



(A Venture of Chandigarh ETC Services Pvt. Ltd.)

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Website : www.citcchandigarh.com

Course Syllabus: Diploma in Software Engineering

Batch Name: DSE

Eligibility: 12th

Course Start: 1st of Every Month

Course Duration: 350 Hours

Courses / Modules Paper

Module 1:

Paper 1	Paper 2
Fundamentals, MS-Office, Internet(Digital Services)	Data Flow Structure, Language C, HTML, CSS

Module 2:

Paper 1	Paper 2
Linux and Commands	Language C++, Java

Module 1:

Paper 1: Fundamentals, MS-Office, Internet

1: Fundamentals of Computer

- 1.1 Introduction to Computer
- 1.2 Block Diagram of Computer
- 1.3 Classification of Computer
- 1.4 Characteristics of computer
- 1.5 Generations of Computer
- 1.6 Uses of Computer
- 1.7 Input Devices
- 1.8 Output Devices
- 1.9 Computer Memory
- 1.10 Computer Hardware
- 1.11 Computer Software
- 1.12 Operating System

2: Number System

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- 2.2 types of Number Systems
- 2.3 Conversion of Number system

3 : Windows-7

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- 3.2 User Interface of Microsoft Window 2007
- 3.3 Changing Desktop Background
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- 3.5 Changing Screen Saver
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- 3.7 Changing Data/Time
- 3.8 Making Empty Recycle Bin
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- 3.10 Hard Drives
- 3.11 File and Folder Views
- 3.12 Copying File and Folder
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Microsoft Word

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- 1.2 Elements of MS Word
- 1.3 Explaining the Ribbons

2: MS Word Insert Tab

- 2.1 Insert
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- 2.3 Tables
- 2.4 Illustrations
- 2.5 Links
- 2.6 Headers and Footers
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- 2.8 Symbols

3: MS Word Mailing

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4: MS Word References

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- 4.2 Footnotes
- 4.3 Citation and Bibliography
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5: MS Word Review

- 5.1 Proofing
- 5.2 Comments
- 5.3 Tracking
- 5.4 Changes
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6: MS Word Views

- 6.1 Document View
- 6.2 Show/Hide
- 6.3 Zoom Group
- 6.4 Window
- 6.5 Macro

Microsoft Excel

7: Introduction to Excel

- 7.1 Introduction
- 7.2 History of Excel

- 7.3 Uses of MS Excel
- 7.4 Important Components of Excel
- 7.5 Excel Window Overview
- 7.6 Font
- 7.7 Alignment
- 7.8 Clip Board
- 7.9 Number Formatting
- 7.10 Conditional Formatting
- 7.11 Format as Table
- 7.12 Cell Styles
- 7.13 Cells
- 7.14 Editing

8: MS Excel: Data

- 8.1 Get External Data
- 8.2 Sort and Filter
- 8.3 Data Tools

9: MS Excel: Insert

- 9.1 Tables
- 9.2 Illustrations
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- 9.6 Text Group

10: MS Excel: Page Layout

- 10.1 Themes
- 10.2 Page Setup
- 10.3 Scale to Fit
- 10.4 Sheet Options
- 10.5 Arrange

11: MS Excel: Review

- 11.1 Proofing
- 11.2 Comments
- 11.3 Changes

12: MS Excel: View

- 12.1 Workbook Views
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- 12.3 Zoom
- 12.4 Window Group
- 12.5 Macros

Microsoft Power Point

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- 13.1 Starting MS Power Point
- 13.2 Elements of MS Power Point
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- 13.7 Drawing Groups
- 13.8 Editing Group

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15: Power Point: Design

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- 15.4 Variants

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- 16.3 Add Custom Animation to Objects
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- 16.8 Transition to This Slide Tab
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- 17.2 Slide Show Starting from the Beginning
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18:Power Point: Review

