Advance Diploma in Computer Application (3 Years Program)

Syllabus

First Semester

6 Month = Days 180 Working Days=125 Days / Hrs 1 Hrs / Day

Project / Assignment / Seminar / Activities

First Semester

EXAMINATION	TOPIC	Hrs	Days	Marks
Unit Ist	Computer Fundamental / Windows	15	15	25
	Lab Work : Notepad, Wordpad, MS Paint, Dos Commands	20	20	--
Unit IInd	Number system / Boolean Algebra / Logic Gates / Internet.	20	20	25
	Lab Work : Internet	10	10	--
Unit IIIrd	Word Processing	20	20	25
	Lab Work : MS Word	20	20	--
Uint IVth	Spread Sheet	20	20	25
	Lab Work : MS Excel	20	20	--
	Assignment I	--	--	50
Total		145	145	150

First Semester Detailed Syllabus

Unit I: Computer Fundamental / Windows

Understanding a computer system, History of computer, characteristics of computer, Generation of computer, Types of computer, Hardware, Input Device, Memory & Storage Device, Output Devices, Basic Architecture of Computer, Software, System Software, system Software, Operating System, Computer Languages & Language Processor, Application Software, MS Dos, Microsoft Windows Operations,

Unit II: Number system / Boolean Algebra / Logic Gates / Internet

Introduction, Decimal Number system, Binary Number system, Octal Number system, Hexadecimal Number system, Conversion Techniques with Remainder Method & Expansion Method, Logical Operators, Gates, Logic Circuits, Introduction of Internet & www, Communication Protocol, Web Browser, Website, Internet Service Provider, E-mail.

Unit III: Word Processing

Understanding Microsoft Word, Creating New Document / Opening an Existing Document, Formatting Tool, Changing Case of Text, Creating Columns of Text, creating a Drop Cap, Changin page Background, Adding Page & Column Breaks, Adding Page Numbers, Hyperlink, Bookmark, Header & Footer Page Setup, Spelling & Grammer, Endnote & Footnote, Mail Merge, Micros, Page Layout, Track Changes.

Unit IV: Spread Sheet

Understanding Microsoft Excel, Format Cell, Conditional Formatting, Pivot Table Report, Adding Graphs / Charts, Cell Referencing, Page Setup, Formulas, Arranging Data – Sort, Filtering Data, Working with Subtotals, Data Analysis with Goal Seek, Scenario Manager & Data Table. Protect Worksheet & Workbook.

Second Semester

EXAMINATION	TOPIC	Hrs	Days	Marks
Unit Ist	Application of Presentations	5	5	25
	Lab Work: PowerPoint	5	5	--
Unit IInd	Programming Logic Techniques	10	10	25
Unit IIIrd	C++ Basic	30	30	25
	Lab Work: C++	30	30	--
Unit IVth	Object Oriented Programming	30	30	25
	Lab Work: C++	35	35	--
	Assignment II / Project	--	--	50
Total		145	145	150

Second Semester Detailed Syllabus

Unit I: Application of Presentations

Understanding MS PowerPoint, Manage Presentations, Change presentation Options and Views, Creating Presentation Using Templates, Configure, print settings, Manage Slides, Insert & Format Images, Master Slide, Apply Transitions & Animations.

Unit II: Programming Logic Techniques

Understanding Programming Logic Techniques, Algorithms, Flow Chart.

Unit III: C++ Basic

Applications of C++, Data Types, Declaring & Initializing Variables, Header Files, Operators, Comments in C++, Conditional Statement, Control Statement, Array and Its types, Strings, String related functions, Structures, Limitations of structures, Array of structure, Pointers, Functions, Call By Value & Call By References, Recursion.

Unit IV: Object Oriented Programming

Object Oriented Programming Paradigm, Basic Concepts of Object-Oriented Programming, Class and Objects, Accessing class members. Defining member functions, Arrays of Objects, Friend Function, Constructors, Types of Constructors, Destructor, Inheritance, Types of Inheritance, File Handling in C++.

Third Semester

EXAMINATION	TOPIC	Hrs	Days	Marks
Unit Ist	Fundments of Data Communication & Network Topology	15	15	25
Unit IInd	Computer Networks	25	25	25
	Lab Work: Assign IP Address to the PC Connected to the Internet	5	5	--
Unit IIIrd	DBMS Introduction (Architecture)	20	20	25
	Lab Work: SQL Server	20	20	--

Uint IVth	Relational Model / Relational Algebra	30	30	25
	Lab Work: SQL Server	30	30	--
	Assignment I	--	--	50
Total		145	145	150

Third Semester Detailed Syllabus

Unit I: Fundaments of Data Communication & Network Topology

Data communication and its characteristics, Components of data communication, Communication media (Guided and Unguided), Data transmission, Transmission characteristics, Types of transmission, Network devices, Network topology, Types of network topology, advantages, and disadvantages.

Unit II: Computer Networks

What is Computer network, Need of computer network, Network criteria, Advantages of networking, Network classification, Network Terminology, Network Topology, Types of Network Topology, Advantages & Disadvantages of Network Topology, OSI Model, Internet Protocol, Types of Internet Protocol,

Unit III: DBMS Introduction (Architecture)

Introduction to Database, Purpose of Database, Various Level of Database, DBMS architecture, E-R Model, Types of Relationship, Relational Data Model, Network Data Model, Hierarchical Data Model, Clint/server approach, Structure Query Language, Processing Capability of SQL, Creating Database, Working with Table.

