

DEPARTMENT OF INFORMATION TECHNOLOGY
Kumaun University, Nainital
(One year Advance Certificate Course in Information Technology)

There will be three papers in **One Year Advanced Certificate Course in Information Technology**. It is proposed to provide the students with specialized training in two advanced course of Information Technology:-Web Designing Tools and Application Development with Visual Basic. The intake may be of those students who are not familiar with computers and different aspects of Information Technology, so it is proposed to acquaint them with introductory on following aspects, which will form Paper I(Information Technology & PC Software) of this certificate course. All questions in this paper shall be of objective nature and maximum marks allotted to this paper shall be 30.

Paper I : Information Technology & PC Software

(M. Marks 30)

- **Fundamentals of Information Technology**
Concept, Data Concept, Processing, Data Processing Concepts, Networking, Applications of IT.
- **Fundamentals of Computer System**
Binary, Hexa decimal, Octal number system and their conversion, Concept of Hardware, Input, Output Devices, Software, Types of Software, Types of memory, Processor, Peripheral Devices, Classification of Computer.
- **Windows Operating System (Win 98 & XP)**
Concept of GUI, Control Panel, Accessories, Windows Explorer etc.
- **PC Packages (MS Office XP)**
Word, Excel, Power point and Access.
- **Web Introduction and Internet Applications**
WWW, Web publishing Browser, Evolution of Internet, E-mail, Telnet, FTP, Search Engine, Network security, HTTP, One Line Web System.

Paper II : Application Programming with VB

(M. Marks 60)

- **Introduction to problem solving, Flow charts, Algorithms.**
- **Introduction to Visual Basic**
Variables, User defined data types, constants, arrays, collections, procedures, Subroutines, Arguments, Control flow statements and conditional statements, loop statements, iteration, working with forms, controlling on form within another, using form templates, menus, manipulating menus of runtime, using message boxes and input dialogs, using standard modules instead of form modules.
- **Integrated Development Environment**
The form designer, using the Application wizard, Concept of VB project, Elements of User interface, Programming an application, Visual development and event driven programming, error handling.
- **ActiveX Controls**
The text Box Control, capturing keystrokes, the list box and combo box controls, arrows, indexing with the list box control, searching and sorting lists, the scroll bar and slider controls, picture boxes, Dialog control, file handling and file control, built in ActiveX controls List View, Image Kist and Tab Strip.
- **Concepts of Objects and classes**
Classes, instances, objects, encapsulation and abstraction, derived classes and databases, class inheritance, dynamic binding, creating object variables, forms as classes creating and manipulating runtime controls, object linking and embedding (OLE), Visual basic and Windows API, Elements of application programming interfaces, dynamic-link-libraries (DLL).
- **Other Aspects & Features**
ODBC with database objects (DAO, RDO and ADO), Graphics with VB, Multiple document Interface (MDI, MDI-built-in capabilities, parent-child menus, objects and instances, loading and unloading of child forms, new and open command, programming with objects, VBA editor, automating office applications, spell-checking documents, working with excel object.

Paper III (Web Page Designing Tools)

(M. Marks 60)

- **HTML/DHTML**
Tags, Forms, Frames, Tables and Embedded objects, Adding scripts to HTML page, DHTML, CSS, Rollover, Visual Effects.
- **Scripting with Java Script**
Fundamentals, how the Java Script & HTML work together, operators, control Structure and Looping, Functions, Client Side Object, Custom Java Object, Layers, Java Script menus; Server Side Scripting; Client Server Architecture, Server Side Java Script, Core Server Side Object, Error Handling, Form Object, Java Script and Web Security.
- **ASP & ASP.Net**
ASP Basic Architecture, configuring ASP, Fundamentals of ASP, Request Object, Response Object, Application Object, Session Object, Server Object, File Operations, Error Handling Cookies, Access Control and Database Access in ASP. Elements of ASP. Net, Object, Embedding codes of C# in ASP Model and Server Control, Uploading files, Handling Uploaded files, Browser Independence.
- **C# (Sharp)**
Introduction C# Language, Compiling and Running C#, Data Type, Operator, Object Oriented nature of C#, Memory Management, Array, Programme Controls, Calling Method, Console I/O, Name Space, Base Class, OOP.
- **Database Connectivity with ADO & ADO.Net**
Introduction to ADO, RDO, & ADO, Difference between DAO, RDO & ADO, Types of ADO Objects, ADO Connectivity with ASP Pages, Introduction to ADO. Net, Scalability, Data Source Independence, Interoperability, Strongly Typed Fields, performance.

Practical

(M. Marks 50)

- **The Students shall be asked to do two practical questions (one each from paper II and III) together with a project on any topic of second and third papers.**