

APPENDIX - Y

MADURAI KAMARAJ UNIVERSITY

MADURAI - 625 021.

ANNEXURE - II

P.G. DIPLOMA IN COMPUTER APPLICATIONS

I. Eligibility

A graduate in any discipline of Madurai Kamaraj University or any other University recognised as equivalent thereto is eligible for admission to this course.

ii) Duration

The course shall extend over a period of one full academic year.

iii) Medium of Instruction

The Medium of Instruction is English only.

iv) Scheme of Examination	Max. Marks	Duration
Paper I - Fundamentals of Computers	100	3 hours
Paper II - COBOL and Date processing	100	3 hours.
Paper III - Software Engineering	100	3 hours
Paper IV - Object Oriented Programming with C++	100	3 hours
Paper V - Client/Server Computing with Oracle 7	100	3 hours
Paper VI - Windows and Visual Basic	100	3 hours
Paper VII - Information Technology and its Applications	100	3 hours
Paper VIII - Computer Programming Lab-I (COBOL & C++ Programming)	100	3 hours
Paper IX - Computer Programming Lab-II (ORACLE & Visual Basic)	100	3 hours

Passing Minimum

Candidates will be declared to have passed the examination if they secure 40% of marks in each paper. The failed candidates shall appear for the paper(s)/ practical in the subsequent appearances.

i) Classification of Successful Candidates

Candidates who obtain 40% but below 50% of marks shall be placed in Third Class. Those who obtain 50% and above but below 60% of marks shall be placed in Second Class. Candidates securing not less than 60% of the total marks shall be declared to have passed the P. G. Diploma examination in FIRST class. Candidates passing the course by making the examination in more than one appearance will also be eligible for the classification of classes. But such candidates are not eligible for rank, if any.

1. FUNDAMENTALS OF COMPUTERS

UNIT - I

Characteristics of computers - Block Diagram - Problem solving using computers - classification of computers - computing methods.

UNIT - II

Representation of characters, Integers & Fractions in computers - Number conversions - Hexa decimal - binary - Octal - decimal - programming languages.

UNIT - III

Functional components of computers - Input - Output units - Memory - CPU

UNIT - IV

Functions of an operating Systems - Classification of Operating system.

UNIT - V

Computers & Communications - Types - Needs - communication Media - Network topologies - protocols - LAN - Interconnecting networks - TCP/IP.

TEXT BOOK

1. Fundamentals of Computers - II Edition - V.Rajaraman - PHL, 1998
CH-I, II, III, IV, IX, X, XII, XIII
- Ref: 1. Computers Today - Basantra Galgotia Publications.
2. Computers & Commonense - Roger - Hunt.

2. COBOL AND DATA PROCESSING

UNIT-I

History of COBOL - Coding format - structure - character set - words - Names & Identifiers - Literals - figurative constants - IDENTIFICATION and ENVIRONMENT DIVISION.

UNIT - II

DATA DIVISION introduction - Level Structure - picture clause - value clause - File section - WORKING STORAGE SECTIONS - Editing features - Structure of PROCEDURE DIVISION - MOVE verb - Arithmetic verbs - sequence control verbs - I/O verbs - conditions verbs.

UNIT-III

Usage clause - SYNCHRONISED - JUSTIFIED - REDEFINES - RENAMES clause - Qualification of Data Names - SIGN Clause - Elementary and Group Moves - Corresponding options - ROUNDED option - ON SIZE ERROR - COMPUTE verb.

UNIT -IV

Relational, sign, class, condition - name conditions - compound condition - IF statements - GOTO - ALTER statement - PERFORM - EXIT statements - PERFORM Verbs - occurs clause - SET verb - SEARCH verbs.

UNIT -V

File handling - file characteristics - file control entries for sequential files -

O statements - SORT & MERGE verbs - case studies - Payroll Inventory - Tax - Exam processing.

Text Book:

COBOL PROGRAMMING - M.K.ROY & GHOSH DASTIDAR
11th editions - Tata - McGraw Hill.

