Course code	Course Name	L-T-P-Credits	Year of Introduction
CH307	COMPUTER PROGRAMMING IN C++	2-1-0-3	2016

Prerequisite : Nil

Course Objectives

- To present the concept of object oriented programming
- To discuss the important elements of C++
- To write simple programs using C++

Syllabus

Introduction to OOP, Basics of C++ programming, Decision making and Looping Functions, Arrays and strings ,Classes and objects, Constructors and destructors, Overloading, Inheritance, Pointers, Polymorphism, Files and streams

Expected Outcome

After the successful completion of this course students will be able to

i. Know the basic concepts of OOP
ii. Develop problem solving skills
iii. Write and execute C++ programs using decision making and looping statements
iv. Apply the concept of functions, arrays, pointers, overloading, polymorphism, files, streams etc.

Text Books

1. E. Balaguruswamy, Object Oriented Programming in C++, TMH
2. Robert Lafore, Object Oriented Programming in C++, Galgotia Publishers

Reference Books

- Bjarne Stroustrup ,The C++ Programming Language, , Pearson Education

Course Plan

Module	Contents	Hours	Sem. exam marks
I	Introduction to OOP, Features of object oriented programming, Basics of C++ programming- Data types, operators, precedence of operators, control flow	7	15%
II	Decision Making (if, if…else, else… if, switch statements, conditional operators), Looping Statements (while, do… while, for), break, continue, goto statements.	7	15%
	FIRST INTERNAL EXAMINATION		
III	Functions, arrays and strings, operations on arrays, string manipulations. Classes and objects, constructors, destructors, objects as function arguments, inline functions, friend functions, friend classes, array of objects	7	15%
IV	Overloading, operator overloading, overloading unary operators, overloading binary operators, function overloading. Inheritance – single, multiple, multilevel, hierarchical and hybrid. Base class and derived class, public inheritance, private inheritance, constructors in derived class	7	15%

SECOND INTERNAL EXAMINATION			
V	Pointers, memory management, new and delete, pointers within a class, pointers to objects, array of pointers to objects, pointer to object members, pointer to derived class objects, pointers to pointers	7	20%
VI	Polymorphism, virtual function, pure virtual function, abstract classes, late binding, early binding. Files and streams, streams, predefined console streams, string I/O, object I/O, files, file modes, file pointers, file input/output, command line arguments, templates.	7	20%
END SEMESTER EXAM			

Question Paper Pattern:

Maximum Marks: 100 Exam Duration: 3 Hours

Part A: There shall be **Three questions** uniformly covering Modules 1 and 2, each carrying 15 marks, of which the student has to answer any **Two questions**. At the most 4 subdivisions can be there in each main question with a total of 15 marks for all the subdivisions put together. (2 x15= 30 Marks)

Part B: There shall be **Three questions** uniformly covering Modules 3 and 4, each carrying 15 marks, of which the student has to answer any **Two questions**. At the most 4 subdivisions can be there in each main question with a total of 15 marks for all the subdivisions put together. (2 x15= 30 Marks)

Part C: There shall be **Three questions** uniformly covering Modules 5 and 6, each carrying 20 marks, of which the student has to answer any **Two questions**. At the most 4 subdivisions can be there in each main question with a total of 20 marks for all the subdivisions put together. (2 x20= 40 Marks)