundamental concepts of software engineering.	88	80	64	96.77	85.385	3	85	3	3	2.5	Attained	
				CO2	Develop the concepts related to software design & analysis.	80	80	72	92.9	84.45	3	83	3	3	2.5	Attained	
				CO3	Compare the techniques for software project management & estimation.	88	76	72	92.9	84.95	3	85	3	3	2.5	Attained	
				CO4	Choose the appropriate model for real life software project	88	84	72	90.97	84.985	3	84	3	3	2.5	Attained	
				CO5	Design the software using modern tools and technologies.	88	80	60	96.13	84.065	3	84	3	3	2.5	Attained	
				CO6	Test the software through different approaches.	88	80	52	88.00	78	3	84	3	3	2.5	Attained	
III	Dr. Ganesh	CSE	Project Planning & Financing-MAC3	CO1	Know the attributes of project and its different phases.	87.95	87.35	56.03	65.34	68.59	2.9	84	3	2.9	2.5	Attained	
				CO2	Develop the project network based on work breakdown structure and esimation of activity durations	87.95	93.37	77.3	71.45	77.715	3	84	3	3	2.5	Attained	
				CO3	Analyze the project network and make decide the various alternates.	66.87	66.87	72.285	72.13	70.85375	3	84	3	3	2.5	Attained	
				CO4	Evaluate the optimum cost of project for assigned deadlines.	84.94	93.37	50	69.45	69.51375	3	84	3	3	2.5	Attained	
				CO5	Understand the different options to arrange the finances to complete it within stipulated time	87.95	92.77	52.67	74.32	72.9175	3	84	3	3	2.5	Attained	
				CO6													
III	Ms. Mona	CSD	2290303-Design &	CO1	Tell the basic features of Algorithms.	76	68	84	96	87	3	83	3	3	2.5	Attained	
				CO2	Outline major Algorithms and Data Structures.	76	84	74	72	74.5	3	87	3	3	2.5	Attained	
				CO3	Apply various algorithmic design paradigms.	68	88	90	76	80	3	91	3	3	2.5	Attained	
				CO4	Analyze the asymptotic performance of Algorithms.	88	72	80	80	80	3	91	3	3	2.5	Attained	
				CO5	Compare different design techniques to develop algorithms for computational problems.	88	80	88	76	81	3	83	3	3	2.5	Attained	
				CO6	Design algorithms using greedy strategy, divide and conquer approach, dynamic programming, backtracking, branch and bound approach.	88	80	84	76	80	3	80	3	3	2.5	Attained	
III	Dr.. Jaimala Jha	CSD	2290304-Database	CO1	Define the terminology, features, classifications, and characteristics embodied in database systems	65.52	89.66	28.16092	88.51	70.69273	3	90	3	3	2.5	Attained	
				CO2	Identify different issues involved in the design and implementation of database system	95.4	95.4	27.58621	94.25	77.8715525	3	87	3	3	2.5	Attained	
				CO3	Analyse database schema for a given problem domain.	87.36	71.26	51.72414	94.25	79.883535	3	87	3	3	2.5	Attained	
				CO4	Justify principles for logical design of databases, including the E-R modeling and Normalization approach.	89.66	60.92	32.75862	96.55	75.287155	3	85	3	3	2.5	Attained	
				CO5	Apply transaction processing concepts and recovery methods over real time data	90.8	66.67	32.18391	96.55	76.0047275	3	82	3	3	2.5	Attained	
				CO6	Formulate, using relational algebra and SQL, solutions to a broad range of Problem	89.66	68.97	32.18391	96.55	76.1497275	3	80	3	3	2.5	Attained	
III	Dr. Gagandeep Kaur	CSD	2290305-Software Engineering	CO1	Explain the various fundamental concepts of software engine	94.05	96.43	77.05	92.86	89.50107143	3	86.46	3	3	2.5	Attained	
				CO2	Develop the concepts related to software design & analysis.	92.86	95.24	70.49	88.10	85.18261905	3	86.18	3	3	2.5	Attained	
				CO3	Compare the techniques for software project management &	92.86	92.86	73.77	91.67	87.49083333	3	90.42	3	3	2.5	Attained	
				CO4	Choose the appropriate model for real life software project.	94.05	85.71	75.525	84.52	83.61125	3	84.58	3	3	2.5	Attained	
				CO5	Design the software using modern tools and technologies	94.05	89.29	81.94	94.05	90.4275	3	86.47	3	3	2.5	Attained	
				CO6	Test the software through different approaches.	91.67	92.86	81.94	84.52	85.81125	3	88.34	3	3	2.5	Attained	
III	Dr. Ganesh	CSD	Project Planning & Financing-MAC3	CO1	Know the attributes of project and its different phases.	48.19	49.4	31.91	68.23	54.29125	1.4	88.34	3	1.7	2.5	Attained	
				CO2	Develop the project network based on work breakdown structure and esimation of activity durations	48.19	50	31.21	70.43	55.29125	1.5	88.34	3	1.8	2.5	Attained	
				CO3	Analyze the project network and make decide the various alternates.	46.39	50	32.62	72.34	56.37375	1.6	88.34	3	1.9	2.5	Attained	
				CO4	Evaluate the optimum cost of project for assigned deadlines.	48.19	43.37	36	71.34	56.115	1.6	88.34	3	1.9	2.5	Attained	

