DAV UNIVERSITY JALANDHAR

FACULTY OF SCIENCE

Course Scheme and Syllabus
for

Post Graduate Diploma in Computer Applications/Bridge Course

(One Year Diploma Course)
1st and 2nd Semester

Eligibility: Graduation with 50% Marks (For SC/ST: 45% Marks)

Syllabi Applicable for 2023 Batch & Onwards

Semester 1

S.No	Paper Code	Course Title	L	T	P	Cr
1	CSA501P	Fundamentals of Information Technology	4	0	0	4
2	CSA502P	Programming in C	4	0	0	4
3	CSA503P	Database Management System	4	0	0	4
4	CSA504P	Computer Organization and Architecture	4	0	0	4
5	CSA505P	Information Systems	4	0	0	4
6	CSA506P	Programming in C Laboratory	0	0	4	2
7	CSA507P	Database Management System Laboratory	0	0	4	2
			20	**0**	**8**	**24**

Semester 2

S.No	Paper Code	Course Title	L	T	P	Cr
1	CSA508P	Computer Network and Internet Applications	4	0	0	4
2	CSA509P	Operating System	4	0	0	4
3	CSA510P	Core JAVA	4	0	0	4
4	CSA511P	Web Designing	4	0	0	4
5	CSA512P	Software Engineering	4	0	0	4
6	CSA513P	Core JAVA Laboratory	0	0	4	2
7	CSA514P	Web Designing Laboratory	0	0	4	2
			20	**0**	**8**	**24**

Course Title: Fundamentals of Information Technology
Course Code: CSA501P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: This course will enable the student to gain an understanding of the core concepts and technologies which constitute Information Technology. The intention is for the student to be able to articulate and demonstrate a basic understanding of the fundamental concepts of Information Technology.

Course Outcomes:

CO-1	To study about the importance and the history of Computers and Number System.
CO-2	To explain the different types of Input-Output and Storage devices.
CO-3	To know about different types of computer languages and applications of IT in different fields.
CO-4	To equip the students with the basics of Operating system, Communication Network and security issues.

UNIT-A

Computer Fundamentals **15 Hours**

- Block Structure of a Computer, Characteristics of Computers
- Problem Solving With Computers, Generations of Computers
- Classification of Computers on the Basis of Capacity,
- Purpose and Generation, Applications of Computers.

Number System

- Binary, Binary Arithmetic, Number System: Positional & Non Positional, Binary, Octal, Decimal, Hexadecimal, Converting from one number system to another , Converting from one number system to another , Converting from one number system to another.

Binary Arithmetic

- Addition, subtraction and multiplication

UNIT-B

Memory Types **15 Hours**

- Magnetic core, RAM, ROM, Secondary, Cache, Bubble Memory.

Input and Output UNITs

- Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen
- Monitors and its types. Printers: Impact Printers and its types. Non

Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers.

Storage Fundamentals

- Primary Vs Secondary Storage, Data storage & retrieval methods. Primary Storage: RAM ROM, PROM, EPROM, EEPROM.
- Secondary Storage: Magnetic Tapes, Magnetic Disks. Cartridge tape, hard disks, Optical Disks, Compact Disks, Zip Drive, Flash Drives.

UNIT-C **15 Hours**

Computer languages

- Machine language, assembly language, higher level language, 4GL.
- Introduction to Compiler, Interpreter, Assembler, Assembling, System Software, Application Software.

Applications of Information Technology and Trends

- IT in Business and Industry, IT in Education & training, IT in Science and Technology
- IT and Entertainment, Current Trends in IT Application AI
- Virtual Reports, voice recognition, Robots, Multimedia Technology

UNIT-D **15 Hours**

Operating system

- Batch, multiprogramming, time sharing, network operating system, online and real time operating system,
- Distributed operating system, multiprocessor, Multitasking, ANDROID.

Computer Network and Communication

- Network types, network topologies, network communication devices, physical communication media.

Security management tools

- PC tools, Norton Utilities, Virus, worms, threats
  Virus detection, prevention and cure utilities, Firewalls, Proxy servers.

