

# **BUDHA DAL PUBLIC SCHOOL, PATIALA**

## **LESSON PLAN (SESSION 2023-2024)**

**CLASS -XI (SUBJECT - INFORMATICS PRACTICES) Subject Code-065**

A lesson plan is the instructor's road map which specifies what students needs to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class. A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding A lesson plan provides an outline of the teaching goals
  1. Identify the learning objectives.
  2. Plan the lesson in an engaging and meaningful manner
  3. Plan to assess student's understanding.
  4. Plan for a lesson closure.

### **AIDS/ INNOVATIVE METHODS**

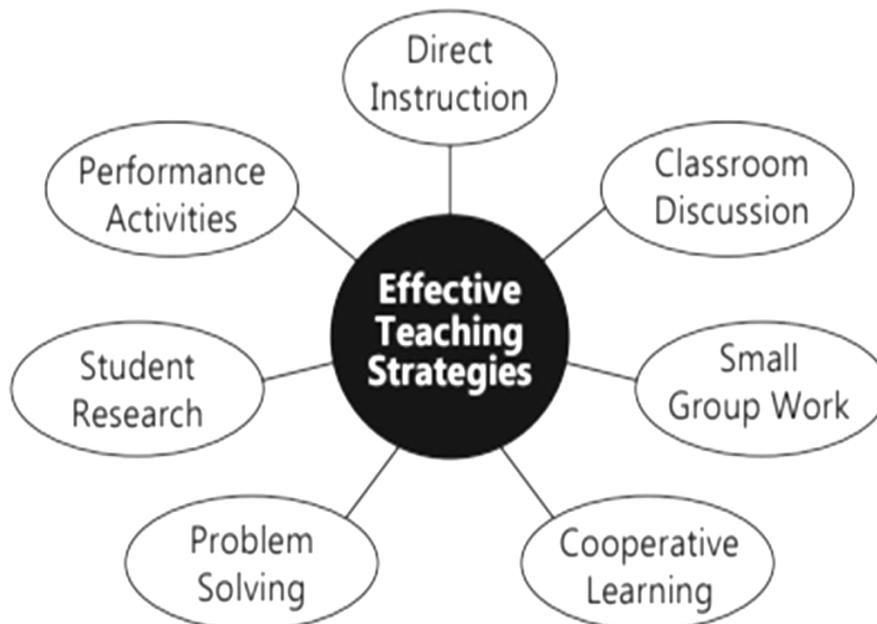
Smart class, Black Board, E-book, Text book

### **PROCEDURE**

The text in the chapter will be read turn wise by the students. Important terms will be written in notebook.

### **CO-SCHOLASTIC ACTIVITY**

Teacher will ensure active participation of the students by providing lab assignment.



## Books

- (i) NCERT Informatics Practices - Text book for class - XI
- (ii) Informatics Practices for Class XI (By Preeti Arora)



