

NORTH MAHARASTRA UNIVERSITY, JALGAON

Diploma in Computer Application

(D.C.A.)

Revised Syllabus with effect from June 2010

- 1.1 Programming in C++
- 1.2 Internet Fundamental and Web Designing Tools
- 1.3 Business Applications & Data Processing
- 1.4 Introduction to Tally 6.3
- 1.5 Oracle / D2K
- 1.6 Practical Based on : 1, 1.2, 1.5

NORTH MAHARASHTRA UNIVERSITY, JALGAON
DIPLOMA IN COMPUTER APPLICATION

1.1 Programming in C++
(w.e.f. June 2005)

1. **Introduction :**

Difference between C, C++ The Object-Oriented Approach, Object Oriented Methodologies in Analysis Characteristics of Object Oriented Languages, Classes, Object. Encapsulation Inheritance, Polymorphism. C++ and C.

2. **Structures :**

An Introduction. to Structure, Features. Structures within Structures Enumerated Data Types.

3. **Function :**

Simple function. passing Arguments to functions Returning Values from Functions, Reference Arguments, Overloaded functions Address of an overloaded function, passing an address of an overloaded function as an argument to another function. Inline functions, default Arguments, variables and Storage Classes

4. **Objects And Classes:**

A simple Class ,Difference between class, structure and union in C++, C++ objects, Constructors and Destructors Concept of ADT, Constant member function object as function Arguments Returning Objects from Functions, Classes, Objects and Memory, Static Class Data

5. **Operator Overloading**

Introduction, Overloading, Unary and Binary Operators Concatenating String. Comparison operators. Arithmetic Assignments Operators, Data Conversion-Between Basic Types, Between Objects and Basic Types

6. **Inheritance :**
Derived Class and Basic Class. David Class Constructors, Class Hierarchies, Public and Private Inheritance, Multiple Inheritance, Containmentship-Classes within Classes inheritance
7. **Pointers :**
The Delete and New Operator, Pointers to object, An Array of pointers to Pointers, Difference Between pointer and references
8. **Virtual Functions:**
Virtual Function, Pure Virtual Functions, Friend, Functions, Static Functions, The copy Constructor, Abstract Classes
9. **Introduction to Templates and Exception Handling. Function with Templates.**
10. **Files and Stream:**
String I/O, Character I/O, file Pointers, Error Handling, Redirection, Command-line Argument, Pointer Output
Overloading the << and >> Operators

TEXTBOOKS /REFERENCES

1. The C++ Programming Language By Bjarne Stroustrup.
2. Object Oriented Programming With C++ By Balguruswamy.
3. Programming With C++ By John R Hubbard.

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1.2 Internet Fundamental and Web Designing Tools

(w.e.f. June 2005)

- Concepts of Networking LAN, MAN, WAN
- Basic requirement for internet
- Modems, Browsers, gateways, bandwidth, leased lines, ISP, voice mail
- domain address types
- TCP/IP setting for internet
- Internet Security Firewalls
- Mail services
- HTML
- Web Designing Fundamentals
- Introduction to HTML, Internet Protocols, Communication on the
- Internet, URLS in HTML
- Document structure Elements in HTML
- Block Formatting Elements (Font, Color, Size)
- MARQUEE Elements
- List Elements
- Form Elements
- Input Elements, select Elements, Option Elements, Character
- formatting, Information type Elements
- Introduction to Table Elements
- BORDER
- CELLSPACING
- ALIGN
- BGCOLOR
- Table and Style Sheets
- Introduction to Frames and Dynamic Documents
- Introduction to Web Publishing
- Interface Design
- Establishing Links
- Page Design
- Uses of GIF and JPEG Files
- Creating a simple Home Page and Site

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1.3 Business Applications

(w.e.f. June 2005)

Introduction to different Business segments:

- Manufacturing
- Trading
- Finance
- Services Industry

Flow of Information in various segments Discussion about Input documents and Output reports in general for the above sectors