Reference Books:

1. P.K. Sinha and P. Sinha, *Foundations of Computing*, BPB First Edition, 2002.
2. Peter Norton, *Introduction to Computers*, McGraw Hill, 2012.
3. V. Rajaraman, *Fundamentals of Computers*, Prentice Hall of India New Delhi, Second Edition, 1996.
4. N. Subramanian, *Introduction to Computers*, McGraw Hill Education India Pvt Ltd (5 March 2001)
5. D. Cyganski, J. A. Orr, *Information Technology Inside and Outside*, Pearson Education 2002.
6. A Jaiswal, *Fundamentals of Computer and information Technology today*, Wiley Dreamtech India Pvt Ltd, 2003

Course Title: Programming in C
Course Code: CSA502P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: The objective of this course is to help the students in finding solutions to various real life problems and converting the solutions into computer program using C language (structured programming). Students will learn to write algorithm for solutions to various real-life problems. Converting the algorithms into computer programs using C language.

Course Objective:

CO 1: The objective of this course is to provide the knowledge about the various electronics components and digital circuits to the students and designing of various building blocks of computer system concepts.
CO 2: To introduce the basic concepts and laws involved in the Boolean algebra and logic families and digital circuits.
CO 3: To familiarize with the different number systems, logic gates, and combinational and sequential circuits utilized in the different digital circuits and systems.
CO 4: The course will help in design and analysis of the digital circuit and system. After studying this subject, students will be able to easily understand the internal working of digital electronic circuits.

UNIT-A **15 Hours**

Logic Development and Program Development Tools

- Data Representation, Flowcharts, Problem Analysis
- Decision Trees/Tables, Pseudo Code and Algorithms,
- Program Debugging, Compilation and Execution.

Fundamentals

- Character Set, Identifiers and Key Words, Data Types
- Constants, Variables, Expressions, Statements, Symbolic Constants.

Operations and Expressions

- Arithmetic Operators, Unary Operators, Relational Operators,
- Logical Operators, Assignment and Conditional Operators, Library functions.

UNIT-B **15 Hours**

Data Input and Output

- Single Character Input, Single Character Output, Entering Input Data
- More About Scan Functions, Writing Output Data, More About Print Functions
- Gets and Puts Functions, Interactive Programming.

Control Structures

- Introduction, Decision Making with If – Statement, If Else and Nested If,
- While And Do-While, For Loop.
- Jump Statements: Break, Continue, Goto, Switch Statement.

Functions

- Introduction To Functions, Function Declaration, Function Categories
- Standard Functions, Parameters And Parameter Passing, Pass – By Value/Reference
- Recursion, Global and Local Variables, Storage Classes.

UNIT-C **15 Hours**

Arrays

- Introduction to Arrays, Array Declaration, Single and Multidimensional Array, Memory Representation, Matrices, Strings, String Handling Functions.

Structure and Union

- Declaration of Structure, Accessing Structure Members, Structure Initialization, Arrays of Structure, Nested Structures, Unions.

UNIT-D **15 Hours**

Pointers

- Introduction To Pointers, Address Operator And Pointers, Declaring and Initializing Pointers,
- Assignment through Pointers, Pointers and Arrays.

Files

- Introduction, Creating a Data File, Opening and Closing a Data File, Processing a Data File.

Preprocessor Directives

- Introduction and Use, Macros, Conditional Preprocessors, Header Files

Reference Books:

1. Yashvant P Kanetkar, *Let us C*, BPB Publications, New Delhi, 16th Edition, 2017.
2. E. Balagurusami, *Programming in ANSI C*, Tata McGraw Hill, 8th Edition, 2019
3. Byron S. Gottfried, *Programming in C*, McGraw Hill Education, 23 July 2018.
4. Kernighan & Richie, *The C Programming Language*, PHI, 22 March 1988.

Course Title: Database Management System
Course Code: CSA503P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: This course covers fundamentals of database architecture, database management systems, and database systems. Principles and methodologies of database design, and techniques for database application development.

Course Outcomes:

CO1: Express the basic concepts of DBMS and RDBMS.

CO2: Apply normalization theory to the normalization of a database.

CO3: Apply the concept of Transaction Management & Recovery techniques in RDBMS.

CO4: To learn the implementation details of distributed databases and PL/SQL.

