Name of the faculty :   Ms.Ekta
Discipline :   Computer Science
Engineering
Semester :   4th
Subject :   Object Oriented Programming
Duration :   15 weeks (April2021- Aug 2021)
Work Load (Lecture/ Practical) per week (in hours): Lecture-02, Practical-02

Unit	Topic	Reference	No. of Hours
I	**Object-Oriented Programming Concepts:** Introduction, comparison between procedural programming paradigm and object-oriented programming paradigm,	Book 1 Book 2	2
	Basic concepts of object-oriented programming — concepts of an object and a class, interface and implementation of a class, operations on objects, relationship among objects, abstraction, encapsulation, data hiding, inheritance, overloading, polymorphism, messaging.	Book 1 Book 2	2
2	**Classes and Objects:** Specifying a class, creating class objects, accessing class members, access specifiers, static members, use of const keyword,	Book 1 Book 3	2
	friends of a class, empty classes, nested classes, local classes, abstract classes, container classes, bit fields and classes.	Book 2	2
3	**Inheritance:** Introduction, defining derived classes, forms of inheritance, ambiguity in multiple and multipath inheritance,	Book 1	2
	virtual base class, object slicing, overriding member functions, object composition and delegation, order of execution of constructors and destructors.	Book 1	2
4	**Pointers and Dynamic Memory Management:** Declaring and initializing pointers, accessing data through pointers, pointer arithmetic, memory	Book 2	2

	allocation (static and dynamic), dynamic memory management using new and delete operators, pointer to an object,		
	this pointer, pointer related problems - dangling/wild pointers, null pointer assignment, memory leak and allocation failures.	Book 1 Book 2	2
	Constructors and Destructors: Need for constructors and destructors, copy constructor, dynamic constructors, explicit constructors, destructors, constructors and destructors with static members, initializer lists.	Book 1	2
	Operator Overloading and Type Conversion: Overloading operators, rules for overloading operators,	Book 3 Book 2	2
	overloading of various operators, type conversion - basic type to class type, class type to basic type, class type to another class type.	Book 1 Book 2	2
	Exception Handling: Review of traditional error handling, basics of exception handling, exception handling mechanism,	Book 1 Book 2	2
	throwing mechanism, catching mechanism, rethrowing an exception, specifying exceptions.	Book 1 Book 2	2
	Templates and Generic Programming: Template concepts, Function templates,	Book 1	2
	class templates, illustrative examples.	Book 1	2

TEXT BOOKS, AND/OR REFERENCE MATERIAL:

1. BjraneStroustrup, "C++ Programming language",3rd edition, Pearson education Asia(1997)
2. LaforeR."Object oriented Programming in C++",4th Ed. Techmedia,New Delhi(2002).
3. Yashwant Kenetkar,"Let us C++",1stEd.,Oxford University Press(2006)
 4. B.A. Forouzan and R.F. Gilberg,CompilerScience,"A structured approach using C++" Cengage Learning, New Delhi.