

Artificial Intelligence - 417

CLASS -IX

Session- 2024-25

Date	Chapter/ Unit	Sub Unit/Content	Demo./Practicals/Session
April No.of working days-22	INTRODUCTI ON TO ARTIFICIAL INTELLIGENC E (AI)	To identify and appreciate Artificial Intelligence and describe its applications in daily life. To relate, apply and reflect on the Human-Machine Interactions. To identify and interact with the three domains of AI: Data, Computer Vision and Natural Language Processing. To undergo an assessment for analysing progress towards acquired AI-Readiness skills.	The AI Game • Learners to participate in three games based on different AI domains. – Game 1: Rock, Paper and Scissors (based on data) (https://next.rockpaperscissors.ai/) – Game 2: Semantris (based on Natural Language Processing NLP) (https://research.google.com/semantris/) – Game 3: Quick Draw (based on Computer Vision - CV) (https://quickdraw.withgoogle.com/)
	INTRODUCTI ON TO PYTHON:	Steps involved in computer problem solving Algorithm, Flow chart difference between algorithm and flow chart What is python?, Important features of python Role of Python in AI	Introduction to programming using Online Gaming portals like Code Combat.
May No.of working days-18	INTRODUCTI ON TO ARTIFICIAL INTELLIGENC E (AI)	To imagine, examine and reflect on the skills required for futuristic job opportunities. Learners to relate to application of Artificial Intelligence in their daily lives. To unleash their imagination towards smart homes and build an interactive story around it. To relate, apply and reflect on the Human-Machine Interactions.	Ice Breaker Activity: Dream Smart Home idea • Learners to design a rough layout of floor plan of their dream smart home. • Make a statement about lighting and LUIS will interpret and adjust the house accordingly (https://aidemos.microsoft.com/luis/demo)
	INTRODUCTI ON TO PYTHON:	Uses of Python Python Character Set Statements in Python Tokens	Python Installation Introduction of W3School website https://www.w3schools.com/python/default.asp
July No.of working days-25	INTRODUCTI ON TO ARTIFICIAL INTELLIGENC E (AI)	To understand the impact of Artificial Intelligence on Sustainable Development Goals to develop responsible citizenship. To research and develop awareness of skills required for jobs of the future. To imagine, examine and reflect on the skills required for the futuristic opportunities. To develop effective communication and collaborative work skills. To understand and reflect on the ethical issues around AI. To gain awareness around AI bias and AI access. To let the students analyse the advantages and disadvantages of Artificial Intelligence.	Activity: • Go Goals Game: Learners to answer questions on Sustainable Development Goals https://go-goals.org/ • AI for Ocean- “helping to conserve oceans is by fighting plastic pollution with machine learning.” (https://code.org/oceans) Theme-based research and Case Studies • Learners will listen to various case-studies of inspiring start-ups, companies or communities where AI has been involved in real-life. • Learners will be allotted a theme around which they need to search for present AI trends and have to visualise the future of AI in and around their respective theme. Moral Machine (https://www.moralmachine.net/)
	INTRODUCTI ON TO PYTHON:	Operators Precedence Comments in python The print () function	• To print personal information like Name, Father’s Name, Class, School Name. • To print the following patterns using multiple print commands- • To find square of number 7 • To find the sum of two numbers 15 and 20. • To convert length given in kilometers into meters. • To print the table of 5 up to five terms. • To calculate Simple Interest