- 18.1 Proofing
- 18.2 Comments
- 18.3 Protect Presentation

19:Power Point: View

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- 19.2 Presentation View Group
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- 19.4 Zoom
- 19.5 Color Tab
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- 19.7 Macro

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- 20.2 Advantages and Features of MS Access
- 20.3 Difference between Access and Excel
- 20.4 Architecture of MS Access
- 20.5 MS Access Objects
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 - Queries
 - Forms
 - Reports
- 20.6 Other MS Access Objects
 - Macro
 - Module
- 20.7 Creating MS Access Database
 - Create Blank Database
- 20.8 Data Types Used in MS Access
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 - Long Text
 - Number
 - Date/Time
 - Currency
 - AutoNumber
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 - Reports

21:MS Access-Creating Tables

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- 21.2 Storing Data in Tables
- 21.3 Table Design View

22:MS Access-Query Data

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- 22.2 Create Select Query
- 22.3 Query Criteria
- 22.4 Action Queries
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- 22.6 Parameter Queries
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- 24.3 Concatenation of Data
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25:Joins and Query Wizard

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- 25.2 Types of Joins in Access
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- 25.3 Concatenation of Data
- 25.4 Summarizing Data
 - Cross Tab Query
- 25.5 Query Wizard
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 - Unbound Forms
- 26.3 Types of Bound Forms
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 - Multiple Item Form
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- 26.4 Creating Forms
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 - Themes
- 26.7 Navigation Form
- 26.8 Form Controls
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28:MS Access- Macors & Built-in 3: Operators and expressions Functions

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- 29.1 Import Different Types of Data
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 - ODBC Database
 - Text Files
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- 29.2 Data Export
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 - MS Excel
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 - ODBC Database
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Internet

1:Internet

- 1.1 Internet
- 1.2 Advantages & Disadvantages of Internet
- 1.3 Search Engines and Web Browsers
- 1.4 Website
- 1.5 Domain Name
- 1.6 E-Commerce
- 1.7 Email
- 1.8 Computer Security Threats
- 1.9 Networking
- 1.10 Network Topology

Paper 2: Data Flow Structure, Language C, HTML, CSS

Data Flow Structure,

1: Algorithms

- 1.1 Introduction of Algorithm
- 1.2 Designing an Algorithm
- 1.3 Types of Algorithm
- 1.4 My First Algorithm
- 1.5 Algorithm Design
 - Divide and Conquer
 - Graph Traversal
 - Greedy
 - Dynamic Programming
 - Reduction

2: FlowCharts

- 2.1 Introduction
- 2.2 Symbols used for flowchart
- 2.3 Designing flowchart for sum of two numbers

Language C

1: Introduction of C

- 1.1 History
- 1.2 Why C language
- 1.3 Getting g started with C
- 1.4 Writing first program: hello world
- 1.5 Algorithm and flowchart
- 1.6 Understanding the structure and syntax of C
- 1.7 C programming style

2: Fundamentals of C

- 2.1 Introduction
- 2.2 Character set
- 2.3 Keywords
- 2.4 Identifiers
- 2.5 Variables
- 2.6 Data types
- 2.7 Constants
- 2.8 Declaring a keyword
- 2.9 Reading data from keyboard

- 3.1 Introduction
- 3.2 Arithmetic operator

- 3.3 Increment and Decrement operator
- 3.4 Assignment operator
- 3.5 Relational operator
- 3.6 Logical operator
- 3.7 Conditional operator
- 3.8 Bitwise operator
- 3.9 Special operators

4: Control Statements

- 4.1 Introduction
- 4.2 Branching statements
 - If
 - Nested if
 - If else
 - Nested if else
- 4.3 Looping statement
 - For loop
 - While loop
 - Do while loop
- 4.4 Jumping statement
 - Goto
 - Break
 - Continue

