

CLASS: B. Sc (Information technology)		Semester – I
SUBJECT: Introduction to C++ programming (USIT105)		
Periods per week	Lectures – 5	3 Credits

Unit – I	Programming Logic and techniques : Algorithms, Flow-charts, Program Design, Introduction to C++: Origin of C++, A Sample C++ program, pitfall and programming tips. Testing and Debugging.	8 Lect.
Unit- II	C++ concepts : Variables and Assignments: variables, identifiers, variable declarations, Assignment Statements, reference variable, symbolic constant, Input and Output: cin, cout, escape sequences, include directives and Namespaces, Indenting and Comments, Operator precedence, Data types and expressions, Arithmetic operators, Type compatibilities.	8 Lect.
Unit- III	Flow of Control : Compound statements, Loops: while, for, do while, nested loops, Decision making: if – else, nested if else, switch , break and continue, Manipulators: endl , setw, sizeof, Increment and decrement operators, Type Cast Operators, Scope resolution operators	8 Lect.
Unit- IV	Functions: Function Prototypes, built in functions and user defined functions, Function overloading, Call by reference, Call by value, const member functions. Inline Functions and recursive functions, Math Library Functions.	8 Lect.
Unit- V	Derived Data types (Arrays , pointers , functions) : Introduction to arrays, arrays in functions, 2-D arrays , Multidimensional arrays, Introduction to pointers, void pointers, pointers in function, pointer to constant and constant pointer, generic pointer.	8 Lect.
Unit- VI	Strings, Vectors and Structures : String functions: strcmp, strcat, strlen, strcpy . Vector Basics. Introduction to Structures.	8 Lect.

Books: Problem Solving with C++ , Walter Savitch, Sixth Edition, Pearson Education.
J.R.Hubbard, Schaum’s outlines “Programming with C++”, Second Edition, Tata McGrawHill
Y.P.Kanetkar, “Let us C++” , seventh edition, BPB publication

Reference Books: Object Oriented programming with C++ , E Balagurusamy , Third Edition , Tata McGraw Hill.

Pure C++ programming , Amir Afzal, Pearson Education.

Computer Science – A structured Approach using C++ by B. Forouzan, R. F. Gilberg, Cengage Publication.

Term Work for USIT105

- i) Assignments: Should contain at least 2 assignments covering the Syllabus.
- ii) Class Tests: One. Also Known as Unit Test or In-Semester Examinations
- iii) Tutorial : Minimum Three tutorials covering the syllabus

Practical (USIT1P5):

Journal Practical	3 Lectures per Week (1 Credit)
<p>List of Practical</p> <ol style="list-style-type: none">1) Write a C++ program for finding greatest of three number.2) Write a C++ program for solving the quadratic equation.3) Write a C++ program to print all the prime numbers in a given range.4) Write a C++ program for displaying the Fibonacci series.5) Write a C++ program for converting number to words. (switch,break,continue)6) Write a C++ function for swapping two numbers without using third variable.8) Write a recursive function for factorial of given number.9) Write your own function for string reverse , string palindrome , string comparison10) Write a program for sorting the number in ascending and descending order11) Write a program for Matrix addition and multiplication.12) Write a program for implementing the concept of structures.13) Write a program for finding the greatest and smallest number using vector.14) Write a program for implementing the concept of call by value and call by reference.15) Write a program for generating the report card.	