Chapters: 3,4,5,6,8,9,10,11,13, & 14.

Ref: Advanced COBOL PROGRAMMING - Philipakis - McGraw Hill.

3. SOFTWARE ENGINEERING

UNIT-I

Introduction - phases in S/W development - Models - role of Mgmt. - SRS - problem analysis technique - Requirements specification - validation & metrics.

UNIT - II

Cost estimation - Project scheduling - staffing & personal planning - Team structure - S/W configuration Mgmt. - project monitoring plans & risk Mgmt.

UNIT - III

System design - objectives - principles - design methodologies - design specification - metrics - detailed design - module specification & verifications.

UNIT - IV

Coding - programming practice - top-down - bottom-up - structured programming - Information hiding - Internal documentation - verification - code reading - static analysis - symbolic execution - code review & walk throughs.

UNIT - V

Testing fundamentals - functional testings - structural testing - testing process.

Text Book:

An integrated approach to Software Engineering - Pankaj Jalote - Narosa Publications.

Chapter: 1, 2, 3, 4, 5, 6 & 7

Ref: S/W Engineering concepts - Richard Fairley.

4. OBJECT ORIENTED PROGRAMMING WITH C++

UNIT - I

Introduction to Object oriented programming - procedural Vs object oriented - Basic concepts - benefits - Languages - Applications - Structure - character set - basic data type - identifier - operators - control structures.

UNIT - II

Functions - declarations - parameter passing methods - inline functions - default arguments - function overloading - friend & virtual functions - structure - class - defining member functions in class - arrays within a class - array of objects - friend functions - object as parameters.

UNIT III

Constructors - Constructor overloading - copy - dynamic Constructors - destructors - operator over loading - unary - binary operators - overloading using friend functions - rules for overloading - type conversions.

UNIT - IV

Inheritance - various forms of inheritance - Abstract classes - pointers - pointers to objects - THIS pointer - virtual functions.

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UNIT - V

I/O streams - stream class - formatted & unformatted I/O. Manipulators - file of classes - file I/O - updating a file, error handling & command line arguments.

Text Book:

Object Oriented Programming with C++ - E. Balagurusamy - T.M.H.

Chapter : 1 to 11

Ref: 1. Object Oriented programming with C++ - Ravichandran C.-PHI
2. Programming with C++ - Schaum series.

5. CLIENT/SERVER COMPUTING WITH ORACLE 7

UNIT-I

Introduction to Databases - Relation model - Dat Integrity - concurrency - Data security - availability - Backup and recovery.

UNIT - II

Evolution of computing models- client / server model - Benefits and pitfalls of client / server computing - client Application interface - object oriented programming for application development.

UNIT - III

SQL - select, insert, update, delete - - transaction control - commit, Roll Back, Savepoint - data definition language - Data Control - grant, Revoke, Set Role commands - SQL functions.

UNIT - IV

SQL and PL/SQL - Basic - difference - variables - constants - data types - control statements - Error handling - creating PL/SQL programs - procedures and functions - Triggers and other miscellaneous commands.

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UNIT - V

Database administration - planning - configuring - installing - Administering security - Backup and recovery - monitoring and running - server manager interface.

Text Book:

Mastering ORACLE 7 & Client/Server computing, Steve Bobrowski, 2nd edition BPB

- Ref: 1. *ORACLE - The complete reference, Bayross, BPB*
2. *Understanding ORACLE, Perry/lateer, BPB*

6. WINDOWS AND VISUAL BASIC

UNIT - I

Introduction to Windows - Windows Graphic User Interface (GUI) - multitasking - format of a window - Icons - selecting, moving, sizing windows - menus - Helpmenu.

UNIT - II

MS OFFICE - MSWORD - Opening Word - Toolbar Highlights - changing fonts - settings - documents patterns - Book marks - Autotext - Auto correct - Auto save - Other major commands.