UNIT – A **15 Hours**

An Overview of DBMS

- Concept of File Processing Systems and Database Systems
- Database Administrator and his Responsibilities
- Physical and Logical Data Independence

Three level Architecture of Database System

- The External Level
- Conceptual Level
- The Internal Level

UNIT-B **15 Hours**

Introduction to Data Models

- Entity Relationship Model, Hierarchical
- Network and Relational Model
- Comparison of Network, Hierarchical and Relational Model
- E–R Diagram
- Different Keys Used In a Relational System, Sql

UNIT – C **15 Hours**

Database Protection

- Recovery
- Concurrency Management
- Database Security
- Integrity and Control
- Disaster Management

Normal Forms

INF, 2NF, 3NF, BCNF, 4th NF, 5th NF, and DBTG

UNIT – D **15 Hours**

Database protection

- Recovery, Concurrency Management
- Database Security, Integrity and Control, Disaster Management

Distributed databases

- Structure of a Distributed Database, Design of Distributed Databases

SQL *PLUS

- Introduction to SQL–DDL, DML, DCL, Join Methods & Sub Query
- Union Intersection, Minus, Tree Walking, Built in Functions
- Views, Security Amongst Users, Sequences, Indexing,

Reference Books:

1. Bipin C. Desai, *An Introduction to Database System*, Galgotia Publications, 2012.
2. C.J. Date, *An Introduction to Data Base Systems*, Eighth Edition, Narosa Publications, 8th Edition, 2012.
3. Henry F. Korth, *Database System Concepts*, Fifth Edition, McGraw Hill, 1987.
4. Ullman, *Principles of Database Systems*, Second Edition, Galgotia Publications, 1984.
5. Rob Coronel, *Database Systems: Design, Implementation, and Management*, Ninth Edition, 2009.

Course Title: Computer Organization and Architecture
Course Code: CSA504P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: The objective of the course is to provide students with a solid foundation in computer design. Examine the operation of the major building blocks of a computer system Syllabus includes instruction set architecture, control design, memory hierarchy, input/output and communication.

Course Outcomes:
CO 1: Demonstrate the working of central processing unit and RISC and CISC Architecture.
CO 2: Describe the operations and language for the register transfer, micro operations and input- output organization.
CO 3: Understand the organization of memory and memory management hardware.
CO 4: Elaborate advanced concepts of computer architecture, Parallel Processing, inter-processor communication and synchronization.

UNIT - A **15 Hours**

Introduction to Computer Organization

- Introduction to Computer and CPU
- (Computer Organization, Computer Design and Computer Architecture), Stored Program Concept- Von Neumann Architecture.

Register Transfer and Micro operations

- Introduction to Registers, Register Transfer Language
- Data movement among Registers and Memory

Micro operations

- Introduction to micro operations, Types of micro operations—Logic Operations, Shift operations, Arithmetic and Shift operations

Common Bus System

- Introduction to Common Bus System, Types of Buses(Data Bus, Control Bus, Address Bus),
- 16 bit Common Bus System--Data Movement among registers using Bus

UNIT– B **15 Hours**

Basic Computer Instructions

- Introduction To Instruction, Types Of Instructions (Memory Reference, I/O Reference And Register Reference), Instruction Cycle,
- Instruction Formats (Direct and Indirect Address Instructions, Zero Address, One Address, Two Address and Three Address

Instructions)

- **Interrupt**
  - Introduction to Interrupt and Interrupt Cycle

Design of Control UNIT:

- Introduction to Control UNIT, Types of Control UNIT (Hardwired & Micro programmed Control UNIT).

Addressing Modes

- Introduction & different types of Addressing Modes

UNIT– C **15 Hours**

Computer Organization

- Microcomputer Organization; Microprocessor Organization, Instruction codes
- Memory Reference, Register Reference and Input-Output Reference Instructions
- Instruction cycle, Instruction formats
- Processing UNIT Design: one, two and three bus Organization.
- Addressing Mode, CISC, RISC

Memory Organization

- Memory Hierarchy, Types of Memory: RAM and ROM Chips,
- Associative Memory, Cache Memory, Auxiliary Memory, Virtual Memory
- Memory Address Map, Memory Connection to CPU.

UNIT– D **15 Hours**

Input Output Organization

- Input output Interface, Memory Mapped I/O; Interrupt
- Asynchronous Data Transfer: Strobe Control, Handshaking
- Priority Interrupts: Daisy-Chaining, Parallel Interrupt, Priority Encoder
- Interrupt Cycle, Types of Interrupt: Program interrupt
- Priority Interrupts, Direct Memory Access (DMA).
- Introduction to Assembly Language.

