

CSE1001	PROBLEM SOLVING AND PROGRAMMING	L	T	P	J	C
		0	0	6	0	3
Pre-requisite	NIL	Syllabus version				
		1.0				
Course Objectives:						
1. To develop broad understanding of computers, programming languages and their generations 2. Introduce the essential skills for a logical thinking for problem solving 3. To gain expertise in essential skills in programming for problem solving using computer						
Expected Course Outcome:						
1. Understand the working principle of a computer and identify the purpose of a computer programming language. 2. Learn various problem solving approaches and ability to identify an appropriate approach to solve the problem 3. Differentiate the programming Language constructs appropriately to solve any problem 4. Solve various engineering problems using different data structures 5. Able to modulate the given problem using structural approach of programming 6. Efficiently handle data using flat files to process and store data for the given problem						
Student Learning Outcomes (SLO):		1, 12, 14				
List of Challenging Experiments (Indicative)						
1	Steps in Problem Solving Drawing flowchart using yEd tool/Raptor Tool				4 Hours	
2	Introduction to Python, Demo on IDE, Keywords, Identifiers, I/O Statements				4 Hours	
3	Simple Program to display Hello world in Python				4 Hours	
4	Operators and Expressions in Python				4 Hours	
5	Algorithmic Approach 1: Sequential				4 Hours	
6	Algorithmic Approach 2: Selection (if, elif, if.. else, nested if else)				4 Hours	
7	Algorithmic Approach 3: Iteration (while and for)				6 Hours	
8	Strings and its Operations				6 Hours	
9	Regular Expressions				6 Hours	
10	List and its operations				6 Hours	
11	Dictionaries: operations				6 Hours	

12	Tuples and its operations	6 Hours
13	Set and its operations	6 Hours
14	Functions, Recursions	6 Hours
15	Sorting Techniques (Bubble/Selection/Insertion)	6 Hours
16	Searching Techniques : Sequential Search and Binary Search	6 Hours
17	Files and its Operations	6 Hours
	Total hours:	90 hours
Text Book(s)		
1.	John V. Guttag., 2016. Introduction to computation and programming using python: with applications to understanding data. PHI Publisher.	
Reference Books		
1.	Charles Severance.2016.Python for everybody: exploring data in Python 3, Charles Severance.	
2.	Charles Dierbach.2013.Introduction to computer science using python: a computational problem-solving focus. Wiley Publishers.	
Mode of Evaluation: PAT / CAT / FAT		
Recommended by Board of Studies		
Approved by Academic Council	No. 37	Date 16-06-2015