



GOVERNMENT OF TAMILNADU
DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI
STATE PROJECT COORDINATION UNIT
(Established under Canada India Institutional Cooperation Project)
CURRICULUM

Course Name	Programming in C++
Course Code	CSE/2020/011
Course Duration	80 Hours
Minimum Eligibility Criteria and Pre-requisites(if any)	ITI/10 th /+2/Diploma/Graduates Basics concepts of c programming
Course Objectives	<p>The learning Objectives of this course are:</p> <ul style="list-style-type: none"> To learn the basic syntax and semantics of c++ language. To learn about classes, functions, pointers and arrays. To know about constructors and types, inheritance in c++. To learn how to overload functions and operators in c++. To handle file operations.
Course Outcomes	<p>At the end of the course, the students will be able to :</p> <ul style="list-style-type: none"> Code in c++ by implementing various I/O operations, all oops concepts like class, object, polymorphism, data hiding, data reusability, memory optimization, different looping and branching statements, arrays. Code in c++ using user defined functions, string handling functions, structure, union and pointers.
Expected Job Roles	C++ Programmer

TEACHING AND SCHEME OF EXAMINATION

Course Code	Course Name	Hours	Assessment Marks		Duration of Examination
			Min	Max	
CSE/2020/011	Programming in C++	Theory	30	10	3 Hours
		Practical	50	40	
		Total	80	50	

CSE/2020/011 – PROGRAMMING IN C++**DETAILED SYLLABUS**

UNIT NO	MODULES	NO.OF.HOURS THEORY
1	INTRODUCTION TO OOP'S CONCEPT:	
	C++ program structure-advantages of OOPs ,Data types. Operator & Logical /looping: Different data types-declaration-user defined data types, Classes &objects ,variables-different type of operators.	8
2	FUNCTIONS, POINTERS,ARRAYS:	
	Function definition-declaration-Types of function, function overloading. Introduction to pointers. Types of array.	8
3	INHERITANCE	
	Types of inheritance	3
4	CONSTRUCTORS, DESTRUCTORS AND OPERATOR OVERLOADING:	
	Different types of constructors-unary and binary operator overloading	5
5	FUNCTION OVERLOADING,	
	Exception handling: try-catch-throw blocks	3
6	FILE HANDLING OPERATIONS:	
	Console I/O management and file management, Introduction to Template	3
Total Theory Hours		30
Total Practical Hours		50
Total Hours		80

PRACTICAL (50 HOURS)

1. Write a program in C++ to exchange the content of two variables using call by reference
2. Write a program in C++ to create the class shape, and overload the function to return the perimeters of the different shapes.
3. Write a program in C++ demonstrating the public, protected and private parameters.
4. Write a program in C++ to sort the integer array.
5. Write a program in C++ demonstrating the Static Data member.
6. Write a program in C++ to demonstrate constructor with default argument.
7. Write a program in C++ to demonstrate destructor in inheritance.
8. Write a program in C++ to demonstrate binary operator for the matrix class.
9. Write a program in C++ to demonstrate multiple inheritance.
10. Write a program in C++ to demonstrate multilevel inheritance.
11. Write a program in C++ to demonstrate virtual function.
12. Write a program in C++ to demonstrate friend function.
13. Write a C++ program to implement a student class having roll no., name, rank, addresses as data members.
14. Write a Program to implement a sphere class with appropriate members and member function to find the surface area and the volume.
(Surface = $4 \pi r^2$ and Volume = $\frac{4}{3} \pi r^3$)
15. Write a C++ program to create the student file and access the file to prepare the mark slip,

HARDWARE AND SOFTWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS/SOFTWARE
1	Desktop /Laptop computers
2	C++ editor ,compiler

REFERENCE BOOKS

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1.	Object Oriented Programming With C++	Prof. E. Balagurusamy	McGRAWHILL publications.
2.	Sams Teach Yourself C++ in 24 Hours (5th Edition) 5th Edition	Jesse Liberty, Rogers Cadenhead	---

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training , Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnic.

END EXAMINATION ALLOCATION OF MARKS

S.No	Description	Max.Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Procedure	10
	b)Execution	30
	c)Output	20
	d)Record	20
Total Marks		100

THEORY MODEL QUESTION PAPER

CSE/2020/011 - PROGRAMMING IN C++

(Maximum Marks : 20)

(N.B: Answer any **twenty** questions)

20 x 1 = 20 Marks

1. What is OOP?
2. What is reference operator?
3. What is a class?
4. What are the logical operators?
5. What is reusability?
6. What is function overloading?
7. What is the pointer?
8. What are the types of arrays?
9. What is constructor?
10. What unary operator?
11. What is the member function?
12. What is use of new operator?
13. What is static variable?
14. What is mean by return statement?
15. What is base class?
16. What is friend class?
17. What is a private member?
18. What is meaning of machine independent?
19. What is iostream.h in c++?
20. What is 'this' keyword?
21. What is inheritance?
22. What is per virtual function?
23. What is derived class?
24. What is F String?
25. What is function for opening a file?