



Govt. of West Bengal  
Office of the Principal

# Government General Degree College, Muragachha

Muragachha, Nadia, Pin – 741154

PhoneNo.:03474-268008web: <https://muragachhagovtcollege.in/> e-mail:[mgnadia2015@gmail.com](mailto:mgnadia2015@gmail.com)

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Ref. No .....

Date : .....

## Course Title: Basic Concepts of C++

Course Duration: 06.06.2022 to 16.06.2022

**Course Description:** This intensive course provides a rapid introduction to the fundamental concepts of the C++ programming language. It covers essential topics such as syntax, data types, control structures, functions, arrays, and basic object-oriented programming principles. Participants will engage in hands-on exercises and coding labs to reinforce learning.

**Prerequisites:** No prior programming experience required, but familiarity with basic computer operations is recommended.

**Learning Objectives:** By the end of this course, participants will be able to:

1. Understand the basic syntax and structure of C++ programs.
2. Implement control structures and loops to solve programming problems.
3. Utilize different data types and variables effectively in C++.
4. Define and use functions for modular programming.
5. Work with arrays to store and manipulate collections of data.
6. Begin to apply basic object-oriented programming principles in C++.

### Day-wise Outline:

#### Day 1: Introduction to C++

- Overview of C++ programming language
- Setting up the development environment
- First program in C++ (Hello World)
- Basic structure of a C++ program

#### Day 2: Variables and Data Types

- Variables and constants
- Primitive data types (integers, floating-point numbers, characters)
- Type modifiers (signed, unsigned, short, long)
- Type inference (auto keyword)





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## Day 3: Control Structures

- Conditional statements (if, else if, else)
- Switch statement
- Logical and relational operators
- Introduction to Boolean data type

## Day 4: Loops

- while loop
- do-while loop
- for loop
- Nested loops and loop control statements (break, continue)

## Day 5: Functions

- Defining and calling functions
- Function parameters (pass by value, pass by reference)
- Function return types and return statements
- Function overloading

## Day 6: Arrays and Strings

- Arrays: declaration, initialization, accessing elements
- Multidimensional arrays
- C-style strings vs. C++ string class
- String manipulation and operations

## Day 7: Introduction to Object-Oriented Programming

- Classes and objects
- Constructors and destructors
- Access specifiers (public, private, protected)

## Day 8: More on OOP

- Inheritance: deriving classes, base and derived classes
- Polymorphism: function overloading, overriding

## Day 9: File Handling





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- File streams (input and output)
- Reading from and writing to files
- Error handling with file operations

## Assessment:

- Daily exercises and quizzes: 50%
- Final project: 50%

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Muragachha Nakashpara Nadia



Government of West Bengal

## Government General Degree College, Nakashipara

Department of Physics

MURAGACHHA, NADIA, PIN- 741154

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Ref. No. 28(A)/22-23

Dated: 20.05.2022

### NOTICE

This is to notify all concerned that the Department of Physics is going to organize a certificate course on 'Understanding The Basic Concepts of C++' held from 06.06.2022 to 16.06.2022. free of cost. Certificate will be provided to the participating students after successful completion of the said course. Students of the Physics department of this college are requested to meet the course coordinator and enrol their names before commencement of the course.

*Sayan Das*

Course Coordinator 20/5/22  
(Dr. Sayan Das)

Government General Degree College, Nakashipara

*20/05/2022*

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College, Nakashipara

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