Reference Books:

1. M.M. Mano, *Computer System Architecture*, Prentice Hall of India, 3rd Edition, 2007.
2. M.M. Mano, *Digital Logic and Computer Design*, Prentice Hall of India, 2004.
3. Hayes, *Computer Architecture and Organization*, Mc Graw Hill International Edition, 1998.
4. A.S. Tannenbaum and Todd Austin, *Structured Computer Organization*, Prentice Hall of India, 2012.
5. B. Brey, *The Intel Microprocessors*, Pearson Education, 2013.
6. M.E. Sloan, *Computer Hardware and Organization*, Galgotia Pvt. Ltd, 1983

Course Title: Information Systems
Course Code: CSA505P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: To provide knowledge about the concepts and usage of different types of information systems at various managerial levels in the organizations.

Course Outcomes:
CO 1: To inculcate students with comprehensive knowledge of information system and information technology for the use in business.
CO 2: To provide knowledge on systems design, development and implementation.
CO 3: To enable students understand the role of information system in managerial decision making.
CO 4: To apply specific knowledge of information system in functional areas of business.

UNIT-A **15 Hours**

Introduction

- Fundamental Aspects of Information, Capturing of Information, Converting Information to Computer – Readable Form, Source of Information, On–Line Information Access and Capture
- Basic Systems Concepts, Elements (Components) of System, Characteristics of System, Types of Systems, System Approach.
- Information Systems: Definition & Characteristics, Types of Information, Role Of Information in Decision - Making, Levels of Management
- Introduction to Different Kinds Of Information Systems: ESS, EIS, DSS, MIS, KWS, TPS, OAS And EDP.

UNIT-B **15 Hours**

Information Systems

- Categories of Information Systems, Development Life Cycle of Information System
- Technologies For Information System: Latest Trends In Hardware and Software

An overview of Management Information System

- Definition & Characteristics, Components of MIS, Frame Work for Understanding MIS: Robert Anthony's Hierarchy Of Management Activity
- Structured Vs Unstructured Decisions, Formal Vs. Informal Systems, Pitfalls In MIS Development

UNIT-C **15 Hours**

Simon's Model of Decision

- Making. DSS: Concept, Characteristics And Components, Gorry & Scott Morton Grid, Introduction to GDSS

Developing Information Systems

- Analysis & Design of Information Systems: Implementation & Evaluation.

UNIT-D **15 Hours**

Various types of information systems

- Transaction Processing Systems, Office Automation Systems, MIS and Decision Support System.

Functional MIS

- A Study of Marketing, Personnel, Financial and Production MIS

Case studies of the Information System

- Accounting Information Systems, Inventory Control Systems & Marketing Systems.

Reference Books:

1. Laudon K.C., *Management Information Systems*, Pearson 11th Ed, 2009.
2. Murdick, Robert G., & Ross, Joel E., & Claggett, James R, *Information Systems for Modern Management*, Third Edition, PHI, 1971.
3. Kanter, J, *Management Information Systems*, PHI, 3rd Ed, 1983.
4. Goyal, D.P, *Management Information Systems*, Macmillan, 3rd Ed, 2006.
5. Oz, Effy, *Management Information Systems*, Cengage Learning, 2007.

Course Title: Programming in C Laboratory
Course Code: CSA506P

L	T	P	Credits	Marks
0	0	4	2	50

Course Outcomes:
CO 1: Enhance skill on problem solving by implementing in C programming language.
CO 2: Identify solution to a problem and apply control structures and user defined functions for solving the problem.

Implementation of C programming concepts:

- Control Structures, Loops, Arrays, Strings
- Functions, Structures, Union, Files, etc.

Course Title: Database Management System Laboratory
Course Code: CSA507P

L	T	P	Credits	Marks
0	0	4	2	50

Course Outcomes:
CO 1: Students get practical knowledge on designing and creating relational database systems.
CO 2: Understand various advanced queries execution such as relational constraints, joins, set operations, aggregate functions, trigger, views and embedded SQL.

Implementation of SQL

- DDL, DML, DCL, TCL

Course Title: Computer Network and Internet Applications
Course Code: CSA508P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: This course provides knowledge about various types of Network, Network Topologies, and protocols.

