Bhartiya Vidya Mandir Sen. Sec. School,Sector 39, Chandigarh Road, Ludhiana				
CLASS - XII Subject: Informatics Practices Session 2024-2025				
BOOKS: Informatics Practices With Python by Preeti Arora				
Month	**Unit/Chapter/Topic**	**Learning Objective**	**Resources/Art-Integrated Pedagogy Tools Used/ E-Resources**	**Learning Outcomes and Skills Learnt by Students**
APRIL	**Introduction to Computer System**	Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.	Lecture Method	Know about computers,Its Components and Input ,output devices
		Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.	Lecture Method	What is computer Memory and types of computer memory
		Software: purpose and types – system and application software, generic and specific purpose software.	Lecture Method	Softwares and different kinds of software

MAY	**Introduction to Python**	Basics of Python programming, execution modes: - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operator, precedence of operators, data types, mutable and immutable data types	Explanation and Practical Implementation	Basics Python and its structure, data types and different types data types used in Python
		statements, expression evaluation. comments, input and output statements, data type conversion, debugging.	Explanation and Practical Implementation	What are statements,expression, debugging
JUNE	**SUMMER HOLIDAYS**			
JULY	**PYTHON COUNTINUE**	Control Statements: if-else, if-elif-else, while loop, for loop	Explanation and Practical Implementation	Python :Control Statements and its types
		Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions – len(),list(),append(),insert(), count(),index(),remove(), pop(), reverse(), sort(), min(),max(),sum()	Explanation and Practical Implementation	Lists used in Python and its functions

		Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions – dict(), len(), keys(), values(), items(), update(), del, clear()	Explanation and Practical Implementation	Dictionary ,types of Dictionary ,fuctions used in dictionary
SEPTEMBER	**TERM 1 EXAMINATION**			
OCTOBER	**Database concepts and the Structured Query Language**	Database Concepts: Introduction to database concepts and its need, Database Management System. Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types	Lecture Method	What is Database, DBMS, Keys used in DBMS

NOVEMBER		Data Definition: CREATE DATABASE, CREATE TABLE, DROP, ALTER Data Query: SELECT, FROM, WHERE with relational operators, BETWEEN, logical operators, IS NULL, IS NOT NULL Data Manipulation: INSERT, DELETE, UPDATE	Explanation and Practical Implementation	DDL,DML Statements
DECEMBER	**Unit 4: Introduction to the Emerging Trends**	Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics	Lecture Method	Introduction to AI,ML,NLP,AR,VR
JANUARY		Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.	Lecture Method	IOT,Cloud computing and its various services