

**IT-PGD02: POST GRADUATE DIPLOMA IN INFORMATION TECHNOLOGY (PGDIT)**

Duration of the course: One-year full time

Eligibility: Bachelors degree in any discipline from a recognized university with at least 50% marks at graduation level. SC/ST and OBC candidate requires only minimum pass marks at the graduation level for admission

Seats: 30 (Thirty)

Course structure:

Paper	Paper Name	Duration of exam. (Hours)	Max. Marks		Total
			University Exam.	Internal Assessment	
Paper-I (ITD-101)	IT Tools and Networks	3	75	25	100
Paper-II (ITD-102)	Programming and Problem Solving through C Language	3	75	25	100
Paper-III (ITD – 106)	Programming with Visual Basic .NET	3	75	25	100
Paper-IV (ITD-104)	Data Base Management System	3	75	25	100
Paper-V (ITD – 107)	Web Technologies	3	75	25	100
Paper-VI (PR-I)	I.T. & Programming Language Lab	6	75	25	100
Paper-VII (PR-II)	Data Base Management Lab	6	75	25	100
Paper-VIII (PR-III)	Web Technology & .Net Lab.	6	75	25	100
Paper-IX (PROJ-I)	Project (Based on .NET technology)	6	150	50	200
	<b>TOTAL</b>		<b>750</b>	<b>250</b>	<b>1000</b>

Teaching: 3hrs/week per paper for theory papers and 6 hrs/week per practical paper. Project work will be of one month duration after completion of the teaching of the all the theory and Practical Papers. However, project may be allotted well in advance to the students.

**Examination rules:**

1. External examination will be conducted in each paper at the end of the session by the university as per scheme given in the course structure.
2. A candidate will be required to answer one question from each unit with an internal choice from each unit. Thus a candidate will be required to answer total five questions
3. Internal marks will be given through continuous evaluation of the candidate through Assignments, two internal examinations, and seminar/Group discussion/Viva in each paper. In the case of project work, internal marks will be awarded on the basis of the reports from the Project supervisors regarding regularity, originality, number of hrs candidate has worked and presentation.
4. Project work will be evaluated by an external examiner. Student will be required to make a presentation of the work to the external examiner.
5. A candidate will be required to pass separately in the internal as well as external evaluation by securing 40% of the maximum marks and a minimum of 50% marks in all the papers taken together

6. Only those candidates who clearly pass at least three theory papers and two of the practical papers will be allowed to re-appear in failed papers. Internal marks will be carry forwarded only for the student who passes internal examination by obtaining at least 40% of the maximum Internal Marks. For others, internal marks shall not be carry forwarded and the candidate will be awarded marks out of the maximum prescribed marks of the paper (i.e. 100 for each theory/practical papers, 200 for project)
7. A candidate securing 50% or more but less than 60% marks will be awarded second division where as candidate secure 60% or more marks will be awarded First division.
8. Maximum of two chances other than the first appearance will be given to the failed candidates to clear their due papers as per conditions laid under Para 6.
9. Students of PGDCA will be eligible to offer any one of the Add-on Diplomas or Certificate courses on part time basis during the course.

**Important Note:** Examination of all the Diploma courses in IT will be conducted together with common question papers as per paper codes given against each paper

## SYLLABUS

### **ITD-101: IT TOOLS AND NETWORKS** (Common for PGDCA, PGDIT and PGDBC courses)

#### **UNIT - 1**

##### **Computer Appreciation**

Characteristics of computers, Input, Output, Storage units, CPU, computer system, Binary number system, Binary to Decimal conversion, Decimal to binary conversion, binary coded decimal (BCD), ASCII Code.

##### **Central Processing Unit**

Control Unit, Arithmetic unit, instruction set, Register, Processor speed.

##### **Memory**

Main memory: Storage Evaluation criteria, Memory Organization, capacity, RAM, Read only memories. Secondary Devices:- Magnetic Disks, Floppy and Hard disks, Optical Disks CD-ROM, Mass storage devices.

##### **Output Devices**

Monitors, Printers- Dot matrix, inkjet, laser, plotters, computer output Micro-Film (COM), Multimedia projector, speech synthesizer; dumb, smart and intelligent terminal.

