CAP444:OBJECT ORIENTED PROGRAMMING USING C++

L:3 T:0 P:0 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: define the various concepts of object oriented programming

CO2 :: understand the working with files and streams

CO3 :: practice the generic programming to increase the efficiency of code

CO4 :: analyze the unexpected situations and manage them using exception handling mechanism

Unit I

Principles of OOP : basic concepts of object oriented programming, object oriented languages, classes and objects, access specifiers, constructors: types of constructors, destructors, friend function

Unit II

Inheritance and type conversion : inheritance: importance, types of inheritance, type conversions: importance, basic to class type, class to basic type, one class to another class type

Unit III

Polymorphism : functions overloading, overloading unary operators, overloading binary operators, virtual base classes, abstract classes, pointer to object, this pointer, pointer to derived class, virtual function, pure virtual function

Unit IV

Working with files and streams : c++ streams, c++ stream classes, classes for file stream operations, opening & closing files, detection of end of file, more about open(): file modes, file pointer & manipulator, sequential input & output operation, updating a file: random access, command line arguments

Unit V

Generic programming with templates : need of template, class template, function template, overloading of function template, recursion with template function, class template and inheritance, difference between templates and macros

Unit VI

Exception handling : principles of exception handling, exception handling mechanism, multiple catch statements, catching multiple exceptions, re-throwing exceptions, exceptions in constructors and destructors, controlling uncaught exceptions

Text Books:

1. OBJECT ORIENTED PROGRAMMING WITH ANSI & TURBO C++ by ASHOK N. KAMTHANE, PEARSON

References:

1. OBJECT ORIENTED PROGRAMMING IN C++ by ROBERT LAFORE, GALGOTIA PUBLICATIONS

2. C++: THE COMPLETE REFERENCE by HERBERT SCHILDT, MCGRAW HILL EDUCATION