

Course: Cpp

Course Code: Cpp

Session: 2017-18

Duration: 4 Months

Assessment procedures: Proctored certification Exam (100%)

Curriculum of the Course: 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

1	Aanchal Pareek
2	Aanshi Mehta
3	Aayushi Khandelwal
4	Abhay Mishra
5	Abhinav Vijay
6	Abhiraj Tak
7	Abhishek Choudhary
8	Abhishek Khandelwal
9	Achal Gupta
10	Akanksha Khurana
11	Akshaya Khandelwal
12	Akshaya Makkar
13	Akshaya Rathi
14	Amanpreet Singh Bagga
15	Amresh Kumar
16	Ananya Gupta
17	Ankit Gupta
18	Ankit Jhakar
19	Ankit Kumar
20	Anmol Singhal
21	Anshul Jain
22	Daksh Jajpura
23	Archita Batra
24	Arnav Dudani
25	Arpit Khandelwal
26	Asish Kumar
27	Astha Bhargava
28	Avinash Nagar

29	Ayush Ranjan
30	Ayushi Midha
31	Bhanu Pratap Singh
32	Bhavya Kashyap
33	Chaitanya Sharma
34	Deepak Nehra
35	Devansh Sharma
36	Dipesh Kalal
37	Divya Shanker Acharya
38	Gaurav Mittal
39	Harish Pradhan
40	Harmukh Wattal
41	Harsh Khandelwal
42	Harsh Rawat
43	Harshit Singh
44	Himanshu Yadav
45	Hritik Samaria
46	Isha Gupta
47	Kalpita Jain
48	Kapil Bhagchandani
49	Keshav Agarwal
50	Kishan Sharma
51	Komal Mishra
52	Lakshya Dosi
53	Madhav Dixit
54	Mahima Jain
55	Mahima Soni
56	Manthan Jain

57	Martand Kankar
58	Mayank Devnani
59	Mohit Sinwer
60	Monit Ranjan
61	Mridul Sharma
62	Nikhil Jain
63	Nikhil Kumawat
64	Palak Munet
65	Parul Singh
66	Piyush Jain
67	Pooja Khandelwal
68	Prabhat Jain
69	Pradeep Saini
70	Pranav Dixit
71	Prateek Agrawal
72	Prateek Talesara
73	Pravesh Chahar
74	Zuber Mohammed
75	Mihir Shah
76	Pushpak Gupta
77	Rahul Kumawat
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83	Shaurya Sisodia
84	Shefali Arora
85	Shikhar Agarwal
86	Shivam Gupta
87	Shubham Tak
88	Shyam Murari Godara
89	Siddhant Jain
90	Siddharth Jain
91	Smriti Bagga
92	Snehil Bhatnagar
93	Tushar Mathur
94	Ujjwal Bansal
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96	Vaibhav Sharma
97	Varun Nagpal
98	Vibhu Jain
99	Yash Dagur
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101	Vinayak Mangal
102	Prachi Keswani
103	Pranjal Sharma

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111	Yash Sharma
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126	Mamta Siyak
127	Mohit Soni
128	Saksham Kumar
129	Nikhil Mathur
130	Nilay Maheshwari
131	Nitesh Gupta
132	Pawan Sharma
133	Pranjal Agarwal
134	Prateek Sharma
135	Puneet Sharma
136	Rakesh Kumar
137	Riya Sagar
138	Sagar Mochi
139	Saksham Jain
140	Satyam Kumar
141	Shagun Agarwal
142	Shiwanshu Mani
143	Shubham Baheti
144	Siddhant Sharma
145	Simran Khameshara
146	Talib Hussain
147	Tanvi Garg
148	Tarun Bhambhani
149	Toshit Jain
150	Vivek Kumar Gupta

151	Aman Sharma
152	Anisha Mittal
153	Shivam Soni
154	Kaushal Kishor Agrawal
155	Neha Mathur
156	Aakriti Jain
157	Aayush Garg
158	Aayush Paliwal
159	Abdul Qadir
160	Abhijit Kumar Jha
161	Aditya Satija
162	Akshay Kumar Sharma
163	Anjali Poddar
164	Ankita Jha
165	Anurag Sharma
166	Arpit Singh Rajpurohit
167	Avinash Toshniwal
168	Ayush Gupta
169	Ayush Kothari
170	Bhavesk Kumar
171	Digvijay Singh Shekhawat
172	Divij Dhall
173	Hardik Sharma
174	Harshit Mehra
175	Harshit Sankhala
176	Hemang Joshi
177	Himanshu Sharma
178	Homan S V
179	Ishika Gupta
180	Keyur Jain
181	Kriyanshu Saraswat
182	Namit Patni
183	Sakshi Dayani
184	Saumya Singh
185	Abhinav Singh
186	Abhishek Kumawat
187	Agnivesh Choudhary
188	Apoorva Sapra
189	Archit Khandelwal
190	Ashwin Royal
191	Bhanwar Singh
192	Bhumika Pandey
193	Harsh Choudhary
194	Harshit Gupta
195	Hitendra Hada
196	Hitesh Agarwal
197	Kartikeya Tiwari

198	Kashish Bhateja
199	Keshav Sharma
200	Kinjal Agrawal
201	Kunal Kaushik
202	Milanpreet Singh
203	Mrinali Mathur
204	Mukul Goyal
205	Nimit Goyal
206	Nishant Nishu
207	Nishchal Shah
208	Nivedita Shanker
209	Piyush Patodi
210	Poonam Suthar
211	Prashi Agrawal
212	Prateek Agarwal
213	Prateek Dwivedi
214	Prateek Navalakha
215	Priyal Jain
216	Rahul Soni
217	Rajat Kriplani
218	Raksha Choudhary
219	Ritika Goyal
220	Ruchika Thory
221	Samridhi Prasad
222	Saurabh Sisodia
223	Sharad Goyal
224	Shrestha Bansal
225	Shrey Maheshwari
226	Shubhankar Srivastava
227	Simran Dhingra
228	Sita Choudhary
229	Sumit Maindoliya
230	Tapesk Kumar
231	Tarun Gupta
232	Uma Kumari
233	Umang Poddar
234	Varun Gandhi
235	Varun Mahirchandani
236	Vatsal Bhatt
237	Vikas Prajapat
238	Vinayak Vashishtha
239	Vishnu Kumawat
240	Yash Mishra
241	Yovan Jain
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243	Abhishek Singhal
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245	Ashima Gupta
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266	Deepankar Sharma
267	Divisha Dadhich
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276	Kanwar Singh
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300	Sonali Pandey
301	Ankit Kumar Jangir
302	Hritvik Patidar
303	Bhavesh Mittal
304	Mayank Agrawal
305	Krishan Kant Sharma
306	Yashshavi Kashayp
307	Yashesh Gupta
308	Aniket Sharma
309	Naveen Sharma
310	Navya Solanki
311	Umang Arora
312	Priya Khandelwal
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