#### **UNIT – 2**

##### **Multimedia**

What is multimedia, text, Graphics, Animation, Audio, images, video; Multimedia Application in Education, Entertainment, Marketing.

## **Computer Software**

Relationship between hardware and software, Application software, compiler, names of some high level languages, free domain software.

### **Different Types of Computers:**

PC, Desktop, Servers, Workstation, Parallel computing, Super computers and applications of super computing

Brief idea of CPU, Memory and Peripherals used with different type of computers, Specifications of latest PC's in the market

## **UNIT – 3**

### **Operating Systems**

#### **Disk Operating System**

Simple DOS Commands, Simple File Operations, Directory related commands.

#### **Microsoft Windows**

An Overview of different versions of windows, Basic windows elements, file management through windows.

Using Essential Accessories: Systems tools- Disk cleanup, Disk defragmenter, Entertainment, Games, Imaging- Fax, Notepad, Paint, WordPad.

#### **Linux**

An overview of Linux, Basic Linux elements: System features, Software features. File structure, File handing in Linux, Installation of Linux: H/W, S/W requirements, Preliminary steps before installation.

## UNIT – 4

Word processing concepts: Saving, closing, opening an existing document, Selecting text, Editing text, Finding and replacing text, printing documents, Creating and Printing Merged Documents, Character and Paragraph formatting, Page design and Layout.

Editing and proofing tools: Checking and correcting spellings. Handling Graphics. Creating tables and Charts. Document Templates and Wizards.

### **Spreadsheet Package**

Spreadsheet Concepts. Creating, Saving and Editing a workbook, Inserting, Deleting work sheets, entering data in a cell/ formula coping moving data form selected cells, Handling operators in formulae, Functions: Mathematical, Logical, statistical, text, financial, date and time functions, Using Function Wizard.

Formatting a worksheet: Formatting Cells- Changing data alignment, changing date, number, character, or currency format, changing font, adding borders and colors, printing worksheet, Charts and Graphs- Creating, Previewing, Modifying charts.

Integrating word processor, spread sheets, web pages.

## UNIT – 5

### **Presentation package**

Creating, Opening and saving presentations, creating the look of your presentation, working in different views, working with slides, adding and formatting text, formatting paragraphs, checking spelling correcting typing mistakes, making noted pages and handouts, drawing and working with Objects, Adding clip and other pictures, Designing slides shows, Running and controlling a slide show, printing presentations.

## **Networks**

Networking Architecture: ISO-OSI, IBM, SNA architecture, their function and implementation. Concepts of circuit switching, packet switching and network switching, Introduction to serial communication standards and parallel communication interfacing. Transmission media: twisted pair, coaxial cable, optical fiber. LAN topologies: STAR, BUS and RING network. LAN access techniques: ALOHA, CSMA, token ring and token bus. Standard components and Devices used to build Networks, Wireless Networks and WI-FI systems.

Network Reliability and Security.

## **RECOMMENDED BOOKS**

### **MAIN READING**

- 1 P.K. Sinha and P. Sinha, “Foundations of computing”. First Edition, 2002, BPB Publication
- 2 S. Sagman, “Microsoft Office 2000 for Windows, “Second Indian Print, 2001, Pearson Education.

### **SUPPLEMENTRY READING**

- 3 Turban, Mclean and Wetherbe, “Information Technology and management,” Second Edition, 2001 John Wiley & Sons.

# **ITD-102 PROGRAMMING AND PROBLEM SOLVING THROUGH 'C' LANGUAGE**

(Common for PGDCA, PGDIT and PGDBC courses)

## **UNIT -1**

### **Introduction to Programming**

The basic model of Computation, Algorithms, Flow-charts, programming languages, Compilation, Linking and Loading, Testing and Debugging, Documentation

### **Algorithms for problem Solving**

Exchanging values of two variables, summation of a set of numbers, Decimal Base to Binary Base conversion, Reversing digits of an integer, GCD (Greatest common Division) of two numbers, test whether a number is prime, Organize numbers in ascending order, find square root of a number, factorial computation, Fibonacci sequence, Evaluate 'Sin x' as sum of a series, reverse order of elements of an array, find largest number in an array, print elements of upper triangular matrix, multiplication of two matrices, Evaluate a polynomial.

