CURRICULUM STRUCTURE OF PG DIP IN COMPUTER APPLICAITON

Eligibility : **12th Std Pass**

Duration : **1 Year**

Examination : **Academic (June) / Calendar (December)**

POST GRADUATE DIPLOMA IN COMPUTER APPLICATION

Sl. No.	Course Code	Course Description	Maximum Marks
1.	PGDCA 1	Diploma In Computer Application	100
2.	PGDCA 2	C Programming	100
3.	PGDCA 3	C++ Programming	100
4.	PGDCA 4	Visual Basic	100
5.	PGDCA 5	Java Programming	100
6.	PGDCA 6	Internship Training	100

1. DIPLOMA IN COMPUTER APPLICATION

UNIT-I

Fundamentals of Computer Accessories menu (Ms-Paint, Notepad, WordPad) Introduction to Word Processors, Text Editors, Title Bar, Status Bar, Tool Bar, Scroll Bar. Files Menu Open, Save, Save as, Close and Exit, Save and Save as Page setup.

UNIT-II

View Menu-Header & Footer, Footnotes, Zoom, Document Map, Views, (Normal, Web Layout, Print Layout, Outline)Insert Menu Page Numbers, Date and Time, Symbols, Pictures, Caption, Footnote, Comment, Object, Index and Tables, Break the Pages, Fields. Format Menu-Font, Bullets & Numbering, Borders & Shading, Change Case, Text Direction, Setting a background colour, Drop Cap, Paragraph Setting, Split Column into Row

UNIT-III

Start with an Introduction of Ms-Excel. Creation of a Salary Slip/ Creation of Mark sheet-Use Fill, Delete a Worksheet, Insert Comment, Create a Chart, Functions, Linking between two sheets. Hide / Unhide a Row, Column, Worksheet, Width of the Column, Height of the Row, Rename a Worksheet, Auto format, Conditional Formatting.

UNIT-IV

Scenarios, Track Changes, Goal seek, Auditing, Protect/Unprotect. Sort Tables, Filter and Advance Filter, Forms, Subtotals, Validation, PivotTable & PivotChart, Consolidate.

UNIT-V

Introduction of PowerPoint, Creating a Next Slide, View the Slides in a Single Page. Word Art, Clip Art and Text, Design Templates, Change Slide Layout, Background. Animate the Figures, Text and Word Art, Set Time for each object, Set Time for Slide, Change the Order, Action Button, Continues Loop. Delete a Slide, Insert Table, Insert Slide from already existing file, Duplicate Slide, Slide into black and White, Date & Time, Guidelines, Note Page, Slide Number, Line Space.

2. C PROGRAMMING

UNIT-I

Introduction to Computer Problem Solving: Introduction-Problem solving aspect, top down design, implementation of algorithms, program verification, efficiency and analysis of algorithms. Designing Programs (Illustrations must be in C language): Understanding the program's purpose, examples, body, and testing and domain knowledge. Variables, Data Types, and Arithmetic Expressions: Working with Variables, Understanding Data Types and Constants, Working with Arithmetic Expressions. Program Looping: for Statement, while Statement, do Statement. Making Decisions: if Statement, switch Statement, Boolean Variables, Conditional Operator. Applications: counting, summing a set of numbers, finding factorial, sine function computation, reversing the digits of an integer, base conversion, character to number conversion.

UNIT-II

Working with Arrays: Defining an Array, Initializing Arrays, Character Arrays, Multidimensional Arrays, Variable-Length Arrays. Working with Functions: Defining a Function, Arguments and Local Variables, Returning Function Results, Functions Calling Functions, Functions and Arrays, Global Variables, Automatic and Static Variables, Recursive Functions. Applications of Arrays and Functions: removal of duplicates from an ordered array, partitioning an array, sorting by diminishing increment, binary search, keyword searching in a text, stack operation, computing the prime factors of an integer.

UNIT-III

Working with Structures: A Structure for Storing the Date, Functions and Structures, Initializing Structures, Arrays of Structures, Structures Containing Structures, Structures Containing Arrays, Structure Variants. Character Strings: Arrays of Characters, Variable-Length Character Strings, Escape Characters, More on 8 Constant Strings, Character Strings, Structures, and Arrays, Character Operations.

UNIT-IV

Pointers: Defining a Pointer Variable, Using Pointers in Expressions, Working with Pointers and Structures, The Keyword const and Pointers, Pointers and Functions, Pointers and Arrays, Operations on Pointers. Operations on Bits: Bit Operators, Bit Fields. The Pre-processor: The #define Statement, The #include Statement, Conditional Compilation. More on Data Types: Enumerated Data Types, The typedef Statement, Data Type Conversions. Applications of structures, character strings and pointers: Left and right justification of text, text line editing, linked list search, linked list insertion and deletion.

