

PROGRAMING IN C++

Course Objective:

The objective of the course is to learn the basics about C++ programming language such as variables, data types, arrays, pointers, functions and classes etc. On successful completion this course, students will acquire a good understanding about the concept of object-oriented programming using C++ and be able to write and read basic C++ code.

Learning Outcome: On the completion of this course, students will be able to

- Learn to understand different types of data by C++ language.
- Learn different symbols used in the programming language representing the text variables and constants.
- Learn to develop various operators, loops and nested control statements.
- Learn to generate functions, local and global variables, 1D and 2D array in C++ programe.

UNIT-I

Introduction to structured programming: data types- simple data types, floating data types, character data types, string data types, arithmetic operators and operators precedence.

UNIT-II

Variables and constant declarations, expressions, input using the extraction operator >>and cin, output using the insertion operator << and cout, preprocessor directives, increment (++) and decrement (--) operations.

UNIT-III

Creating a C++ program, input output, relational operators, logical operators and logical expressions, if and if-else statement, switch and break statements, for, while and do-while loops, continue statement, nested control statement.

UNIT-IV Functions, value returning functions, value versus reference parameters, local and global variables, one dimensional array, two dimensional array, pointer data and pointer variables.

Books Recommended

- ✓ *D. S. Malik: C++ Programming Language, Course Technology, Cengage Learning, India Edition, 2009.*
- ✓ *E. Balaguruswami: Object oriented programming with C++, fifth edition, Tata Mc Graw Hill Education Pvt. Ltd., 2008*

Books For Reference

- ✓ *R. Johnsonbaugh and M. Kalin-Applications Programming in ANSI C, Pearson Education.*

- ✓ *S. B. Lippman and J. Lajoie, C++ Primer, 3rd Ed., Addison Wesley, 2000.*
- ✓ *Bjarne Stroustrup, The C++ Programming Language, 3rd Ed., Addison Wesley, 2010.*
- ✓ *Suggested digital platform: NPTEL/SWAYAM/MOOCs*
- ✓ *e-Learning Source <http://ndl.iitkgp.ac.in> ; <http://ocw.mit.edu> ; <http://mathforum.org>*