Course Outcomes:

CO 1: Recognize the technological trends of Computer Networking.
Co 2: Evaluate the key technological components of the Network.
Co 3: Evaluate the challenges in building networks and solutions to those.

UNIT—A **15Hours**

Introduction:

- Uses Of Computer Networks, Network Hardware, Network Software
- Seven-Layer OSI Architecture of ISO, Concepts of Layer Protocols and Layer Interfaces
- TCP/IP Reference Model, Comparison of OSI &TCP/IP Reference Models
- Physical Layer: Transmission Media , Telephone System (Structure, Trunks , Multiplexing and Switching
- Wireless Transmission

UNIT—B **15 Hours**

Data Link Layer:

- Design Issues
- Error Detection And Correction
- Elementary Data Link Protocols
- Sliding Window Protocols
- Medium Access Sub layer: The channel allocation ,
- IEEE standards 802 for LAN & MAN.

UNIT—C **15 Hours**

Network Layer:

- Design issues
- Routing Algorithms
- Congestion Control Algorithms, IP Protocol
- IP Addresses, Sub Nets

Transport Layer: Transport Services, Elements of Transport Protocols, TCP Service, Model , protocol, Header

Application Layer: Network Security, DNS, E-Mail, World Wide Web, Multimedia

UNIT—D **15 Hours**

Evolution Of The Internet

- Growth of the World Wide Web.
- Client-Server Model.
- Architecture of the Intranet/ Internet /Extranet.

- Access Methods: Dialup, Isdn, Adsl/2+, Cable, Lan, Wifi, Mobile Satellite.
- Proxy Servers.
- Application Areas: E-Commerce, Education,
- Entertainment such as Games and Gambling.
- Portals, Discussion Forums, Weblogs, Podcasting, Rss / Atom, Wiki, VOIP, Video on Demand.
- Search Engines, Webbots, Integrity of Information, Databases Online.

Reference Books:

1. Tananbaum A.S. and David J. Wetherall, *Computer Networks*, Pearson, Fifth Edition 2010.
2. Stalling W, *Data & Computer Communications*, PHI, Ninth Edition 2010.
3. B. Forouzan, *Data Communication and Networking*, Tata McGraw Hill July 2010.
4. Bates, C., *Web Programming: Building Internet Applications*, John Wiley and Sons (3rd Ed), 2006.
5. Hofstetter, F.T., *Internet Literacy*, McGraw Hill, 2005.

L	T	P	Credits	Marks
4	0	0	4	100

Course Title: Operating System
Course Code: CSA509P
Course Duration: 45-60 Hours

Course Objective: Understand the overall architecture of the operating system and its main components, Functions of Kernel, file system architecture and implementation, concurrent programming and concurrency.

Course Outcomes:
CO1: To understand the services provided by and the design of an operating system.
CO2: To understand what a process is and how processes are synchronized and scheduled.
CO3: To understand different approaches to memory management.
CO4: To apply fundamental algorithmic problems including type casting, inheritance, and polymorphism.

UNIT—A **15 Hours**

Introduction To Operating System

- Computer System Structure
- Operating System Structure
- Process Management

UNIT—B **15 Hours**

CPU Scheduling

- Process Synchronization
- Deadlocks

UNIT—C **15 Hours**

Memory management

- Paging and Segmentation Virtual Memories
- I/O System and Secondary Storage Structure

UNIT—D **15 Hours**

Protection and Security

- Introduction to multiprocessor and distributed operating systems

Case Studies:

- LINUX
- UNIX Operating System with SOLARIS
- SCO-UNIX

Reference Books

1. Silberschatz Galvin, Operating System Concepts, Forth Addition, Addison Wesley.

2. Crowley, Operating Systems: A Design Oriented Approach, Tata McGraw Hill.
3. Donovan J.J, Systems Programming, New York, McGraw Hill.
4. Dhamdhere, D.M, System Programming and Operating Systems, Tata McGraw Hill.
5. Madnick and Donovan, Operating System, McGraw Hill.
6. Leland L. Beck, System Software, San Diego State University, Pearson Education.
7. P.B. Henson, Operating System Principles, Prentice Hall
8. A.S. Tenenbaum, Operating System: Design and Implementation, PHI

Course Title: Core JAVA
Course Code: CSA510P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: To provide the advanced Knowledge about OOPS implementation using java.