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				CO5	Understand the different options to arrange the finances to complete it within stipulated time	49.4	50	36	68.34	55.595	1.6	88.34	3	1.9	2.5	Attained	
				CO6					73.43				1	0.2	2.5	Attained	
V	Mr. Amit	CSE	150513-Information	CO1	Explain attacks, hash algorithms and authentication mecha	75.51	67.35	74.15	76.87	77.77	3	47.92	1	2.6	2	Attained	
				CO2	Illustrate fundamentals of number theory and security	59.86	66.67	69.39	76.87	61.8	2.2	41.67	1	2	2	Attained	
				CO3	Apply various algorithms to achieve principles of	65.31	69.39	70.75	75.51	61.8	2.2	41.67	1	2	2	Attained	
				CO4	Analyse the cause for various exixting network attacks	52.38	52.38	95.92	52.38	75.69	3	43.75	1	2.6	2	Attained	
				CO5	Examine the vulnerabilities in IT infrastructure.	26.53	46.94	70.07	48.3	75.69	3	43.75	1	2.6	2	Attained	
				CO6	Predicts the attacks and controls associated with IP,	0	0	0	52.38	75.69	3	45.83	1	2.6	2	Attained	
V	Mr. Mahesh	CSE	150514-Compiler	CO1	I am able to define the concepts of finite automata and	59.86	84	88	83.5	81.7325	3	92	3	3	3	Attained	
				CO2	I am able to build the concept of working of compiler.	65.31	78	84	81	79.41375	3	88	3	3	2.5	Attained	
				CO3	I am able to examine various parsing techniques and	52.38	76	88	75.23	75.6625	3	90	3	3	3	Attained	
				CO4	I am able to compare various code generation and code	56.53	77	86	79.34	77.86125	3	89	3	3	2.5	Attained	
				CO5	I am able to analyze different tools and techniques for	64.22	78	84	79.24	76.69	3	87	3	3	2	Attained	
				CO6	I am able to design various phases of compiler.	62.5	85	82	80	78.9375	3	84	3	3	2.5	Attained	
V	Dr. Manish Dixit + Ms. Aashi	CSE	150515-Artificial Intelligence	CO1	Understand Concepts and applications of Artificial Intelligence and different types of intelligent systems.	76.77	89.03	87.095	76.13	80.56375	3	75.56	3	3	2.5	Attained	
				CO2	Formulate problems as state space search problem and efficiently solve them.	78.71	82.58	78.06	90.32	84.83625	3	73.87	3	3	2.5	Attained	
				CO3	Understand the work8ing of various informed, uninformed and heuristic search algorithms.	79.35	89.03	76.13	80.65	80.405	3	70.83	3	3	2.5	Attained	
				CO4	Understand the concepts of knowledge representation techniques.	75.48	82.58	77.415	81.29	79.75625	3	73.54	3	3	2.5	Attained	
				CO5	Evaluate the various learning algorithms for solving problems.	53.55	90.97	70.965	82.58	77.09625	3	74.8	3	3	2.5	Attained	
