

# COURSE CONTENT

---

## Day-1

### Introduction to SDLC

- Initiation Phase
- System Concept Development Phase
- Planning Phase
- Requirement Analysis Phase
- Design Phase
- Development Phase
- Integration and Test Phase
- Implementation Phase
- Operations and Maintenance Phase

### Programming Concepts

- Introduction to Objects and Classed
- Understanding class definitions
- Object interaction
- Grouping of objects
- Well-behaved objects
- Designing classes
- Abstraction
- Encapsulation
- Inheritance
- Polymorphism
- Overloading
- Overriding
- Implementing dynamic polymorphism

## Day-2

### **OOPS Concepts Using C++**

- **Creating classes in C++**
- **Access specifiers**
- **Static variables and function**
- **Friend function and classes**

### **Polymorphism**

- **Implementing Polymorphism**
- **Function overloading**
- **Operator overloading.**
- **Overloading unary operators**
- **Overloading binary operators**
- **Implementing late binding**

### **Inheritance**

- **Identifying relationships between classes**
- **Classes and inheritance**
- **Introduction to multiple inheritances**
- **Ambiguities in multiple inheritances**
- **Invocation of constructors and destructors**

### **Template**

- **Exception handling**
- **Tips on exception-handling**
- **Function template**
- **Class template**

## Day-3

### **Introduction to DBMS**

- **Approaches to Data Management**
- **DBMS Benefits**
- **DBMS Functions**
- **Data Model**

## **Introduction to RDBMS**

- **Advantages of RDBMS over File Management Systems**
- **CODD's Relational Rules**
- **Normalization**

## **Introduction to Oracle**

- **Oracle9i Database**
- **Oracle9i Application Server**

## **Writing Basic SQL Statements**

- **SQL SELECT Statement**
- **SQL WHERE Clause**
- **SQL Like Clause**
- **SQL ORDER BY Clause**
- **SQL GROUP BY Clause**

## **Create & Modify Tables**

- **SQL CREATE TABLE Statement**
- **SQL ALTER TABLE Statement**
- **SQL DROP TABLE Statement**

## **Oracle Functions**

- **Numeric Functions**
- **Text Functions**
- **Date Functions**

## **Subqueries**

- **FROM clause**
- **Where clause**

## Day-4

### **Software Engineering**

- **Software Engineering Process**
- **Characteristics of Software**
- **Seven Principles of Software Engineering**

### **System Analyst**

- **Software Requirement Specifications**
- **Software Design**
- **Software Development Life Cycle**
- **Data Flow Diagram**

### **UML Diagrams**

- **Use Case Diagram**
- **Class diagram**
- **Object Diagram**
- **Sequence Diagram**
- **State Diagram**
- **Collaboration Diagram**
- **Component Diagram**

## Day-5

### **HTML Basics**

- **Introduction to HTML**
- **HTML document Structure**
- **HTML Syntax**

### **Fundamental Elements**

- **Using block-level tags to create paragraphs and headings**
- **The quote tag**
- **Strong and emphasis tags**
- **Character entities**
- **The comment tag**

## Lists

- Making Unordered (bulleted) lists
- Making Ordered (numbered) lists
- Making Definition lists
- Creating a nested list and the importance of nesting

## Validation

- The need to error check your HTML
- Importance of testing your HTML markup for its validity
- The W3C Validation Service
- Other validation tools

## Links

- The anchor tag
- Linking from page to page and within pages
- Path statements – the importance of folders and files
- Email links

## Images and Videos

- Web image formats
- How images are used in web design
- The img tag
- Clickable images
- Embedding videos

## Forms

- Creating the ability to collect user data
- Making text fields, radio buttons, and check boxes
- Making drop down menus

## Tables

- The table, tr, and td tags
- The th tag
- The caption tag
- Spanning multiple rows and columns
- The thead, tbody, and tfoot tags

## Meta Information

- **Meta Tags and various attributes**
- **Meta Headers**

## Advanced HTML Tags

- **Div Tag**
- **Span Tag**
- **I-Frame Tag**

## CSS and Inheritance

- **What CSS is and how it works**
- **How CSS attaches to an HTML file**
- **Cascading Style Sheets/Fonts**
- **Cascading Style Sheets/Background**
- **Cascading Style Sheets/Text**
- **Cascading Style Sheets/Positioning**
- **Cascading Style Sheets/Classes**
- **The 'inherit' value**