UNIT-V

Working with Larger Programs: Dividing a Program into Multiple Files, Communication between Modules, Other Utilities for Working with Larger Programs. Input and Output Operations in C: Character I/O: getchar and putchar, Formatted I/O: printf and scanf, Input and Output Operations with Files, Special Functions for Working with Files. Miscellaneous and Advanced Features: Miscellaneous Language Statements, Working with Unions, The Comma Operator, Type Qualifiers, CommandLine Arguments, and Dynamic Memory Allocation. Debugging Programs: Debugging with the Preprocessor, Debugging Programs with gdb. Application of file I/O: creation and processing of text and binary files with and without command line arguments

3. C++ PROGRAMMING

UNIT - I

Introduction: Fundamentals of object oriented programming-procedure oriented programming Vs. object oriented programming (OOP), Object oriented programming concepts-Classes, reusability, encapsulation, inheritance, polymorphism, dynamic binding, message passing. C++ Programming Basics: Output Using cout, directives, input with cin, type bool, setw( ) Manipulator, type Conversions. Functions: returning values from functions, reference arguments, overloaded function, inline function, default arguments, returning by reference

UNIT-II

Object And Classes: Implementation of Class in C++, C++ Objects As Physical Object, C++ Object As Data Types, Constructor, Object As Function Arguments, the Default Copy Constructor, returning Object From Function, Structures And Classes, Classes Objects And Memory Static Class Data, Const Data and Classes. Arrays and String Arrays Fundamentals: Arrays as Class Member Data, Arrays Of Object, String, the standard C++ String Class. Operator Overloading: Overloading Unary Operators, Overloading of Binary Operators, Data Conversion, Pitfalls of Operators Overloading And Conversion, Keywords Explicit And Mutable.

UNIT-III

Inheritance: Concept of Inheritance, Derived Class And Base Class, Derived Class Constructors, Overriding Member Function, Inheritance In The English Distance Class, Class Hierarchies, Inheritance And Graphics Shapes, Public And Private Inheritance, Levels Of Inheritance, Multiple Inheritance, Ambiguity In Multiply Inheritance, Aggregation: Classes Within Classes, Inheritance And program Development.

UNIT-IV

Pointers: Addresses and pointer, The Address-Of Operator &, Pointer and Arrays, Pointer and Fraction, Pointer And C- Types String. Memory Management: New And Delete, Pointers to Objects,

Debugging pointers. Virtual Function: Virtual 27 Function, Friend Function, Static Function, Assignment And Copy Initialization, This Pointer, Dynamic Type Information.

UNIT-V

Streams and Files: Streams Classes, Stream Errors. Disk File I/O with Streams, File Pointers, Error Handling in File I/O, File I/O with Member Function, Overloading the Extraction And Insertion Operators, Memory As A Stream Object, Command line Arguments, and Printer Output. Templates and Exceptions: Function Templates, Class Templates Exceptions. Multi file Programming: Reasons for multi-file programming, creating multi-file program, a very long number class, a high rise elevator simulation

4. VISUAL BASIC

UNIT–I

What is Visual Basic-Features of Visual Basic-The Visual Basic Philosophy-The integrated development environment - The anatomy of Form - Project Types

UNIT-II

Operators-Variables-Declaring Variables-Types Of Variables-Data types-Constants-Arrays: -Declaring Arrays-Specifying Arrays-Multidimensional Arrays-Dynamic Arrays-Arrays of Arrays

UNIT-III

Collections–Procedures-Subroutines-Functions-Calling Procedures-Object Browser-Creating Classes & Object - I/O Statements-Control Flow Statements–If-Then-If-then-else-Nested Control Statements- Select-Case - Loop Statements -Do-Loop-For-Next -While-Wend -Exit Statement.

UNIT-IV

What is on the toolbar-Textbox Control-Picture Box-Image Box-Label Box-Frame-List Box-Option Button-Combo Box-Command Button-Check Box-The Drive, Directory, File List Controls-The Line & Shape Control-Scroll Box-Data-Timer.

UNIT-V

Multiple Document Interface & Menus-Why MDI Forms- Features Of an MDI forms-Loading MDI forms & child forms-Creating an simple MDI forms-Accessing MDI forms-Creating MENUS-POP-UP MENUS. DATA Access Controls-JET database Engine-ADODC-DAO Data Control-ODBC Data Source Administrator - DATA REPORT

5. JAVA PROGRAMMING

UNIT-I

Java history, Java features-How Java Differs from C & C++-Java & Internet-Java Environment - Java virtual machine-Constant, Variables, Data types, Scope of Variable-Branching–if, if...else, Nested if...Else, Switch Statement - Looping–while, do while, for Statement

UNIT-II

Classes, Objects & Methods-Introduction-Defining a Class, Field, Method Declaration, Creating Objects-Constructors-Method Overloading-Static Members-Method overriding-Final Variables & methods - Final classes - Finalize Methods

UNIT-III

Arrays, Strings and Vectors-Arrays-Strings-Vectors-Exception Handling-Types of Errors - Exceptions-Multiple Catch Statements-Using Finally Statement-Throwing Our Own Exceptions

UNIT-IV

        Packages & Interfaces-Multiple Inheritance-Introduction of Package-Java API Packages-Using System Packages-Creating Packages, Accessing a Packages, Using a Package-Defining Interfaces - Extending Interfaces-Implementing Interfaces-Multithreaded Programming-Introduction-Creating Threads-Extending the Thread Class-Stopping & Blocking a Thread-Life Cycle of Thread-Thread Priorities-Synchronization

UNIT-V

        APPLET Programming-Introduction-How Applet differ from Applications-Preparing to Write Applets-Building Applet Code-Applet Life Cycle-Applet Tag-Passing parameters to Applets-Displaying Numerical values-The Graphics Class-Drawing Lines, Rectangles, Circles, Ellipses

6. INTERNSHIP TRAINING