				CO6	-					0	1		1	1	2.5		
V	Ms. Kratika	CSE	1000006-Disaster	CO1	Identify disaster prevention and mitigation approaches	80	88	80	68.23	75.115	3	82	3	3	2.5	Attained	
				CO2	Classify global and national disasters, their trends and	76	84	84	70.43	76.215	3	79	3	3	2.5	Attained	
				CO3	Determine the impacts of various disaster	84	88	68	72.34	74.67	3	76	3	3	2.5	Attained	
				CO4	Apply Disaster Risk Reduction in management	80	76	64	71.34	71.17	3	72	3	3	2.5	Attained	
				CO5	Infer the linkage between disasters, environment and	84	76	68	73.23	73.615	3	74	3	3	2.5	Attained	
				CO6						0	1		1	1	2.5		
V	Ms. Khushboo Agarwal	CSD	290502-Networking with TCP/IP	CO1	outline of the basic functionality of TCP/IP layers.	81.8	81.23	80.23	76.22	78.54625	3	84.21	3	3	2.5	Attained	
				CO2	analyze various addressing mechanism used in the internet	91.92	81.23	81.2	67.22	75.55375	3	98.12	3	3	2.5	Attained	
				CO3	elaborate the framing, Routing and Address translation	70.12	70.16	76.25	72.42	72.8075	3	96.25	3	3	2.5	Attained	
				CO4	analyze the working of Application layer protocols	81.2	80.21	78.88	69.21	74.50125	3	96.25	3	3	2.5	Attained	
				CO5	simulate network protocols & Topologies	65	70.47	55.23	66.22	63.85125	3	88.21	3	3	2.5	Attained	
				CO6	install, maintain and troubleshoot a TCP/IP Network	66	78.23	63.12	35.55	51.58375	3	73.23	3	3	2.5	Attained	
V	Dr. Gagandeep Kaur	CSD	290503-Software Design & Project	CO1	I am able to Understand software design methodologies	87.88	95.45	72.22	79.69	80.815	3	93.24	3	3	2.5	Attained	
				CO2	I am able to Apply and recognize project management practices.	83.33	95.45	70.37	93.75	86.815	3	91.2	3	3	2.5	Attained	
				CO3	I am able to Understand user stories, tasks and Agile methodology.	77.27	80.3	75.93	93.75	85.55375	3	89.67	3	3	2.5	Attained	
				CO4	I am able to Understand and Apply Project Scheduling techniques.	84.85	80.3	86.89	71.88	78.30625	3	94.2	3	3	2.5	Attained	
				CO5	I am able to Recognize Quality Assurance and Control Techniques	75.76	95.45	86.89	89.06	87.65375	3	88.47	3	3	2.5	Attained	
				CO6	I am able to Examine the Risks and Managing.	86.36	95.45	88.52	71.88	80.79625	3	91.54	3	3	2.5	Attained	
V	Ms. Ankita	CSD	290501-Data Science	CO1	Define basic concepts of Data Sciences.	81.2	78.26	98.33	95.65	92.34202899	3	91.54	3	3	2.5	Attained	
				CO2	Illustrate various concepts of python that are used in	65	62.32	96.67	82.61	81.38586957	3	91.54	3	3	2.5	Attained	