## **UNIT - 2**

### **Introduction to 'C' Language**

Character set, Variables and identifiers, Built-in data types, variable definition, arithmetic operators and expressions, constants and literals, simple assignment statement, Basic input/output statement, Simple 'C' programs.



## **Conditional Statements and Loops**

Decision making within a program, Conditions, Relational operators, Logical connectives, if statement, if- else statement, Loops, do while, for loop, nested loops, infinite loops, Switch statement, Structured programming.

## **UNIT - 3**

### **Arrays**

One dimensional arrays: Arrays manipulation; Searching, insertion, deletion of an element from an array; finding the largest/smallest element in an array; Two dimensional arrays, Addition/Multiplication of two matrices, transpose of a sparse matrices, Transpose of square matrix; Null terminated strings as array of characters, Representation of sparse matrices.

### **Functions**

Top-down approach of problem solving, modular programming and functions, standard library of C functions, prototype of a function: Formal parameter list, return type, function call, block structure, passing arguments to a function: call by reference, call by value, recursive functions, arrays as functions arguments.

## **UNIT – 4**

### **Structures and Unions**

Structure variables, initialization, structure assignment, nested structure, structures and functions, structures and arrays: arrays of structures, structures containing arrays, unions.

## **Pointers**

Address operators, pointer type declaration, pointer assignment, pointer initialization, pointer arithmetic, function and pointers, Arrays and Pointers, pointer arrays

## **UNIT-5**

### **Self Referential Structures and Linked Lists**

Creation of a singly connected linked list, traversing a linked list, insertion into a linked list, deletion from a linked list.

### **File Processing**

Concept of file opening in various modes and closing of a file, reading from a file, writing onto a file.

## **RECOMMENDED BOOKS**

### **Text Books**

- 1 Byron Gottfried “Programming with C” Second edition, Tata mcgrawhill, 2000
- 2 R.G. Dromey. “How to solve it by computer”, Seventh Edition, 2001, Prentice hall of India.

### **Reference Books**

- 3 E. Balaguruswami, “Programming with ANSI- C”, First Edition, 1996, Tata mcgraw hill.
- 4 A. Kamthane, “Programming with ANSI & Turbo C”, First Edition, 2002, pearson Education.

5 Venugopal and prasad, “Programming with ‘C’, first Edition, 1997, Tata

6 B.W. Kermighan & D.M. Ritchie, “The C Programming Language”, Second Edition, 2001, prentice hall of India.

## **ITD-106 PROGRAMMING WITH VISUAL BASIC.NET**

### **UNIT-I**

Introduction to .NET Framework, Understanding web programming - web browser and web server, How to create HTML pages and HTML Forms, Role of .NET in Web Development, .NET Framework and platform, base classes, XML as .NET meta language, Relation with COM, overview of CLR, .NET class Frame, An overview of .NET Components.

IDE of VB.NET - Menu bar, toolbars, project explorer, toolbox, Properties window, Form designer, Form layout, immediate window . Visual Development And Event-Driven Programming -Event Driven Programming Methods and events, Concept of VB.NET project, types of VB.NET project, Opening and saving the projects, Elements of the user interface, Designing the user interface, Creating forms and code modules, Running the application, Grouping controls, Customizing The Environment -Editor tab, format tab, general tab, docking tab, environment tab, Working with Forms, Loading, Showing and hiding forms, Controlling one form within another

### **UNIT-II**

Variables -Declaring variables, Type of variables Converting variables types, User-defined data types, Special values, Forcing variables declarations, Scope and lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Procedures,

subroutines, functions, Control flow statements and conditional statements, Loop statements, Designing menus and popup menus, Programming menu commands, Using access and shortcut keys, Using message box and input box, Using standard modules

### **UNIT – III**

The Text Box Control -Text selection, Search and replace operations, The List box and Combo box controls, Indexing with the List box controls, Searching a Sorted list, The scroll bar and slider controls, Using the common dialog controls, Color common dialog box, Font common dialog box, The file open and save common dialog boxes, Print dialog box, Help common dialog box, The file controls.