5: Function in C

- 5.1 Introduction
- 5.2 Types of functions
- 5.3 Types of user define functions
 - No return type with no arguments
 - Return type with no arguments
 - No return type with arguments
 - Return type with arguments
- 5.4 Need of functions
- 5.5 Scope rules
- 5.6 Recursion
- 5.7 Function using arguments
 - Call by value
 - Call by reference

6: Array in C

- 6.1 Introduction
 - Declaration of Array
 - Initializing an array
 - Accessing an Array
- 6.2 One-dimensional array
- 6.3 Two-dimensional array
 - Nesting of loops
- 6.4 Multi-dimensional array
- 6.5 Dynamic Array

7: Pointers in C

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- 7.2 Declaration of pointers
- 7.3 Initialization of pointers
- 7.4 Accessing variable through pointer
- 7.5 Pointer to a pointer
 - Declaring a double pointer
- 7.6 Operation on pointer
 - Increment and decrement operator
 - Addition and subtractions of constant value
 - Subtracting two pointers
 - Comparison between two pointers
- 7.7 Pointer to array
- 7.8 Array to pointer
- 7.9 Passing pointer as a function
- 7.10 Pointer to structure
 - Pointer pointing to a function

8: Structures in C

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- 8.2 Defining a structure
- 8.3 Declaring a structure member
 - Declaring structure variable separately
 - Declaring structure variable along with definition
- 8.4 Accessing structure member
 - With Dot operator
 - With arrow operator
- 8.5 Structure initialization
- 8.6 Array of structure
- 8.7 Using structure as a function argument
 - Passing structure member as an argument
 - Passing structure variable as an argument
 - Passing structures pointer as an argument
- 8.8 Array within structure
- 8.9 Nested structure
- 8.10 typedef keyword
 - Typedef vs #define

9: Union in C

- 9.1 Introduction
- 9.2 Declaration of union
- 9.3 Accessing union member
- 9.4 Bit field

10: Input and output

- 10.1 Introduction
- 10.2 Standard files
- 10.3 Formatted input output
 - scanf()
 - printf()
- 10.4 Unformatted input output
 - getchar()
 - Getch()
 - gets()
 - putchar()
 - puts()
- 10.5 Error Handling
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 - strerror
 - Perror

11: File I/O

- 11.1 Introduction
- 11.2 Needs of files
- 11.3 Types of files
 - Text files
 - Binary files
- 11.4 Files operations
 - File creation
 - Opening a file
 - Reading data from file
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 - Closing a file
- 11.5 Reading writing text files
 - getc()
 - putc()
 - getw()
 - putw()
 - getchar()
 - putchar()
 - fprintf()
 - fscanf()
- 11.6 Reading writing binary files
 - fread()
 - Fwrite()

HTML and CSS

HTML

1: Starting with HTML

- 1.1 Introduction to HTML
- 1.2 What is HTML
- 1.3 HTML Versions
- 1.4 Web Browsers
- 1.5 HTML Editors
- 1.6 HTML Tags

2: HTML Images

- 2.1 HTML Images
- 2.2 alt attribute with images
- 2.3 style Attribute
- 2.4 Change the Height and Width of Image
- 2.5 Images as a Floating
- 2.6 HTML Images as a Link
- 2.7 Background Images
- 2.8 The <picture> Element
- 2.9 HTML Images vs Title Attribute

3: Links in HTML

- 3.1 Link
- 3.2 HTML Links
- 3.3 The Target Attribute
- 3.4 Images as Link
- 3.5 HTML Links Titles
- 3.6 External Paths
- 3.7 HTML Link Colors

4: HTML Lists

- 4.1 List
- 4.2 Types of Lists in HTML
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 - Ordered List
 - Definition List

5: HTML Tables

- 5.1 Table Introduction
- 5.2 HTML Table-Adding Borders
- 5.3 HTML Table-Collapsed Borders
- 5.4 The Empty-cells Property
- 5.5 Table Heading Alignment
- 5.6 Cell Padding and Border Spacing
- 5.7 Cells that Span many Columns
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- 5.9 Adding a Caption
- 5.10 Table Styling

