

**ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY: CHIRALA**  
**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**LESSON PLAN**

**SUBJECT: PRINCIPLES OF PROGRAMMING LANGUAGES**

**Name: Dr.D.N.V.Syam Kumar**

**Year&Sem/Section: II –II-‘c’**

**No. of Lectures per week : 4+1\* (Tutorial)**

**Academic Year: 2018-19**

Sl No/Unit	Topic	No of Classes Required
I	<b>SYNTAX AND SEMANTICS:</b> Evolution of programming languages, describing syntax, context free grammars, attribute grammars, describing semantics, lexical analysis, parsing, recursive - decent bottom - up parsing	10
II	<b>DATA, DATA TYPES AND BASIC STATEMENTS:</b> Names, variables, binding, type checking, scope, scope rules, lifetime and garbage collection, primitive data types, strings, array types, associative arrays, record types, union types, pointers and references, Arithmetic expressions, overloaded operators, type conversions, relational and Boolean expressions, assignment statements , mixed mode assignments, control structures – selection, iterations, branching, guarded Statements	13
III	<b>SUBPROGRAMS AND IMPLEMENTATIONS:</b> Subprograms, design issues, local referencing, parameter passing, overloaded methods, generic methods, design issues for functions, semantics of call and return, implementing simple subprograms, stack and dynamic local variables, nested subprograms, blocks, dynamic scoping	10
IV	<b>OBJECT- ORIENTATION, CONCURRENCY AND EVENT HANDLING:</b> Object – orientation, design issues for OOP languages, implementation of object oriented constructs, concurrency, semaphores, Monitors, message passing, threads, statement level concurrency, exception handling, event handling	12
V	<b>FUNCTIONAL PROGRAMMING LANGUAGES:</b> Introduction to lambda calculus, fundamentals of functional programming languages, Programming with Scheme, –Programming with ML,	8
VI	<b>LOGIC PROGRAMMING LANGUAGES:</b> Introduction to logic and logic programming, –Programming with Prolog, multi - paradigm languages	7
<b>Total Classes Required</b>		<b>60</b>

**TEXT BOOKS:**

1. Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.
2. Programming Languages, Principles & Paradigms, 2ed, Allen B Tucker, Robert E Noonan, TMH

**REFERENCES:**

1. R. Kent Dybvig, “The Scheme programming language”, Fourth Edition, MIT Press, 2009.
2. Jeffrey D. Ullman, “Elements of ML programming”, Second Edition, Prentice Hall, 1998.
3. W. F. Clocksin and C. S. Mellish, “Programming in Prolog: Using the ISO Standard”, Fifth Edition, Springer, 2003.

**FACULTY MEMBER**

**HEAD OF THE DEPARTMENT**