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				CO3	Identify various methods for the representation and	66	79.71	93.33	98.55	90.82246377	3	91.54	3	3	2.5	Attained	
				CO4	Analysis the data for applying various statistical	87.88	76.81	88.33	81.16	83.24949275	3	91.54	3	3	2.5	Attained	
				CO5	Identify hidden patterns in data and transform it	83.33	73.91	90.00	97.10	90.70610507	3	91.54	3	3	2.5	Attained	
				CO6	Apply regression techniques to solve real world problems.	74.56	62.32	96.67	98.55	90.55188406	3	91.54	3	3	2.5	Attained	
VII	Dr. Smita Parte	CSE	150716-Distributed	CO1	Tell the basic elements and concepts related to	66.2	71.83	85.92	97.18	87.32375	4.23	55.56	1.6	3.7	2.5	Attained	
				CO2	Demonstrate knowledge of the core architectural aspects	57.75	57.75	85.92	97.18	84.5075	3	55.56	1.6	2.7	2.5	Attained	
				CO3	Identify how the resources in a distributed system are	67.61	59.15	88.73	92.96	84.5075	3	55.56	1.6	2.7	2.5	Attained	
				CO4	Examine the concept of distributed file system and	49.3	45.07	91.55	91.55	80.45875	3	55.56	1.6	2.7	2.5	Attained	
				CO5	Compare various distributed system algorithms for	45.07	45.07	88.73	87.32	77.11	3	61.11	2.1	2.8	2.5	Attained	
															2.5		
VII	Ms. Ankita	CSE	1000008-Universal	CO1	to become more aware of their surroundings, society,	78.4	87.1	74.6	71.2	74.9375	3	78.5	3	3	2.5	Attained	
				CO2	to become sensitive to their commitment towards what	75.6	79.7	83.7	69.2	74.9375	3	74.8	3	3	2.5	Attained	
				CO3	to apply what they have learnt to their own self in different	82.7	78.3	76.3	75.34	76.87	3	70.8	3	3	2.5	Attained	
				CO4	to sustain human relationships and human nature in	74.3	72.9	77.7	76.34	75.995	3	73.5	3	3	2.5	Attained	
				CO5	to have better critical ability.	74.6	79.7	78.3	71.5	74.6125	3	74.8	3	3	2.5	Attained	
				CO6	to negotiate living in harmony with self and other	79.7	78.6	80.7	69.34	74.6325	3	73.5	3	3	2.5	Attained	
VII	JKT	CSE	Network	CO1	define various aspects of network security	92.11	94.74	62.16	57.89	67.84125	2.8	83.34	3	2.8	2.5	Attained	
				CO2	illustrate fundamentals of number theory and cryptography	92.11	89.47	43.24	74.34	70.6775	3	80.32	3	3	2.5	Attained	
				CO3	apply security mechanisms to achieve principles of network security.	86.84	89.47	72.97	65.79	73.17625	3	79.21	3	3	2.5	Attained	
				CO4	analyze the cause for various existing network attacks.	94.74	84.21	57.58	44.74	59.13375	1.9	86.32	3	2.1	2.5	Not Attained	
				CO5	examine the vulnerabilities in applications over internet.	97.37	71.05	63.64	47.37	60.6475	2.1	84.34	3	2.3	2.5	Not Attained	
				CO6	develop a secure protocol for achieving various network security services.	94.74	89.47	69.7	44.74	62.82125	2.3	82.38	3	2.4	2.5	Not Attained	
I	AM	M.Tec	620116	CO1	Define Computer Security and basics of cryptography	90.63	75.66	67.66	75.89	75.64625	3	62.3	2.2	2.8	2	Attained	
				CO2	demonstrate different data encryption algorithms and	80.23	80.09	66.72	76.66	75.05	3	62.3	2.2	2.8	2	Attained	
				CO3	Identify the various security attacks and threats	82.65	80.09	68.67	78.63	76.825	3	77.12	3	3	3	Attained	
				CO4	Analyse evaluation criteria for AES, Triple DES and	82.65	86.23	69.74	69.23	73.16	3	77.13	3	3	3	Attained	
				CO5	Explain SSL and TLS , Firewall, Digital Signatures and its	67.88	88.23	72.45	88.23	81.74125	3	75.69	3	3	3	Attained	
				CO6	Discuss various web security considerations.	80.88	88.1	72.13	86.23	82.27	3	75.69	3	3	3	Attained	