### **Unit-I: Introduction to Computer System**

**Month :- April**

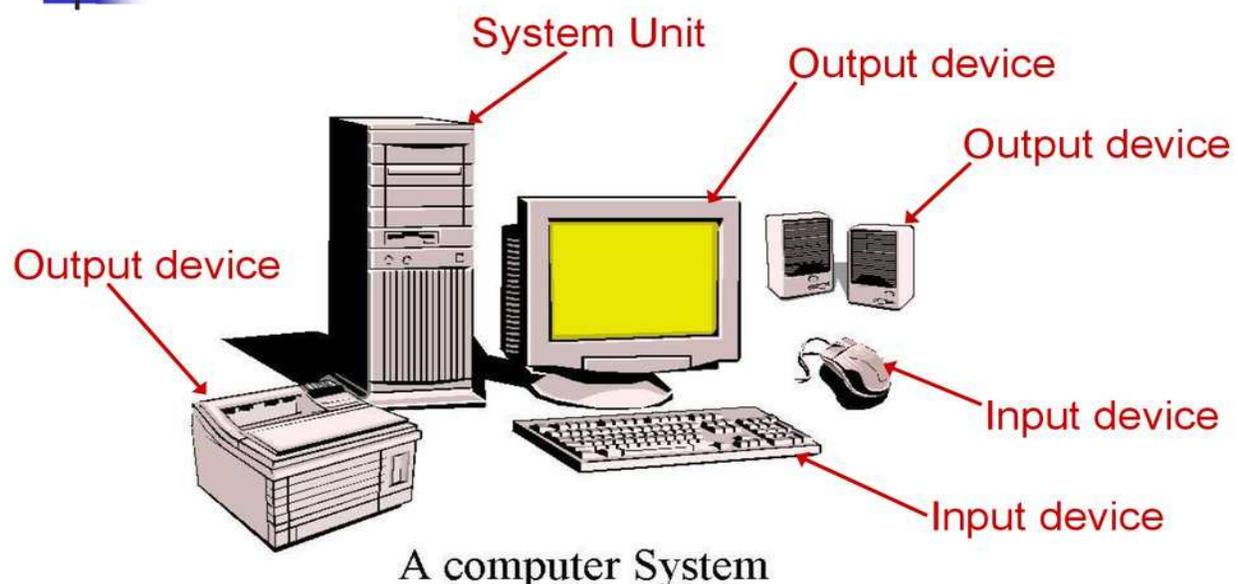
#### **Experiential Learning:-**

Introduction to computer and computing: Evolution of computing devices, components of a computer system and their interconnections, Input/output devices.

Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.

Software: purpose and types – system and application software, generic and specific purpose software.

## Computer Systems



## **LEARNING OBJECTIVES**

Identify the components and Memory units of computer system

### **Practical Activity:-**

- Make a PowerPoint Presentation on following Topics:-
- Evolution of computing devices,
- components of a computer system and their interconnections,
- Input/output devices
- Computer Memory: Units of memory, types of memory – primary and secondary
- Software: purpose and types – system and application software, generic and specific purpose software.

### **Use of E-Content**

E-book, PowerPoint Presentation, Explanation of topic on Projector  
Videos Explanation.

### **Question During Chapter Explanation:**

- Describe functional units of computer.
- What is the function of control unit?
- Name some storage devices that you use daily.
- What is the function of memory? What are its measuring units?
- Write down the classifications of PROM.
- What is the purpose of Cache memory?

## **ASSESSMENT STRATEGIES PLANNED**

Individual Task, Group Task, Quiz ,Questionnaire ,Demonstration Method,  
Monthly test



**Unit-II: Introduction to Python**

**Month :- MAY**

### **Experiential Learning:-**

Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, mutable and immutable data types, statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging.

<b>Interactive mode</b>	<b>Script mode</b>
A way of using the Python interpreter by typing commands and expressions at the prompt.	A way of using the Python interpreter to read and execute statements in a script.
Cant save and edit the code	Can save and edit the code
If we want to experiment with the code, we can use interactive mode.	If we are very clear about the code, we can use script mode.
we cannot save the statements for further use and we have to retype all the statements to re-run them.	we can save the statements for further use and we no need to retype all the statements to re-run them.
We can see the results immediately.	We cant see the code immediately.

**LEARNING OBJECTIVES**

Knowledge of basics of python like structure of program, indentation, I/O statements, data type etc

**Practical Activity:-**

**Practical of Basic Python Programs :-**

- (i) Use of Variable in Interactive and script mode.
- (ii) Find the Sum of Three values
- (iii) Find the Simple and Compound Interest
- (iv) Find the area of Rectangle and Square
- (v) Find the average form five numbers

**Use of E-Content**

E-book, PowerPoint Presentation, Explanation of topic on Projector Videos Explanation.

**Question During Chapter Explanation:**

- What is Python?
- What is IDLE?
- Python is interpreted language. Justify.
- Differentiate between Interactive mode and script mode.
- What is the difference between a keyword and a variable?
- How many types of strings are supported in Python?

## ASSESSMENT STRATEGIES PLANNED

Individual Task, Group Task, Quiz ,Questionnaire ,Demonstration Method,  
Monthly test

