



Jaypee Public School, Noida

Computer Science and Emerging Technologies Curriculum Class X



COURSE OUTCOMES		COGNITIVE LEVELS
CO 10.1	Create and deploy a functional application by applying concepts of AI-assisted and prompt-based development using Lovable.dev, including planning, designing, testing, and integrating basic features.	Create Level (Level 6)
CO 10.2	Design and develop effective online forms using Jotform by applying principles of form structure, data collection, basic logic, and response handling in real-world contexts.	Create (Level 6)
CO 10.3	Use Python to automate web scraping tasks with Selenium.	Application Level (Level 3)
CO 10.4	Analyze fundamental concepts of Artificial Intelligence and Machine Learning by building and evaluating simple models using tools like Teachable Machine, ArtBot, NotebookLM, and Lobe AI, while reflecting on ethical use and bias in AI systems.	Analysis Level (Level 4)
CO 10.5	Analyze and manage relational data by constructing advanced SQL queries, applying aggregate functions, joins, constraints, and transaction controls using MySQL to ensure data integrity and security.	Analysis Level (Level 4)
CO 10.6	Develop an XR project using core XR terminologies and algorithms.	Application Level (Level 3)
CO 10.7	Discuss real-world applications and the future of quantum technology.	Understanding (Level 2)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Design Thinking with XR	Introduction to Design Thinking, Design Thinking Stages, Apply design thinking with XR.	08
2.	Explore App Creation with Lovable.dev	Introduction to App Development; Types of Apps (Web, Mobile, AI-powered); Overview of Lovable.dev; Getting Started with the Platform; Interface and Navigation; Concept of AI-Assisted and Prompt-Based App Development; Designing an App Idea; Planning Features and Layout; Creating Screens and Basic Functionality; Customizing App Design (Themes and Layouts); Adding Simple AI-Based Features; Testing	14

		and Debugging Basics; Publishing and Sharing the App; Mini Project – Building a Simple App (Quiz/To-Do/Idea Generator).	
3.	Python for Automation	Web Scraping for Selenium	08
4.	Learning AI through Artbot and Teachable Machine	Introduction to Artificial Intelligence and its applications; Basics of Machine Learning; Learning AI through games using ArtBot (training AI, supervised learning, and bias); Introduction to Teachable Machine; Types of models (image, sound, pose); Training, testing, and improving simple models; Ethical use of AI; Mini Project – Explore ArtBot and build a basic AI model using Teachable Machine.	10
5.	Smart AI Tools for Learning and Creation	Introduction to AI Tools, Getting Started with NotebookLM, Practical Uses of NotebookLM, Introduction to Lobe AI, Building Models with Lobe AI	05
6.	Create and Manage Forms using Jotform	Introduction to online forms and data collection; real-life uses of digital forms; overview and setup of Jotform; creating forms and managing fields; form design, customization, and basic logic; sharing and collecting responses; basic data analysis and ethics; mini project – design a functional online form (survey/registration/feedback).	12
7.	Advanced Database Concepts	Introduction to Relational Databases; Review of Tables, Records, and Keys; Structured Query Language (SQL) Overview; Advanced Queries (WHERE, ORDER BY, LIMIT); Aggregate Functions (COUNT, SUM, AVG, MAX, MIN); Grouping Data (GROUP BY, HAVING); Joins (INNER JOIN, LEFT JOIN); Constraints (Primary Key, Foreign Key, NOT NULL, UNIQUE); Data Integrity and Relationships; Indexes (Basic Concept); Introduction to Transactions (COMMIT, ROLLBACK); Basic Database Security Concepts.	12
8.	Big Data and Target Marketing	Introduction to Big Data & Targeted Marketing Impact of Digital Footprints on Big Data, Scope of Big Data	04
9.	Game Development through Unity	Introduction to Game Development; Types of Games (2D and 3D); Overview of Unity Interface and Workspace; Creating a New Project and Scene;	12

		Understanding GameObjects and Components; Working with Assets and Asset Store; Transform Tools (Move, Rotate, Scale); Introduction to Physics (Rigidbody, Colliders); Adding Lights and Camera; Basics of Scripting in Unity (C# Introduction); Creating Simple Interactions; Working with UI Elements (Text, Buttons); Adding Audio to Games; Testing and Debugging; Building and Publishing the Game; Mini Project – Create a Simple 2D/3D Game.	
10.	Quantum Computing	Applications and Future of Quantum Computing	04
Technologies tools Learnt		Photoshop, Selenium, Firebase, Pictoblox, Lovable.dev, Jot form, Unity, My SQL	

Project based learning: Each student in a group of 3-4 will study a practical problem in social network analysis with its real-world applications.

Total Classes-89