VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
AN AUTONOMOUS INSTITUTION

Department of Information Technology

Innovative Teaching Learning Methodologies Academic Year: 2022-2023

S.No	Name of the Faculty	Course	Topic	Innovative methods adopted	Goals	Preparation	The significance of results	Availability of review and critique	Reproducibility and Reusability
1	Dr.Obulesu Avuku	Operating Systems	CPU Scheduling Algorithms	Cooperative Learning Method	Improve students learn as a team	Students come with Preparation of the topic	This approach encourages collaboration, interaction, and peer-to-peer learning, fostering a deeper understanding of the subject	Report on concept will be made available for the reference	Students develop communication, teamwork, leadership, and conflict resolution skills, which are essential for success in both academic and professional settings.
2	B. Deepthi Reddy	Design and Analysis of Algorithms	Dynamic Programming	Activity Based Learning	Improve students to understand in a technical way	Students come with Preparation with the basic topic	Understanding the real time design	Report on concept will be availed for the reference	Students learn implementation part
3	Mohd Sirajuddin	Database Management System	Normalization	Real-life examples and peer teaching	Improve understanding of data redundancy and integrity	Students review different normal forms (1NF, 2NF, 3NF, BCNF)	Reduces data redundancy, improves data integrity, and enhances database	Peer reviews and group discussion after exercises	Concepts can be applied to various database design scenarios
4	Mr.B.Srinivasulu	Software Engineering	Process Models	Project-Based Learning	To involve students in understanding Project Development Phases	Students will come with the basic preparation on a topic	The level of understanding of technical concepts of the students is depicted	Report on concept demonstrate will be availed for the references	Students of upcoming batches can refer the report

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5	Mr.B.Eswar Babu	Object oriented programming through JAVA	OOPS concepts	Demonstartion-Based Learning	To provide a clear understanding of OOP concepts through practical demonstrations.	Prepare small Java programs demonstrating each OOP concept with live coding.	Students will gain practical knowledge and confidence in applying OOP principles.	Encourage peer discussions and provide real-time feedback during demonstrations.	Programs will be modular and reusable for assignments and projects.
6	Mrs.Laxmi Hugar	Computer networks	OSI models	ICT based learning	To make students understand through presentation approach	Students will come with the basic preparation on networks topics	Understanding the purpose of network communiation model	Report on concept demonstrate will be availed for the reference	Engaging in active learning through practical illustrations enhances understanding and retention.
7	Mrs.J.Bramarambha	Big Data Analytics	HDFS	Inquiry based learning	Foster understanding of HDFS through inquiry-based learning.	Set up a Hadoop environment, provide datasets, and ensure resources and tools for experimentation are available.	Inquiry-based learning with HDFS fosters practical skills, deepens understanding of distributed systems, and prepares students for real-world Big Data challenges.	Peer reviews and collaborative discussions enable continuous feedback and refinement of understanding in HDFS concepts and applications.	The structured activities and experiments in HDFS learning can be consistently replicated and adapted for various Big Data scenarios.
8	Mrs.Padma Priya J	Fundamentals of Cyber Security	Tools and methods used in cyber crime	Interactive Learning	Understanding tools used in cybercrime in our day to day life	Students share the details about online scams	Understanding financial frauds, different methods and tools criminals use to hack victims device.	Group Discussion on different financial frauds happend in past	students have awareness to deal different types of frauds

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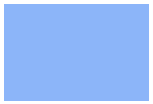
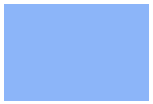
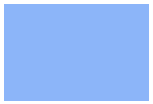
9	Mrs.Mutyala Keerthi	MFCS	Combinations	Interactive Learning	the concept of combinations in combinatorics through interactive, collaborative, and hands-on learning, fostering critical thinking, teamwork, and problem-solving skills.	Students will prepare on a topic inheritance	The significance lies in enabling code reuse, customization, and easy maintenance through object-oriented design.	an inheritance-based student grading system project allows for continuous improvement, identifying potential design flaws, ensuring code efficiency, and providing feedback for better functionality and scalability.	ensures that the project can be easily replicated with the same results, while reusability allows for components, like the base Student class, to be used across different student types or projects, saving time and effort.







