CO attainment with Gap Analysis and action taken for Jan-June 2024

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	CO indirect attainment level	Overall CO attainment	Target (To be set for Overall CO Attainment)	Attained/not attained
II	Dr. Ranjeet Kumar Singh	CSE	3150221-Data Structures	CO1	Outline the basics of Algorithms and their performance criteria'	52.83	59.12	71.07	56.45	59.98625	2	81.54	3	2.2	2.2	Attained
				CO2	Explain the working of linear/Non Linear data structures	74.21	85.53	54.09	57.23	62.105	2.2	89.22	3	2.4	2.2	Attained
				CO3	Identify the appropriate data structure to solve specific problems..	65.41	86.16	72.96	58.43	66.40125	2.6	91.32	3	2.7	2.2	Attained
				CO4	analyze the performance of various Data Structures & their applications.	81.13	84.28	70.44	55.67	66.12125	2.6	88.59	3	2.7	2.2	Attained
				CO5	Evaluate the time/space complexities of various data structures & their applications. .	62.45	66.04	68.76	56.34	61.42125	2.1	87.34	3	2.3	2.2	Attained
				CO6	Design the optimal algorithmic solutions for various problems..	62.34	64.56	69.34	59.34	62.8675	2.3	89.22	3	2.4	2.2	Attained
II	Prof. Manisha Pathak	CSE	3150222-Object Oriented Programming & Methodology	CO1	tell the concepts of classes & objects and their significance in real world	92.5	93.13	83.75	79.35	83.81625	3	80.57	3	3	2.5	Attained
				CO2	explain the benefits of object oriented design.	92.5	93.13	79.06	79.35	82.64375	3	82.69	3	3	2.5	Attained
				CO3	build C++ classes using appropriate encapsulation and design principles.	36.25	76.88	84.06	76.77	73.54125	3	84.25	3	3	2.5	Attained
				CO4	analyze the utilization of inheritance and polymorphism in the solution of problems.	92.5	93.13	71.25	72.9	77.46625	3	87.32	3	3	2.5	Attained
				CO5	choose appropriate object orient programming concepts for solving real world problems	88.75	88.75	77.19	76.77	79.87	3	88.31	3	3	2.5	Attained
				CO6	develop solutions to problems demonstrating usage of control structures, modularity, I/O	88.75	88.75	80	69.03	76.7025	3	85.23	3	3	2.5	Attained
II	Dr.. Kuldeep Narayan Tripathi	CSD	3290223-Computer System Organization	CO1	Recall the basic building blocks of computer Architecture.	85.32	88.21	87.27	71.63	79.32375	3	82.37	3	3	2.5	Attained
				CO2	Describe different memories and the functional units of a processor.	91.27	92.34	78.65	72.37	78.79875	3	74.67	3	3	2.5	Attained
				CO3	Demonstrate the concept of working of microprocessor, multiprocessor and pipelining.	88.67	78.36	76.32	69.04	74.47875	3	81.47	3	3	2.5	Attained
				CO4	Analyze various modes of Input-Output data transfer.	89.43	82.76	77.39	73.453	77.59775	3	85.76	3	3	2.5	Attained
				CO5	Explain different cache mapping techniques.	87.33	82.37	86.67	71.23	78.495	3	82.67	3	3	2.5	Attained
				CO6	Develop the skill of writing low level programming.	74.27	76.67	81.03	68.724	73.487	3	73.47	3	3	2.5	Attained
II	Dr. Gagandeep Kaur	CSD	3290221-Data Structures	CO1	outline the basics of Algorithms and their performance criteria's	93.33	93.33	70.97	78.87	80.51	3	91.24	3	3	3	Attained
				CO2	explain the working of linear/Non Linear data structures	93.33	96	70.97	80.28	81.54875	3	89.22	3	3	3	Attained
				CO3	identify the appropriate data structure to solve specific problems.	97.33	76	70.97	81.69	80.25375	3	93.32	3	3	3	Attained
				CO4	analyze the performance of various Data Structures & their applications	94.67	78.67	94.37	74.65	82.585	3	90.59	3	3	3	Attained
				CO5	evaluate the time/space complexities of various data structures & their	97.33	92	91.55	73.24	83.17375	3	88.34	3	3	3	Attained
				CO6	design the optimal algorithmic solutions for various problems.	97.33	89.33	70.97	74.65	78.4	3	89.22	3	3	3	Attained
