MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous Institute, Affiliated to RGPV, Bhopal)
NAAC Accredited with A++ Grade
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CO attainment with Gap Analysis and action taken for Jan-June. 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
II	Mr. Amit Manjhwar	CSE	Computer System Organization -150223	CO1	Recall the basic building block of computer	90.71	78.66	87.65	78.66	82.41375	3	79.55	3	3	2	Attained	
				CO2	Explain different memories and the functional	98.85	80.88	84.73	80.88	84.08875	3	83.45	3	3	2	Attained	
				CO3	Explain the concept of working of	92.77	89.66	72.77	89.66	85.82625	3	85.66	3	3	2	Attained	
				CO4	Analyze various models of input-output data	96.77	88.56	69.88	88.56	84.91625	3	84.33	3	3	2	Attained	
				CO5	Evaluate the airthmetic related to number	94.44	88.84	70.41	88.84	84.9325	3	83.45	3	3	3	Attained	
				CO6	develop the skill of writing low level	95.77	75.67	75.89	75.67	78.2375	3	76.66	3	3	3	Attained	
II	Ms. Hemlata arya	CSE	Computer Graphics-150224	CO1	Explain interactive Computer Graphics, various display devices and explore applications of computer graphics	91.5	82.54	85.21	89.6	87.8575	3	85.4	3	3	2.5	Attained	
				CO2	Illustrate various line generations, circle generation, curve generation and shape Generation algorithms.	80.62	89.2	72.61	89.64	84.2	3	82.3	3	3	2.5	Attained	
				CO3	Apply various 2-Dimensional and 3-Dimensional transformations and projections on Images.	93.12	90.48	82.47	87.34	87.2375	3	88.45	3	3	2.5	Attained	
				CO4	Classify methods of image clipping and various algorithms for Line and Polygon clipping.	87.68	90.12	92	94.34	92.395	3	91.32	3	3	2.5	Attained	
				CO5	Choose appropriate filling algorithms, Hidden Surface Elimination algorithm and apply on various images.	75.21	75	90	72	77.27625	3	78.45	3	3	2.5	Attained	
				CO6	Discuss various color models, shading methods, animation and Digital Image Processing.	80	79.2	78	82.14	80.47	3	81.56	3	3	2.5	Attained	
II	Prof. Khushboo Agarwal	CSD	Data structures-290221	CO1	outline the basics of Algorithms and their	90	92	89	90	90	3	86.23	3	3	3	Attained	
				CO2	explain the working of linear/Non Linear data	88	91	76	91	86.875	3	86.96	3	3	3	Attained	
				CO3	identify the appropriate data structure to solve	80	89	72	85	81.625	3	89.95	3	3	3	Attained	
				CO4	analyze the performance of various Data	86	88	71	82	80.5	3	87.23	3	3	2.5	Attained	
				CO5	evaluate the time/space complexities of	65	88	68	82	77.125	3	81.27	3	3	2.5	Attained	
				CO6	design the optimal algorithmic solutions for	71	75	76	70	72.25	3	89.11	3	3	2.5	Attained	
II	Dr. Ranjeet Kumar Singh	CSE	Data structures-150221	CO1	outline the basics of Algorithms and their	90.75	81.67	84.65	79.66	82.545	3	79.55	3	3	2.5	Attained	
				CO2	explain the working of linear/Non Linear data	94.89	80.89	82.73	80.88	83.095	3	83.45	3	3	2.5	Attained	
				CO3	identify the appropriate data structure to solve	92.78	82.67	80.77	89.66	86.95375	3	85.66	3	3	2.5	Attained	
				CO4	analyze the performance of various Data	95.79	81.56	78.88	88.56	86.16875	3	84.33	3	3	2.5	Attained	
				CO5	evaluate the time/space complexities of	94.41	84.85	73.41	88.84	85.18	3	83.45	3	3	2.5	Attained	
				CO6	design the optimal algorithmic solutions for	95.7	81.64	78.89	75.67	79.725	3	76.66	3	3	2.5	Attained	
