



North Maharashtra University, Jalgaon

FACULTY OF COMMERCE & MANAGEMENT

Structure & Syllabus of –

Master in Business Management (Computer Management)

MBM (Computer Management)

(w.e.f.: July-2011)

For Newly Admitted Students, from Academic Year 2011-12

- Specializations Offered –

[A] Web Management

[B] Application and Database Management



North Maharashtra University, Jalgaon

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FACULTY OF COMMERCE & MANAGEMENT

STRUCTURE OF MASTER IN BUSINESS MANAGEMENT (COMPUTER MANAGEMENT)

ACADEMIC YEAR: 2011-12

MBM (COMPUTER MANAGEMENT)

Semester-I and II (w.e.f.-July 2011)

Paper	Semester-I A: Credit Courses	Paper	Semester-II A: Credit Courses
1.1	Web Designing & Web Tools	2.1	Object Oriented Programming using C++
1.2	Computer Fundamentals & Operating Systems	2.2	RDBMS with MS-SQL Server
1.3	Programming concepts using C++	2.3	Graphics & Animation
1.4	Financial Accounting for Manager (Tally ERP)	2.4	Information Systems Audit (ISA)
1.5	Principles of Management	2.5	Management Information System & ERP
1.6	Lab - I (1.1 & 1.2)	2.6	Lab – III (2.1 & 2.2)
1.7	Lab – II (1.3 & 1.4)	2.7	Lab – IV (2.3 & 2.4)

Semester-III and IV (w.e.f.-July 2012)

Paper	Semester-I A: Credit Courses	Paper	Semester-I A: Credit Courses
3.1	Software Engineering & Project Management	4.1	Quality Control and Software Testing
3.2	O.B. & HRM	4.2	Functional Elective Paper 3
3.3	Advanced Graphics & Animation	4.3	Functional Elective Paper 4
3.4	Functional Elective Paper 1	4.4	Functional Elective Paper 5
3.5	Functional Elective Paper 2	4.5	Functional Elective Lab - VII (4.1 & 4.2)
3.6	Lab – V (3.1 & 3.3)	4.6	Functional Elective Lab – VIII (4.3& 4.4)
3.7	Functional Elective Lab – VI (3.4 & 3.5)	4.7	Project based on functional elective

**Functional Electives for Semester-III and IV
(w.e.f.-July 2012)**

Functional Elective Paper No.	Subject Code	A (Web Management)	B (Application & Database Management)
1	3.4	Scripting languages	Oracle & D2K
2	3.5	C#.NET	VB.Net
3	4.2	E-Commerce and Website Management	Data Mining & Data Warehousing
4	4.3	ASP.NET	Database Administration & Security
5	4.4	PHP & AJAX	Java



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) (w.e.f. A.Y. 2011-12) Semester I

1.1 Web Designing & Web Tools

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1. Internet

(05)

- Types of Networks-LAN, WAN, MAN , Internet, History & Network Topologies-Star, Bus, Ring Topology
- Basic requirements of internet – Modem, Routers, browsers, gateways, leased lines, ISP,TCP/IP, Transmission Media: Co-axial Cable, Twisted Pair Cable, Fiber Optics, Wireless Communication
- Comparison of live web sites, domain types, Browser compatibility & display resolution
- ISO-OSI seven layer model

2. HTML

(06)

- Introduction : Structure of HTML
- HTML Tags: Text formatting tags, Marquee tags, Changing Background with color and images, Anchor-Internal and External Linking, Image tags, List
- Moving from HTML to XHTML
- Browser compatibility issues
- Considering Connection Speed Differences

3. Planning Site Navigation

(04)

- Create usable Navigation, Text-Based Navigation, Contextual linking,
- Using Graphics for navigation & Linking

4. Working with Tables, Graphics & Color

(03)

- Understanding table basics, using table elements, Formatting Tables
- Understanding graphics file formats, Using , working with images and color, applying background properties

5. CSS (Cascading Style Sheets)

(06)

- Style & Types of styles-Internal/External Style Sheets.
- Using <Div> and
- CSS Font Properties , Creating Font and Text Properties Style Sheets
- Controlling color & image properties with css

6. Working with Frames and Forms

(06)

- Designing effective Frames, Working with FrameSets
- Understanding Form Syntax, Creating input objects- <form>, <input>, <select>, <option>, <textarea>, <button>, <label>, <optgroup>

7. Web Designing Tools

a. Dream Weaver:

(14)

- i. Introduction & Dreamweaver Interface
- ii. Adding content to site: Creating web pages, defining sites, Page Properties, using design template, inserting/presenting text, list, horizontal rules.
- iii. Formatting with CSS: Formatting page, CSS, creating CSS, using external CSS, attaching CSS, page layout with CSS.
- iv. Inserting Objects: Inserting date, Flash Movies, shockwave movie, flash text, flash navigation buttons, behavior linked to objects, script, images.
- v. Layers: Inserting a layer, selecting, formatting managing layers, transforming layer, layer properties, creating nested layers.
- vi. Links: Different types of links, formatting links, creating links, managing links, jump menu.
- vii. Framesets & layout: Creating a Frameset, formatting defining links in a frameset, construction strategy for frameset, defining different layout, different types of layout.
- viii. Tables: Inserting Table, formatting a table, changing the structure of table, page structure using tables.
- ix. Forms: Creating form, Adding objects to the form, Verifying a form validity.

b. Flash CS 3

(06)

- i. Introduction to Flash: Starting the flash program, Interface of Flash Environment, Introduction to Flash Features, Window of Flash
- ii. Scene: Scenes, Inserting new scene, Arranging Scene order, scene editor
- iii. Timelines: Using timelines , timeline properties, inserting keyframes , extending keyframe difference between frames, blank keyframes, keyframes, etc
- iv. Symbols: Types of Symbols, using symbols, linking scène with button symbols
- v. Tools & Graphics: ToolBar Palette, Selection, Direct Selection, pencil, Brush, eraser, Magnifier, text, ink bottle, paint bucket, gradient, lasso, eyedropper, hand, shape, transform tool with options etc

REFERENCE BOOKS:

- 1) Textbook of Web Designing By Joel Sklar, Cengage Learning Publication 2009
- 2) Web designing in Nut Shell (Desktop Quick Reference) by Jennifer Niederst ublication – O'Reilly publication
- 3) Designing web navigation by James Kalbach Publication – O'Reilly publication
- 4) How to become web master in 14 days Publication – Techmedia publication
- 5) The Web collection revealed premium edition : Dream weaver CS4 & Photoshop CS4 by Sherry Bishop, Jim Shuman, Elizabeth Eisner Reading, Delmar, Language Learning
- 6) Local & Wide Area Network By Michael Palmer and Robert Bruce Sinclair, Thomson Publications
- 7) Web Enabled Commercial Application Development using HTML, DHTML, Java Script, PERL,
- 8) CGI By Ivan Bayross, BPB Publication
- 9) Flash MX BIBLE (By BPB Publisher)



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M.B.M. (C.M.) (w.e.f. A.Y. 2011-12) Semester I

1.2 Computer Fundamentals & Operating Systems

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1) Computer Fundamentals (6)

Definition, types of computer, characteristics & block diagram of computer.