II	Prof. Manisha Pathak	CSD	3290222-Object Oriented Programming & Methodology	CO1	tell the concepts of classes & objects and their significance in real world	96.15	96.15	62.82	66.67	73.0775	3	82.75	3	3	2.5	Attained
				CO2	explain the benefits of object oriented design.	96.15	96.15	59.62	66.67	72.2775	3	80.25	3	3	2.5	Attained
				CO3	build C++ classes using appropriate encapsulation and design principles.	65.38	87.18	66.67	66.67	69.0725	2.9	81.35	3	2.9	2.5	Attained
				CO4	analyze the utilization of inheritance and polymorphism in the solution of problems.	96.15	96.15	52.56	62.82	68.5875	2.9	82.45	3	2.9	2.5	Attained
				CO5	choose appropriate object orient programming concepts for solving real world problems	93.59	93.59	56.41	66.67	70.835	3	82.79	3	3	2.5	Attained
				CO6	develop solutions to problems demonstrating usage of control structures, modularity, I/O and other standard language constructs.	93.59	93.59	64.1	53.85	66.3475	2.6	86.48	3	2.7	2.5	Attained
II	Prof. Jigyasha Mishra	CSD	3290224-Computer Graphics and Animation	CO1	Apply graphics principles to new and evolving application domains.	79.49	85.9	89	83.34	84.59375	3	82.78	3	3	2	Attained
				CO2	Identify and troubleshoot common issues related to computer graphics rendering.	71.79	70.51	78.21	85.22	79.95	3	86.11	3	3	2	Attained
				CO3	Implement graphics algorithms for tasks such as clipping, rasterization, and shading	79.49	69.23	87.18	85.44	83.105	3	83.21	3	3	2	Attained
				CO4	Apply mathematical transformations to manipulate and transform graphical objects	88.46	78.21	65.38	78.9	76.62875	3	84.4	3	3	2	Attained
				CO5	Grasp the key concepts of 2D and 3D graphics representation	78.21	70.51	70.51	80.78	76.6075	3	88.2	3	3	2	Attained
				CO6	Demonstrate ethical considerations in the use and creation of computer graphics	78.21	70.51	66.67	82.1	76.3075	3	82.3	3	3	2	Attained
IV	Prof. Amit	CSE	2150411-Computer Networks	CO1	Outline the Data Communications System and its components.	76.13	67.74	97.42	85.16	77.77	3	82.79	3	3	2	Attained
				CO2	Identify the different types of network topologies and protocols.	61.29	67.1	96.13	85.81	61.8	2.2	86.01	3	2.4	2	Attained
				CO3	Enumerate the layers of the OSI model and function(s) of each layer.	63.87	65.81	71.61	83.87	61.8	2.2	84.40	3	2.4	2	Attained
				CO4	Identify the different types of network devices and their functions within a netwo	51.61	50.97	54.19	86.45	75.69	3	81.70	3	3	2	Attained
				CO5	Analyze the problems associated with various networking protocols and measure the performance.	55.16	65.81	54.19	87.1	75.69	3	82.25	3	3	2	Attained
				CO6	Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.	58.76	64.56	56.76	87.74	75.69	3	86.01	3	3	2	Attained

CO attainment with Gap Analysis and action taken for Jan-June 2024

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IV	Dr. Rohit Agrawal	CSE	2150412-Optimization Techniques	CO1	Describe fundamental concepts of optimization, including its role in engineering applications.	66.23	92.81	84.56	92.68	87.36	3	85.45	3	3	2	Attained
				CO2	Describe a clear understanding of the importance of formulating optimization problems	55.19	84.97	84.32	80.49	78.845	3	86.45	3	3	2	Attained
				CO3	Apply their knowledge by classifying optimization problems, formulating linear programming problems.	65.58	90.85	71.24	51.22	62.97375	2.3	89.34	3	2.4	2	Attained
				CO4	Analyze optimization algorithms such as gradient descent, steepest descent, Newton's method, and direct methods for constrained optimization.	57.79	85.62	64.71	74.39	71.29875	3	88.53	3	3	2	Attained
