

**PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

LESSON PLAN

Semester: 3rd Sem

Subject Name: Principles of Programming Languages

Subject Code: ES-227A

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

19	L 19	Type definitions, abstract data types
20	L 20	Over loaded subprograms, generic subprograms
21	L 21	Sequence Control: Implicit and explicit sequence control, sequence control within expressions
22	L 22	Sequence control within statement
23	L 23	Subprogram sequence control: simple call return, recursive subprograms
24	L 24	Exception and exception handlers
25	L 25	Co routines, sequence control
26	L 26	Concurrency – subprogram level concurrency, synchronization through semaphores
27	L 27	Monitors and message passing
28	L 28	Data Control: Names and referencing environment
29	L 29	Static and dynamic scope, block structure
30	L30	Local data and local referencing environment
31	L 31	Shared data: dynamic and static scope
32	L32	Parameter and parameter transmission schemes
33	L33	Storage Management: Major run time elements requiring storage
34	L34	Programmer and system controlled storage management and phases
35	L35	Static storage management
36	L36	Stack based storage management, Heap storage management
37	L37	Variable and fixed size elements
38	L38	Programming Languages: Introduction to procedural, non-procedural
39	L39	Structured, logical
40	L40	Functional and object oriented programming language
41	L41	Comparison of C and C++ programming languages