Course Outcomes:
CO1: To gain knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc.
CO2: To understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc. and exception handling mechanisms.
CO3: To understand the principles of inheritance, packages and interfaces.

UNIT—A
An overview of Java **15 Hours**

- Object Oriented Programming, Two Paradigms
- Abstraction, The, OOP Principles, Java Class Libraries
- Date Types, Variables And Arrays:-Integers, Floating-Point Types, Characters, Boolean, Iterates, Variable, Data Types And Casting
- Automatic Type Promotion in Expressions Arrays.
- Operators: Arithmetic Operators, Bit Wise Operators, Relational Operators
- Boolean Logical Assignment Operators, The? Operator, Operator Precedence Control Statements
- Java's Selection Statements, Iteration Statements, Jump Statements
- Introduction to Classes: Class Fundamentals, Declaring Object Reference Variable

UNIT—B **15 Hours**
Introducing Methods

- Constructors, The Key Word, Garbage Collection, The Finalize () Method
- Methods And Classes :-Overloading Methods, Using Objects As Parameters, Recursion

Inheritance:

- Inheritance Basics, Using Super, Method Overriding, Dynamic Method Dispatch
- Using Abstract Classes, Using Final With Inheritance, Package and Interfaces
- Package Asses Protection, Importing Packages

UNIT—C **15 Hours**
Exception Handling:

- Exception Handling Fundamentals., Exception Types

- Uncaught Exceptions Using Try and Catch, Multiple Catch Clauses, Nested Try Statements Throw
- Finally Java Built in Exception Creating Your own Exception Sub Classes, Using Exceptions

Multithreaded Programming:

- The Java Thread Model, The Main Thread, Creating Thread, Creating Multiple Thread, Using Is Alive () and Join ()

UNIT—D **15 Hours**

String Handling:

- The String Constructor, String Length, Special String Operator Character
- Extraction, String Comparison, Searching String, Modifying String, Data Conversion

The Applet Class:

Applet Architecture Displays Methods. The HTML APPLET.

- Passing Parameters to Applet. The Get Documentation Base () and Get Code Base () Methods
- Applet Context And Show Document ()

Reference Books:

1. Bruce Eckel, *Thinking in Java*, Pearson Education, Fourth Edition, 2006.
2. Herbert Schildt, *Java The Complete Reference*, Seventh Edition, 2006.
3. E-Balagurusami, *Programming In Java*, Tata McGraw Hill Fourth Edition, 2010.
4. Ivan Bayross, *Java 2.0 Web enabled Commercial Application Development*, BPB Publications, 2000.
5. Phil Hanna, *JSP 2.0: The Complete Reference*, TMH, Edition 2, Publications 2003.

Course Title: Web Designing
Course Code: CSA511P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: This course will enable the student to build and publish web sites using Dreamweaver, a popular visual web site production and management program, using HTML, DHTML, CSS and PHP. This course will enable the student to build and publish web sites using Dreamweaver, a popular visual web site production and management program.

Course Outcomes:

CO1: Introduce the creation of static webpage using HTML. Write PHP scripts to handle HTML forms.

CO2: Create PHP programs that use various PHP library functions. Write regular expressions including modifiers, operators, and meta characters.

CO3: Manipulate files and directories. Database Connectivity using MySQL

CO4: Purchasing domain name and uploading the Website.

UNIT-A **15 Hours**

Introduction to Web Development

- Website, Webpage, Static Website, Dynamic Website.

Introduction to HTML/DHTML:

- HTML Basics, HTML Elements (Tags), Structure of HTML Program, Attributes, Headings, Paragraphs
- Formatting, Links, Images, Tables, Lists, Forms, Frames, Where to put Tables, Lists, Images, Forms
- CSS in DHTML, Implementation of WebPages using CSS

UNIT-B **15 Hours**

Dreamweaver

- Understanding Workspace Layout, Managing Websites, Creating a Website, Using Dreamweaver Templates
- Adding New WebPages, Text and Page Format, Inserting Tables, Lists, Images, Adding Links.

