DSC-1C	BCS-C101	OBJECT ORIENTED PROGRAMMING IN C++	L	C	CIA	ESE	Time for ESE
			4	4	30	70	3Hrs.

PREREQUISITES	:	No prior knowledge about C++ is required, but students are expected to have some basic knowledge about computers, some knowledge in programming language is preferred.
COURSE OBJECTIVES/ LEARNING OUTCOMES	:	After successfully completing this course, students should be able to: • design, analyze and evaluate computer programs using the C++ programming language. • apply object-oriented programming principles and techniques using C++.

NOTE: The question paper shall consist of **three sections** (Sec.-A, Sec.-B and Sec.-C). **Sec.-A** shall contain **10** *Objective/ Multiple Choice Questions* of one mark each and student shall be required to attempt all questions. **Sec.-B** shall contain **10** *Short Answered Questions* (maximum 100 words) of four marks each and student shall be required to attempt any five questions. **Sec.-C** shall contain **8** *Long Answered / Descriptive Questions* of ten marks each and student shall be required to attempt any four questions. ***Questions shall be uniformly distributed from the entire syllabus.*** The previous year paper/model paper can be used as a guideline and the following syllabus should be strictly followed while setting the question paper.

Program: Program Definition, Program development cycle, Programming Languages, Low Level language, High Level Language, Features of a good programming language. **2L**

4L

Algorithm and Flow chart: Algorithm: Definition, Properties of an Algorithm, Classification of Algorithms, Algorithm logic, Flow Chart, Importance of Flowchart, Flow chart symbols, Advantages of flow chart, Limitation of flow charts.
Algorithm and flow chart for the problems: to find area & circumference of circle, to find the product of first n natural numbers , largest of 3 numbers, the check whether the number is odd or even, to find factorial of a given number

Programming using C++:

Primitive Data types, Variables, Arithmetic and Logical Expressions, Assignment	**5L**
Input/output Methods, Operators	**3L**
Control Structures, Arrays	**10L**
Functions, Recursion,	**7L**
Pointers, Basic File Handling	**7L**

OOPs concepts:

Procedural Abstractions, Data Abstraction and Encapsulation	**8L**
Inheritance; Polymorphism	**8L**
Exception Handling	**6L**

RECOMMENDED BOOKS:

1. H. Schildt C++, "The Complete Reference Book", (4th ed.), Tata McGraw Hill
2. E. Balaguruswamy, "Object Oriented Programming with C++", (4th ed.), Tata McGraw Hill
3. H. Schildt, C++, "A Beginner's Guide" (2nd ed.), McGraw Hill
4. J. R. Hubbard, "Programming with C++", (2nd ed.), Schaum's Outlines, Tata McGraw Hill
5. R. Albert and T. Breedlove, C++, "An Active Learning Approach", Jones and Bartlett India Ltd.