II	Dr. Devesh Kumar Lal	CSD	Computer System Organization-290223	CO1	Recall the basic building blocks of computer	85	88	87	89	87.875	3	82.21	3	3	2.5	Attained	
				CO2	Explain different memories and the functional	91	92	78	87	85.875	3	74.25	3	3	2.5	Attained	
				CO3	Explain the concept of working of	88	78	76	88	83.75	3	81.64	3	3	2.5	Attained	
				CO4	Analyze various modes of Input-Output data	89	82	77	82	81.625	3	85.23	3	3	2.5	Attained	
				CO5	Evaluate the arithmetic related to the number	86	82	86	86	85.5	3	82.64	3	3	2.5	Attained	
				CO6	Develop the skill of writing low level	74	76	81	76	77	3	73.45	3	3	2.5	Attained	
II	Prof. Kratika Sharma	CSD	Computer Graphics and Animation-290224	CO1	Explain interactive Computer Graphics, various	48	88	60	64	64	2.4	72	3	2.5	2.5	Attained	
				CO2	Illustrate various line generations, circle	48	80	68	68	67	2.7	76	3	2.8	2.5	Attained	
				CO3	Apply various 2-Dimensional and	68	76	68	72	71	3	76	3	3	2.5	Attained	
				CO4	Classify methods of image clipping and various	56	84	64	68	67.5	2.8	76	3	2.8	2.5	Attained	
				CO5	Choose appropriate filling algorithms, Hidden	56	84	64	68	67.5	2.8	74	3	2.8	2.5	Attained	
				CO6	Analyis various color models, shading	68	92	68	76	75	3	80	3	3	2.5	Attained	
IV	Dr. Rajni Ranjan	CSE	Computer	CO1	Outline the Data Communications System and	74.32	82.2	79.63	64.4	71.6725	3	76.4	3	3	2.5	Attained	
				CO2	Identify the different types of network	72.3	79.4	81.23	68.34	73.44	3	78.3	3	3	2.5	Attained	
				CO3	Enumerate the layers of the OSI model and	73.4	69.4	71.43	69.3	70.3575	3	73.5	3	3	2.5	Attained	
				CO4	Identify the different types of network devices	78.2	81.3	68.4	65.2	69.6375	3	74.5	3	3	2.5	Attained	

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CO attainment with Gap Analysis and action taken for Jan-June. 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
IV	Singh	CSE	Networks-150411	CO5	Analyze the problems associated with various networking protocols and measure the	71.3	72.3	68.4	64.2	67.15	2.7	77.4	3	2.8	2.5	Attained	
				CO6	Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and	73.2	73.4	69.3	63.2	67.25	2.7	72.5	3	2.8	2.5	Attained	
IV	Dr. Kuldeep Narayan Tripathi	CSE	Database Management System-150412	CO1	Define the terminology, features, classifications,	90.67	82.32	76.28	78.44	79.91375	3	86.46	3	3	2.5	Attained	
				CO2	Identify different issues involved in the design and implementation of database system	82.06	78.22	75.68	76.54	77.225	3	86.18	3	3	2.5	Attained	
				CO3	Analyse database schema for a given problem	87.46	78.48	74.34	86.68	82.6675	3	90.42	3	3	2.5	Attained	
				CO4	Justify principles for logical design of databases,	86.24	81.94	76.02	88.4	84.2275	3	84.58	3	3	2.5	Attained	
				CO5	Apply transaction processing concepts and recovery	84.27	88.14	77.46	84.38	83.10625	3	86.47	3	3	2.5	Attained	
				CO6	Formulate, using relational algebra and SQL,	88.18	84.28	81.38	88.74	86.2725	3	88.34	3	3	2.5	Attained	
IV	Dr. Gagandeep	CSE	Software Engineering-150413	CO1	Explain the various fundamental concepts of	89.13	81.98	83.11	78.13	80.54	3	78.55	3	3	2.5	Attained	
				CO2	Develop the concepts related to software design &	89.11	80.42	81.21	77.22	84.61	3	84.45	3	3	2.5	Attained	
