

Savitribai Phule Pune University
Syllabus for B.B.A (CA) (CBCS 2019 Pattern)
Semester I - Subject Code: - 107
Subject Name -: Principles of Programming and Algorithms

Total Contact Hours: -30

Total Credits: - 2

Objectives: To develop Analytical / Logical thinking and Problem solving capabilities

Credit Distribution: - 1 credit for theory (15 Lectures) and 1credit for Practical.

Note: - **Practical of PPA is on Computer fundamental and Scratch Programming.**

Unit No.	Contents	Lectures
1	Algorithm 1.1 Concept: Problem, Algorithm. 1.2 Characteristics of an algorithm. 1.3 Examples 1.3.1 Addition / Multiplication of integers 1.3.2 Determining if a number is +ve / -ve , even / odd 1.3.3 Maximum of 2 numbers , 3 numbers 1.3.4 Sum of first n numbers, sum of given n numbers , Sum of digits of a given number, sum of first and last digit of aNumber. 1.3.5 Digit reversing, Table generation for number n, Factorial of a number, Prime number, Factors of a number, Perfect number, Palindrome number , Armstrong number, GCD And LCM of 2 numbers.	6
2	Flowchart 2.1 Introduction 2.2 Symbols 2.3 Draw flowcharts for algorithms implemented in chapter 1.	3
3	Function 3.1 Definition, Syntax. 3.2 Introduction to Library functions : such as pow(),sqrt() etc 3.3 Recursion 3.3.1. Factorial of a number. 3.3.2. Sum of digits of a given number.	2
4	Array 4.1 Introduction 4.2 Algorithms and Flowcharts using array 4.2.1. Maximum and minimum element from an array 4.2.2. Reversing elements of an array	4

	4.2.3. Mean and Median of n numbers 4.2.4. Row major and Column major representation of an array 4.2.5. Sum of elements of an array 4.2.6. Matrices: Addition, Multiplication, Transpose, Symmetry, upper/lower triangular .	
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Evaluation of the course: Continuous evaluation of the student through written examination and necessary lab practical.

Certification: A Course Completion Certificate will be provided by the college to every student who has passed in the continuous evaluation and the Grade as per his / her performance in the evaluation will appear on the Certificate.

References:

Sr. No.	Title of the Book	Author/s	Publication
1	How to solve it by Computer	R. G. Dromy	Pearson
2	Fundamentals of Data Structures	Horowitz and Sahani	Universities Press
3	Introduction to algorithms	Cormen, Leiserson, Rivest, Stein	MIT Press