

Description:

Object-oriented concepts form the base of all modern programming languages. Understanding the basic concepts of object-orientation helps a developer to use various modern-day programming languages, more effectively. C++ is an object-oriented programming language that intends to be a simple, modern, and general-purpose programming language for application development. The course is applicable to the students who wanted to enter the world of object-oriented programming, using the C++ language.

Course Outcome:

- Appreciate the object-oriented approach.
- Learn to create objects.
- Define and implement Encapsulation and Abstraction.
- Use operators and decision-making constructs.
- Use arrays.
- Implement functions.
- Use Constructors and Destructors.
- Implement Polymorphism, Inheritance, Dynamic Polymorphism, and Multiple Inheritance.
- Use file input and output.
- Use exception handling and templates.
- Implement linked list

Session Plan:

Session	Topics	Contents
Session 1	C++ Overview	OOPS Terminology
		Polymorphism
		Abstract Data Type
		I/O Services
		Standard Template Library
Session 2	Functions and variables	Functions
		Variables
		Arrays and Strings in C++
		Qualifiers
Session 3	Classes in C++	Classes and Encapsulation
		Member Functions
		Instantiating and using Classes
		Using Constructors and Destructors
Session 4	Operator Overloading	Operator overloading
		Working with Overloaded Operator Methods
Session 5	Storage Management	Memory Allocation
		Dynamic allocation
Session 6	Inheritance	Base class and Derived classes
		Constructor and Destructor Calls
Session 7	Polymorphism	overview of Polymorphism
	I/O Operations	Standard Streams
		Manipulators
		File Operations
Session 8	Exceptions	Exceptions
		Inheritance and Exceptions
		Exception Hierarchies
Session 9	Template	template Overview
		Customizing a Templated Method
		Standard Templates Library Containers
Session 10	Programs	C++ Programs of Different Patterns