1. PAYROLL SYSTEM

Earning & Deduction Calculation Module

Wage Pay Slip Processing

Monthly Salary File

Report Generation

Preparation Of Annual Summaries

Bonus Reporting

STATUTORY REPORTS

Costing and Management Reports

2. LIBRARY MANAGEMENT SYSTEM

Books Issue, Return, Fine Due analysis

Reports- Author wise, Book wise, Subject wise etc

Video, Audio Cassette Library system Reports

3. INVENTORY MANAGEMENT

Purchase order processing

Stores Accounting

Stores transaction receipts, Issues and adjustment

Stock ledger

Inventory levels FOO ABC Analysis

Inventory control reports such as slow moving / non moving items
MATERIAL PLANNING Bill of material Computing
Gross / net requirements

4. **HOTEL MANAGEMENT**

Departmental Organization of Hotel: such as room occupancies, room service, restaurant, house keeping, conferencing, exhibition, parties etc
Kitchen stores accounting
Reservation check in and check out
Service accounting and bill printing
Management Reports.

5. **HOSPITAL MANAGEMENT**

Departmental organization of hospital such as in-patient, outpatient, laboratories, pharmacy, surgical rooms etc
Medical stores accounting
Registration, shifting and discharge of patient
Service accounting and bill printing
Management Reports

Note: All the above systems must consist of the following

- 1 File Layout
- 2 E-R Diagram
- 3 Data Flow Diagram
- 4 Input Design
- 5 Output Design

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1.4 Introduction to Tally 6.3 (w.e.f. June 2005)

1. Introduction : - Starting Tally (08 Lect)
- Tally Screen _Product info_ Work area, Button bar and Calculator
 - Concerning Accounting, Financial Management, Inventory management And Security
- Company info . Menu :- (05 Lect)
- Company creation - Accounts only . Accounts with Inventory. Inventory only
 - Accounts Configuration.
3. (a) Classification of Accounts :- (08 Lect)
- Account Heads
- Account Groups - Ledger Accounts
- (b) Reserved Account Groups for Final Accounts :-
- Reserved Groups for Balance sheet
Reserved Groups for Profit & Loss Account
4. Accounts Masters : - (12 Lect)
- Creation of Account Masters -
Account info Menu - Groups, Ledgers, Voucher Types
- (A) Account Group -
- (1) Creation of new individual (Account) Group
- (i) In normal mode
 - (ii) In Advanced mode
- Group creation in Advanced mode
 - Creation of Parent Group
 - Alteration of Account group
 - Creation of Primary group

- (II) Buttons at (Single) Group screen
- (III) Cost centers - Creation of new individual cost center and Alteration of cost enter
- (IV) Cost Category - Creation of New Cost Category in Normal Mode and in Advanced Mode And alteration in the cost categories

(B) **Account Ledgers** :-

- (I) Creation of New Individual Ledger
Ledger creation in Normal Mode
Ledger creation in Advanced mode

Alteration of individual ledger, Specifying closing stock value Opening balance entries

- (II) Creation of Multiple Ledgers - Alteration of Multiple Ledgers
- (III) Copying Masters -
 1. Copying groups from one company to another
 2. Copying Individual group
 3. Copying selected / All groups of a company

(C) **Accounts Vouchers** :-

- (I) Vouchers Screen - Vouchers Header - Vouchers Body
- (II) Saving Vouchers- Vouchers Printing-
Creating new Vouchers Type-
-Receipt Vouchers, payment Vouchers, contra Vouchers
-Receipt Vouchers, Sales Vouchers, Panches Vouchers Debit Note Credit Note.

