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| **C++ COURSE CONTENTS** |

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| **C++** | |
| **Chapter 1: Perspective**   * The Software Crisis * Design Techniques * Large Software Systems * Roots of Object Technology * What Is Object-Oriented Programming? * C++ and Object-Oriented Programming * Why C++? * Features of C++ * Pros and Cons of C++ | **Chapter 2: Object-Orientation Concepts**   * What Is an Object? * What Is a Class? * Encapsulation * Data Hiding * The Public Interface * Relationships Among Classes * Inheritance * Polymorphism * Object-Oriented Design |
| **Assignments / Case Studies will be provided on above topics which needs to be completed** | |
| **Chapter 3: C vs. C++**   * Comments * Namespaces * Simple Output * Simple Input * Definitions Near to First Use * Function Prototypes * The inline Specifier * const * Structure Members * The Reference Type * Overloading Function Names * Default Parameters * The Scope Resolution Operator * Aggregates * Operators new and delete * The bool Data Type * The string Data Type | **Chapter 4: Fundamentals of Classes**   * Data Types * User Defined Data Types * Using the Class Concept * Defining a Class * public and private Access Levels * The Scope Resolution Operator :: * Using Class Objects Like Built-in Types * Scope * Constructors * Member Initialization Lists * Destructors * Array of Objects * Pointers * The this Pointer * Passing Objects to Functions * Returning Objects From Functions * static Class Members |
| **Chapter 5: Operator Overloading**   * Introduction * Rules for Operator Overloading * Rationale for Operator Overloading * Overloading Member Functions * Overloading Non-Member Functions * friend Functions * The Copy Constructor * The Assignment Operator * Overloading [ ] * Overloading Increment and Decrement Operators * const Objects and References | **Chapter 6: Composition of Classes**   * Relationships * Composition of Classes * The Point Class * The Line Class * Member Initialization Lists * An Application With Composition * The Copy Constructor under Composition * operator= under Composition |
| **Assignments / Case Studies will be provided on above topics which needs to be completed** | |
| **Chapter 7: Inheritance**   * Introduction * Public Base Classes * The protected Access Level * Member Initialization Lists * What Isn’t Inherited * Assignments Between Base and Derived Objects * Compile-Time vs. Run-Time Binding * virtual Functions * Polymorphism * virtual Destructors * Pure virtual Functions * Abstract Base Classes * An Extended Inheritance Example | **Chapter 8: I/O in C++**   * The iostream Library * Predefined Streams * Overloading operator<< * Overloading operator>> * Manipulators * Stream States * Formatted I/O * Disk Files * Reading and Writing Objects   **Chapter 9: Advanced Topics**   * Template Functions * Template Classes * Multiple Inheritance * User-Defined Conversions * Data Structures * An Iterator Class * Exceptions * The Standard Template Library |
| **Assignments / Case Studies will be provided on above topics which needs to be completed** | |