				CO3	Compare the techniques for software project	88.12	81.23	79.31	87.11	84.23	3	83.66	3	3	2.5	Attained	
				CO4	Choose the appropriate model for real life software	85.21	80.12	77.42	86.21	83.12	3	82.33	3	3	2.5	Attained	
				CO5	Design the software using modern tools and	83.11	83.34	72.11	85.41	80.23	3	84.41	3	3	2.5	Attained	
				CO6	Test the software through different approaches.	87.22	79.54	77.23	74.32	77.3125	3	78.61	3	3	2.5	Attained	
IV	Dr.Manish Dixit	CSE	Theory of Computation-150414	CO1	Explain the basic concepts of switching and finite	86.7	85.3	72.3	65.3	72.225	3	71.2	3	3	2.5	Attained	
				CO2	Relate practical problems to languages, automata,	87.2	86.4	74.2	64.4	72.45	3	70.3	3	3	2.5	Attained	
				CO3	Construct abstract models of computing and check their power to recognize the languages	86.3	87.4	71.6	62.3	70.7625	3	74.2	3	3	2.5	Attained	
				CO4	Analyse the grammar, its types, simplification and	88.4	88.5	73.1	66.7	73.7375	3	69.5	3	3	2.5	Attained	
				CO5	Interpret rigorously formal mathematical methods to prove properties of languages, grammars and	85.7	84.3	72.3	68.4	73.525	3	71.3	3	3	2.5	Attained	
				CO6	Develop an overview of how automata theory, languages and computation are applicable in	88.4	80.9	70.4	69.3	73.4125	3	70.4	3	3	2.5	Attained	
IV	Ms.Khushboo Agrawal	CSD	Computer Networks-290402	CO1	Outline the Data Communications System and	85	90	73	83	81.625	3	86.11	3	3	3	Attained	
				CO2	Identify the different types of network	70	76	71	84	78	3	83.33	3	3	3	Attained	
				CO3	Enumerate the layers of the OSI model and	80	72	65	79	74.75	3	83.33	3	3	3	Attained	
				CO4	Identify the different types of network devices	66	82	65	80	74.75	3	91.67	3	3	3	Attained	
				CO5	.Analyze the problems associated with various	70	80	63	76	72.5	3	93.45	3	3	2.5	Attained	
				CO6	. Familiarity with the basic protocols of	69	76	65	79	73.875	3	91.67	3	3	2.5	Attained	
IV	Dr. Kuldeep Narayan Tripathi	CSD	Database Management System-290402	CO1	Define the terminology, features, classifications,	89.46	81.26	76.24	76.47	78.635	3	84.74	3	3	2.5	Attained	
				CO2	Identify different issues involved in the design and	82.34	77.37	74.25	74.56	75.80625	3	86.42	3	3	2.5	Attained	
				CO3	Analyse database schema for a given problem	86.74	76.94	72.84	82.38	79.86	3	88.47	3	3	2.5	Attained	
				CO4	Justify principles for logical design of databases,	86.12	80.47	74.02	84.92	81.78875	3	82.38	3	3	2.5	Attained	
				CO5	Apply transaction processing concepts and recovery	82.25	86.72	76.92	82.84	81.77125	3	84.94	3	3	2.5	Attained	
				CO6	Formulate, using relational algebra and SQL,	84.37	83.46	80.64	86.04	84.15875	3	87.28	3	3	2.5	Attained	
IV	Ms. Jigyasa Mishra	CSD	Software Engineering-290403	CO1	Explain the various fundamental concepts of software engineering.	84.32	80	60	82	76.54	3	88	3	3	2.5	Attained	
				CO2	Develop the concepts related to software design & analysis.	76.12	80	60	72	70.515	3	81	3	3	2.5	Attained	
				CO3	Compare the techniques for software project management & estimation.	76	60	68	71	69.5	3	78	3	3	2.5	Attained	
				CO4	Choose the appropriate model for real life software project	88	84	72	84	81.5	3	80	3	3	2.5	Attained	
				CO5	Design the software using modern tools and technologies.	88	84	60	76	74.5	3	86	3	3	2.5	Attained	
				CO6	Test the software through different approaches.	76	60	80	68	71	3	82	3	3	2.5	Attained	