Input - Keyboard, mouse, scanner, web camera

Output - Printer- dot-matrix; Inkjet & laser, monitor, Speakers

Storage -HDD, CD, Pen drive & DVD, Blue-ray, Memory Card

Machine language, Assembly language, High level language & 4 GL.

2) Introduction to viruses & vaccines and Communication (6)

a) Meaning of viruses

b) Effects of viruses

c) Role of antivirus, spy ware & firewall.

d) Types of Communication: simplex, duplex

3) Hardware and Software Installation (6)

a) Installation of I/O device, Web camera, Scanner, printer (including network printer)

b) Operating systems Installation & Configuration: Windows vista/XP

c) Installation of MS- Office, Anti Virus

d) BIOS Configuration

4) Introduction to System Software (8)

a) System Software- Definition, Components of System Software

b) Operating System: Meaning, Need for Operating system

c) Types of Operating Systems-Single user, Multi-user, simple and batch processing,

Multitasking, Distributed system, Real time System, OS functions and Services

5) Concept understanding of Process Management, CPU scheduling, Memory Management, Storage Management (8)

6) Introduction to Linux Operating System (8)

a) Study of file system, Features of Linux, Linux Distributions

b) XWindows - GNOME, KDE, Shells and Types-BSh, BASH, CSh,KSh, Environmental variables of Bash shell.

c) Basic commands: pwd, cd, ls, more, less, head, tail, cat, echo, clear, kill, ps, find, grep, man, chmod, cal, date, cut, paste, who, who am I, wall, wc, pr, mkdir, rmdir, rm, sort, tar, tty, users, groups, cmp

d) Control structure and looping statements for shell.

7) Introduction to Windows Operating System

(8)

- a) Comparison of Windows Products
- b) Design Goals: Extensibility, Portability, Reliability, Compatibility, Performance
- c) Memory Management, Processor Management, Device Management, File Management, Network Management, Security Management, User Interface

REFERENCE BOOKS:

1. Fundamentals of Computer by V. Rajaraman.
2. Computer Fundamental by P. K. Sinha.
3. System Programming and Operating Systems - D. M. Dhamdhare - Tata McGraw Hill
4. Operating system concepts - Peterson Silberschatz - Addison Wesley.
5. Operating System, By S.R.Sathe & Anil S.Mokhade - MacMillan Publication.
6. Operating System Concepts- A. Silberzchaz & P.B. Galvin, Addison Wesley
7. Operating System - Achyut Godbole - TMH Publications
8. Complete Guide to Linux By Peter Norton, Techmedia Publication
9. The Complete Reference Red Hat Linux By Richard Petersen, Tata McGraw Hills Publications
10. Operating Systems By Flynn/McHoes, Cengage Learning Publication



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M.B.M. (C.M.) (w.e.f. A.Y. 2011-12) Semester I

1.3 Programming concepts using C++

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1. Introduction to C++ (4)

History of C++, advantages of C++, Difference between C++ and old programming Languages

2. Data types, operators, expression and control structure: (8)

Character set, tokens, identifiers, keywords, variables, operators, Control flow statements, expressions and qualifiers, operator precedence and associativity

3. Array, strings (6)

Arrays, multidimensional array, strings, array of string, string functions.

4. Structures and Union (8)

Structure declaration and definition, use of structure and union, difference between structure and unions.

5. Function (8)

Function component, parameter passing – pass by value, pass by address, pass by reference, inline function, scope and extent of variables, recursive function,

6. Pointers (8)

Introduction to pointers, uses of pointers, address variable, pointer variable, pointer to function, void pointer, memory management operator, object to pointer (vice versa)

7. Preprocessor directives (6)

#define, defining like macros, #error, #include

References:-

K.R. Venugopal, Rajkumar, T. Ravishankar, Mastering C++, TMH.

Balguruswamy, Object Oriented Programming C++, TMH



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M.B.M. (C.M.) (w.e.f. A.Y. 2011-12) Semester I

1.4 Financial Accounting for Manager (Tally ERP)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

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- 1) Basic Concepts: (06)**
a) Accounting Concepts & Conventions.
b) Accounting Standards : As 1, As 2, As 3, As 4, As 5, As 6, As 7, As 8, As 9, As 10
- 2) Elements of Accounts: (10)**
a) Types of Accounts
b) Journals, Ledgers, Trial Balance, Cash Book
c) Adjustment Entries and Final Account of Sole Traders
- 3) Rectification of Errors (04)**
- 4) Bank Reconciliation Statement: (06)**
Need, Causes of Disagreement, Preparation of Bank Reconciliation Statement
- 5) Tally Accounting Package (20)**
a) **Introduction To Tally :**
i) Features Of Tally Software (ERP)
ii) Starting Tally - Gateway Of Tally And Exit From Tally
iii) Company Creation In Tally, Saving The Company Profile, Alteration / Deletion Of Company, Selection Of Company
iv) Account Groups And Ledgers
v) Hierarchy Of Account Groups And Ledgers, Reserved Account Groups,
vi) Account Groups Of Balance Sheet – Account Groups Of Liabilities & Assets
vii) Account Groups Of Profit & Loss Account - Account Groups Of Direct Income And Direct Expenses Apart From Sale And Purchases, Indirect Income And Indirect Expenses
viii) Account Masters - Account Groups Creation And Account Ledgers Creation
ix) Feeding Of Opening Balances
x) Alteration / Deletion Of Account Master Records
xi) Feeding Of Closing Stock Value
- b) **Tally: Voucher Entry**
i) Types Of Vouchers In Tally - Contra, Receipts, Payments And Journal
ii) Entering Account Voucher - Sales, Purchases, Debit Note, Credit Note, Incomes, Expenses, Voucher Modification, Saving The Voucher
iii) Voucher Alteration, Deletion And Cancellation, Single Mode Voucher Entries, Account Voucher Printing - Online Voucher Printing, Multi Voucher Printing
iv) Displaying Voucher List, Day Book, Ledger
v) Extracting Daybook Summaries

c) Tally: Trial Balance And Final Accounts

- i) Extracting Detailed Trial Balance, Exploded Trial Balance And Ledgerwise Trial Balance
- ii) Extracting Balance Sheet - Primary Balance Sheet , Detailed Balance Sheet
- iii) Closing Stock Value Entry Through Balance Sheet
- iv) Extracting Profit And Loss Account - Detailed Form And Vertical Form,
- v) Extracting Income And Expenditure Statements For Non-Trading Units