				CO5	Evaluate optimization methods, comparing their efficiency, limitations, and practical applications.	54.55	81.05	68.72	62.2	65.23	2.5	82.45	3	2.6	2	Attained
				CO6												Please Set Target
IV	Prof. Ankita	CSE	2150413-Data Mining & Warehousing	CO1	Classify various databases systems and data models of data warehouse .	80.72	83.73	90.96	81.21	83.90328952	3	84	3	3	2.5	Attained
				CO2	Compare various methods for storing & retrieving data from different data sources/repository.	81.33	72.89	89.19	88.48	85.81703268	3	84	3	3	2.5	Attained
				CO3	Apply pre-processing techniques for construction of data warehouse.	83.73	78.92	92.77	76.36	81.70564348	3	88	3	3	2.5	Attained
				CO4	Analyze data mining for knowledge discovery & prediction.	81.93	84.34	93.37	80.61	84.42866283	3	84	3	3	2.5	Attained
				CO5	Explain data mining methods for identification of association for transactional databases.	80.12	81.33	92.17	71.52	78.98079865	3	80	3	3	2.5	Attained
				CO6	Develop various classification and clustering algorithms for data using data mining.	81.33	78.92	95.18	80.61	84.12815078	3	83.21	3	3	2.5	Attained
IV	Dr. Ganesh Chandra	CSE	2150414-Theory of Computation	CO1	Describe the basic concepts of switching and finite automata theory & languages.	90.96	84.34	56.74	75.83	74.0125	3	84.4	3	3	2.5	Attained
				CO2	Compute abstract models of computing and check their power to recognize the languages	90.96	92.77	70.21	69.36	75.19875	3	88.2	3	3	2.5	Attained
				CO3	Analyse the grammar, its types, simplification and normal form.	87.95	67.47	77.67	73.67	75.68	3	82.3	3	3	2.5	Attained
				CO4	Design mathematical models to prove properties of languages, grammars and automata	85.54	92.77	56	71.42	71.99875	3	82.79	3	3	2.5	Attained
				CO5	Apply automata theory, languages and computation in engineering application.	87.35	91.57	64	77.12	76.925	3	78.59	3	3	2.5	Attained
																Please Set Target
IV	Dr. Gagandeep	CSD	2290401 Web Technology	CO1	Distinguish among various web designing technologies for website development	91.46	78.57	85	90.24	87.62587979	3	91.01	3	3	2.5	Attained
				CO2	Construct webpages using HTML and CSS,	89.02	92.86	81.67	90.24	88.27409408	3	89.85	3	3	2.5	Attained
				CO3	Model website using JavaScript and PHP	86.59	91.67	86.67	90.24	89.07153455	3	90.31	3	3	2.5	Attained
				CO4	Design Static and Dynamic website	85.37	91.67	87.34	71.95	79.93958333	3	88.126	3	3	2.5	Attained
				CO5	Explain the working of web pages and data retrieval.	92.68	86.90	88.61	79.27	84.23559524	3	92.39	3	3	2.5	Attained
				CO6						0	1		1	1	2.5	Not Attained
IV	Dr. Devesh	CSD	2290402-Microprocessor Design	CO1	Define technological trends influencing the design and performance of microprocessor systems.	81.75	84.11	85.65	56.34	70.315	3	74.67	3	3	2.5	Attained
				CO2	Develop suitable assembly code for different problemsk	88.44	89.21	86.31	55.67	71.61875	3	81.47	3	3	2.5	Attained
				CO3	Analyze and Understand Assembly Language Instructions.	91.17	88	87.60	54.36	71.47625	3	85.76	3	3	2.5	Attained
				CO4	Show the metrics for measuring microprocessor performance.	84.33	87.04	82.75	57.68	70.94875	3	82.67	3	3	2.5	Attained
				CO5	Describe and classify the instruction set of 8085/8086 microprocessor.	90.05	91.45	90.41	58.34	74.46	3	73.47	3	3	2.5	Attained
				CO6												Please Set Target
IV	Dr. Kuldeep	CSD	2290405-Computer Networks	CO1	Outline the Data Communications System and its components.	85.45	90.67	74.29	73.56	77.3675	3	88.43	3	3	2.5	Attained
				CO2	Describe the different types of network topologies and protocols.	71.56	77.46	72.37	74.92	74.18	3	83.77	3	3	2.5	Attained
				CO3	Demonstrate the layers of the OSI model and function(s) of each layer.	80.86	73.94	67.68	75.52	74.03	3	84.43	3	3	2.5	Attained
