॥ शांभरो विद्यू ज्ञानज्योत ॥

North Maharashtra University, Jalgaon

Revised Syllabus for

DIPLOMA IN

COMPUTER MANAGEMENT

(D.C.M.)

One Year Post-Graduate Course
(w.e.f. July, 2000)

North Maharashtra University, Jalgaon

Revised Syllabus for
Diploma In Computer Management (D.C.M.)
(w.e.f. July, 2000 -2001)

PAPER 101 : C.C.D.P.
----

1. Computer, its components and functions : Generation of computers and Historical Growth; Hardware and Software, Mini-Computer, Micro Computers and main-frame Systems.

2. Binary, Octal, BCD, EBCDIC, ASCII, Representation of numeric data (binary, packed decimal, decimal, real)

3. Computer Instructions and Addressing System, Machine Assembly and Higher Level Language, Non procedural Programming Languages.

4. Operating System Memory and I/O Management

5. Files hierarchy of data, sequential, Relative, Direct, Indexed Organization.
   Data processing concepts : Master & transaction file, sorting, interactive - on line processing concepts.

6. Inter program communication
   Machine to Machine communication concepts.
   Networking LAN, WAN concepts
   Distributed data processing concepts.

7. Batch and on-line processing, time sharing, multiprogramming, end user computing.

8. Applications of Computers
   - Business & Industry - Applications
   - CAD/CAM
   - Computer Graphics
   - Office Automation
   - Process Control
   - Scientific Applications
     (Awareness of use)

PAPER 102. WINDOWS AND M.S. OFFICE
----

1. Environent of a Windows Application
   The Graphics Oriented User Interface, The pros & cons of the Visual Interface. MS Windows' window component, The Graphics device Interface, The display context, The GDI I/P Routines, A Multitasking Environment, H/W Independence.

2. Basic Concepts of Window Program
   Hardware and Software requirements, derived Data types, Handles, Hungarian notation, STRICT, windows,h; argsused pragma, WinMain () and it arguments-hInstance, hPrevInst, ipszCmdLine, wdShow, Comments,Instances, API functions, message boxes ros, icons, main window, window class, WNDCLASS structure, e t-driven programming, window procedure, window messages, me ge loop, basic working of a Message System. Message format, The ources of a Message, Some Common Message types, The Sequence of Me sage Processing. The Role of Messages.

3. Resource Handling

Using a text Resourace, Message Box, Message Box types, Menus-Receiving commands from the User, Creating Pop-up Menus, displaying & Processing a Menu, Accelarators, Dialog Boxes : Receiving data from the user, Defining a dialog box using the Dialog Box Editor, Programming for the Dialog Box, Device Context, Resources and Projects, Icons, Stock Cursors, Disk Files, File Common dialogs.

4. M.S. Office

Introduction to MS-Office, Installing MS-Office, The office Manages, sharing information with MS-Office, The clipboard, Ulternation to the clipboard, Using the clipboard to cut, copy & parte, The clipboard viewer object linking & embedding (OLE), editing, linking information, editing embedded objects, word processing with MS-WORD for windows, Word basics, undo, redo, repeat, inserting text, Replacing text, formating text, copying from one word document to another, Printing auto format.

Working with headers, footers & footnotes, tab, tables & sorting, converting table to text & vice-versace, Working with graphics such as importing graphics, Seiring & copying graphics with the picture command, Using Words drawing features, Drawing objects, colour firling tampltes, Wirards & sample document, Writers tools, Typing symbols & special bulleted list commands, spell check, auto text grammar checker, word count & other statestic, table & contents, creating an index, macros, Introduction to muil-merge.

Excel basics, The usual spred sheet features, overview of Excel featuers, Creating a new cell, selecting cells, Rearranging worksheet, moving cell, Deleting parts of worksheet, raesing part of worksheet, Excel page setup, changing columns, Using border buttons & commands, changing colours & shading, Inserting & removing page breaks, Hiding rows & coloumn, Working with multiple worksheet, Viewing multiple windows, summering information from multiple windows.

Books : Pet Zpld - Window 3.11
        Lafper - Window Prof. Notes
        Wondow Programmings Principals - Jim Concar

List of Programs for Windows
----

1. Introduction to windows
2. Accessories : File manager, Calculator, Time, Date, Sound recorder etc.
3. Creating document using WR
4. Creating, editing, Saving, Formating document using ms word
5. Mail merge using ms-word
6. Creating a worksheet.
   (Entering data, calculating formulas, saving & closing the worksheet)
7. Editing & formating the worksheet
   a] Inserting & deleting columns & rows
   b] Copy & Paste commands
   c] Printing a worksheet
8. Creating charts [graphs]

2

9. Working with Database in Excell
    Sorting data
    Auto filler
    Query.
10. Creating picture in paintbrush & copy it into word, write
    & excell.

PAPER 103. Data Base Management Systems (DBMS)
----
1. Introduction
    History : Advantages and limitations of DBMS, Users of DBMS,
Software Modules in DBMS, Architecture of DBMS.
2. Modelling Techniques
    Different Types of Models, Introduction to ERD.