6: HTML Forms

- 6.1 The <form> Element
- 6.2 Text
- 6.3 Radio Button Input
- 6.4 The Submit Button
- 6.5 Attributes
- 6.6 Grouping Form Data with <fieldset>
- 6.7 The <select> Element
- 6.8 The <option> Element
- 6.9 Visible Values
- 6.10 Allow Multiple Selection
- 6.11 The <textarea> Element
- 6.12 The <datalist> Element
- 6.13 The Output Element
- 6.14 Input Type Password
- 6.15 Input Type Reset
- 6.16 Checkboxes
- 6.17 Input Type Color
- 6.18 Input Type Date
- 6.19 Input Type Email
- 6.20 Input Type Number
- 6.21 Input Type Range
- 6.22 Input Type Search
- 6.23 Input Type Tel
- 6.24 Input Type Time
- 6.25 Input type URL
- 6.26 Input Type Week
- 6.27 Input Attributes

7: HTML Blocks and Classes

- 7.1 HTML Blocks Introduction
- 7.2 The <div> Element
- 7.3 The Element
- 7.4 Using the Class Attribute
- 7.5 Using the id Attribute
- 7.6 HTML Iframes

8: Starting with CSS

- 8.1 What is CSS?
- 8.2 CSS Syntax
- 8.3 CSS Selectors
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 - The class Selector
- 8.4 Grouping Selectors
- 8.5 CSS Comments
- 8.6 CSS File Inclusion
- 8.7 Multiple Style sheets
- 8.8 Cascading Order

9: CSS Colors

- 9.1 CSS Colors
- 9.2 Background Color
- 9.3 Text Color
- 9.4 Border color
- 9.5 Color Values
- 9.6 RGB Values
- 9.7 HEX Value
- 9.8 HSL Value
- 9.9 Saturation
- 9.10 Lightness
- 9.11 RGBA Value
- 9.12 HSLA Value

10: CSS Background

- 10.1 CSS Backgrounds
 - Background Color
 - Background Image
 - Background-Shorthand Property

11: CSS Borders

- 11.1 CSS Borders
 - Border Style Property
 - Border width Property
 - Border Color Property
 - Border-Individual Sides

- Border -Shorthand Property
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12: CSS Margins

- 12.1 CSS Margins
- 12.2 Margin Properties
- 12.3 Margin-Shorthand Property
- 12.4 the Auto Value
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13: CSS Padding

- 13.1 CSS Box Model
- 13.2 CSS Padding Properties
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 - Padding-Bottom
 - Padding-Left
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 - Padding
- 13.3 Giving only one value to Padding

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- 14.1 CSS Text Properties
- 14.2 Types of CSS Text Properties
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 - Text-Align Property
 - Text-Decoration Property
 - Letter-Spacing Property
 - Word-Spacing Property
 - Text-Indent Property
 - Direction Property
 - White-Space Property
 - Line-Height Property
 - Text-Shadow Property
 - Text-Transform Property

15: CSS Font

- 15.1 CSS Font Properties
- 15.2 Types of CSS Font Properties
 - Font-Family Property
 - Font-Style Property
 - Font-Size Property
 - Font-Weight Property
 - Font-Variant Property
 - Font Property

16: CSS Lists

- 16.1 CSS List Properties
- 16.2 Types of CSS List Properties
 - List-Style-Type Property
 - List-Style-Image Property
 - List-Style-Position Property
 - Marker -Offset Property
 - List-Style Property
- 16.3 Styling with Colors

17: CSS Scrollbars

- 17.1 CSS Overflow/Scrollbar Properties
- 17.2 Types of Overflow Properties
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- 17.3 Overflow-x and Overflow-y