6) Introduction to Stock Management

(4)

REFERENCE BOOKS:

1. Fundamentals of Accounting, S.N & S.K Maheshwari – Vikas Publications
2. Advanced Accountancy – Shukla & Grewal – Sultan Chand & Sons
3. Advanced Accountancy – Tulsian – Tata McGraw Hill
4. Financial Accounting – Ashok Banerjee – Excel Books
5. Implementing Tally 9, Comprehensive Guide – A. K. & K. K. Nandani, BPB Publishers, New Dehli
6. Tally 9.2 □ Comdex Publisher
7. Practical Approach towards Tally 8.1 & 9 S. H. Sharma , Siddhant Prakashan, Aurangabad



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) (w.e.f. A.Y. 2011-12) Semester I

1.5 Principles of Management

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1) Nature & Development of Management (06)

- a) Management: Concept, Nature, Importance
- b) Evolution of Management: Introduction to Scientific Management by Taylor, Administrative Management by Fayol, Contribution of Peter Drucker

2) Management Functions - I (12)

- a) Functions of Management, Levels of Management, Managerial Skills & roles
- b) Planning: Nature, Scope, Objective and Significances of Planning, Key factors to planning, Types of Plans, Process of Planning.
- c) Decision Making – Types of Decision , decision making processes, Individual Vs Group decision making, Information Technology & Decision Making

3) Management Functions □ II (12)

- a) **Organizing: Concept, Organization Structure, Forms of Organizational Structure, Departmentation-** need, importance & bases of Departmentation, Span of Control - Determination of factors affecting Span of Control, Delegation of Authority, Authority & Responsibility, Line & Staff, and Formal & Informal Organization.
- b) Staffing: Concept, Manpower Planning.
- c) Directing: Concept, Direction and Supervision, Importance of Directing, Principles of Directing.
- d) Coordination – Need & Importance, Coordination & Cooperation,
- e) Controlling : Concept, Types of control.

4) Management Practices (05)

Concepts of – Kaizen, Six Sigma, Theory Z, SWOT analysis, Business Process Outsourcing, Knowledge management

5) Organizational Communication Skills (15)

- a) Meaning & Importance of Organizational Communication
- b) Internal communication: Notice, Circular, Memo.
- c) External Communication – Enquiries, Quotations, Bank & Financial Institutions
- d) Letter writing: Layout of Business letter, types of layouts, Essentials of Good Business letters, Attitude in Business writing
- e) Purpose of letters: Resume, Application
- f) Reading Skills: Rapid Reading, Comprehension.
- g) Speaking Skill: Speech-preparation, Guidelines for Effective speech
- h) Listening Skill: Importance, Process, and Barriers & Guidelines for Effective Listening.
- i) Presentation Skill: Types of Presentations, Propositions about presentations, Types of delivery, Process of Preparing & Delivering.

- j) Interview : Types, Preparation, Conducting and Appearing for interview
- k) Drafting Skills: Documents, Policies, Procedures, Rules, Note taking etc.

REFERENCE BOOKS:

1. Koontz – Principles Of Management (Tata Mc Graw Hill, 1st Edition 2008)
2. Stoner , Freeman & Gilbert Jr – Management (Prentice Hall Of India ,6th Edition)
3. Robbins & Coulter – Management (Prentice Hall Of India,8th Edition)
4. Robbins S.P And Decenzo David A. – Fundamentals Of Management : Essential Concept And Applications (Pearson Education ,5th Edition)
5. L.M.Prasad – Principals Of Management (Himalaya Publications)
6. Dr. Manmohan Prasad – Management – Concepts & Practices (Himalaya Publications)
7. Weihrich Heinz And Koontz Harold – Management : A Global And Entrepreneurial Perspective (McGraw Hill 12th Edition 2008)
8. Business Communication for Managers By Penrose / Rasberry / Myers, Cenage Learning.
9. Business Communication by Raman & Singh, Oxford Publication.
10. Business Communication – C.S. Raydu – Himalaya Publishing House



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FACULTY OF COMMERCE & MANAGEMENT
M.B.M. (C.M.) Semester I

1.6 Lab - I (1.1 & 1.2)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100
[Required Lectures: 50 hours]

1.1 Web Designing & Web Tools

- 1) Developing a web page using
 - a) Basic HTML tags
 - b) List , Hyperlinks
- 2) Develop a web page
 - a) Tables
 - b) Forms
- 3) Design a web page using
 - a) Frames
 - b) CSS
 - i) Demonstrate Internal CSS
 - ii) Demonstrate External CSS
- 4) Develop a web page using Dream Weaver.
- 5) Create website using flash elements in Dreamweaver
- 6) Develop fully integrated web site using XHTML & Flash CS-3 & Dream weaver.

1.2 Computer Fundamentals & Operating Systems

- 1) Demonstration of basic operation of XP like file handling, device mgt etc.
- 2) Write a program to calculate total swap time.
- 3) Demonstration of Linux commands with attributes:
pwd, cd, ls, more, less, head, tail, cat, echo, clear, kill, ps, find, grep, man, chmod, cal, date, cut, paste, who, who am I, wall, wc, pr, mkdir, rmdir, rm, sort, tar, tty, users, groups, cmp
- 4) Write a shell script to display first 20 terms of Fibonacci series.
- 5) Write a shell script to display message according to current time.
- 6) Write a shell script to create two separate file for even and odd lines from given file.



