

3.	Charles B. Pfleeger, Shari Lawrence Pfleeger, "Security in Computing", Third Edition, Pearson Education, 2003.
<b>MOOC</b>	
1.	<a href="http://nptel.ac.in/courses/106105031/1">http://nptel.ac.in/courses/106105031/1</a>
2.	<a href="http://nptel.ac.in/courses/106102064/23">http://nptel.ac.in/courses/106102064/23</a>

COURSE TITLE		PROGRAMMING PARADIGMS			CREDITS	3
COURSE CODE		CSB4404	COURSE CATEGORY	PC	L-T-P-S	3-0-0- 1
CIA		50%			ESE	50%
LEARNING LEVEL		BTL-3				
CO	COURSE OUTCOMES					PO
Upon completion of this course, the students will be able to						
1	Compare various programming languages.					1,2,12
2	Explain the concepts of scripting languages					1,2
3	Describe various data types and statements in programming languages					1,2
4	Identify design issues and Implement subprograms.					1,2,3,12
5	Explain concurrency and exception handling in various programming languages.					1,2,12
6	Describe functional programming and logic programming.					1,2
Prerequisites : Nil						
MODULE 1: EVOLUTION OF PROGRAMMING LANGUAGES						(9)
Categories of Languages – Procedural languages: FORTRAN, BASIC, C, COBOL, ALGOL 68, PL/1-Object oriented Languages: ADA, SIMULA, Small Talk, C++, Java, C# - Logic Programming: Prolog – Functional Programming :LISP – Scripting languages.						
Suggested Activities:						
1. Install java and write a sample program in java						
2. design an webpage for signup which uses any scripting language for validation						
MODULE 2: DATA TYPES AND STATEMENTS						(9)
Primitive types, Character, string, arrays, associative arrays, record type, tuple, list, union, pointers – Type checking - Arithmetic and Boolean expressions- overloading of operators. Assignment statements -Selection- Iteration-Unconditional branching.						
Suggested Activities:						
1. Write a program to store & print an employee data using array.						
2. Write a program to overload unary operators.						
MODULE 3: SUB PROGRAMS AND IMPLEMENTATION						(9)
Fundamentals of sub programs – design issues – local referencing environments– parameter passing methods – overloaded sub programs – generic sub programs.						

Implementation of sub programs – simple sub program – stack implementation – Nested sub programs - blocks – dynamic scope.	
<b>Suggested Activities:</b>	
1. Write a program using templates which overload a function.	
2. Write a program for call by reference.	
<b>MODULE 4: CONCURRENCY AND EXCEPTION HANDLING</b> (9)	
Concurrency: Semaphores – Monitors – Message passing – Concurrency in Ada, Java and C#.	
Exception handling : Introduction – Exception handling in C++, Java, Python and Ruby.	
<b>Suggested Activities:</b>	
1. Write a program to handle arithmetic exception.	
2. Write a program to handle threads	
<b>MODULE 5: FUNCTIONAL AND LOGIC PROGRAMMING LANGUAGES</b> (9)	
Functional Programming languages: Fundamentals of functional programming languages – LISP, Common LISP, Scheme, Haskell, ML, F# - Comparison of Functional and Imperative languages.	
Logic Programming Languages: Introduction to predicate calculus – Theorem proving – Basic elements of Prolog- Applications of Logic programming.	
<b>Suggested Activities:</b>	
1. Write a program for Tower of Hanoi/8queens problem using any programming language	
2. Implement functional programming concept to evaluate expressions.	
<b>TEXT BOOKS</b>	
1.	Robert W. Sebesta, “Concepts of Programming Languages”, Eleventh Edition, Pearson Education, 2016.
<b>REFERENCE BOOKS</b>	
1.	Kenneth A. Lambert and Kenneth C. Loudon, “Programming Languages Principles and Practices”, Cengage publications, 3/e, 2012
2.	Ellis Horowitz, “Fundamentals of Programming Languages”, Springer , 2011
<b>E BOOKS</b>	
1.	<a href="https://www.amazon.in/Principles-Programming-Languages-Undergraduate-Computer-ebook/dp/B00FBSW2RA">https://www.amazon.in/Principles-Programming-Languages-Undergraduate-Computer-ebook/dp/B00FBSW2RA</a>
<b>MOOC</b>	
1.	<a href="https://www.coursera.org/learn/programming-languages">https://www.coursera.org/learn/programming-languages</a>
2.	<a href="https://www.mooc-list.com/course/programming-languages-part-c-coursera">https://www.mooc-list.com/course/programming-languages-part-c-coursera</a>

<b>COURSE TITLE</b>	<b>CLOUD DEPLOYMENT LAB</b>			<b>CREDITS</b>	<b>3</b>
<b>COURSE CODE</b>	<b>CSB4431</b>	<b>COURSE CATEGORY</b>	<b>PC</b>	<b>L-T-P-S</b>	<b>2-0-2- 0</b>
<b>CIA</b>	<b>60%</b>			<b>ESE</b>	<b>40%</b>
<b>LEARNING LEVEL</b>	<b>BTL-4</b>				
<b>CO</b>	<b>COURSE OUTCOMES</b>				<b>PO</b>