### **UNIT-IV**

Classes, instances, objects, Encapsulation and abstraction, Derived classes and base classes, class in. Object linking and embedding (OLE), OLE at runtime, OLE control, Graphics With Visual Basic.NET, Form, picture box and image box controls Sizing images, loading and saving images, Coordinate systems, scale properties and methods, The drawing methods: drawing text, drawing, drawing boxes, filling, Drawing curves, manipulating pixels, specifying colors, Using timer controls, Multiple Document Interface(MDI), MDI-built-in capabilities, Parent-child menus, Objects and instances, Loading and unloading of child forms, New and open commands

### **UNIT-V**

Windows management, Graphics device interface, Accessing the Win32 API from VB.NET, Dynamic-link-libraries (DLL), Declaring a DLL procedure, Calling a DLL procedure, Special considerations when

calling DLL with special data types, The bitmaps and graphics API functions, System API functions

Programming and Interfacing with Office 97 -

Programming with objects, The New VB for applications (VBA) Editor, Automating office applications, Spell-checking documents, Working with excel objects

**TEXT BOOK:**

1. *Application Development Using Visual Basic and .NET* by Robert J. Oberg, Peter Thorsteinson, Dana L. Wyatt

**ITD-104: DATABASE MANAGEMENT SYSTEMS**

(Common for PGDCA and PGDIT courses)

**UNIT – 1**

**Introduction to database Management System (DBMS)**

Why database, Characteristics of data in database, DBMS, what is database, advantage of DBMS,

**Database Architecture and Modeling**

Conceptual, physical and logical models, role of DBA, Database design

**UNIT – 2**

**Entity Relationship Model**

Components of ER Model, ER modeling symbols. Super class and sub class types. Attribute inheritance. Specialization, Generalization, Categorization.

## **Relational DBMS Model**

Introduction to Relational DBMS, RBMS Terminology.

### **UNIT - 3**

#### **Database Normalization**

Keys, relationships, first normal form, functional dependencies, second normal form, third normal form, Boyce- codd Normal form, fourth normal form, fifth normal form, Case study

#### **Relational Algebra and Relational Calculus**

Relational Algebraic operations, tuple relational calculus, Domain relational calculus.

### **UNIT – 4**

#### **Introduction to SQL**

History of SQL Characteristics of SQL Advantage of SQL. SQL data types and literals. Types of SQL commands. SQL Operators and their precedence. Tables, views and Indexes. Queries and sub queries. Aggregate functions. Insert, update and delete operations join, unions, intersection, minus. Cursors in SQL, Embedded SQL.

#### **Back up and Recovery**

Database backups. Why plan backups? Hardware protection and redundancy. Transaction logs. Importance of backups. Database. Data storage, Causes of failures, recovery concepts and terminology. Recovery facilities. Recovery techniques. Detached transaction actions, Disaster Database Management System.

## UNIT – 5

### **Database Security and integrity**

Types of integrity constraints. Restrictions on integrity constraints. Data security risks. Complex user management requirements. Dimensions of security. Data security requirements. Database users. Protecting data with in the database. Granting and revoking privileges and roles. System viability factors. Authenticating users to the database.

### **RECOMMENDED BOOKS**

#### **Text Books**

- 1.A. Leon and M. Leon, “Database management systems,” First Edition, 2002, Vikas publishing house (P) Ltd.
2. R. Elmasri , S.Navathe, “Fundamentals of database Systems,” third Edition, 2000, Addison wesley

#### **Reference Books**

3. H. Korth, A. Silberchafz, “database system,” Third Edition, 1997, Mcgraw- hill International.
4. B. Desai, “An Introduction to database system,” Galgotia publication
5. D.K. Kroenke, “Database processing: Fundamentals, Design Implementation,” Prentice hall of India.
6. P. Bhattacharya and A.K. Majumdar, “Database Management system,” First Edition, 1996, Mcgraw Hill.