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1.7 Lab - II (1.3 & 1.4)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100
[Required Lectures: 50 hours]

Practical assignments on 1.3 Object Oriented programming using C++

- 1 Program using various arithmetic operators
- 2 Program using control statements (if, if else, nested if, switch)
- 3 Program using various looping structure (for, while, do while, nested loops)
(Programs like prime number, factorial of a number, Fibonacci series)
- 4 Program using arrays (One dimension, Two dimensions)
- 5 Write a program to demonstrate use of function (call by value, call by reference, recursive)
- 6 Write a program to demonstrate use various string function
- 7 Write a program to demonstrate use structure and union

Practical assignments on 1.5 Tally 9.2

1. Creation of company, Alter and Shut Company, Delete the existing company and show the company details.
2. Creation of Groups, Alter the Groups and deletion of Group and Display Groups.
3. Creation of Ledger A/c's, Display and Alter the Ledger A/c's, Deletion of Ledger a/c's.
4. Demonstrate different types of voucher entries and display Profit & Loss A/c and Balance Sheet.
5. Creation of stock groups, stock Item and also stock category with unit of measurements.
6. Creation of Purchase order and sales order.
7. Demonstrate of Value Added Tax (VAT) using Voucher Entry.
8. Showing Ledger wise Trial-Balance of a Company
9. Showing detailed Profit & Loss Account & balance Sheet of a Company
10. Showing Income & Expenditure Statements for Non Trading Concerns.



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester II

2.1 Object Oriented Programming using C++

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1) Introduction

(02)

History of C++, Structured Vs Object oriented development, OOP's Features-Object, Classes, Data Encapsulation & Abstraction, Delegation, Inheritance, Polymorphism, Message Communication.

2) Classes and Objects

(08)

Class Specification, Defining Members, Object, Access Specifier, Constructors, types of Constructors, destructor, Friend Class and Friend Function

3) Inheritance

(06)

Types of Inheritance, Member Accessibility, Visibility Modes, Virtual Base Class, Benefits of Inheritance, Virtual & Pure Virtual functions, Abstract class.

4) Operator Overloading

(06)

Rules, Unary & Binary Operator Overloading using friend functions, without using friend functions

5) Templates & Exception Handling

(04)

Class template, Function template, Exception handling constructs.

6) Stream Computation

(06)

Stream Computation with console, Streams computations with Files.

7) Introduction to Data Structure

(18)

Definition and application of – Array, Stack, Queue, Link List, Tree and Graph

REFERENCE BOOKS:

1. Mastering C++ by K R Venugopal, Rajkumar, T Ravishankar, Publication - TMH
2. Exploring C++ by Yashwant Kanetkar
3. Object Oriented Programming using C++ by W. Balguruswamy, Publication - TMH
4. The C++ Programming Language by Bjarane Stroustrup,
5. Data Structures – TMH Publications.



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester II

2.2 RDBMS with SQL Server 2008

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

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- 1) Database Systems (02)**
- a) Definition of DBMS & RDBMS
 - b) File processing system Vs DBMS
 - c) Limitation of file processing system
 - d) Advantages and Disadvantages of RDBMS
 - e) Database Users
- 2) Data Models (03)**
- a) Relational Model
 - b) Network Model
 - c) Hierarchical Model
 - d) Entity Relationship Model
- 3) Entity Set (03)**
- a) Attribute
 - b) Relationship Set
 - c) Entity Relationship Diagram (ERD)
 - d) Keys: Super, Candidate, Primary, Foreign Key
- 4) Relational Database Design (06)**
- a) Introduction
 - b) Anomalies of un normalized database
 - c) Normalization
 - d) Normal Form: 1 NF, 2 NF, 3 NF
- 5) SQL (Structured Query Language) (02)**
- a) Introduction
 - b) Basic Structure
 - c) DDL Commands
 - d) DML Commands
- 6) Introduction to SQL Server 2008 (08)**
- a) New features of SQL Server 2008 - Intellisense, Encrypting Databases, Auditing All Actions, Data Type Enhancements, Processing of delimited strings, Plan Freezing, Resource governor, Filtered indexes, compression editing, Auditing, C like math syntax, Inline variable assignment, Plug-in model for SSMS, Managing Workloads with Resource Governor, Managing Performance with the Data Collector, Managing Performance with Plan Freezing
 - b) Preparing for SQL Server 2008, Data Mining with SQL Server Analysis Services
 - c) Data Types

- d) Creation of database
- e) Databases: Files, File groups
- f) Modifying database

7) Creating tables and enforcing data Integrity (04)

- a) Creating table using different constraints like Primary Key, Foreign Key, Check, NULL, NOT NULL
- b) Alter Table, Drop Table & Truncate Table

8) Database Functions and Operators (04)

- a) Aggregate functions
- b) Date time functions
- c) String functions
- d) Arithmetical functions
- e) Operators: Logical and Relational

9) Joins and Subqueries: (5)

- a) Joins: Equi , Self, Inner, Outer Join
- b) Subqueries: using IN, EXISTS and nested subquery

10) Stored Procedures and functions (06)

- a) Benefits & Types of Stored Procedures
- b) Types of parameters
- c) Executing & Deleting Stored Procedures
- d) Creating, using and deleting functions

11) Triggers (05)

- a) Types of triggers including DDL & DML Trigger
- b) Creating, Viewing, Modifying and Deleting Triggers

12) Error Handling: (02)

Using @@ERROR function, RAISERROR statement, TRY...CATCH Statement
Note: Topics from topic no. 6 and onwards (with practical) should be taught using SQL Server.

REFERENCE BOOKS:

1. Database System Concepts :- Abraham Silberschatz, Henry F. Korth & S. Sudarshan, McGraw-Hill
2. SQL Server 2008 in Simple Steps by Kogent Learning Solutions Inc., Dreamtech Press Publication
3. SQL Server 2008 Programming – Rob Vieira – Willy Wrox
4. Microsoft SQL Server 2008 Bible , TMH
5. SQL Sever 2008,The complete Reference, TMH
6. SQL Server 2008 Blackbook, BPB Publishers



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FACULTY OF COMMERCE & MANAGEMENT
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2.3 Graphics & Animation

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100
[Required Lectures: 50 hours]

(Using Photoshop & Corel Draw)

- 1) (04 Hrs)
Exploring the Adobe Photoshop CS4 Environment
 - Explore the Photoshop interface
 - Explore the Navigation Tools
 - Customize the Workspace
 - Explore Adobe Bridge
 - Use Photoshop Help

- 2) (03 Hrs)
Determining Resolution and Graphic Type
 - Differentiate between Raster and Vector Graphics
 - Understand Image Resolution

- 3) (03 Hrs)
Working with Selections
 - Create a Selections , Save ,Modify
 - Apply Color to a Selection

- 4) (03 Hrs)
Working with Layers
 - Create Layers
 - Work with Type Layers , • Transform Layers , Apply Layer Styles , • Manage Layers

- 5) (02 Hrs)
Enhancing Images with Paint and Filters
 - Paint on an Image
 - Apply Filter Effects

- 6) (02 Hr)
Exploring Image Modes and Color Adjustments
 - Explore Grayscale and Bitmap Modes
 - Explore Color Modes