(8)

5. Accounting Reports - (07 Lect.)

Display screen

- (a) Final Account - Balance Sheet, Profit Loss Account
Trial Balance
- (b) Account Books- Cash Book, Bank Book, sales Register,
purchases Register, Journal Register, Debit note Register,
Credit Note Register, Ledger, Group Vouchers,
statement of Account
 - Statement of Account -
 - Outstanding - Receivable, Payable
 - Interest CalculationDay Book.
- (c) List of Accounts
- (d) Bank Reconciliation Statement

6. Inventory Management - (10 Lect.)

1) Inventory Info Menu :-

- Stock Group, Stock Categories, Stock items,
Reorder Levels, Price List, Godown, Voucher
Type, Unit of Measure.

2) (a) Inventory Voucher Entry:-

- Invoicing - Voucher Mode, invoice mode,
invoice entry
 - Taxes and Duties.
 - Discounts.
 - Debit Note and Credit Note.
 - Challans - Delivery Note, Receipt Note,
Rejection In, Rejection Out.
- (b) Printing the Documents

Inventory Report: -

(05 Lect.)

- Stock Summary – Stock item
- Movement Analysis
- Sales and Purchase Order Book
- Godown Category Stock Query
- Sales Order Summary, Purchase Order Summary.
- Reorder Level.
- Sales and Purchase Bills Pending.
- Accounts and Inventory Integration
- Stock Valuation.

Printing and House Keeping

(05 Lect.)

- Print Configuration Screen
- Printing of Vouchers, Day Books
- Registers, Final Accounts and Summary Reports
- Back up and Restoring of Data.
- Security control user password.
- Tally Audit
- Tally Vault
- Safety and Confidentiality of Data.
- Tally Locker

List of Practicals

Create Company M.M.T Ltd. to maintain Financial Accounts only using hypothetical address other details-

The Company maintains its books of accounts from 1st April to 31st March every year.

- a. Make the default selling for printer assuming that the report are printed on the stationery with a letterhead printed on the top which consumes the space of one inch
- b. The Company wants to print the amount in Indian Currency with space between Rs and amount

2. Create a Company Temporary Ltd (Store data in C:\work\temp) having financial year as the accounting year. It is a newly set up Company commenced business from 1st Oct.2002 Other details may be entered as per your assumption, except the Income Tax Number (PAN) upon saving the Income tax number PAN as AABCF02784.

3. Delete the Company created for Temporary Ltd.

4. Created Groups following created for hierarchy shown below-

Debtors-	International
Debtors-	National
Debtors-	South
Debtors-	North
Debtors-	Central

5. Create the following ledger accounts, place under appropriate group (Create new groups whenever necessary)

- Wages paid to factory workers
- Wages paid to temporary workers
- Salary paid to H.O. Employees
- Salary paid to Branch Employees.
- Share capital (Rs. 5,00,000 Cr.)
- Telephone Charges

6. Create the following ledger

Name	Group	Op. Balance Rs.
Khandesh Textiles	Debtors South	5,000 Dr.
Kanpur Textiles	Debtors Central	0
Lucknow Textiles	Debtors North	0
Honda Corporation	Debtors International	0
Jackson Textiles	Debtors International	0

(11)

Bank of Maharashtra	Bank Account	60,000 Dr
Sales Domestic	Sales Account	0
Sales International	Sales Account	0
Purchases	Purchase Account	0
Building	Fixed Assets	6,00,000
Furniture	Fixed Assets	30,000

7. Create a Short life company and copy all the masters from the M.M.T Ltd to the short life company. Select the short life company created and check whether all the masters (Groups and Ledgers) have been copied. Delete the short life Company.

8. **In case of M.M.T. Ltd.**

- a) Create Sales Voucher for credit sales to domestic customers with serial number to be given automatically
- b) Create Receipt Voucher to be given to the domestic customers when they made payment

These Vouchers are printed at the end of the day and the company stationary (with printed Letter Head) for record purposes

9) **Enter the following transactions :-**

- a) Purchase Machinery worth Rs. 15,000 Paid in cash on 10th Oct 2002
- b) Sold old furniture worth Rs 10,000 for Rs 8,000 for cash on 12th Oct. 2002
- c) Paid Salary to Rajesh, The Works Manager, Rs. 18,800 by cheque of Bank of Maharashtra

10) **View the balance sheet of M.M.T. Ltd. as on 31st March 2003.**

11) **View the trail balance as on 31st March 2003.**

12. View the Sales Register for the Period of 1/10/2002 to 31/03/2003.
13. View the Profit and Loss Account.
14. Create a Company New Era Ltd. for Accounts cum Inventory using Hypothetical data.
15. Print Sales Order Reports with the Gross Profit and Profit of Column using data from the New Era Ltd.