	Excellent (3)	Very Good (2)	Good (1)
Attainment Levels	70	60	50

Total CO Attainment = 80% of Direct CO

Direct CO Attainment = 12.5% of Weekly Quiz Score +

For **Indirect CO attainment:** CO feedback from the students, by respective course instructor, was collected (via Institute's MOODLE), along with the course end seminar and one minutes paper writing.

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CO attainment with Gap Analysis and action taken for July-Dec 2023

Sem	Faculty Name	Branch & Section	Cource code & name		Course Outcome Statements	CO attainment Lab wok and sessional (%age)	CO attainment from SBMP (%age) OR CO attainment from Lab wok	CO attainment from End Sem (%age)	CO direct attainment (%age)	CO direct attainment level	Overall CO attainment	Target (To be set for Overall CO Attainment)	Attained/not attained	Action taken for Not Attained
I	KS+AS+MSP	CSE	150122 – Computer Programming LAb	CO1	Identify situations where computational methods and	92.36	89.17	87.9	89.05	3	3	2.5	Attained	
				CO2	Describe the basic principles of procedural programming.	92.36	89.17	86.62	88.28	3	3	2.5	Attained	
				CO3	Develop algorithms and flowchart for a given problem.	91.08	87.9	86.62	87.77	3	3	2.5	Attained	
				CO4	Analyze the problems and choose suitable programming	91.08	87.9	88.54	88.92	3	3	2.5	Attained	
				CO5	Design, implement, debug and test programs.	93.63	88.54	88.54	89.56	3	3	2.5	Attained	
				CO6	Design computer programs to solve real world problems.	93.63	88.54	85.35	87.64	3	3	2.5	Attained	
I	MP+DL+RKS	CSE	150124-	CO1	Understand Python syntax and basic programming concep	82.52	78.18	76.22	77.87	3	3	2.5	Attained	
				CO2	Create professional-looking documents and generate	75.42	78.44	77.21	77.10	3	3	2.5	Attained	
				CO3	Solve real-world problems using Python, applying key prog	78.58	87.01	82.22	82.45	3	3	2.5	Attained	
				CO4	Develop basic web pages using HTML, CSS and Google	85.22	82.23	80.15	81.58	3	3	2.5	Attained	
				CO5	Demonstrate the Object-oriented programming paradigm	72.44	75.21	76.66	75.53	3	3	2.5	Attained	
I	KS+AS+GK	CSD	290123-DE LAB	CO1	Explain the computer architecture for defining basic	84.42	83.12	85.71	84.93	3	3	2.5	Attained	
				CO2	Recall different number system and solve the basic	84.42	83.12	88.31	86.49	3	3	2.5	Attained	
				CO3	Develop the understanding of combinationalcircuits.	83.12	87.01	88.31	87.01	3	3	2.5	Attained	
				CO4	Analyze the basic concept of sequential circuits.	83.12	87.01	87.01	86.23	3	3	2.5	Attained	
				CO5	Compare various memories.	85.71	84.42	87.01	86.23	3	3	2.5	Attained	
				CO6	Solve the boolean functions using logic gates.	85.71	84.42	84.42	84.68	3	3	2.5	Attained	
III	Ms. Mona Pandey Sharma + AS	CSE	2150303-Design & Analysis of Algorithms Lab	CO1	Relate the principles of algorithm design in solving problems.	78.18	82.42	93.33	88.12	3	3	2.5	Attained	
				CO2	Demonstrate basic algorithms and different problem solving strategies.	92.73	92.73	92.12	92.36	3	3	2.5	Attained	
				CO3	Build creativeness and confidence to solve non-conventional problems.	93.94	93.94	93.33	93.57	3	3	2.5	Attained	
				CO4	Analyze running times of algorithms using asymptotic analysis.	89.09	86.67	93.33	91.15	3	3	2.5	Attained	
				CO5	Compare various algorithm design approaches for solving real world problems.	93.94	93.94	92.12	92.85	3	3	2.5	Attained	
				CO6	Design and implement optimization algorithms in specific applications.	92.73	92.73	93.33	93.09	3	3	2.5	Attained	
III	Dr. Kuldeep Narayan Tripathi	CSE	2150304-Database Management System Lab	CO1	Apply the database concepts, technology and create the	67.34	75.67	87.74	81.25	3	3	2.5	Attained	
				CO2	Construct a database by using data definition, data	71.56	72.67	88.92	82.20	3	3	2.5	Attained	
				CO3	Design a Database application and retrieve the values with	75.45	78.43	84.52	81.49	3	3	2.5	Attained	
				CO4	Design and Implement the database for an application.	68.34	74.34	82.75	78.19	3	3	2.5	Attained	
				CO5							0	2.5	Not Attained	
				CO6							0	2.5	Not Attained	
				CO1	Demonstrate proficiency in Java programming syntax, control structures, and data types to develop functional applications.	83.64	88.48	92.73	90.06	3	3	2.5	Attained	