IV	Mr. Mahesh Parmar	CSE	Theory of Computation-290404	CO1	Explain the basic concepts of switching	65	80	85	87	82.875	3	90	3	3	2.5	Attained	
				CO2	Relate practical problems to languages, automata, computability and complexity	65	83	92	85	84	3	88.33	3	3	2.5	Attained	
				CO3	Construct abstract models of computing	70.2	75	89	75	77.9	3	88	3	3	2.7	Attained	
				CO4	Analyse the grammar, its types,	70	75	90	65	73.125	3	73.6	3	3	2.5	Attained	
				CO5	Interpret rigorously formal mathematical	63	70	92	72	75.625	3	84	3	3	2.5	Attained	

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				CO6	Develop an overview of how automata	64	85	85	66	72.875	3	88.33	3	3	2.5	Attained	
IV	Dr. Gagandeep Kaur	CSD	Web Technology-290401	CO1	I am able to Utilize the set of standards,	79.21	86.11	74.31	84.11	81.2975	3	79.55	3	3	2.5	Attained	
				CO2	I am able to Identify suitable web designing technologies for website development	77.32	92.32	81.23	82.21	82.6175	3	84.45	3	3	2.5	Attained	
				CO3	I am able to Design basic webpages using	84.31	79.11	80.21	91.11	86.035	3	83.66	3	3	2.5	Attained	
				CO4	I am able to Validate user input using	91.11	74.11	75.11	83.12	80.99	3	81.33	3	3	2.5	Attained	
				CO5	I am able to Design Static and Dynamic	75.98	79.21	78.21	75.23	76.56625	3	83.41	3	3	2.5	Attained	
																Please Set Target	
VI	Prof. Smita Parte	CSE	Cloud Computing & Virtualization-150611	CO1	Build the fundamental ideas behind Cloud	73.40	84.10	74.60	69.06	72.87	3	72.13	3	3	2.5	Attained	
				CO2	Understand ideas and principles of	85.70	79.30	76.30	35.25	57.33	1.7	73.15	3	2	2.5	Not Attained	Discuss the students about it.
				CO3	Describe fundamental concepts of cloud	82.70	78.30	76.30	92.09	85.24	3	70.34	3	3	2.5	Attained	
				CO4	Illustrate the fundamental concepts of	78.30	81.90	77.70	69.06	73.98	3	69.24	2.9	3	2.5	Attained	
				CO5	Study of various tools and technologies for	76.60	75.70	78.30	57.55	67.39	2.7	71.67	3	2.8	2.5	Attained	
																Please Set Target	
VI	Dr. Rohit Agrawal	CSE	Digital Image Processing-150612	CO1	Explain different modalities and current	92.09	82.91	75.65	92.09	86.83075031	3	72.13	3	3	2.5	Attained	
				CO2	Classify spatial and frequency domain	69.06	78.34	52.17	69.06	66.00144589	2.6	73.15	3	2.7	2.5	Attained	
				CO3	Apply image processing techniques to	57.55	91.45	67.42	57.55	64.25853363	2.4	70.34	3	2.5	2.5	Attained	
				CO4	Analyze the constraints in image processing	43.88	88.48	62.88	43.88	54.20775452	1.4	69.24	2.9	1.7	1.5	Attained	
				CO5	Evaluate various enhancement, restoration	35.25	90.15	65.91	35.25	49.77839683	1	71.67	3	1.4	1.5	Not Attained	Discuss the students about it.
										0	1		1	1		Please Set Target	
VI	Ms. Manisha Pathak + Ms. Aashi Singh Bhadouria	CSE	Machine Learning-150613	CO1	Define basic concepts of Machine Learning	76	80	88	89	86	3	70	3	3	2.5	Attained	
				CO2	Illustrate various techniques for learner	88	80	64	72	73	3	72.25	3	3	2.5	Attained	
				CO3	Implement various types of supervised	92	76	62	58	65.5	2.6	69.55	3	2.7	2.7	Attained	
				CO4	Apply ML ensemble model to solve real world	88	84	64	65	70	3	70.25	3	3	2.5	Attained	
				CO5	Apply unsupervised ML techniques to solve	92	72	56	40	54.5	1.5	71.65	3	1.8	2.5	Not Attained	Discuss the students about it.