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1	Dr.M.Nagabhushana Rao	Cloud Computing	Deployment Models	Competency based Learning	It emphasizes critical thinking, and practical application.	Students come with basic knowledge of the topic	professionals can confidently work within any cloud deployment model—be it public, private, hybrid, or community cloud.	Report is available for reference.	As cloud computing continues to evolve, CBL helps ensure that learners are always ready to tackle the complexities of cloud technologies, from the fundamentals to advance
2	Dr.Ramesh Ch	Information Retrieval Systems	Distributed information Retrieval	Case Studies	Understand the fundamentals of distributed information retrieval and its architecture.	Provide curated materials, such as white papers or recorded lectures, to ensure students grasp basic concepts.	Improved understanding of search engine mechanisms and distributed data handling.	Incorporate peer assessments for coding projects or design solutions.	Emphasize documenting code and processes for future reproducibility.
3	Mr.Anil Degala	Programming for Problem Solving	LOOPS	Demonstartion-Based Learning	how each loop structure operates and understand when to use each type depending on specific needs in a program.	Students with basic knowledge of the topic	teaching method where learners acquire knowledge and skills by observing demonstrations and then practicing those skills.	Report is available for reference.	giving learners opportunities to implement similar code themselves.

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4	Mr.Suresh Babu Marakanti	Dataware Housing and Datamining	Apriori algorithm	Group Work and Collaborative Learning	team members can better focus on understanding the key concepts, implementing the algorithm, and applying it to real-world scenarios.	explaining the Apriori algorithm, the dataset used, the results, and insights ,Evaluate rules based on metrics like support, confidence.	The significance of the results from group work on the Apriori algorithm is in fields like marketing, sales, inventory management, and recommendation systems, but they also help improve decision-making processes.	Enhances Critical Thinking,Enhances Critical Thinking and Encourages Continuous Learning	Prepares students to apply the Apriori Algorithm in various real-world scenarios.
5	Mrs.Deepthi Reddy B	Compiler Design	syntax directed translation	Interactive Based Learning	Advanced IDEs can use real-time syntax-directed translation to guide the students, showing suggestions or warnings about possible errors.	Advanced debugging tools can use SDT to offer live insights into the syntax and semantics of the code, allowing students to see how the program is being translated step by step.	This technology can provide more interactive and user-friendly experiences for students, improving both the speed and accuracy of code translation.	Novel tools are used to understand the translation process	Syntax-directed translation is fundamental to compiler design, and the integration of innovative technologies like AI, machine learning, and parallel processing holds great promise for enhancing the efficiency, scalability, and flexibility of compilers.
6	Mrs.Shireesha Kola	design and analysis of algorithms	Types of algorithms	case study-based approach	To bridge the gap between theory and practice by allowing students to apply concepts learned in class to real-world situations.	Explaining Clearly what students to learn from the case studies, aligning them with course goals and outcomes.	Students can able to identify a particluar algorithm suitable for any given problem	Using real-world examples and case studies to help students analyze and apply design principles and analyses in practical scenarios.	Students can able to identify a suitable algorithm for any given problem.students can try to develop new algorithms for non polynomial type of problems.

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7	Mr.Udaya Kiran Mandhugula	Mobile and Application Development	SQLite	Competency based Learning	learners can gain a deeper understanding	Students come with basic knowledge of the topic	This approach can help learners develop practical, real-world database skills that they can apply in various development contexts.	Report is available for reference.	focuses on learners mastering specific skills
8	Mrs.Divya Sarabudla	Object Oriented Analysis and Design	Deployment Diagrams	Design Thinking	This redefine problems and create innovative solutions to prototype and test.	Students come with basic knowledge of the topic	This help to ensure that the model chosen meets the user's requirements, is scalable, and is easy to manage and maintain.	Report and copy is available for reference.	this model aligns perfectly with the real-world needs of the users and the business.

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9	Mrs.Mutyala Keerthi	Object oriented programming through JAVA	Inheritance	Problem-based learning	To reinforce object-oriented programming principles and prepare students to build modular, reusable, and maintainable Java applications.	Prepare by reviewing Java basics, OOP concepts (inheritance, encapsulation), and class design and setting up your environment	The results demonstrate the effective use of inheritance in Java to simplify code, enhance modularity, and apply object-oriented principles to solve real-world problems	Review and critique can be facilitated through collaborative activities like peer code reviews, group discussions on implementation strategies, and formative assessments to ensure code quality, logic, and adherence to object-oriented principles.	solidifying theoretical understanding through real-world applications.

