**CCS358-Principle of Programming Languages**

**UNIT 1**

**PART A**

1. **programming Paradigms:**

Explore different ways of structuring code, such as imperative, functional, object-oriented, and logic programming.

**2.Type Systems:**

Investigate how languages handle data types, including static vs. dynamic typing, and their impact on program reliability.

**3.Control Structures:**

Examine how languages control the flow of execution, including conditionals, loops, and concurrency mechanisms.

**4.Data Structures:**

Study how data is organized and accessed, including arrays, linked lists, trees, and graphs.

**5.Execution Models:**

Analyze how languages are executed, including compilation vs. interpretation, and the impact on performance and portability.

**6.Design Issues:**

Consider various factors that influence language design, such as readability, writability, reliability, and cost.

**7.Abstraction:**

Explore how languages provide mechanisms for hiding implementation details and creating reusable components.

**8.Concurrency:**

Examine how languages support multiple processes or threads executing concurrently.

**9.Object-Oriented Programming (OOP):**

Explore concepts like encapsulation, inheritance, and polymorphism.

**10.Functional Programming:**

Investigate concepts like pure functions, immutability, and recursion.