Unit IV: Relational Model / Relational Algebra

Introduction to Relational Algebra in DBMS, Fundamental Operators (Selection, Projection, Union, Set Difference, Set Intersection, Rename, Cartesian Product), Derived Operators, (Natural Join, Conditional Join), Relational Calculus,

Fourth Semester				
EXAMINATION	**TOPIC**	**Hrs**	**Days**	**MARKS**
Unit Ist	SQL -Server	20	30	25
	Lab Work: SQL -Server	20	30	--
Unit IInd	Normalization / Joins in SQL	20	30	25
	Lab Work: SQL -Server	20		
Unit IIIrd	Windows Programming / Event Driven Programming Using Visual Basic	20	30	25
	Lab Work: Visual Basic 6.0	15		
Uint IVth	Data Access Technology	15	25	25
	Lab Work: MS Access with Visual Basic	15		
	Assignment II / Project	--	--	50
Total		145	145	150

Fourth Semester Detailed Syllabus

Unit I: SQL -Server

Introduction to SQL, SQL Datatypes, SQL Expression, SQL Comments, SQL Function, Basic Operators, View, Working of Where, Having, Group by Clause.

Unit II: Normalization / Joins in SQL

Join, Types of Join, Normal Forms, The Problem of Redundancy in Database, Types of Normal Forms in SQL, Acid Properties in Database.

Unit III: Windows Programming / Event Driven Programming Using Visual Basic:

Introduction to windows Programming, Understanding the Event Driven Model, Windows Applications Development Tools, Introduction to Visual Basic, Features of Visual Basic, Integrated Development Environment, Visual Basic Project & Forms, Creating Visual Basic Applications, use of Various Control in Visual Basic, Array in Visual Basic, Function in Visual Basic, Working with Menus in Visual Basic, Multiple Document Interface (MDI) in Visual Basic,

Unit IV: Data Access Technology

Visual Basic Database Architecture, Data Access Technology, Accessing Data using Data Control, Data Control Events, Data Access using DAO Programming, ODBC & Working of ODBC, ADO Architecture, Database Connectivity with ADOBC,

Fifth Semester				
EXAMINATION	**TOPIC**	**Hrs**	**Days**	**MARKS**
Unit Ist	Internet / Web Design	15	15	25
	Lab Work: HTML	15	15	--
Unit IInd	HTML	20	20	25
	Lab Work: HTML	15	15	--
Unit IIIrd	Front Page / Java Script /VB Script	20	20	25
	Lab Work: Front Page & Java Script	20	20	--
Uint IVth	Classic ASP	20	20	25
	Lab Work: ASP	20	20	--
	Assignment I	--	--	50
Total		145	145	150

Fifth Semester Detailed Syllabus

Unit I: Internet / Web Design

Introduction to Internet, Advantages of Internet, Internet Addressing System, Communication Protocol, Web Browser, Internet Service Provider, Basics of Web Designing, Web Technologies, Multimedia & its application.

Unit II: HTML (Hypertext Markup Language)

Introduction to HTML, HTML Basic Formatting Tags, HTML Grouping using Div Span, HTML List, HTML Images, Importance of Hyperlinks, HTML Tables, HTML Frame, HTML Form, HTML Header.

Unit III: Front Page / Java Script /VB Script

Understanding Microsoft Front Page, Front Page Menu Bar, What is Style Sheet, Specifying Styles for the Style Sheet, What is Java Script, Evolution of Java Scrip, Features of Java Script, Advantages & Disadvantages of Java Script, How to add Java Script in HTML, Introduction to VB Script, Data Types & Variables in VB Scrip, VB Script Operators, Decision making Statements, Flow Control in VB Script.

Unit IV: Classic ASP

Introduction to ASP, Uses of ASP, How to Run ASP File, ASP Application Object, ASP Request Object, Architecture of ASP, Introduction to Web Server Control, Validation Server Control.

Sixth Semester				
EXAMINATION	TOPIC	Hrs	Day	MARKS
Unit Ist	Database Handling in ASP	20	20	25
	Lab Work: ASP & MS Access	20	20	--
Unit IInd	Core Java	20	20	25
	Lab Work: Java	20	20	--
Unit IIIrd	Abstract Window Toolkit (AWT) /Applet	20	20	25
	Lab Work: Java	15	15	--
Uint IVth	Database Handling with JDBC	15	15	25
	Lab Work: Java	15	15	--
	Assignment II/ Project	--	--	50
Total		145	145	150

Sixth Semester Detailed Syllabus

Unit I: Database Handling in ASP

How to Create Database Connection, Working with User Access Control, How to Make Connection, ODBC, ADO Connection String,

Unit II: Core Java

Introduction to Java, Object Oriented Programming Concept, Understanding Classes & Objects, Accessing class members. Defining member functions, Arrays of Objects, Constructors, Types of Constructors, Inheritance, Types of Inheritance in Java, Interfaces & Packages, Input Method in Java, Strings in Java, Exception Handling in Java.

Unit III: Abstract Window Toolkit (AWT) /Applet

Multi – Threading, Life Cycle of Thread, Thread Methods, Thread Priorities, Components for Creation of Interactive Graphical User Interface, Event Handling, Applet, Life Cycle of an Applet, Use of Graphic, Font, Color, Class, Getting User input through Applets.

Unit IV: Database Handling with JDBC

Introduction of JDBC, JDBC Architecture, Java Database Connectivity Steps Creating JDBC Statements, Types of Statements, Creating an ODBC Database Driver.

GRADING SCHEME

Percentage > = 80	Grade – A	Excellent
Percentage > = 60	Grade – B	Good

Percentage >= 40	Grade – C	Average
Percentage < 40	Grade – D	Fail