				CO6	-	-										Please Set Target	

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

Total CO Attainment = 80% of Direct **Direct CO 12.5% of**

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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II	Dr. Ranjeet Kumar Singh	CSE	Data structures Lab-150221	CO1	outline the basics of Algorithms and their performance criteria's	82.11	76.23	91.21	86.394	3	3	2.5	Attained	
				CO2	explain the working of linear/Non Linear data structures.	77.54	74.89	81.44	79.35	3	3	2.5	Attained	
				CO3	identify the appropriate data structure to solve specific problems.	76.33	82.93	84.55	82.582	3	3	2.5	Attained	
				CO4	analyze the performance of various Data Structures & their applications.	77.48	84.37	82.23	81.708	3	3	2.5	Attained	
				CO5	evaluate the time/space complexities of various data structures & their	72.89	79.51	72.73	74.118	3	3	2.5	Attained	
				CO6	design the optimal algorithmic solutions for various problems	73.89	80.23	74.12	75.296	3	3	2.5	Attained	
II	Ms. Hemlata arya	CSE	Computer Graphics Lab-150224	CO1	Demonstrates the fundamental concepts of Computer Graphics and its applications.	90	85	82	84.2	3	3	2.5	Attained	
				CO2	Explain and use hardware's and software's component of computer graphics.	84	80	78	79.6	3	3	2.5	Attained	
				CO3	Apply various image generation, manipulations and color model techniques in coding.	76.2	79	74	75.44	3	3	2.5	Attained	
				CO4	Implement algorithms for create and manipulate image in programs.	88	84	72	77.6	3	3	2.5	Attained	
				CO5	Develop the ability to write computer programs for create image and animation using graphics concepts.	82	80	67	72.6	3	3	2.5	Attained	
				CO6	Develop application programs and projects in terms of image and animation using graphics concepts.	89	87	74	79.6	3	3	2.5	Attained	
II	Prof. Khushboo Agarwal	CSD	Data structures Lab-290221	CO1	outline the basics of Algorithms and their performance criteria's	81.45	79.23	90	86.136	3	3	2.5	Attained	
				CO2	explain the working of linear/Non Linear data structures.	74.23	80.34	83	80.714	3	3	2.5	Attained	
				CO3	identify the appropriate data structure to solve specific problems.	69.49	81.46	85	81.19	3	3	2.5	Attained	
				CO4	analyze the performance of various Data Structures & their applications.	77.5	75.23	83	80.346	3	3	2.5	Attained	
				CO5	evaluate the time/space complexities of various data structures & their	79.34	76.34	70	73.136	3	3	2.5	Attained	
				CO6	design the optimal algorithmic solutions for various problems	82.94	81.83	70	74.954	3	3	2.5	Attained	
II	Prof. Jigyasa Mishra	CSD	Python Programming Lab-290222	CO1	understand basic python programming constructs	80	80	76	77.6	3	3	2.5	Attained	
				CO2	analyze various data structures available in python	84	80	60	68.8	2.9	2.9	2.5	Attained	
				CO3	implement the Object-oriented programming paradigm in Python	88	76	60	68.8	2.9	2.9	2.5	Attained	
				CO4	apply the different File handling operations	88	84	72	77.6	3	3	2.5	Attained	
				CO5	design GUI Applications in Python	88	80	60	69.6	3	3	2.5	Attained	
				CO6	construct graphical representation of data using python packages	88	80	60	69.6	3	3	2.5	Attained	
II	Mr. Arun Kumar	CSE	Python Programming-150222	CO1	understand basic python programming constructs	84	80	60	68.8	2.9	2.9	2.5	Attained	
				CO2	analyze various data structures available in python	88	76	60	68.8	2.9	2.9	2.5	Attained	
				CO3	implement the Object-oriented programming paradigm in Python	88	84	72	77.6	3	3	2.5	Attained	
				CO4	apply the different File handling operations	88	80	60	69.6	3	3	2.5	Attained	