# Introduction to Python Programming



**Unit-II: Introduction to Python Conti...**

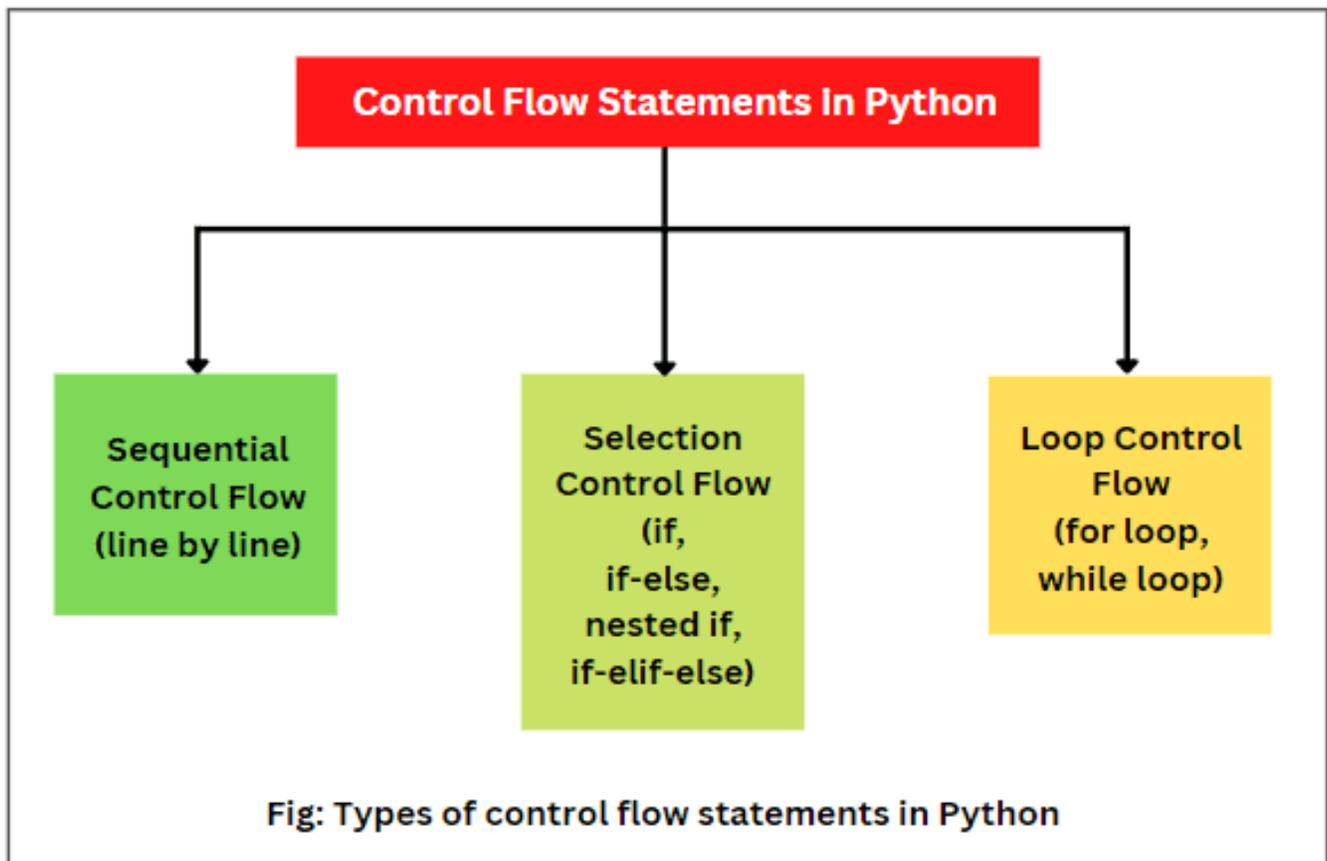
**Month :- July/August**

### Experiential Learning:-

Control Statements: if-else, for loop

Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions.

Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions.



### LEARNING OBJECTIVES

Create Python programs using different data types, lists and dictionaries.

### Practical Activity:-

## **Use of E-Content**

E-book, PowerPoint Presentation, Explanation of topic on Projector  
Videos Explanation.

## **Question During Chapter Explanation:**

- **What are operators? What is their function?**
- **Write a program to find the area of a rectangle?**
- **What are data types? What are Python's built in core data types?**
- **What do you understand by term 'immutable'?**
- **Write the output of the following code:-**
- **What is None in Python?**
- **Explain Expression in Python language.**
- **What is a statement?**
- **Write a program to find maximum out of 3 entered numbers.**
- **What is the purpose of 'else' in a loop?**
- **Write a program to calculate Area and Perimeter of a rectangle and display.**

## **ASSESSMENT STRATEGIES PLANNED**

Individual Task, Group Task, Quiz ,Questionnaire ,Demonstration Method,  
Monthly test

**Revision and Mid Term Exams**

**September**

# **Database Concepts**

**Unit 3: Database concepts and the Structured Query Language      Month :- October**

## **Experiential Learning:-**

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

Data Definition: CREATE TABLE



### **LEARNING OBJECTIVES**

Understand database concepts and Relational Database Management Systems.

### **Practical Activity:-**

### **Use of E-Content**

E-book, PowerPoint Presentation, Explanation of topic on Projector  
Videos Explanation.

### **Question During Chapter Explanation:**

- What is SQL?
- What are DDL and DML statements?
- How can you eliminate duplicate records in a table with SELECT query?
- Define Knowledge base.
- Define the term Robotics.
- Write any two benefits of cloud computing.
- Define DDL. Write two commands of DDL.
- Define DML. Write two commands of DML.