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III	JKT+ASB + MSP	CSE	2150306	CO2	Apply object-oriented programming principles, including inheritance, polymorphism, and encapsulation, to design and implement robust Java	93.33	91.52	90.3	91.15	3	3	2.5	Attained	
				CO3	Implement exception handling techniques and file input/output operations to ensure program stability and data persistence	92.73	91.52	85.45	88.12	3	3	2.5	Attained	
				CO4	Utilize the Java Collections Framework to effectively manage and manipulate data structures, such as lists, sets, and maps.	86.67	88.48	92.73	90.67	3	3	2.5	Attained	
				CO5	Design and develop multithreaded applications, incorporating synchronization mechanisms to ensure thread safety and efficiency	92.73	90.91	90.3	90.91	3	3	2.5	Attained	
				CO6	Create interactive graphical user interfaces (GUI) using Java Swing components, incorporating event-driven programming to enhance user experience.	93.33	92.73	85.45	88.48	3	3	2.5	Attained	
III	Ms. Mona Pandey Sharma + AS + RKS	CSD	2290303-Design & Analysis of Algorithms Lab	CO1	Relate the principles of algorithm design in solving problems.	97.62	94.05	98.81	97.62	3	3	2.5	Attained	
				CO2	Demonstrate basic algorithms and different problem solving strategies.	98.81	94.05	98.81	97.86	3	3	2.5	Attained	
				CO3	Build creativeness and confidence to solve non-conventional problems.	98.81	86.9	98.81	96.43	3	3	2.5	Attained	
				CO4	Analyze running times of algorithms using asymptotic analysis.	96.43	96.43	98.81	97.86	3	3	2.5	Attained	
				CO5	Compare various algorithm design approaches for solving real world problems.	98.81	98.81	98.81	98.81	3	3	2.5	Attained	
				CO6	Design and implement optimization algorithms in specific applications.	98.81	94.05	98.81	97.86	3	3	2.5	Attained	
III	DL+KS+ JKT	CSD	2290306	CO1	Demonstrate proficiency in Java programming syntax, control structures, and data types to develop functional applications.	93.1	93.1	87.36	89.66	3	3	2.5	Attained	
				CO2	Apply object-oriented programming principles, including inheritance, polymorphism, and encapsulation, to design and implement robust Java applications.	94.25	90.8	90.8	91.49	3	3	2.5	Attained	
				CO3	Implement exception handling techniques and file input/output operations to ensure program stability and data persistence.	93.1	93.1	85.06	88.28	3	3	2.5	Attained	
				CO4	Utilize the Java Collections Framework to effectively manage and manipulate data structures, such as lists, sets, and maps.	94.25	95.4	87.36	90.35	3	3	2.5	Attained	

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				CO5	Design and develop multithreaded applications, incorporating synchronization mechanisms to ensure thread safety and efficiency.	95.4	95.4	90.8	92.64	3	3	2.5	Attained	
				CO6	Create interactive graphical user interfaces (GUI) using Java Swing components, incorporating event-driven programming to enhance user experience.	91.95	95.4	85.06	88.51	3	3	2.5	Attained	
V	Mr. Amit Manjhwar + SP	CSE	150513-Information Security Lab	CO1	Explain attacks, hash algorithms and authentication mecha	78.26	98.33	95.65	73.45	3	3	2.5	Attained	
				CO2	Illustrate fundamentals of number theory and security	62.32	96.67	82.61	73.23	3	3	2.5	Attained	
				CO3	Apply various algorithms to achieve principles of	79.71	93.33	98.55	72.32	3	3	2.5	Attained	
				CO4	Analyse the cause for various exixting network attacks	76.81	88.33	81.16	75.22	3	3	2.5	Attained	
				CO5	Examine the vulnerabilities in IT infrastructure.	73.91	90.00	97.10	80.33	3	3	2.5	Attained	
				CO6	Predicts the attacks and controls associated with IP, Transport level, Web and email security	62.32	96.67	98.55	81.32	3	3	2.5	Attained	
V	Ms. Ankita Sengar	CSD	290501-Data Science Lab	CO1	Define basic concepts of Data Sciences.	68.34	95.65	95.65	81.32	3	3	2.5	Attained	
				CO2	Illustrate various concepts of python that are used in	62.23	89.67	82.61	81.32	3	3	2.5	Attained	
				CO3	Identify various methods for the representation and	75.45	78.33	98.55	81.32	3	3	2.5	Attained	
				CO4	Analysis the data for applying various statistical	78.34	87.33	81.16	81.32	3	3	2.5	Attained	
				CO5	Identify hidden patterns in data and transform it	73.91	87.00	97.10	81.32	3	3	2.5	Attained	
				CO6	Apply regression techniques to solve real world problems.	59.45	89.67	98.55	81.32	3	3	2.5	Attained	
V	GK + DL	CSD	290503-Software Design & Project Management Lab	CO1	Understand epics, stories and tasks	86.15	89.23	92.31	81.32	3	3	2.5	Attained	
				CO2	Apply and recognize priorities and story points.	89.23	87.69	93.85	81.32	3	3	2.5	Attained	
				CO3	Understand burn down charts.	92.31	86.15	95.38	81.32	3	3	2.5	Attained	
				CO4	Understand and Apply filters, version and releases.	81.54	92.31	93.85	81.32	3	3	2.5	Attained	
				CO5	Recognize workflows and roadmaps	87.69	84.62	92.31	81.32	3	3	2.5	Attained	
				CO6	Assign the team collaborations and project roles.	90.77	90.77	96.92	75.65	3	3	2.5	Attained	

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