				CO5	design GUI Applications in Python	86	79	62	70.2	3	3	2.5	Attained	
				CO6	construct graphical representation of data using python packages	88	80	60	69.6	3	3	2.5	Attained	
IV	Dr. Devesh K Lal	CSE	Python Programming-150415	CO1	understand basic python programming constructs	82	86	73.34	77.604	3	3	2.5	Attained	
				CO2	analyze various data structures available in python	84	80	75.12	77.872	3	3	2.5	Attained	
				CO3	implement the Object-oriented programming paradigm in Python	90	92	79.55	84.13	3	3	2.5	Attained	
				CO4	apply the different File handling operations	86	84	73.3	77.98	3	3	2.5	Attained	
				CO5	design GUI Applications in Python	84	86	80.45	82.27	3	3	2.5	Attained	
				CO6	construct graphical representation of data using python packages	88	80	79.28	81.168	3	3	2.5	Attained	
IV	Dr. Rajni Ranjan Singh + Prof. Smita	CSE	Computer Networks Lab-150411	CO1	Outline the Data Communications System and its components.	79.56	77.44	82.56	80.936	3	3	2.5	Attained	
				CO2	Identify the different types of network topologies and protocols.	80.21	83.39	80.38	80.948	3	3	2.5	Attained	
				CO3	Enumerate the layers of the OSI model and function(s) of each layer.	77.54	78.23	79.43	78.812	3	3	2.5	Attained	
				CO4	Identify the different types of network devices and their functions within a network	78.31	77.43	81.23	79.886	3	3	2.5	Attained	
				CO5	.Analyze the problems associated with various networking protocols and measure	75.43	80.45	79.66	78.972	3	3	2.5	Attained	
				CO6	. Familiarity with the basic protocols of computer networks, and how they can be	73.31	69.31	74.34	73.128	3	3	2.5	Attained	
				CO1	**Apply the database concepts, technology and create the relations by specifying**	78.56	76.44	86.24	82.744	3	3	2.5	Attained	

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CO attainment with Gap Analysis and action taken for Jan-June. 2023

Sem	Faculty Name	Brabch & 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 session for Minor/Departmental Lab/CPS (%)	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
IV	Dr. Kuldeep Narayan Tripathi	CSE	Database Management System Lab-150412	CO2	**Construct a database by using data definition, data manipulation and control**	80.12	79.23	87.53	84.388	3	3	2.5	Attained	
				CO3	**Design a Database application and retrieve the values with the help of queries using**	73.56	76	84.22	80.444	3	3	2.5	Attained	
				CO4	**Design and Implement the database for an application.**	78.3	81.2	81.74	80.944	3	3	2.5	Attained	
				CO5					0	1	1	2.5	Not Attained	
				CO6					0	1	1	2.5	Not Attained	
IV	Dr. Devesh K Lal + Prof. Arun	CSE	Python Programming Lab-150415	**CO1**	understand basic python programming constructs	80	86	78.65	80.39	3	3	2.5	Attained	
				CO2	analyze various data structures available in python	84	80	71.2	75.52	3	3	2.5	Attained	
				CO3	implement the Object-oriented programming paradigm in Python	92	92	79.42	84.452	3	3	2.5	Attained	
				CO4	apply the different File handling operations	84	84	78.18	80.508	3	3	2.5	Attained	
				CO5	design GUI Applications in Python	88	86	81.26	83.556	3	3	2.5	Attained	
				CO6	construct graphical representation of data using python packages	88	80	81.45	82.47	3	3	2.5	Attained	
IV	Dr. Devesh K Lal	CSD	Python Programming-290405	**CO1**	understand basic python programming constructs	82	86	73	77.4	3	3	2.5	Attained	
				CO2	analyze various data structures available in python	84	80	82	82	3	3	2.5	Attained	
				CO3	implement the Object-oriented programming paradigm in Python	90	92	81	85	3	3	2.5	Attained	
				CO4	apply the different File handling operations	86	84	74	78.4	3	3	2.5	Attained	