### **ASSESSMENT STRATEGIES PLANNED**

Individual Task, Group Task, Quiz ,Questionnaire ,Demonstration Method,  
Monthly test



**Unit 3: Database concepts and the Structured Query Language Conti.....**

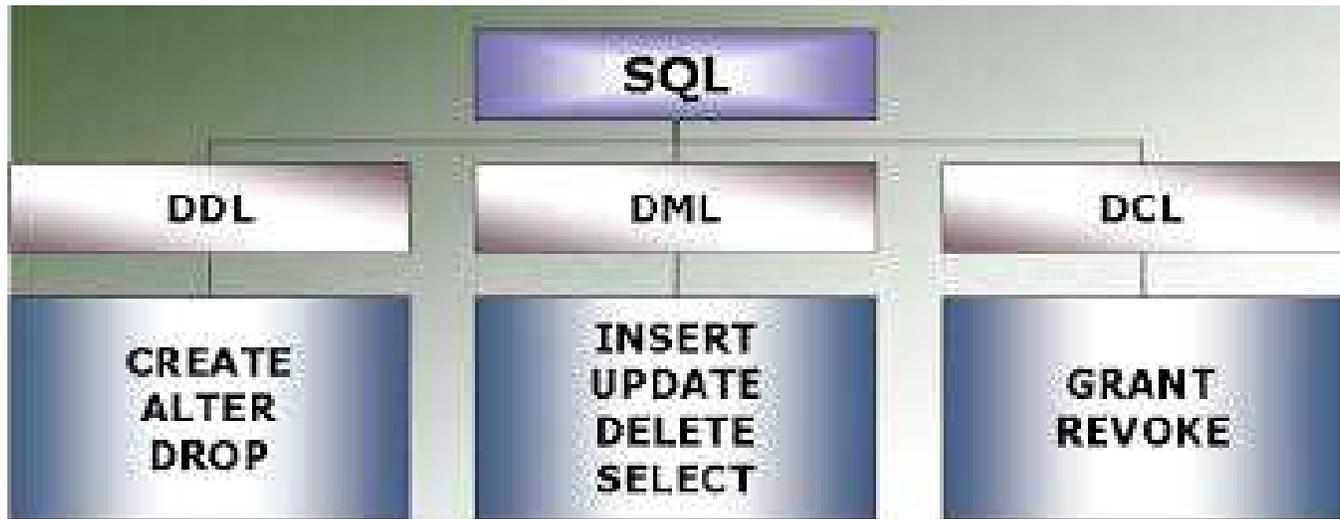
**Month :- November**

### **Experiential Learning:-**

**Data Definition: CREATE TABLE**

**Data Query: SELECT, FROM, WHERE.**

**Data Manipulation: INSERT**



### **LEARNING OBJECTIVES**

Retrieve and manipulate data in RDBMS using Structured Query Language

### **Practical Activity:-**

### **Use of E-Content**

E-book, PowerPoint Presentation, Explanation of topic on Projector  
Videos Explanation.

### **Question During Chapter Explanation:**

### **ASSESSMENT STRATEGIES PLANNED**

Individual Task, Group Task, Quiz ,Questionnaire ,Demonstration Method,  
Monthly test



**Unit 4: Introduction to the Emerging Trends**

**Month: - December**

### **Experiential Learning:-**

Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.



## **LEARNING OBJECTIVES**

Identify the Emerging trends in the fields of Information Technology.

### **Practical Activity:-**

- Make a PowerPoint Presentation on following Topics:-
- Artificial Intelligence,
- Machine Learning, Natural Language Processing,
- Immersive experience (AR, VR), Robotics, Big data and its characteristics,
- Internet of Things (IoT),
- Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS);
- Grid Computing, Block chain technology.

### **Use of E-Content**

E-book, PowerPoint Presentation, Explanation of topic on Projector  
Videos Explanation.

### **Question During Chapter Explanation:**

- Differentiate between Cloud Computing and Grid Computing.
- Briefly explain the role played by robots in the medical field.
- Define the term big data. Which all activities can contribute to big data?
- Define Knowledge base.
- Define the term Robotics.

### **ASSESSMENT STRATEGIES PLANNED**

Individual Task, Group Task, Quiz ,Questionnaire ,Demonstration Method,  
Monthly test

<b>REVISION</b>	<b>JANUARY &amp; FEBRUARY</b>
<b>ANNUAL EXAMINATION</b>	<b>MARCH</b>

<b>BLUE PRINT</b>		
<b>Unit No</b>	<b>Unit Name</b>	<b>Marks</b>
1	Introduction to computer system	10
2	Introduction to Python	25
3	Database concepts and the Structured Query Language	30
4	Introduction to Emerging Trends	5

Subject Teacher : \_\_\_\_\_

Principal: \_\_\_\_\_