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1.5 -ORACLE/D2K

(w.e.f. June 2005)

SQL:

Introduction. Data types in oracle - operators, Working with table. Introduction to DML, TCL, DDL, DCL, Nested table. Varray, object table Integrity constraints. Function in Oracle, Numeric Function, Character Function, Date function, Conversion Function, Group Function

Working with Multiple Tables:

Set Operators. Joins. Inner joins, Equi, Non Equi, Self-joins, and Outer Joins

Sub Queries and Database Objects:

Sub Queries Using Correlated Queries View, Index Partition Sequence. Cluster. Synonyms. Materialized View

Locks:

Locks in Oracle, Concept of Locking Shared Locks, Shared Update Locks, Dead Locks

PL/SQL:

Introduction, PL/SQL Blocks, Advantages of PL/SQL, Control Structure, Nested Blocks

Cursor

Implicit Cursors, Explicit Cursor, Composite Data Type, Table and records

Triggers :

Types of trigger, Enabling & Disabling, Database trigger

Introduction of LOBS:

CLOB, NCLOB, BFILE, BLOB

Commonly Used Tools of Oracle:

WEBDB, TKPROF, EXPORT, IMPORT

D2K

Introduction:

Working with the Form Developer Environment, Working a Basic Form Module Working With Data Blocks And Frame Running the Form Developer Application

Data Blocks:

Data Block wizard, Creating Block Manually, Base Table block and control block, Master Details Blocks,

Working with GUI Controls:

Working with Text Items Creating Additional Input Items, Check

Box, Radio Button, List Item, Creating Non Input Items
Display item Push Buttons, Label and Boiler Plate Graphics

Record Group and LOV:

Working with Record Groups, Creating LOV's, LOV's Wizard, LOV Properties

EDITORS AND ALERTS:

Types of Editors, Alerts, Properties

Property Class and Visual Attributes,

CREATING POPUP, MENU, TOOLBAR, TRIGGER, Trigger Validation

REPORT:

Design and Running Report, Parameter Repon, Group Report, Matrix Report, Tabular Report.

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1.6- Practical

(w.e.f. June 2005)

1.6.1 C++

1. Write a C++ program to print sum of digits.
2. Write a C++ program to implement class and object.
3. Write a C++ program to implement function overloading.
4. Write a C++ program to implement Inheritance.
5. Write a C++ program to implement operator overloading
6. Write a C++ program to implement class template

1.6.2 Internet Fundamentals and Web designing Tools

- 1 Demonstration of Internet Operating
- 2 Web Page Design using simple HTML tags
- 3 Implement lists in web page
- 4 Use of Graphical files in web pages
- 5 Create Tabular Document in Web Page.
- 6 Linking Document with its types
- 7 Use of Frames and its attributes
- 8 DHTML Tags with attributes.
- 9 Use of Cascaded Style sheets with SPAN and DIV tag.
10. Sample Web site

1.6.3 Oracle/ D2K

- 1 Design of Database. Create table. Insert a record. Update the data
- 2 Write a SQL queries using string and date functions.
- 3 Write a PL/SQL block using cursor.
- 4 Write a PL/SQL block using Control statement and error handling sections
5. Create Function.
- 6 Create Simple Data entry Form with Validation.
- 7 Create Master Detail data entry Form
- 8 Design Simple Report
- 9 Design Master detail Report
- 10 Design Matrix Report

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