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1	Dr.Obulesu Avuku	Object Oriented Analysis and Design	All topics	Learning – Ticket Google FormOnline	To make to underst and all	Prepare d Google form for every concept and mention two questio ns and take the data from students	Comple te pulse of the class will came to know to the faculty	All respon ses are in google sheet to review	We can take this dataset and estimate students mind with natural language models
2	Dr.Marlene Grace Verghese D	Data Structures	Conversion and Evaluation of Infix to Post fix expression	Flipped Classroom	Provides more interaction time between students and teacher as the student comes prepared to the class.	Students can study the material beforehand so they can learn the concepts at their own way before coming to the class.	Students gain necessary knowledge before class, and Teachers guide students to actively and interactively clarify and apply that knowledge during class.	Report on concept demonstrate will be availed for the reference	Students have online access to the lesson material, they are able to review it any time as needed to understand it.
3	Dr.Ramesh Ch	Information Security	Email Secur	Case Studies:	Analyze real-world applications of SSL in securing web traffic.	Set up virtual labs for hands-on activities, using tools like OpenSSL or Wireshark for demonstration		Encourage students to critique existing implementations of SSL in open-source projects or websites.	Create reusable teaching materials, including step-by-step guides for SSL implementation and troubleshooting.
4	Dr.Masrath Parveen	Internet of Things	Types of Ser	Collaborative based Learning	To make students understand through practical approach	Student will come with the basic preparation on the topic	Make the student understand the working principle	Report on concept will be available for reference	Continuous learning and illustration in practical site.
5	Dr. Rambabu Permula	Machine Learning	Data Collect	Case Studies	To make students understand the datatypes, preprocessing	Student will come with the basic preparation on the topic	Make the student understand the working principle	Report on concept demonstrate will be availed for the reference	Students have online access to the lesson material, they are able to review it any time as needed to

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6	Dr.Ampavathi Anusha	Data Mining	Data Mining Techniques	Problem-Based Learning (PBL)	Foster Analytical Thinking and Critical Reasoning	1. Define a real-world data mining problem 2. Organize students into small teams 3. Schedule project presentation	1. Real-World Insights 2. Collaborative Learning 3. Model Performance	Peer Reviews Group Reflection Evaluation Rubric	Can be recreated by others using the same dataset, methods, and tools.
7	Dr.Nanditha B	Information Security	Pretty Good Privacy	Role Play and Simulation	Provide hands-on experience with encryption and decryption	Students study basic cryptography concepts beforehand	Enhances understanding of secure communication techniques	Performance reviews and peer critique will be encouraged	Techniques are directly implementable in real-world scenarios
8	Mr.B .Eswar Babu	Object oriented programming through JAVA	Exception Handling in Core Java	Demonstartion-Based Learning	To help students understand and implement exception handling mechanisms effectively.	Prepare Java programs demonstrating try-catch, finally blocks, throw, throws, and custom exceptions.	Students will learn to write robust code by effectively managing runtime errors.	Facilitate interactive sessions where students debug provided code and receive instructor feedback.	Exception handling examples will be reusable for debugging and error-handling tasks in future projects.
9	Mrs.G. Indira Priya Darshini	Web Technologies	HTML,JavaScript,, PHP/Servlet, JDBC	Project Based Learning	To develop a real time web application	Preapre Tasks from Requirements to Deployment of Application	Students will Learn to develop a web applicationlearn to write robust code by effectively managing runtime errors.	Available for the Review	Can be used by the scociety and can be enhanced with advanced features

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10	Mrs.M.Vijaya laxmi	Computer Networks	Toplogies	Experiential Learning	teach computer network topologies through hands-on, experiential activities that enhance practical skills, collaboration, and real-world application.	Install and test networking simulation software like Cisco Packet Tracer or GNS3 on student and instructor devices.	Ensures students not only understand theoretical concepts but also gain practical skills by actively engaging in the construction, simulation, and analysis of network topologies	Students present their work, receive constructive critiques, and engage in discussions to refine their understanding. This iterative process enhances learning by allowing participants to reflect on their approach and improve collaboratively.	Reproducibility of network topology ensures that experiments can be consistently replicated with the same results, while Reusability allows network configurations and testing setups to be adapted for different experiments, saving

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