3. Hierarchical Database
    Introduction.
4. Network Database
    Introduction
5. Relational Database
    Introduction, Codd's 12 Rules, Concept of Domain, Tuple,
Cardinality, Comparison Between HDB_NDB_RDB.
6. Normalisation
    Advantages and disadvantages of Normalisaton, INF-2NF-3NF-
4NF-5NF-BCNF-DKNF rules with examples, Anomalies
7. Integrity Constraints
    Entity-Domain-Referential integrity rules, Assertion and
Triggers concept.
8. Recovery Mechanisms
    Re covery from various problems of volatile and non-volatile
storage devices, Concept-properties-states of Transaction,
Introduction to mechanisms such as Log, Checkpoint and Shadow
Paging.
9. Concurrancy Controls
    Problems of concurrent Transactions, Control Mechanisms such
as Locks, Time-Stamps, Optimistic-Scheduling and MVT.
10. Distributed Databases
    Concepts, Data Distributions Techniques.
11. Security and Privacy.
12. ANSI SQL commands.

Note :
1. ERD technique is not to be covered in detaisl as the same is
expected to be covered in Course 104.
Books : 1. Henry Korth - Data Base Concepts
        2. C.J.Date - Systems Concepts
        3. Desai - Data Base Systems.

PRACTICAL
DATABASE MANAGEMENT SYSTEM   PAPER 103

1. Designing & Creating a database & adding data by using

CREATE TABLE command

3

2. Modifying Database & Data entry screen forms using

ALTER TABLE   table name
Add (newcolname datatype(size)

Modifying existing colouan

ALTER TABLE tablename
MODIFY (coloumname newdatatype(size)

3. Using SQL
   i] Nested querise using IN.EQUAL TO etc.
   ii] Aggrigate function

AVG,MIN,MAX,COUNT,SQRT
   III] Group by clause
   iv] Having Clause

4. Using DML
   i] INSERT clause
   ii] UPDATE clause
   iii] DELETE clause
   vi] DROP clause

5. Trigger concept

PAPER 104. DATA STRUCTURE
----

1. Concept of datatype, data object, data structure and representation, abstract data structures, introduction to analysis of data structure and algorithms.

2. Arrays as ADT, implementation of arrays, Single dimensional and multidimensional.

3. Stacks as ADT, implementation of stack, push and pop operations, conversion of infix to postfix notation. Evaluation of postfix notation, concept of back-tracking, recursion using stacks (concept only)

4. Queues as ADT, implementation of queues, Application of queues to preemptive scheduling in transaction processing, Circular queues using arrays.

5. Linked list as ADT, signly linked list, operations on linked list, implementations of stacks and queues using linked lists, Doubly linked lists, application of double linked lists in dynamic storage management, concept of generalied link list.

6. Trees as ADT, baisc terminology, Binary tree representation using arraays and linked lists, binary tree traversal-inorder, postorder, preorder (both recursive and non-recursive versions) Threaded binary trees, traversal of thread-ed binary trees, Binary tree representation of trees.

7. Symbol Table : Concept of table, static tree table, binary search, tree definition and search algorithms, Huffman algorithm, Dynamic tree table as binary search tree. Concept of height-balance (AVL) trees, introduction to reblancing techniques

8. Searching : Linear searach, binary search, depth first search and breadth first search on binary trees.

9. Sorting : Bubble sort, insertion sort, quick sort, heap sort.

PAPER 105 : FOXPRO

A. USING FOXPRO 2.5 UNDER DOS (USAGE LEVEL)
    1. What is a database ?
    2. Simple and Relational Databases
    3. Limitatiosn of DBase III Plus
    4. Advantages of using FOXPRO
    5. Introduction to FOXPRO menu structure
    6. Introduction to FOXPRO dialog boses.
    7. Using FOXPRO Command Window
    8. Creating a database structure.
        (a) Defining structures of a database file
        (b) Entering field names.
        (c) Saving database file.
        (d) Copying and modifying structures of database files.
    9. Adding Editing and Viewing Data
        (a) Appending data
        (b) Changing or Editing data
        (c) Reaizing or Changing the order of fields
        (d) Partitioning the Window
        (e) deleting a record
        (f) Moving the record pointer.
   10. Understanding Indexes and Expressions
        (a) Types of Indexes (Single, Comound, Structural compound, Compact)
        (b) Overview of Index Dialog Box
        (c) Indexing commands
        (d) Understanding Expressions
        (e) Selecting and Controlling Index Piles.
   11. Generating Reports
        (a) Designing the report form.
        (b) Page Layout
        (c) Page Preview
        (d) Layout Toos
        (e) Title/summary
        (f) Data Grouping
        (g) Variables.

Books: R.K. Taxali
      Gran 2.5

LIST OF PRACTICALS FOR FOXFRP

    Use of command window is expected.
(1) Create the strucutre of a database file (minimum 5 fields must be inclused), add the records in it and display the selected fields (minimum 3 fields) for the records satisfying given conditions. Copy the file to another specified file, copy the selected records to another file.

♠ 5

(2) Add the records in a database file whose structure is given. Sort the all the records in a specified order, sort the records satisfying given conditions.
(3) Create the index files for a given database file, add the records from original and indexed database file.
(4) Edit and delete the records satisfying the given conditions for a given database file.
(5) Create the report with suitable titles for a given database file. The report should display only the field values of database file without any condition and grouping.
(6) Create the report for a given database file with suitable titles to display the records satisfying given conditions (without grouping).
(7) Create the report for a given database file with data grouping.

106. PRACTICALS

Based on M.S.Office Windows and Oracle & Visual Basic there should be minimum 20 practicals based on M.S.Office & Windows (10 Practical) and Foxpro (10 Practicals)

The practical examination shall be conducted by two external examiners appointed by the University which shall carry 60 marks and the internal assessment of practical examination shall be conducted by the Institute which shall carry 40 marks.

107. PROJECT WORK AND VIVA :
Internal Assessment shall be carry 40 marks and External Assessment shall cary 60 marks

cd/O/rane1.70