August No.of working days-23	AI PROJECT CYCLE:	<p>Problem Scoping Identify the AI Project Cycle framework. Learn problem scoping and ways to set goals for an AI project. Identify stakeholders involved in the problem scoped. Brainstorm on the ethical issues involved around the problem selected. Understand the iterative nature of problem scoping for in the AI project cycle. Foresee the kind of data required and the kind of analysis to be done.</p>	<p>Activity: Brainstorm around the theme provided and set a goal for the AI project. 4Ws problem canvas and a problem statement to learn more about the problem identified in the community/ society https://www.itechcreations.in/artificial-intelligence/4w-canva-ai-project-cycle/</p>
	INTRODUCTION TO PYTHON	<p>The Input() function Errors in Python</p>	<p>To calculate Area and Perimeter of a rectangle To calculate Area of a triangle with Base and Height To calculating average marks of 3 subjects To calculate discounted amount with discount % To calculate Surface Area and Volume of a Cuboid</p>
September No.of working days-23	AI PROJECT CYCLE:	<p>Data Acquisition - Identify data requirements and find reliable sources to obtain relevant data. Data Exploration- To understand the purpose of Data Visualisation</p>	<p>Activities: Let's use Graphical Tools • Selecting an appropriate graphical format and presenting the graph sketched. • Understanding graphs using (https://datavizcatalogue.com/) • Listing of newly learnt data visualization techniques. https://www.datawrapper.de/</p>
	INTRODUCTION TO PYTHON:	<p>Compilation of all the functions and operators (Variables, Arithmetic Operators, Expressions, Comparison Operators, logical operators, Assignment Operators, Data Types - integer, float, strings, type conversion, using print() and input() functions</p>	<p>Practical / Project file assessment</p>
October No.of working days-20	AI PROJECT CYCLE:	<p>Data Visualisation Use various types of graphs to visualise acquired data. Modelling Understand modeling (Rule-based & Learningbased)</p>	<p>Data Features • Identifying the possible data features affecting the problem. Activity: System Maps https://ncase.me/loopy/ Modeling • Introduction to modeling and types of models (Rule-based & Learning-based) Activity: Rule-based & Learningbased) • Rule-based: Students can be asked to create text to speech bot using (https://theaiplayground.com/blocks/new) • Learning-based Activity: Students can be asked to use (https://teachablemachine.withgoogle.com/)</p>
	INTRODUCTION TO PYTHON:	<p>Control Structures Sequential Statements Lists in Python</p>	<p>• Create a list in Python of children selected for science quiz with following names- Arjun, Sonakshi, Vikram, Sandhya, Sonal, Isha, Kartik Perform the following tasks on the list in sequence- ○ Print the whole list ○ Delete the name "Vikram" from the list ○ Add the name "Jay" at the end ○ Remove the item which is at the second position. • Create ○ a list num=[23,12,5,9,65,44] Print the length of the list ○ Print the elements from second to fourth position using positive indexing ○ Print the elements from position third to fifth using negative indexing • Create a list of first 10 even numbers, add 1 to each list item and print the final list. • Create a list List_1=[10,20,30,40]. Add the elements [14,15,12] using extend function. Now sort the final list in ascending order and print it.</p>

November No. of working days-23	AI PROJECT CYCLE:	Understand, create and implement the concept of Decision Trees. Understand and visualise computer's ability to identify alphabets and handwritings.	Activity: Decision Tree • To design a Decision Tree based on the data given. (Spot the Elephant) Activity: Pixel It https://www.piskelapp.com/
	NEURAL NETWORK:	Understand and appreciate the concept of Neural Network through gamification.	Session: Introduction to neural network • Relation between the neural network and nervous system in human body • Describing the function of neural network. https://experiments.withgoogle.com/ai/drum-machine/view/ Recommended Activity: Creating a Human Neural Network https://www.piskelapp.com/
	INTRODUCTION TO PYTHON:	Selection Statements	<ul style="list-style-type: none"> • Program to check if a person can vote • To check the grade of a student Input a number and check if the number is positive, negative or zero and display an appropriate message • To print first 10 natural numbers • To print first 10 even numbers • To print odd numbers from 1 to n • To print sum of first 10 natural numbers • Program to find the sum of all numbers stored in a list
December No. of working days-24	EMPLOYABILITY SKILLS	Unit 1: Communication Skills-I Unit 2: Self-management Skills-I Unit 3: Information and Communication Technology Skills-I	Codes based on for loop, If Condition
	INTRODUCTION TO PYTHON	Iterative Statements	
January	EMPLOYABILITY SKILLS	Unit 4: Entrepreneurial Skills-I Unit 5: Green Skills-I	
No. of working days-13	Submission and assessment of the projects/ Prctical files		
February No. of working days-22	Annual Examination		

Suggested Projects/ Field Visit / Portfolio (any one activity to be one)

Suggested Projects	<ol style="list-style-type: none"> 1. Create an AI Model using tools like- <ul style="list-style-type: none"> o Teachable Machine (https://teachablemachine.withgoogle.com/) o Machine Learning For Kids (https://machinelearningforkids.co.uk/) 2. Choose an issue that pertains to the objectives of sustainable development and carry out the actions listed below. <ul style="list-style-type: none"> o To understand more about the problem identified, create a 4Ws problem canvas. o Identify the data features and create a system map to understand relationship between them o Visualize the data collected graphically (Spreadsheet software to be used store and visualize the data) o Suggest an AI enabled solution to it (Prototype/Research Work)
Suggested Field Visit	Visit to an industry or IT company or any other place that is creating or using AI applications and present the report for the same.
Student Portfolio	Maintaining a record of all AI activities and projects (For Example Letter to Futureself, Smart Home Floor Plan, Future Job Advertisement, Research Work on AI for SDGs and AI in Different Sectors, 4Ws canvas, System Map).