Corel Draw X4

- 7)
Introduction to CorelDRAW Graphic Suits X4 (02 Hrs)
- CorelDRAW Graphics Suite X4 Applications
 - New and enhanced features in CorelDRAW Graphic Suite X4
- 8)
Getting Started with CorelDRAW (04 Hrs)
Workspace of CorelDRAW Application Window
- Drawing Basic Geometric Figures
 - Previewing a Drawing
 - Viewing a Drawing in Different Views
 - Working with Page Layout.
 - Help in CorelDRAW
- 9)
Overview of drawing tools. (03 Hrs)
- Freehand Tool
 - Rectangle Tool
 - Ellipse Tool
 - Polygon, Spiral & Graph Paper Tools
- 10)
Working with Shapes (05 Hrs)
- Modifying Basic Objects.
 - Working with Grids and Guidelines .
 - Applying Convert to Curve Command on Object.
 - Modifying Shape of an Object by Applying Distortions.
 - Modifying Shape of an Object by Cropping, Splitting and Erasing it.
 - Modifying Shape Object by using the Fillet Scallop & Chamfer Tools.
- 11)
Editing the object (03 Hrs)
- Deleting, Moving, Scaling, Rotating & Skewing
 - Shape Tool
 - Knife Tool
 - Erase Tool
 - Smudge Tool
 - Roughen Tool
- 12)
Working with Text (03 Hrs)

Types of Text , Converting Text from One Type to Another , Changing the Appearance of Text , Applying Effects to Text , Converting Text to Object using Curve Command Working with Text in Tables.

13)

Transformation

(03 Hrs)

Transformation (Mirror) of object and combine it, Transformation (Rotation), to make a flower

14)

Advance tools

(06 Hrs)

Outline Tool:

- Outline Pen, Outline Color, No Outline, Outline Thickness
- Convert to curve , Convert Outline to object
- Delete, Symbol, Duplicate, Duplicate an object
- Clone, Copy Properties From
- Simple Wireframe , Wireframe

Color Fill Tool:

- Fill Color, Fountain Fill, Pattern Fill, Texture Fill, PostScript Fill

15)

Interactive Tool

(04 Hrs)

a) Interactive Blending Tool b) Interactive Contour Tool c) Interactive Distortion Tool
d) Interactive Envelope Tool e) Interactive Extrude Tool

Reference

CorelDRAW X4 in Simple Steps – Dreamtech press



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester II

2.4 Information Systems Audit (ISA)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1. Overview of Information Systems Auditing – Need for Control and Audit of Computers, Effect of Computers on Internal Controls, Effect of Computers on Auditing, Foundations of IS Auditing (5 Lectures)
2. Conducting an Information Systems Audit – Introduction, The Nature of Controls, Dealing with Complexity, Audit Risks, Types of Audit Procedures, Steps in Audit, Auditing Around or Through the Computer, introduction to Security Standards – ISO 27001 (6 Lectures)
3. Top Management Controls and Systems Development Controls – Evaluation of Planning, Organizing, leading and Controlling functions, Approaches to Auditing Systems Development, Models for Systems Development, Evaluating Major Phases in Systems Development Process (6 Lectures)
4. Programming Management Controls – Program Development Life Cycle, Programming team organization, Managing the Programming Group (5 Lectures)
5. Data Management Controls – Functions and motivations of DA and DBA roles, Organizational Issues, Data Repository Systems, Control over DA and DBA (6 Lectures)
6. Security Management Controls – Introduction, Conducting a Security Program, Major Security Threats and remedial measures, Controls of last resort – DRP, Insurance (5 Lectures)
7. Input / Output and Operational Controls – Data preparation and entry, Production control, Library, Documentation and Program Library, Help desk and Technical Support, Capacity Planning and Performance Monitoring, Managing Outsourced operations, Check Digits, Batch Controls, Audit Trail Controls, Exposures in Communication subsystem, Controls over the Subversive Threats, OS Integrity Checking, Built in validation checks in Software, Online output Production and Distribution Controls (11 Lectures)
8. BCP and Cyber Crimes – Difference between BCP and DRP, Social Engineering, Data Diddling, Denial of Service attack, Sniffing, Man in Middle attack, Identity Theft and spoofing – Phishing, Pharming, SQL Injection, Zeroth Day Attacks. (6 Lectures)

Reference Book –

1. Information System Control and Audit – Ron Weber – Pearson Education
2. Information System Audit and Assurance – D.P. Dube and V.P. Gulati – Tata McGraw Hill
3. ISACAs IT Audit standards –



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) (w.e.f. A.Y. 2011-12) Semester II

2.5 Management Information System & ERP

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

-
- 1. Fundamentals of Management Information Systems (08)**
- 1.1. Concepts, Classification & Value of Information
 - 1.2. Information System : Open & Closed
 - 1.3. Management Information System
 - 1.3.1. Definition, Concepts & Meaning
 - 1.3.2. Components & Activities
 - 1.3.3. Types – Operation support system & Management support systems
 - 1.3.4. Control systems – Feedback & Feed forward systems
 - 1.3.5. MIS planning process – Steps in planning
 - 1.3.6. MIS design & Development Process – Phases
 - 1.3.7. Components of MIS
 - 1.4. MIS vis-à-vis Computer, Academics & Users
 - 1.5. MIS vis-à-vis Information Concepts , System Concepts
- 2. Process of Management Information System (08)**
- 2.1. System Analysis & Design
 - 2.1.1. Introduction & Need for System analysis
 - 2.1.2. System analysis of a new requirement
 - 2.1.3. Structured systems analysis & Design (SSAD)
 - 2.2. Development of MIS
 - 2.2.1. Introduction & Contents of MIS Long range plans
 - 2.2.2. Determining the information Requirement
 - 2.2.3. Management of Quality in the MIS
 - 2.2.4. Factors contributing in the Success & Failure of MIS
- 3. Application of Management Information System (10)**
- 3.1. Business Processes : Primary, Supportive & Administrative
 - 3.2. MIS in functional area
 - 3.2.1. MIS & Manufacturing sector
 - 3.2.2. Marketing Information System
 - 3.2.3. Accounting Information system
 - 3.2.4. Human Resource Information System
 - 3.3. Transaction Processing System
 - 3.4. Concept of Knowledge Based Expert System
 - 3.5. Concept of Artificial Intelligence
 - 3.6. Knowledge Management: Concepts , Benefits & Application
- 4. Support System (06)**

- 4.1. Decision Support System (DSS): Concept, Philosophy, Characteristic, Classes, Users of DSS
- 4.2. Executive Support System (ESS) : Introduction, Components & Architecture
- 4.3. Office Information System: Document management & Communication system