## **ITD- 107 (Paper-V) Web Technologies**

### **UNIT I**

Basic Web Concepts - How the web server works – static web pages- Dynamic web pages-How scripting languages work – Server side scripting Language – Client Side Scripting – Overview of HTML – Formatting text and pages – Linking pages – Formatting the body section of the web page – Using block level Elements –Using Text level Elements – Including audio and video files in web pages – Style sheets – Image maps – Frames – Tables – DHTML – Creating Layers – Moving and Sliding objects

### **UNIT II**

Java Script: object, names, literals-operators and expression-statements-functions-events-windows-documents-frames- data types-statements-I/O-built in functions- Handling Events – Browser object model – Verifying forms - Cookies. - VBScript: variables, operators, intrinsic functions-procedures- Arrays and control statements – objects – File System object, Dictionary object, folder object, Drive object and File object.

### **UNIT III**

Introducing XML – Main features of XML technology – XML syntax –Elements –Attributes – Entity references – Processing instructions – CDATA sections – Document structure – Document Type Definition – Writing DTD's – Formal DTD structure – Conditional sections – Data modeling and XML –DOM(Document Object model ) and XML – Simple API for XML – Namespaces and schemas – XSL



(Extensible Style sheet Language ) – XML and Databases – CSS and XML.

#### UNIT IV

Introduction to PHP – Advantages of PHP – Functions – Data types – Arrays – SQL – Connecting Databases using ODBC – Files – Forms – Images –Imap objects.

#### UNIT V

ASP fundamentals – Request object – Response object – Server object – Object Context object – Error object – Application object – Session object – Global.asa file – ASP components – Connecting Databases – Server side includes

#### References:

1. McCoy, Mastering Web Design, BPB Publications, New Delhi, 3<sup>rd</sup> Edition
2. Pitts-Moultics, Natanya & Sanders CC & Chandak,ramesh, Dynamic HTML
3. Petroustos & Schongar, VBScript unleashed, Samsnet,1997
4. Wagner, Richard et al, JavaScript Unleashed
5. Aaron Weiss, The Complete Idiot's guide to JavaScript, PHI, 2<sup>nd</sup> Edition
6. Eric. C.Richardson, Programming web server, Galgotia Publications
7. Lee Scot Johnson et.al., "Using Active Server Pages", Que,, Information Technology.
8. Purcell, Marry Jane Maria, ABC of JavaScript, BPB Publications, 1997
9. Moulding , Peter., PHP Black Book, Dreamtech Press Ltd, 2001.

10.Browl, Martin, The Complete Reference – Perl – Tata Mcgraw Hill,2002.

## **PRACTICAL**

Paper-VI I.T. & Programming Language Lab: Laboratory exercises based on Paper- I and Paper-II. Theory part related to software packages in Paper I may be taught in the Laboratory using computer and Multimedia Projector

Paper-VII Data Base Management Laboratory: Laboratory exercises based on Paper-IV using MS Access and Visual Basic

Paper-VIII Web Technology and .NET Lab.: Laboratory exercises based on Paper-III and V using VB.NET, HTML, JavaScript, Vbscript, XML and ASP

Paper IX Minor Project making use of web Technologies

Study Information Technology 7.500 Postgraduate Diploma in Information Technology. 7.500 Postgraduate Diploma in Information Technology. Level 8.Â Dmitry completed his Graduate Diploma in Information Technology (Software Development) at AIS in December 2011. He now works as a junior developer at Foster Moore, a dedicated registry development company based in Auckland. Dmitry received a bachelorâ€™s degree in mathematics from Perm State University, Russia, in 2009 and spent the next 2 years working as a tester for Prognoz, an international business intelligence software vendor.Â Master of Computer Applications, Post Graduate Diploma in computing. Read more. Rakesh Kumar. ^ Post Graduate Diploma in Information Technology [PGDIT] - Course Overview. STREAM. MANAGEMENT.Â PGDIT is a 1-year full-time postgraduate course divided into 2 semesters. The IT industry has emerged as one of the fastest growing sectors of the Indian economy. With such unprecedented growth of the IT industry, a growing number of organizations require manpower that is proficient in Information Technology, Business aspect of IT, technology systems, effective management of technology, business strategies and implementation of designed database models. Information technology colleges in uttar pradesh. INFORMATION TECHNOLOGY COLLEGES IN Maharashtra. INFORMATION TECHNOLOGY COLLEGES IN Tamil Nad