UNIT - III

MS-EXCELL - working with ranges - range names - filling a range - creating, copying, moving - inserting and deleting, clearing - manipulating formulas and functions - operator procedure - Auditing formulas - entering functions - working with charges - formatting chart - selecting chart elements - setting options.

UNIT - IV

Visual Basic Concepts - Introduction to VB - event driven programming - terminology - working screen - controls and events - menu system -

programming language - tools; msgbox, inputbox, scroll bars, frames, checkbox, menus.

Creating programs - form and controls - writing code - saving - Running & Testing - making EXE file - printouts - program flow logical testing - Branching statements.

UNIT - V

procedures and functions, forms and arrays creating procedures, functions - recursive functions - multiple forms - startup forms - starting from submain - transferring between forms - arrays and loops - control arrays - indexing and event handling.

Text Books:

1. AL Stevens. 'Teach Yourself Windows' BPB Publications (1994)
2. McFedries et.al 'MS Office 97' Sams Publications (Techmedia)
3. P.K.McBride "Programming in visual Basic", BPB Publications.

Reference:

1. *Mastering Windows. Techmedia Publisher.*
2. *Learn MS Office, Techmedia Publisher.*
3. *Mastering Visual Basic, Techmedia Publisher.*

7. INFORMATION TECHNOLOGY AND ITS APPLICATIONS

UNIT-I

Internet - concept - History -Service - standards and agreements - Electronic lifelines - Data Communication - tools - Broadcast message - www pages - Gopher servers - FTP - searchable data box.

UNIT - 2

Domain and address - Domain name system - IP addresses - arrangement - equipment for connection Internet Service providers.

UNIT - 3

Working with Direct and dialup lines - TCP/IP. Modems - Parity - Duplex - Flow control - connecting to a Net - Dialup troubleshooting.

UNIT - 4

Electronic Mail - working of E-Mail - word processor for E-Mail - addresses - Mail reflectors, mailing lists, list servers, - talk, search, access, mailing list.

UNIT - 5

Information provider - Benefits - reduce expenditure - Improve the productivity - relations with customer - speed and accuracy - Method of use - management issues.

Text Book: "Mastering the Internet". Glee Harah Cady and Pat McGregor, BPB Publications.

- Ref: 1. *The Internet Book, Comer, PHI Publishers.*
2. *Internet instant reference, Hoffman, BPB publishers.*

8. Computer Programming Lab-I - practical - I
(COBOL & C++ Programming)
9. Computer Programming Lab-II - Practical - II
(ORACLE & VISUAL BASIC)

APPENDIX - Y

MADURAI KAMARAJ UNIVERSITY

(Under Distance Learning Program)

DIPLOMA IN INFORMATION TECHNOLOGY TWO YEAR PROGRAM

I. SCOPE & OBJECTIVE OF THE COURSE:

The Curriculum of the Two Year Diploma in Information Technology designed by practising IT Professionals aims at preparing a novice to face the challenge thrown open by the competitive and ever-growing IT industry. The first year of the course is designed to give a strong foundation in programming techniques and make a candidate efficient in Office Automation after giving due introduction to Information Technology. The Second year of the curriculum prepares the participant to become a thorough-bred professional in the areas of networking, Business Information Systems, Relational Database Management systems & Client Server technology.

II. ELIGIBILITY FOR THE COURSE

Candidates for admission to the Diploma in information Technology Course should have passed in the X + 2 Examination conducted by the State Board of High Secondary Education or an Examination accepted as equivalent thereto by MKU. Candidates holding Diploma Certificates are also eligible for this program.

III. APPLICATION FOR ADMISSION:

Application for admission to the course must be made in the prescribed form obtainable at the Office of the Centre offering the course, not later than the date notified each year. The admission will be subject to interview/group discussion and/or test to enable the respective Admission committee to decide about the suitability of the candidate. The decision of the committee shall be final in all cases of admissions.

IV. ELIGIBILITY FOR THE DIPLOMA

- i) This is a unique program offered by the Directorate of Distance Education of MKU. In this program the University shall identify