5. Enterprise Resource Planning (08)

- 5.1. Concept/System
- 5.2. Drivers for implementing ERP
- 5.3. ERP architecture
- 5.4. ERP Solution Structure: Business operations, Technology & Implementation
- 5.5. Benefits of ERP
- 5.6. ERP Selection: Vendor evaluation, Technology evaluation & Solution evaluation
- 5.7. ERP Implementation: Customization & Precautions
- 5.8. Problems encountered with ERP
- 5.9. Service process optimization: Service processes & its benefits
- 5.10. ERP in the twenty-first century

6. ERP – Technologies & Application (06)

- 6.1. Material Requirement Planning (MRP-I)
- 6.2. Manufacturing Resource Planning (MRP-II)
- 6.3. Business Process Re-engineering
 - 6.3.1. Meaning, Necessity & Principles
 - 6.3.2. Application of re-engineering
 - 6.3.3. Three R's – Rethink, Redesign & Retool
 - 6.3.4. Quality & re-engineering
 - 6.3.5. Benefits & Limitations of re-engineering
- 6.4. Geographical Information Systems (GIS)

7. ERP Case Studies: Post implementation review of ERP Packages in Manufacturing, (04)

Services, and other Organizations

REFERENCE BOOKS:

- 1) Management Information System by Jawadekar – Tata McGraw Hill
- 2) Management Information System by Arora – Excel Books
- 3) Management Information System by Davis & Gordon - Tata McGraw Hill
- 4) Management Information System by James O'Brian & George M Marakas - Tata McGraw
- 5) Management Information Systems Managerial Perspectives- D P Goyal – Macmillan
- 6) Management Information Systems – S. Sadagopan- PHI
- 7) Business Process Reengineering by K Sridhar Bhat – Himalaya Publishing House
- 8) Management Information System by C S V Murthy – Himalaya Publishing House
- 9) Enterprise Resource Planning by Alex Leon - Tata McGraw Hill
- 10) Enterprise Resource Planning (Concept & Practices) by Garg, Venkitkrishnan – PHI



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) (w.e.f. June 2012) Semester II

2.6 Lab - III (2.1 & 2.2)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

2.1 Object Oriented Programming using C++

1. Write C++ program to demonstrate the use of function.(call by value & call by reference)
2. Write a C++ program to demonstrate function overloading
3. Write a C++ program to demonstrate operator overloading using friend function.
4. Write a C++ program to demonstrating the use of constructors and destructor
5. Write a C++ program to demonstrate the Single & multiple inheritances.
6. Write a C++ program to demonstrating Pointers to Function & Pointer to object
7. Write a C++ program to demonstrate the use of virtual function
8. Write a C++ program to demonstrate the concept of function template & class template.
9. Write a C++ program to demonstrate Exception Handling
10. Write a C++ program to demonstrate File handling.

2.2 RDBMS & SQL Server

1. Demonstration of creating database and table.
2. Defining different types of database constraint.
3. Manipulation of data.
4. Query based on operators and joins
5. Simple and nested query
6. Demonstration of stored procedures and triggers
7. Creating DML & DDL triggers
8. Demonstrate the Use of @@error & RAISERROR



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FACULTY OF COMMERCE & MANAGEMENT

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2.7 Lab - IV (2.3 and 2.4)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Practical course on 2.3 Graphics and Animation

1. Study of Photoshop Interface and Various Tools.
2. Create a Photoshop design based on Resolution and sizes
3. Create a Photoshop design with Multiple Layers. Apply effects like transparency, feather effects.
4. Create a design in Photoshop with mixed contents from multiple images.
5. Create a design in Photoshop and change the actual colors. (Black and white image to Color Image)
6. Study of CorelDraw Interface and Various Tools.
7. Create a Design in CorelDraw by Converting a shape into curves.
8. Create a Design in CorelDraw use tools like Blend, Shadow , Transparency, Lens. Contour, Distortion
9. Create a Design using fill, outline, transformation , text shaping tools.

Practical Course on 2.4 : ISA

Study any organization which is using information system for various organizational, computational and information security aspects. Also Identify information security threats and suggest remedies. Prepare study report. Group size is maximum 4 students.

Note - Exam will be conducted on the basis of study report



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

3.1 Software Engineering & Project Management

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1. Introduction to Management
2. Software Engineering Process, SW Engineering Project Management
3. System Concept: Definitions, Types, Characteristics of system
4. Software Engineering: Definition
5. Role of Software Engineer / System Analysts / Users in the various phases of Systems Development Life Cycle
6. Phases of SDLC
7. Software Process Models: Waterfall Model, Spiral Model, Prototyping, RAD, Component based Model, Object Oriented, 4GL, WebE Process Model
8. Planning a Software Engineering Project, Software Cost and Size estimation.
9. Organizing a Software Engineering Project, Staffing a Software Engineering Project
10. Requirement Engineering, Requirement Elicitation Process, Documenting Software Requirement Specifications, , Process Modeling – Data Flow Diagrams, UML
11. Software design,
12. Documentation Techniques- System Flow Charts, Functional Decomposition Diagrams, Structured Flow Charts (N-S Diagrams), Logic Representation Techniques - Decision Trees, Decision Tables, Pseudo code and Structured English
13. Users Interface Design: Menu, Screen and Report Layout Designing
14. Data Codification Schemes, Designing Code-less systems
15. Software design and implementation: Functional/process oriented design, bottom up design, Object oriented Design,
16. Implementation strategies -top-down, bottom-up, testing and debugging
17. Introduction to Computer Aided Software Engineering (CASE)
18. Introduction to Reverse Engineering

References:

1. Software Engineering Project Management, Thayer, 2nd Edition, Wiley Student Edition
2. Software Engineering Practitioner's Approach – Roger Pressman, McGraw-Hill H.E.
3. Software Engineering, 6th Edition., Ian Sommerville, Addison Wesley,
4. Systems Analysis and Design – Elias Awad



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

3.2 O.B. & HRM

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

-
- 1) **Introduction** (6)
 - a) Definition of O.B,
 - b) Key elements of O.B.
 - c) Nature & Scope of O.B.
 - d) Disciplines contributing to O.B.

 - 2) **Individual Perspective** (9)
 - a) Personality. Concept. Determinants and Types, How Personality influences O.B
 - b) Attitudes. Types, Components & Functions. Attitudes & O.B.
 - c) Concept of Job Satisfaction.
 - d) Perception. Definition, Basic Elements, Factors Influencing Perception, Attribution.
 - e) Learning: Meaning and determinants.