				CO5	design GUI Applications in Python	84	86	79	81.4	3	3	2.5	Attained	
				CO6	construct graphical representation of data using python packages	88	80	81	82.2	3	3	2.5	Attained	
IV	Dr. Gagandeep Kaur	CSD	Web Technology-290401	**CO1**	**I am able to Utilize the set of standards, protocols, and interfaces required to deliver**	79.21	86.11	74.31	77.65	3	3	2.5	Attained	
				CO2	**I am able to Identify suitable web designing technologies for website development**	77.32	92.32	81.23	82.666	3	3	2.5	Attained	
				CO3	**I am able to Design basic webpages using HTML and CSS**	84.31	79.11	80.21	80.81	3	3	2.5	Attained	
				CO4	**I am able to Validate user input using JavaScript**	91.11	74.11	75.11	78.11	3	3	2.5	Attained	
				CO5	I am able to Design Static and Dynamic website	75.98	79.21	78.21	77.964	3	3	2.5	Attained	
				CO6					0	1	1	2.5	Not Attained	
IV	Dr. Kuldeep Narayan Tripathi	CSD	Database Management System Lab-290402	**CO1**	**Apply the database concepts, technology and create the relations by specifying**	78.54	79.23	83.58	81.702	3	3	2.5	Attained	
				CO2	**Construct a database by using data definition, data manipulation and control languages.**	79.31	78.43	85.64	82.932	3	3	2.5	Attained	
				CO3	**Design a Database application and retrieve the values with the help of queries using**	79.43	81.45	76.84	78.28	3	3	2.5	Attained	
				CO4	**Design and Implement the database for an application.**	77.31	68.31	80.94	77.688	3	3	2.5	Attained	
				CO5					0	1	1	2.5	Not Attained	
				CO6					0	1	1	2.5	Not Attained	
IV	Dr. Devesh K Lal	CSD	Python Programming Lab-290405	**CO1**	understand basic python programming constructs	86	90	88	88	3	3	2.5	Attained	
				CO2	analyze various data structures available in python	84	80	82	82	3	3	2.5	Attained	
				CO3	implement the Object-oriented programming paradigm in Python	90	92	81	85	3	3	2.5	Attained	
				CO4	apply the different File handling operations	88	84	79	81.8	3	3	2.5	Attained	
				CO5	design GUI Applications in Python	84	86	81	82.6	3	3	2.5	Attained	
				CO6	construct graphical representation of data using python packages	88	86	82	84	3	3	2.5	Attained	
VI	HA + SP (A batch) AK + KS (B Batch)	CSE	Minor Project-150614	**CO1**	**Execute a solution or prototype related to the chosen topic.**	77	78	79	78.4	3	3	2.5	Attained	
				CO2	**Demonstrate critical thinking skills by evaluating different approaches,**	78	79	86	83	3	3	2.5	Attained	
				CO3	**Develop clear and concise documentation of the entire project, including the problem**	80	81	79	79.6	3	3	2.5	Attained	
VIII	Prof. Amit	CSE	Internship/Project-150801	**CO1**	Identify job skills, knowledge, and attitude, which are requisite to constitute a	87	79	76	78.8	3	3	2.5	Attained	
				CO2	Review in the projects in industries during his or her industrial training.	82	86	85	84.6	3	3	2.5	Attained	
				CO3	Apply advanced tools and techniques encountered during industrial training and visit.	84	80	89	86.2	3	3	2.5	Attained	
				CO4	Point out industrial personnel and follow engineering practices and discipline prescribed	90	92	78	83.2	3	3	2.5	Attained	
				CO5	Generate awareness about general workplace behavior and build interpersonal and team	79	81	84	82.4	3	3	2.5	Attained	
				CO6	Summarize professional work reports and presentations.	82	79	81	80.8	3	3	2.5	Attained	

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						Excellent (3)	Very Good (2)	Good (1)						
					Attainment Levels	70	60	50						
					Total CO Attainment = 80% of Direct CO Attainment + 20% of										
							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.