Course: An Introduction To Programming Through C++

Course Code: noc21-cs38

Session: 2020-21

Duration: 12 Weeks

Assessment procedures: Weekly Assignment (25%) + proctored certification Exam (75%)

Curriculum of the Course:

Week: Introduction to computers using graphics. Notions of program organization, control flow. Introduction to a repeat macro statement and its use for drawing interesting pictures. Basics of computer hardware and how numbers and other information are represented and processed on computers.

Week: Basic data types. Variables. Assignment statement. Introduction to program design using examples such as summing infinite series. Introduction to coordinate based graphics and elementary animation. The repeat macro is used for looping.

Week: Statements of C++ for conditional execution and looping. Applications such as computing mathematical functions, root finding.

Week: Functions. Parameter passing. Pointers and references. Recursion basics. Recursive algorithms and recursive drawings. Breaking larger programs into functions. Passing functions as arguments to other functions.

Week: Arrays. Basic array processing strategies including passing arrays to functions. Pointers. Applications illustrating use of arrays to store sets and sequences. Iterating over pairs of objects from an array. Selection sort.

Week: Use of arrays to represent textual data. Multidimensional arrays. Command line arguments. Binary search. Mergesort.

Week: Structures. Pointers with structures. Structure examples. Basics of classes: member functions, constructors, operator overloading and access control. Dynamic memory allocation. Basic mechanisms and pitfalls. Design of a "String" class that has automated memory management. Copy constructors and destructors. Introduction to the standard library.

Week: Use of the standard library in designing programs. Design of medium size programs. A miniature program for marks and ranks display. A program for gravitational simulation. A program for designing and solving resistive circuits with a graphical user interface

List of students enrolled

S. No	Name of Student		S. No	Name of Student
1	Lavanya Sharma		11	Isha Tripathi
2	Aditya Agarwal		12	Aayush Sharma
3	Abhishek Garg		13	Krishna Rathi
4	Hansika Agarwal		14	Divyansh Sharma
5	Amey Vijaywargiya		15	Moksh Avasthi
6	Nikita Choudhary		16	Siddharth Agarwal
7	Anuj Sharma		17	Sakshi Jain
8	Anushka Jain		18	Yatin Parmar
9	Arihant Pokharna		19	Mohak Saini
10	Avinash Mittal		20	Himanshu Patni
			21	Shagun Agarwal

22	Kartikey Sharma		64	Pratham Kothari
23	Abhinandan Sharma		65	Prisha Kasat
24	Harsh Singh Narooka		66	Purvi Tanwar
25	Yash Sharma		67	Rishi Bhargav
26	Jigyasa		68	Ritik Khandelwal
27	Chhavi Jangid		69	Ruchika Jain
28	Somu Dey		70	Rudraksh Agarwal
29	Divyam Agarwal		71	Rudra Pratap Singh
30	Kartikeya D		72	Sakshi Gurbani
31	Divyansh Jaitlia		73	Yogendra Singh
32	Parth Dwivedi		74	Deep Shah
33	Faisal Khan		75	Cmaune Sharma
34	Mukul Gupta		76	Siddhi Saxena
35	Palak Gupta		77	Ayush Singhal
36	Harshit Sharma		78	Ayuh Singhal
37	Harsh Kumar Sahu		79	Dhananjay Nathawat
38	Himanshi Sharma		80	Mohak Saini
39	Himanshu Patni		81	Sneha Khandelwal
40	Ishaan Khandelwal		82	Nikunj Sahu
41	Kanak Sharma		83	Sanjana Saxena
42	Priyanshu Jangid		84	Somik Choudhary
43	Jayesh Singh		85	Suraj Sharma
44	Shikhar Gupta		86	Akhil Upadhyay
45	Kanika Singhal		87	Suryapratapsingh
46	Harsh Kanojia		88	Sachin Yadav
47	Kartik Dusad		89	Tanishk Goyal
48	Kashish Karamchandani		90	Tanisha Dhemla
49	Kashish Sharma		91	Tanu Gautam
50	Vishal Katariya		92	Harsh Goyal
51	Devendra Kaur		93	Shreya Pandey
52	Manan Purohit		94	Mukul Gupta
53	Kiran Solanki		95	Prajwal Soni
54	Prashansha Khandelwal		96	Poorvaja Verma
55	Mahima Sharma		97	Ujjwal Mantri
56	Manish Manohar Chandwani		98	Utkarsh Dattatrey
57	Mehak Jain		99	Vaibhav Bairathi
58	Mrityunjay Kumar		100	Vinam Choudhary
59	Gaurav Namdev		101	Vishal Bansiwal
60	Harsh Singh Narooka		102	Vikas Kumar Prasad
61	Naitik Popli		103	Yash Bairwa
62	Nicky Lakhisarani		104	Yatin Meena
63	Nitya Singh			