UNIT-C **15 Hours**

Introduction to PHP

- PHP Environment, Syntax Overview, Variable Types, Constants, Operator Types, Decision Making
- Arrays, Strings, Web Concepts, GET & POST
- File Inclusion, Files & I/O, Functions, Cookies, Sessions, Sending Emails, Uploading, Coding Standards.

UNIT-D **15Hours**

Purchasing a Domain Name & Web Space

- Domain Name & Web Space, Getting a Domain Name & Web Space (Purchase or Free), Uploading the Website to Remote Server

Reference Books:

1. Thomas Powell, *HTML & CSS: The Complete Reference*, Fifth Edition, 2010.
2. Andy Harris, *HTML, XHTML and CSS All in One for Dummies*, Second Edition, 2010.
3. Rasmus Lerdorf, Kevin Tatroe, Peter Mac Intyre, *Programming PHP*, 3rd Edition, 2013.
4. Larry Ullman, *PHP for the World Wide Web*, Visual Quick Start Guide, 2011.

Course Title: Software Engineering
Course Code: CSA512P
Course Duration: 45-60 Hours

L	T	P	Credits	Marks
4	0	0	4	100

Course Objective: The course should provide an introduction to the fundamentals principles of software engineering. The present course should seek to equip the student with a repertoire of principles, tools and techniques and make him/her appreciate that software engineering is, after all, an exercise in making compromises.

Course Outcomes:

CO1: Decompose the given project in various phases of a lifecycle. Choose appropriate process model depending on the user requirements.

CO2: Perform various life cycle activities like analysis, design, implementation, testing and maintenance. Know various processes used in all the phases of the product.

CO3: Apply the knowledge, techniques, and skills in the development of a software product.

CO4: Explain project management techniques.

UNIT—A **15 Hours**

Software Engineering Principles:

- How is Software Engineering an Engineering Discipline
- Information System Characteristics, Software Development Process Models,
- Life Cycle Concepts, Software Phases and Deliverables, Software Development Strategies

UNIT—B **15 Hours**

Technical Development:

- Structured Systems Analysis and Design Requirements
- Collection And Specification, Data Flow and Logical Data Modeling, Cost Benefit Analysis,
- Feasibility Study, Architectural And Detailed Design, Process, Data, Network, Control
- User Interface Designs, Physical Data Design, Dynamic Modeling for Real-Time Systems

UNIT—C **15 Hours**

Software Project Management:

- Principles Of Software Project Management Organizational and Team Structure
- Project Planning, Project Initiation and Project Termination; Technical
- Quality And Management Plans, Project Controls, Cost Estimation Methods-Function Points and COCOMO, Tools
- Software Quality Management: Quality Control, Quality Assurance, Quality Standards
- Software Metrics, Verification And Validation, Testing, Quality Plans, Tools

Configuration Management.

UNIT—D **15 Hours**

Software Development Method & CASE:

- Formal, Semi-Formal and Informal Methods; Data Function, and Event-Based Modeling, Some of The Popular Methodologies Such as Yourdon's SAD, SSADM Etc.
- CASE Tools, CASE Standards
- Implementation: In 3GL Environment, In 4GL Environment, In Client-Server
  Environments, Coding Styles.
- Documentation, Software Maintenance

Reference Books:

1. Pressman R. S., *Software Engineering: A practitioner's Approach*, McGraw Hill, Seventh Edition 2010.
2. Pankaj Jalote, *An Integrated Approach to Software Engineering*, Pearson 2010.
3. Sommerville I., *Software Engineering, Addison –Pearson*, Eighth Edition 2009.

Course Title: Core JAVA Laboratory
Course Code: CSA513P

L	T	P	Credits	Marks
0	0	4	2	50

Course Outcomes:

CO1: To development environment to write, compile, run, and test simple object-oriented Java programs.
CO2: To read and make elementary modifications to Java programs that solves real-world problems.
CO3: To validate input in a Java program.
CO4: To identify and fix defects and common security issues in code.

- Implementation of OOP concepts using JAVA
- Packages and Interfaces
- Exception Handling
- Applets
- AWT classes

Course Title: Web Designing Laboratory
Course Code: CSA514P

L	T	P	Credits	Marks
0	0	4	2	50

Course Outcomes:

CO1: Apply skill of identifying appropriate programming constructs for problem Solving.

CO2: Demonstrate the use of Strings and string handling functions.

- Web designing using HTML, DHTML, CSS, and PHP.