18: CSS Tables

- 18.1 CSS Tables Properties
- 18.2 Types of CSS Table Properties
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 - Border-Collapse Property
 - Width and Height Property
 - Vertical Align Property
 - Border-Spacing Property
 - Caption-Side Property
 - Empty-Cells Property
 - Table-Layout Property
 - Border-Bottom Property
 - Zebra-Striped Property
- 18.3 :hover Selector

- 1.1 History of Linux
- 1.2 Linux advantages
- 1.3 Difference between Linux and Unix OS
- 1.4 Difference between Linux and windows

2: Linux Commands

- 2.1 Introduction
 - cat command
 - rm command
 - cd command
 - cp command
 - is command
 - in command
 - mkdir command
 - rmdir command
 - mv command
 - diff command

3: Security by file permission

- 3.1 File permission
 - chmed command
 - su command
 - chown command
 - chgrp command
- 3.2 Process utilities
 - ps command
 - kill command
- 3.3 Filters
 - more command
 - lead command
 - tail command
 - cut command
 - paste command
 - sort command

4: General Commands

- 4.1 Introduction
 - Date command
 - Who command
 - Echo command
 - Passwd command
 - Pwd command
 - Cal command
 - Login command
- 4.2 Disk Utilities
 - Df command
 - Dir command

5: Networking Commands

- 5.1 TELNET and FTP practical
- 5.2 BSD-Unix
- 5.3 Remote login
- 5.4 Using ssh
- 5.5 FTP Utility
- 5.6 Telnet utility
- 5.7 Finger utility

6: Test Processing Commands

- 6.1 Introduction
 - sort
 - tsort
 - uniq
- 6.2 Word Frequency Analysis
 - expand, unexpand
 - cut
 - paste
 - join
 - sed
 - awk
 - wc
 - tr

Paper 2: Language C++, java

1: Introduction of C++

- 1.1 History
- 1.2 Why Java language
- 1.3 Getting started with C++
- 1.4 Writing first program: hello world
- 1.5 Algorithm and flowchart
- 1.6 Understanding the structure and syntax Of C++
- 1.7 C++ programming style

2: Principle of OOP

- 2.1 Introduction to OOP
- 2.2 OOP vs Procedural oriented programming
- 2.3 objects
- 2.4 Classes
- 2.5 Encapsulation
- 2.6 Abstraction
- 2.7 Polymorphism
- 2.8 Inheritance
- 2.9 Applications of OOP

3: Operators in C++

- 3.1 Introduction to operators
- 3.2 Special operators
- 3.3 scope resolution operator
- 3.4 Member dereferencing operator
- 3.5 Memory management operator
- 3.6 Manipulators and Typecast operator

4: variables and Functions in C++

- 4.1 Introduction
- 4.2 Functions
 - Devlaration
 - Definition
- 4.3 Variables
 - Declaration
 - Scope of variables
- 4.4 Arrays and Strings

5: Classes and Objects

- 5.1 Introduction
- 5.2 Declaring a Class
 - Data members
 - Member function
 - Private and public members
 - Accessing member functions
- 5.3 Functions
 - Class function definition
 - Member function definition
- 5.4 Objects
 - Creating an object
 - Accessing members using objects
- 5.5 Object as a function argument
 - Pass by value
 - Pass by reference

6: Operator Overloading

- 6.1 Introduction
- 6.2 Operator Overloading Methods
- 6.3 Type Conversion

7: Constructors in C++

- 7.1 Introduction
- 7.2 Declaration of Constructor
- 7.3 Definition of Constructor
- 7.4 Types of Constructor
 - Default Constructor
 - Parameterized Constructor
 - Copy Constructor
- 7.5 Destructor
 - Definition
 - Use of Destructor

8: Inheritance

- 8.1 Introduction
- 8.2 Base Class and Derived Class
- 8.3 Visibility Mode
 - Private
 - Public
 - Protected
- 8.4 Types of Inheritance
 - Single inheritance
 - Multilevel inheritance
 - Multiple Inheritance
 - Hierarchal Inheritance
 - Hybrid inheritance
- 8.5 Nesting of Classes

