

## DEPARTMENT OF COMPUTER ENGINEERING

### LESSON PLAN

**Semester: 4<sup>th</sup> Semester**

**Subject Name: Principles of Programming Languages**

**Subject Code: B24-CSE-206**

**Name of Faculty: Ms. Monika and Ms. Shubh Chawla**

Lecture No.	Unit No	Topics to Be Covered	CO Covered
L 1	Unit-1	<b>Introduction</b> to Programming Language	CO1
L 2		Characteristics of a good programming language	
L 3		History of Programming Language	
L 4		Programming language translators- compiler and interpreters	
L 5		Elementary data types- data objects, variable and constants,data types	
L 6		Specification and implementation of elementary data types	
L 7		Declarations, type checking and type conversions	
L 8		Assignment and initialization, Numeric data types	
L 9		Booleans and characters	
L 10		<b>Syntax and Semantics:</b> Introduction, general problem of describing syntax	
L 11		Formal method of describing Syntax, attribute grammar dynamic semantic	
L 12	Unit-2	<b>Structured data objects:</b> Structured data objects and data types	CO2
L 13		Specification and implementation of structured data types, Declaration and type checking of data structure	
L 14		Vector and arrays	
L 15		Records Character strings	
L16		Variable size data structures	
L 17		Union, pointer and programmer defined data objects	
L 18		Sets, files	
L 19		<b>Subprograms and Programmer Defined Data Types:</b> Evolution of data type concept abstraction	
L 20		Encapsulation and information hiding, Subprograms	

L 22		Over loaded subprograms, generic subprograms	
L 23	Unit-3	<b>Sequence Control:</b> Implicit and explicit sequence control, sequence control within expressions	CO3
L 24		Sequence control within statement	
L 25		Subprogram sequence control: simple call return, recursive subprograms	
L 26		Exception and exception handlers	
L 27		Co routines, sequence control	
L 28		Concurrency – subprogram level concurrency, synchronization through semaphores	
L 29		Monitors and message passing	
L30		<b>Data Control:</b> Names and referencing environment	
L 31		Static and dynamic scope, block structure	
L 32		Local data and local referencing environment	
L 33		Shared data: dynamic and static scope	
L 34		Parameter and parameter transmission schemes	
L 35	Unit-4	<b>Storage Management:</b> Major run time elements requiring storage	CO4
L 36		Programmer and system controlled storage management and phases	
L 37		Static storage management	
L 38		Stack based storage management, Heap storage management	
L 39		Variable and fixed size elements	
L 40		<b>Programming Languages:</b> Introduction to procedural, non-procedural	
L 41		Structured, logical	
L 42		Functional and object oriented programming language	
L 43		Comparison of C and C++ programming languages	

**Suggested Books:**

- Terrence W. Pratt, Marvin V. Zelkowitz, Programming Languages Design and Implementation, Pearson.
- Allen Tucker and Robert Noonan, Programming Languages—Principles and Paradigms, Tata McGraw-Hill, 2009.
- Ellis Horowitz, Fundamentals of Programming Languages, Galgotia Publications, 2010.
- C. Ghezzi, Programming Languages Concepts, Wiley Publications, 2010.