



**CENTRE FOR DEVELOPMENT OF IMAGING TECHNOLOGY
TECHNOLOGY EXTENSION DIVISION**

SYLLABUS

CERTIFICATE IN PHP PROGRAMMING

Duration: 3 Months

Eligibility: Plus two or equivalent / 3 year Diploma in Engineering

SCHEME OF STUDY

CHP 101	<u>Principles of Programming</u>
CHP 102	<u>Programming in PHP</u>
CHP 103	Lab I- PHP Lab

PAPER I - PRINCIPLES OF PROGRAMMING

Module – I- Programming Practice and Techniques (8 Hrs)

Introduction—steps in Programming Process— Understanding Program Specification— Design Program Model— Determine correctness of the program— code the program— Test and debug the program— document the program— Structured Programming- Sequence— Selection— Repetition—Criteria for a good program—Program Tools — Flowcharts — Pseudo codes— Algorithm checking Methods— Dry Run— Independent Inspection— Structured Walk-through—Algorithm Development- Decision— Decision symbol— selection Construct— guidelines for if statements— Algorithm Development- Iteration; While loop construct— for loop construct— repeat until construct—Arrays— What is an array— declaring an array— initialising an array— boundaries of an array— Single dimensional array— two dimensional array—multi dimensional array—Subroutines: modular programming— criteria for decomposing larger modules— recursion.

Module II -Programming Practice using C (12 Hrs)

Program structure —input and output statements— function definition— delimiters— statement terminator— comment lines —libraries— compiling and running—Variables — constants— identifiers— keywords— data types—Operators —Arithmetic operators- binary operators— unary operators —Arithmetic expressions— assignment operators— multiple assignment and short hand operators .Precedence of operators —type casting—Relational operators and expressions— logical operators and expression— if statement— nested if statement— switch case—Loop Structure- the for loop —while loop— do... while loop. Working of nested loops. Jump statements break and continue—Arrays- Array elements and indices— string/char arrays. Array searching —linear and binary search. Sorting techniques selection and bubble sort— multi dimension arrays and matrix examples— Functions- Function declaration— invoking a function— function body— function prototypes. Formal variables— actual variables—Call by value— call by reference—Global variables —local variables and static variables. Working of recursive functions.

Module –III- Object Oriented Programming Concepts (10 Hrs)

Structured programming and its drawbacks. Object oriented approach and its advantages. Define classes and objects—Properties and methods of a class— Access Modifiers —public and private sections —Classes and Objects: Implementing Data hiding— Data Abstraction and Encapsulation. Memory allocation for an object— The reference object 'this'. Static class members— Object Arrays—Functions— function overloading. Constructors— parameterized constructor— Destructors— Methods with default arguments— constructor overloading—Inheritance: Introduction— Advantages of inheritance— derived and base classes— types of inheritance— inheritance and access control— constructors in inheritance— super key word. Multiple inheritance —Polymorphism and overriding: Introduction— overriding methods— virtual— super key words. abstract classes— interfaces.

Module –IV - Database Concepts (8Hrs)

Database Management system introduction— purpose of database —Advantages of DBMS— Database Architecture—Data Models: Object Based Logical Model —Record based Logical Model— Object-based Logical Model: Entity Relationship Data Models— Types of Relationship: ER Diagram Symbols—Record-based Logical Model: Hierarchical Model— Network model— Relational model— Entity— Strong Entity— Weak entity— subtypes— Sub types— super types. Attribute— Keys:- Primary key— Foreign Key— candidate key— Alternate Ker— Composite Key. Relationship— cardinality of relationship— One-to-One— One-to-many— Many-to Many—Relational algebra: Restrict— Project— Product— Union— Intersect— difference— Join— divide—Normalization: Different forms of Normalization. First Normal Form— second Normal Form —Third Normal form and BCNF

Module –V- Practicing MySQL (12 Hrs)

Introduction—MySQL features— Data Types—Data Definition Commands: Create database— Drop database and select database. Create table— alter table —add constraints and drop table—Data Manipulation Commands: Insert records — delete records and update records—Querying Data: select command with options —Retrieving specific Attributes— retrieving selected Rows— where and order by clauses—Functions— aggregate functions— group by and having clause—Querying data by using Joins and sub queries— inner join— outer join— self join—Creating views — indexers— Stored procedure

PAPER II - PROGRAMMING IN PHP

Module I (15 Hrs)

How to start PHP—Introduction—Personal Home Page to Hypertext Preprocessor [Versions]—Basic Statements and tags— Introduction to data types— Variables and Constants—Scope of variables— Inbuilt functions include String functions, date functions random number functions, etc—Operators and its precedence include arithmetic, comparison, increment, decrement and assignment operators—How to control the flow of Code—Branching statements – if— if..else—if..elseif...elseif else—nested if— switch—Looping statements – for—while— do..while

Module II (20 Hrs)

User defined functions—Structure of function—Passing arguments by Reference, by Value, default argument values—Return values from functions— Introduction to Arrays—Definition and types of arrays—Create array variables—Storage and retrieval of values from array—Some array related functions.

Module III (25 Hrs)

Relational Database Server—Introduction to Database—Need for database—Introduction to MySQL—Types of Queries—Table creation basics—Set Relationships—Introduction to phpMyAdmin—Inserting data and retrieving data using queries—Working with indexed and associative arrays—Database Transaction Management

Module IV (25 Hrs)

How Webpage is interacting with user through PHP—Introduction to Advanced HTML—Difference between Static and Dynamic Page—Different tags in HTML (table, Form, Input, Select tags) – Introduction to CSS—Importance of validating a form—Uses of Ajax and JavaScript in PHP

Module V (15 Hrs)

OOPs concept in PHP—Definition of OOPS—Class and Objects, Instance creation, constructor and destructor—Private , public and protected members— How to handle common errors—Not showing your design—Page not found—Not closed the quotes properly—Math errors—Call to undefined function—Arithmetic related errors eg NAN—Creating and destroying cookies, setting session values and Server authentication