9: Polymorphism

- 9.1 Introduction
- 9.2 Application and Demonstration
- 9.3 Early Binding
- 9.4 Polymorphism with pointers
- 9.5 Early Binding

Module 2:

Paper 1: Linux and Commands

1: Introduction to linux

- 9.6 Late Binding
- 1.7 Virtual Functions
- 9.8 Pure Virtual Functions

10: Exception Handling

- 10.1 Introduction
- 10.2 Exception handling mechanism
 - Throw an Exception
 - Catch an Exception
 - Rethrow an Exception

11: Input and Output in C++

- 11.1 Introduction
- 11.2 Standard Streams
- 11.3 Manipulators
- 11.4 Unformatted Input
- 11.5 Unformatted Output

12: File Processing

- 12.1 Introduction
- 12.2 Opening and Closing of file
- 12.3 Binary File Operations
- 12.4 Structures and file operations
- 12.4 Classes and File operations
- 12.5 Random File Processing

Java

1: Introduction of Java

- 1.1 Introduction
- 1.2 History
- 1.3 Introduction to JVM, JDK and JRE
- 1.4 Writing first program: hello world
- 1.5 Understanding the structure and syntax of Java
- 1.6 Java programming style

2: Principle of OOP

- 2.1 Introduction to OOP
- 2.2 OOP vs Procedural oriented programming
- 2.3 objects
- 2.4 Classes
- 2.5 Encapsulation
- 2.6 Abstraction
- 2.7 Polymorphism
- 2.8 Inheritance
- 2.9 Applications of OOP

3: Java Fundamentals

- 3.1 Introduction
- 3.2 Variables
- 3.3 Data types
- 3.4 Operators
- 3.5 Expressions
- 3.6 Control Structure

4: Classes and Object

- 4.1 Introduction
- 4.2 Declaring a Class
 - Data members
 - Member function
 - Private and public members
 - Accessing member functions
- 4.4 Objects
 - Creating an object
 - Accessing members using objects
- 4.5 Method overloading

5: Inheritance

- 5.1 Introduction
- 5.2 Types of Inheritance
 - Single inheritance
 - Multilevel Inheritance
 - Hierarchical inheritance
- 5.3 Member Accessing
- 5.4 Super Keyword and This Keyword
- 5.5 Overloading and Overriding
- 5.6 Final Keyword
- 5.7 Abstraction
- 6.8 Encapsulation

6: Packages

- 6.1 Introduction
- 6.2 Defining a Package
- 6.3 ClassPath
- 6.4 Importing a package
- 6.5 Qualified Path
- 6.6 Unqualified Path
- 6.7 Access Specifier

7: Interfaces

- 7.1 Introduction
- 7.2 Member Access
- 7.3 Defining Interface
- 7.4 Multiple Inheritance using Interface
- 7.5 Hybrid Inheritance using Interface

8: String Handling

- 8.1 Introduction
- 8.2 Immutable String
- 8.3 String comparison
- 8.4 String Concatenation
- 8.5 Substring
- 8.6 Methods of String class
- 8.7 StringBuffer class
- 8.8 StringBuilder class
- 8.9 Creating Immutable class
- 8.1 toString method

9: Exception Handling

- 9.1 Introduction
- 9.2 Throwable Class
- 9.3 try and catch block
- 9.4 Multiple catch Block
- 9.5 Nested try statement
- 9.6 finally block
- 9.7 throw keyword
- 9.8 throes keyword
- 9.9 Exception handling with method overriding
- 9.10 User define exception

10: Multithreading

- 10.1 Introduction
- 10.2 Life cycle of threads
- 10.3 Creating threads
- 10.4 Thread scheduler
- 10.5 Sleeping a thread
- 10.6 Joining a thread
- 10.7 Thread Priority
- 10.8 Thread pooling
- 10.9 Thread Group
- 10.10 Garbage Collection
- 10.11 Runnable Class