				CO4	Differentiate the different types of network devices and their functions within a network.	68.93	82.68	66.29	73.21	72.12875	3	92.34	3	3	2.5	Attained
				CO5	Analyze the problems associated with various networking protocols and measure the	72.04	81.37	64.87	70.48	70.63375	3	94.67	3	3	2.5	Attained
				CO6	Evaluate the basic protocols of computer networks, and how they can be used to assist in	70.43	76.52	65.74	71.47	70.53875	3	92.33	3	3	2.5	Attained
VI	Prof. Kratika	OC	910100-Data Structures	CO1	Outline the basics of algorithms and their performance criteria	61.54	74.36	53.85	76.32	68.61	2.9	68.6	2.9	2.9	2	Attained
				CO2	Explain the working of linear/non-linear data structures	61.54	74.36	51.28	55.26	57.4375	1.7	67.4	2.7	1.9	2	Not Attained
				CO3	Identify the appropriate data structure to solve specific problems	69.23	76.92	53.85	63.16	63.31125	2.3	71.5	3	2.4	2	Attained
				CO4	Analyze the performance of various data structures & their applications	66.67	64.1	51.28	50	54.16625	1.4	63.3	2.3	1.6	2	Not Attained
				CO5	Evaluate the time/space complexities of various data structures & their applications	66.67	61.54	56.41	65.79	63.02375	2.3	64.7	2.5	2.3	2	Attained
				CO6	Design the optimal algorithmic solutions for various problems	66.67	61.54	51.28	55.26	56.47625	1.6	62.4	2.2	1.7	2	Not Attained
VI	Ankita	OC	910101-Python Programming	CO1	I am able to define basic concepts of Data Sciences	72.94	70.59	72.94	75.71	81.33	3	74.3	3	3	2.5	
				CO2	I am able to illustrate various concepts of python that are used in data sciences	70.59	70.59	69.41	75.71	83.35	3	87.35	3	3	2.5	
				CO3	I am able to identify various methods for the representation and manipulation of	70.59	71.76	76.47	58.57	74.6	3	73.2	3	3	2.5	
				CO4	I am able to analysis the data for applying various statistical modelling	70.59	70.59	74.12	74.29	91.67	3	91.67	3	3	2.5	
				CO5	I am able to identify hidden patterns in data and transform it using data science	72.94	74.12	74.12	64.29	83.33	3	68.7	2.9	3	2.5	
				CO6	I am able to apply regression techniques to solve real world problems.	69.41	71.76	80.00	74.29	87.5	3	70.3	3	3	2.5	
VI	Dr. Smita Parte	CSE	150615-Cloud Computing & Virtualization	CO1	Build the fundamental ideas behind Cloud Computing, the evolution of the	90	78.57	91.46	79.59	83.73142857	3	63.3	2.3	2.9	2.5	Attained
				CO2	Understand ideas and principles of Virtualization and its applications.	91.67	87.34	89.02	77.55	83.40583333	3	64.7	2.5	2.9	2.5	Attained
				CO3	Describe fundamental concepts of cloud infrastructures and Service Oriented	86.67	91.67	86.59	76.19	82.03458333	3	62.4	2.2	2.8	2.5	Attained
				CO4	Illustrate the fundamental concepts of cloud storage and cloud security.	87.34	91.67	85.37	78.91	83.17333333	3	63.3	2.3	2.9	2.5	Attained

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			Virtualization	CO5	Study of various tools and technologies for implementing applications of Cloud	88.61	86.90	92.68	79.59	84.90434524	3	64.7	2.5	2.9	2.5	Attained
				CO6						0	1	0	1	1	2.5	Not Attained
VI	Prof. khusboo	CSE	150616-Digital Image Processing	CO1	Explain different modalities and current techniques in image acquisition.	82.40	82.39	84.93	72.44	78.05126381	3	85.22	3	3	2.5	Attained
				CO2	Classify spatial and frequency domain techniques used in image processing.	85.40	78.60	86.30	75.21	79.68034247	3	88.21	3	3	2.5	Attained
				CO3	Apply image processing techniques to enhance visual images	73.45	78.38	72.60	83.60	78.92943493	3	91.22	3	3	2.5	Attained
				CO4	Analyze the constraints in image processing when dealing with real problems.	65.71	71.16	77.22	65.47	69.14875	2.9	79.62	3	2.9	2.5	Attained
