

<u>OBJECT ORIENTED PROGRAMMING USING C++</u>			
B.E. V Semester (Open Elective)			
[As per Choice Based Credit System (CBCS) Scheme]			
Course Code	17EC562	CIE Marks	40
Number of Lecture Hours/Week	03	SEE Marks	60
Total Number of Lecture Hours	40 (08 Hrs/ Module	Exam Hours	03
CREDITS – 03			
<p>Course objectives: This course will enable students to:</p> <ul style="list-style-type: none"> • Define Encapsulation, Inheritance and Polymorphism. • Solve the problem with object oriented approach. • Analyze the problem statement and build object oriented system model. • Describe the characters and behavior of the objects that comprise a system. • Explain function overloading, operator overloading and virtual functions. • Discuss the advantages of object oriented programming over procedure oriented programming. 			
Module -1			
<p>Beginning with C++ and its features: What is C++?, Applications and structure of C++ program, Different Data types, Variables, Different Operators, expressions, operator overloading and control structures in C++ (Topics from Ch -2,3 of Text). L1, L2</p>			
Module -2			
<p>Functions, classes and Objects: Functions, Inline function, function overloading, friend and virtual functions, Specifying a class, C++ program with a class, arrays within a class, memory allocation to objects, array of objects, members, pointers to members and member functions (Selected Topics from Chap-4,5 of Text). L1, L2, L3</p>			
Module -3			
<p>Constructors, Destructors and Operator overloading: Constructors, Multiple constructors in a class, Copy constructor, Dynamic constructor, Destructors, Defining operator overloading, Overloading Unary and binary operators, Manipulation of strings using operators (Selected topics from Chap-6, 7 of Text). L1, L2, L3</p>			
Module -4			
<p>Inheritance, Pointers, Virtual Functions, Polymorphism: Derived Classes, Single, multilevel, multiple inheritance, Pointers to objects and derived classes, this pointer, Virtual and pure virtual functions (Selected topics from Chap-8,9 of Text). L1, L2, L3</p>			

Module -5

Streams and Working with files: C++ streams and stream classes, formatted and unformatted I/O operations, Output with manipulators, Classes for file stream operations, opening and closing a file, EOF (Selected topics from Chap-10, 11 of Text). **L1, L2, L3**

Course Outcomes: At the end of the course, students will be able to:

- Explain the basics of Object Oriented Programming concepts.
- Apply the object initialization and destroy concept using constructors and destructors.
- Apply the concept of polymorphism to implement compile time polymorphism in programs by using overloading methods and operators.
- Use the concept of inheritance to reduce the length of code and evaluate the usefulness.
- Apply the concept of run time polymorphism by using virtual functions, overriding functions and abstract class in programs.
- Use I/O operations and file streams in programs.

Text Book:

Object Oriented Programming with C++, E.Balaguruswamy, TMH, 6th Edition, 2013.

Reference Book:

Object Oriented Programming using C++, Robert Lafore, Galgotia publication 2010.