 - 3) **Interpersonal Relationship** (9)
 - a) Developing interpersonal relations
 - b) Conflict. Meaning, Sources, Types.
 - c) Intrapersonal Conflict - Role Identity, Role Perception, Role Expectation, Role Conflict.
 - d) Interpersonal Conflict (Transactional Analysis and Johari Window)
 - e) Aspects of Conflict (Functional and Dysfunctional)
 - f) Conflict Management

 - 4) **Group Dynamics** (6)
 - a) Groups in Organization, Nature, Membership, Process of Group Development, Types of Groups, Group structure
 - b) Group Norms, Group Conformity, Group Cohesion, Group Size, Group Think, Group Shift.
 - c) Group dynamics & Inter-group dynamics

 - 5) **Motivation** (10)
 - a) Meaning
 - b) Types of Motives
 - c) Theories of Motivation
 - i) Hierarchy of needs Theory
 - ii) Theory X and Theory Y
 - iii) Motivation-Hygiene Two Factor theory
 - iv) Goal Setting Theory
 - d) Motivation applied - Financial and non-Financial motivators

6) Leadership

(10)

- a) Meaning , Functions, Styles, Traits of Leadership
- b) Fielders Leadership Contingency theory
- c) Path Goal Theory
- d) Charismatic Leadership Theory
- e) Ohio State Leadership Quadrants and Management Grids

7) Change management and Development

- a) Why organization changes? Planned change, Resistance to change, Managing resistance to change
- b) Meaning of Organization development, Characteristics, Objectives
- c) Work Stress: Meaning of stress, Nature and sources of stress, consequences of stress, coping strategies for the stress, stress and task performance

8) Human Resource Management

- a) Definition, Need of HRM
- b) Functions of HRM
- c) HRM in IT Industry
- d) Best Practices in HRM

Reference Books

1. Organization Behavior – K. Ashwathappa, Himalaya Publications
2. Organization Behavior – V.S.P. Rao, Excel Books
3. Organization Behavior – Suja R. Nair, Himalaya Publications
4. Organization Behavior –Stephen P . Robbins, Pearson
5. Organization Behavior –S.S. Khanka, S.Chand & Sons
6. Organization Behavior –Fred Luthans
7. Human Behavior at Work –Keith Devis
8. Organization Behavior – P G Aquinas, Excel books, New Delhi
9. Organization Behavior – M.N. Mishra, Vikas Publications



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FACULTY OF COMMERCE & MANAGEMENT
M.B.M. (C.M.) Semester III

3.3 Advanced Graphics and Animation

1) Introduction to Animation: (04)

- a) What is Animation, History of Animation
- b) Principle of Animation
- c) Types of Animation & Animation Tech.
- d) Classical Animation, Stop Animation, Clay animation, Frame Animation
- e) Cell Animation.
- f) Components used for designing animation such as light box, Live Shooting, Love Photography, Croma Shoot,
- g) Techniques of story boarding for digital film making
- h) Understanding vector animation
- i) Use of Animation in Industries
- j) Concept of 2D, 3D animation

2) Flash CS3: Flash CS3 Revisited (02)

3) Flash CS3: Working with Graphics: (02)

- a) Grouping of Elements
- b) Working with Text
- c) Creating a static text field, Creating a Dynamic text field, Creating a Input text field, Editing Text Field-Scrolling the Text, Breaking Apart The Text
- d) Working with Library
Importing Library , Library properties, Common Library, Creating own Library
- e) Working with Colors
Color mixer, creating gradients, opacity of gradients, creating custom gradients
- f) Working with graphics
Importing & working with Bitmaps, Jpeg, gif, etc, Break apart

4) Flash CS3: Creating Flash Elements: (06)

- a) Working With Object
- i) Drawings, creating, moving, drag, cutting, copying, and selecting objects.
- b) Transforming Objects
- i) Transforming an object freely, Distorting an object, Modifying an object with envelope modifier, Scaling an object, Rotating & skew an object, Flipping an object, restoring a transformed object.
- c) Working With Symbol & Instances
- d) About the symbol, creating and deleting symbols, duplicate and modify an instance of a symbol
- i) Types of Symbol- Movie clip, Button, Graphic

- ii) Creating Dynamic Buttons, editing buttons, converting an existing into a movie clip, placing movie clip symbol inside the button symbol.
- e) Marking Positions - What is Onion Skinning & its Types & uses.

5) Flash CS3: Working with Layers: (06)

- a) Introduction to layers, Hide & Show Layers ,Lock a Layer, Add and name layer, change the orders of layers, organize layers in folder.
- b) Type of Layers-Guide layer, Mask layer, layer properties
Masking Animation, Masking Frame by Frame

6) Flash CS3: Tweened Animation: (05)

- a) Motion Tween Animation
- i) Creating motion tween-setting the property of tweening object,additional tween on existing layer
- ii) Editing the motion path of an tween – changing the position, location, deleting the motion path, applying motion preset,
- b) Shape tween Animation: Creating shape tween-setting the property of tweening object, additional tween on existing layer
- c) Applying Path, orient to path
- d) Frame by Frame Animation:Creating frame by frame animation

7) Flash CS3: Effects: (03)

- a) Timelines Effect
- b) Using Alpha, Blur, Glow, Bevel, Drop Shadow
- c) Adding effects to Buttons

8) Flash CS3: Action Script (04)

- a) Introduction to Flash Action Script
- b) Add a script to button by using script assist mode
- c) Add frame scripts to timeline by using script assist mode
- d) Add a frame script to the title movie clip

9) Flash CS3: Action Script:

a) Action Script: Adding Interactivity (04)

- i) Setting up your workspace
- ii) Name button instances ,Add a scene, Move between buttons with the stop() action .
- iii) Link the buttons to the scene
- iv) User behaviour to play an MP3 file

b) Create a form with conditional logic: (08)

- i) Add an input text field to collect from data
- ii) Add submit button to the form
- iii) Add an error() message
- iv) Add a confirmation message
- v) Add a stop() action
- vi) Add conditional logic for the submit button
- vii) Write a function for Try Again button

10) Flash CS3: Working with Sound & Video (02)

- a) Working with sound: Importing Sound file, adding sound to the timeline, adding sound to button, editing sounds,

b) Working with Video: Importing & Editing a video file

11) Flash CS3: Flash Web Templates (03)

a) Creating Interactive Webpage

b) Optimizing Movies & Exporting movies for the web exporting files

12) Flash CS3: Publish flash documents (02)

a) Using different publishing formats

b) Using publishing profiles

c) Adding flash player detection

d) Publishing for deployment

13) Introduction to 3D graphics with 3Ds Max

REFERENCE BOOKS:

