

Course: Cpp

Course Code: Cpp

Session: 2019-20

Duration: 4 months

Assessment procedures: Proctored certification Exam (100%)

Curriculum of the Course:

- 1 Introduction to C
- 2 Basic Level
- 3 Intermediate level
- 4 Advanced level

Basic Level

1) First C Program

- -Header Files
 - example: `#include <stdio.h>`
- `main()`
- Curly braces { }
- `printf()`
- semicolon ;
- Compiling a C program
 - example: `gcc filename.c -o output parameter`
- Executing a C program
 - example: `./output parameter`
- Errors

2) First C++ Program

- Header files
 - --example: `#include <iostream>`
- `main()`
- Curly braces { }
- `-cout<<`
- semicolon ;
- Compiling a C++ program
 - example: `g++ filename.cpp -o output parameter`

- Executing a C program
 - example: ./output parameter

3) Tokens in C and C++

- Data types, constants, identifiers
- Keywords
 - example: if, break, else
- Constants
- Data types
 - example: int, float, char, double
- Format specifiers
 - example: %d, %f, %c, %lf
- Range of data types
- Variables
- Identifier
- Errors

4) Functions in C and C++

- What is a function
- Syntax for declaration of a function
- Function with arguments
 - example: return-type function-name(parameter);
- Function without arguments
 - example: return-type function-name;
- Calling a function
- Errors

5) Scope of Variables in C and C++

- Introduction
- Syntax of declaring a variable
 - example: data-type var-name;
- Syntax for initializing a variable
 - example: data-type var-name = value;
- Scope of variables
- Global variable
- Local variable
- Error

6) If And Else If statement in C and C++

- What are Statements.
- Syntax for if and
- If-else Statement
- Errors

7) Nested if and switch statement in C and C++

- Nested if statement.
- Switch statement.
- Syntax for nested-if statement
- Syntax for switch statement
- break statement
- Comparison between nested if-else and switch statement
- Errors

8) Increment and Decrement Operators in C and C++

- Increment Operator
 - example: ++
- Postfix increment
 - example: a++
- Prefix increment
 - example: ++a
- Decrement Operator
 - example: --
- Postfix decrement
 - example: a--
- Prefix decrement
 - example: --a
- Typecasting
- Errors

9) Arithmetic Operators in C and C++

- Arithmetic Operators
- Addition Operator
 - example: a + b
- Subtraction Operator

- example: a - b
- Multiplication Operator
 - example: a * b
- Division Operator
 - example: a \ b
- Modulus Operator
 - example: a % b
- Errors

10) Relational Operators in C and C++

- Double Equal to
 - example: a == b
- Not Equal to
 - example: a != b
- Greater Than
 - example: a > b
- Less Than
 - example: a < b
- Greater than Equal To
 - example: a >= b
- Less Than Equal To
 - example: a <= b
- Errors

11) Logical Operators in C and C++

- And &&
- Or ||
- Not !
- Errors

Intermediate level

12) Loops in C and C++

- Loops
- Syntax for while and do-while loop
- Comparison of while and do-while loop
- Syntax for
- for loop

- Errors

13) Arrays in C and C++

- What are arrays
- 1-D Arrays
- Syntax for Declaration of arrays
 - example: data type array_name [size];
- Syntax for Initialization of arrays
 - example: data type array_name [size]=value;
- Accepting values from the user
- Errors

14) Working with 2-D Arrays in C and C++

- What are 2-D Arrays.
- Range of arrays
- Syntax for Declaration of 2-D arrays
 - example: data type array_name[row][column];
- Syntax for initialization of 2-D arrays
 - example: data type array_name[row][column]=

```
{
{row-val},{col-val}
};
```

- Errors

15) Strings in C and C++

- What is a string
- Syntax for declaring a string
- Syntax for initializing a string
- To read a string from keyboard
- Errors

16) String Library Functions in C and C++

- What are string library functions.
- Types of string library functions
 - Strcpy
 - Strlen
 - Strcmp
 - Strcat

- Errors

Advanced level

17) Working with Structures in C and C++

- Introduction
- Syntax of structures
- Declaration and initialization
- Declaration of structure variable
- Accessing structure variables

18) Understanding Pointers in C and C++

- Introduction
- Syntax of Pointer
 - example: `int *iptr;`
- Declaration
 - example:

`int a; (integer a) int *aptr; (pointer to an integer *aptr) aptr = &a; (aptr set to address of a)`
Address Pointer

- Errors

19) Function call in C and C++

- types of function calls
- function pass by value
- function pass by reference

20) File Handling in C

- File handling functions
- Opening a File closing a file
 - example: `fopen, fclose`
- Reading data from a File

List of Students Enrolled

#	Name of student
1	Abhishek Khandelwal
2	Acchint Kaur
3	Aditi Joshi
4	Aditya Chaturvedi
5	Aditya Kumar Gupta
6	Aditya Manu Sharma
7	Akhil Singh Khangarot
8	Akshat Jain
9	Amit Kumar

10	Anshita Yadav
11	Apoorva Dubey
12	Arishma Khan
13	Ashutosh Maheshwari
14	Dinesh Soni
15	Disha Nagori
16	Drishti Jain
17	Durvish Paliwal
18	Garima Sinha
19	Harsh Khandelwal

20	Harshita Shekhawat
21	Ishita Mathur
22	Kajol Jain
23	Kartikeya Bajpai
24	Keshav Kumar Sharma
25	Keshav Nama
26	Khushal Sharma
27	Krity Jain
28	Kunal Mamodiya
29	Mayank Saxena
30	Mishal Gupta
31	Muskan Khandelwal
32	Naman Kumar Jain
33	Nisha Jain
34	Nishant Kumar
35	Nitesh Goyal
36	Poonam Vijay
37	Pragya Gaggar
38	Prakriti Agrawal
39	Pranav Parashar
40	Prateek Baheti
41	Rahul Chandnani
42	Ritik Garg
43	Ritika Jalewa
44	Ronit Gupta
45	Sachin Sharma
46	Saksham Kalavtia
47	Saurabh Gupta
48	Shruti Gupta
49	Shubham Sharma
50	Skand Gupta
51	Sunidhi Sharma
52	Tanisha Dhemla
53	Tanmay Bhargava
54	Tarun Sharma
55	Vinay Bansal

56	Vinod Kalwani
57	Vishesh Sharma
58	Vinay Vyas
59	Pankaj Sharma
60	Nishant Nishant
61	Devyanshi Khandelwal
62	Aman Kuntal
63	Dimple Gupta
64	Ajay Gupta
65	Ayushi Sharma
66	Akshita Dalmia
67	Vibhuti Sharma
68	Prachi Munot
69	Vibhor Jain
70	Ranu Goyal
71	Vishal Bothra
72	Tushar Saxena
73	Adarsh Dixit
74	Uma Agarwal
75	Tanu Mehra
76	Rishi Khandelwal
77	Prafull Bhadauria
78	Shruti Dubey
79	Shreyas Satija
80	Prateek Goyal
81	Rohit Singh Foujdar
82	Saksham Agrawal
83	Bhavika Samdani
84	Lakshya Dewani
85	Kshitij Agarwal
86	Nilesh Rawat
87	Gaurav Mehta
88	Mohan Nainani
89	Dev Sharma
90	Kartikey Agrawal