**INSTITUTIONAL TRAINING**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**MODULE 1 (OOPS)**

**DAY 1**

1. **FUNCTIONS**
	1. Advantages of function
	2. Classification of functions
	3. Library functions
	4. User defined functions
	5. Function definition
	6. Function declaration
	7. Function call
	8. Categories of functions
	9. Pass by value
	10. Pass by address (or Pass by pointer)
	11. Pass by reference
	12. Difference between Pass by value and Pass by reference
	13. Function overloading
	14. Advantages of function overloading
	15. Inline functions
	16. Advantages of Inline functions
	17. Recursion
	18. Advantages of Recursion

**DAY 2**

1. **POINTERS**
	1. What is Pointer?
	2. Declaring Pointer Variables
	3. Initialization of Pointer Variables
	4. Pointer to a pointer
	5. Operations on pointers
	6. Array of Pointers
	7. Pointer to functions
	8. Dynamic memory management
	9. New operator
	10. Delete operator
	11. Void pointer

**DAY 3**

1. **OBJECTS AND CLASSES**
	1. Structures in C
	2. Structures in C++
	3. Class Specification
	4. Class Objects
	5. Accessing Class Members
	6. Defining member functions
	7. Inline member function outside the class
	8. Accessing member functions within the class
	9. Data Hiding, Encapsulation and Abstraction
	10. Class, Objects and memory
	11. Passing objects as arguments

**DAY 4**

1. **CONSTRUCTORS AND DESTRUCTORS**
	1. Constructors
	2. Parameterized Constructor
	3. Constructor Overloading
	4. Constructor with default arguments
	5. Dynamic initialization using constructor
	6. Destructors
	7. Copy Constructors
	8. Friend Functions
	9. Member Function of one class as a friend of another class

**DAY 5**

1. **OPERATOR OVERLOADING AND TYPE CONVERSION**
	1. Syntax for operator overloading
	2. Overloading unary operators
	3. Operators return values
	4. Drawbacks of increment/decrement operator
	5. Overloading binary operators
	6. Overloading arithmetic assignment operators
	7. Operator overloading using friend function

**DAY 6**

1. **INHERITANCE**
	1. Inheritance by example
	2. Derived class declaration
	3. Public Inheritance
	4. Private Inheritance
	5. Protected Inheritance
	6. Protected Inherited Members
	7. Friend function and Inheritance
	8. Overriding member function
	9. Forms of Inheritance
	10. Single Inheritance
	11. Multilevel Inheritance
	12. Hierarchical Inheritance
	13. Multiple Inheritance
	14. Hybrid Inheritance
	15. Abstract Class
	16. Advantages of Inheritance
	17. Disadvantages of Inheritance

**DAY 7**

1. **VIRTUAL FUNCTIONS**
	1. Polymorphism
	2. Classification of Polymorphism
		1. Compile time(or static) Polymorphism
		2. Runtime(or dynamic) Polymorphism
	3. Virtual Functions
	4. Pure Virtual Functions
	5. When to use this Pointer
	6. this Pointer