				CO5	Evaluate various enhancement, restoration and retrieval techniques of image processing	71.23	73.16	61.10	68.23	67.4377226	2.7	77.43	3	2.8	2.5	Attained
				CO6	Design a system using the mathematical models and principles of digital image processing for real world problems.	64.22	71.21	60.23	57.57	60.77125	2.1	73.23	3	2.3	2.5	Not Attained
VI	Prof. Aashi	CSE	150617-Machine Learning	CO1	Explain basic concepts of Machine Learning.	91.61	79.35	77.745	62.34	71.97625	3	64.23	2.4	2.9	2.5	Attained
				CO2	Discuss model optimization using sckit-learn technique in python.	88.39	80	69.03	64.32	70.46625	3	63.23	2.3	2.9	2.5	Attained
				CO3	Apply various techniques for learner evaluation.	80.65	86.45	69.675	58.91	67.76125	2.8	62.23	2.2	2.7	2.5	Attained
				CO4	Illustrate various types of supervised machine learning algorithm using python.	89.03	92.26	67.74	61.23	70.21125	3	61.23	2.1	2.8	2.5	Attained
				CO5	Formulate ML ensemble model to solve real world problem using python.	80.65	92.26	61.61	57.65	65.84125	2.6	60.45	2	2.5	2.5	Attained
				CO6	Evaluate unsupervised ML techniques to solve real world problems using python.	81.94	87.1	73.23	58.43	68.6525	2.9	63.23	2.3	2.8	2.5	Attained
VI	Dr. Devesh	CSD	290601-IOT System Design	CO1	Define the basic concepts, principles, and challenges in IoT.	82.34	85.22	86.12	62.34	73.645	3	61.67	2.2	2.8	2.5	Attained
				CO2	Describe the functioning of hardware devices and sensors used for IoT.	87.25	86.17	85.83	65.45	75.86	3	67.7	2.8	3	2.5	Attained
				CO3	Apply network communication aspects and protocols used in IoT.	78.4	81.41	80.07	60.23	70.10875	3	69.3	2.9	3	2.5	Attained
				CO4	Analyze IoT for developing real-life applications using Arduino programming.	89.66	88	90.15	62.34	75.915	3	63.33	2.3	2.9	2.5	Attained
				CO5	Develop different challenges during IoT system design.	84.15	83.7	85	58.67	71.56625	3	64.71	2.5	2.9	2.5	Attained
				CO6												
VI	Prof. Mahesh	CSD	290602-Soft Computing	CO1	Describe soft computing techniques and the basic models of Artificial Neural Network	61.86	77	78	85.23	79.4725	3	90	3	3	3	Attained
				CO2	Illustrate the operations, model and applications of fuzzy logic	59.32	75	82	74.44	74.51	3	78	3	3	2.5	Attained
				CO3	Evaluate and develop the concepts of Genetic Algorithm	62.32	78	76	88.34	80.71	3	82	3	3	3	Attained
				CO4	Analyze the concepts of multi-objective optimization models and the need for using hybrid soft computing approaches	52.53	69	84	78.33	75.35625	3	84	3	3	2.5	Attained
				CO5	Design a system using the mathematical models and principles of soft computing for real world problems	61.5	80	79	78	76.4375	3	81	3	3	3	Attained
VIII		CSE	150811 Internship Research Project/ Innovative & Startup	CO1	Design solutions to real world problems	73.4	76.4	76.4	78.2	76.925	3	81.2	3	3	2.5	Attained
				CO2	Express the technical ideas, strategies and methodologies	76.3	76.3	75.50	79.3	77.6	3	80.4	3	3	2.5	Attained
				CO3	Utilize new tools, algorithms, techniques to obtain solution of the project	79.2	79.3	78.3	74.5	76.6375	3	77.3	3	3	2.5	Attained
				CO4	Evaluate the performance of the prototype/ results	80.3	77.3	79.3	77.4	78.225	3	78.3	3	3	2.5	Attained
				CO5	Able to locate and use technical information from multiple sources.	77.3	74.6	74.5	78.2	76.7125	3	77.8	3	3	2.5	Attained
				CO6	Demonstrate the ability to communicate effectively in speech and writing	76.4	79.2	78.3	76.5	77.275	3	79.4	3	3	2.5	Attained

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

Total CO Attainment = 80% of Direct CO Attainment + 20% of Indirect

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.