1) Flash CS3 in Simple Steps – Kogent Learning Solutions – Dreamtech Press

2) Flash 8-Straight to Point by Dinesh Maidasani -Firewall Media Publisher

3) Macromedia Flash 8: A Tutorial Guide, author- Jay Armstrong, Jen deHaan- BPB Publisher

4) Flash MX BIBLE (By BPB Publisher)



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

Functional Electives for Semester III (Web Management [A])

3.4 A] Scripting languages

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Chapter 1 : Scripting Language Basics

(Lectures : 5)

- Meaning of Scripting Language
- Types of Scripting Language (JavaScript, VBScript, Perl, ASP, PHP)
- Scripting Language vs. programming Language
- Differences between client-side and server-side scripting
- Advantages and Disadvantages of Scripting Languages

Chapter 2 : JavaScript

(Lectures : 15)

- JavaScript: Introduction
- Advantages of using JavaScript.
- Writing JavaScript into HTML.
- Basic Programming Techniques: Data Types and Literals, Creating variables, JavaScript Array, operators and Expressions (Arithmetic, Logical, Comparison, String and Assignment operator) in JavaScript .
- JavaScript Programming Constructs: Conditional checking (if-then-else statement), Loops (for loop and While loop), Functions in JavaScript (Built-in functions and User defined functions)
- Dialog Boxes (Alert, Prompt and Confirm Dialog Box)
- Handling Web Page Events using Java Script.
- Creating Frames in JavaScript: accessing different frames, storing and using information in a frame.
- Forms used by a Website, Form Object's Methods, Form Actions and Form Validation.

Chapter 3 : VBScript

(Lectures : 10)

- What Is VBScript?, Adding VBScript Code to an HTML Page
- VBScript Data Types, VBScript Variables, VBScript Constants, VBScript Operators, Using Conditional Statements, Looping Through Code, VBScript Procedures, VBScript Coding Conventions
- Message and Input Boxes, Dates and Times, Page Updates.
- Using VBScript in Internet Explorer, VBScript and Forms

- e) The Document Object Model, History and Background of the DOM.
- f) Top-Down vs. Event-Driven Programming, Mouse Events, Keyboard Events, Validation and Error Handling

Chapter 4 : ASP

(Lectures : 10)

- a) Introduction of ASP, Working with ASP page
- b) Client Server Architecture, 3 Tier / N Tier Architecture
- c) ASP Objects : Response, Request, Application, Session, Server, Error
- d) ASP Components : AdRotator, BrowserCap, Content Linking, Content Rotator
- e) ASP Cookie, Determining Browser Capabilities with Cookie
- f) Error Handling in ASP
- g) Database Handling: Connection, Recordset, Command Object

Chapter 5 : XML

(Lectures : 10)

- a) Intro & features of XML
- b) Difference between XML & HTML
- c) XML writing Elements, Attributes etc.
- d) XML with CSS, XML Namespaces
- e) XML DTD, XML Schemas, Writing Simple sheets using XSLT.

Reference Books:

1. The Complete Reference HTML and CSS 5th Edition , McGrawhill Publication
2. JavaScript: The Definitive Guide, Sixth Edition Activate Your Web Pages By David Flanagan Publisher:O'Reilly Media
3. HTML, DHTML, JavaScript, Perl & CGI by Ivan Bayross, BPB Publishing
4. VBScript Programmer's Reference, 3rd Edition by Adrian Kingsley-Hughes, Kathie Kingsley-Hughes, Daniel Read; ISBN: 9780470168080, Wrox Publication
5. VBScript in a Nutshell By Matt Childs, Paul Lomax, Ron Petruscha, O'Reilly Media Publication.
6. Beginning XML, 4th Edition,David Hunter, Jeff Rafter, Joe Fawcett, Eric van der Vlist, Danny Ayers, Jon Duckett, Andrew Watt, Linda McKinnon ISBN: 978-0-470-11487, Wrox Publication
7. Professional XML by Bill Evjen, Kent Sharkey, Thiru Thangarathinam, Michael Kay, Alessandro Vernet, Sam Ferguson, Wrox Publication
8. ASP in a NutshellBy David Kreines, Ken Jacobs, ISBN: 9788173661785, Shroff/O'Reilly
9. Designing Active Server Pages By Scott MitchellISBN: 9788173663208, Shroff/O'Reilly
10. Programming ASP by Ivan Bayross

Reference Sites:

www.w3schools.com, www.devguru.com



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

Functional Electives for Semester III

(Application and Database Management [B])

3.4 B] Oracle & D2K

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Introduction to Oracle	(3)
a. Introduction to Oracle Tool.	
b. Oracle DBA.	
c. SQL *PLUS.	
d. Oracle Architecture.	
i. Memory Structure.	
ii. System Global Area (SGA).	
iii. Program Global Area (PGA).	
iv. Process (User, Oracle and Instance).	
Structured Query Language (SQL):	(4)
a) Introduction	
b) Data types in oracle, Operators in oracle, Working with tables.	
c) Introduction to DML, TCL, DDL, DCL, Nested tables, Varray, Object table integrity constraints.	
d) Functions in Oracle, Numeric Function, Character Function, Date Function, Conversion Function, Group Function	
Sub Queries, Joins and Database Objects	(4)
a. Sub Queries using correlated queries view, Index Partition, Sequence, Cluster, Synonyms, and Materialized View.	
b. Set Operators, Joins, Inner joins, Equi, Non Equi, Self-join and Outer Joins	
Locks	(2)
a. Locks in Oracle Concept of Locking	
b. Shared Locks and Shared update Locks	
c. Dead Locks	
PL/SQL	(4)
a. Introduction	
b. PL/SQL Blocks	
c. Advantages of PL/SQL	
d. Control Structure, Nested Blocks	
Cursor	(4)
a. Implicit Cursors and Explicit Cursor	
b. Composite Data Type, Table and Records	

- Triggers** (4)
- a. Types of trigger
 - b. Enabling & Disabling
 - c. Database trigger

Developer 6i

- Introduction** (2)
- a. Working with the Form Developer Environment
 - b. Working a Basic Form Module
 - c. Working with Data Blocks and Frame Running the Form Developer Application

- Data Blocks** (03)
- a. Data Block Wizard
 - b. Creating Block Manually
 - c. Base Table Block and Control Block
 - d. Master Details Blocks

- Working with GUI Controls** (5)
- a. Working with Text Items
 - b. Creating Additional
 - c. Input Items, Check Box, Radio Button, List Item
 - d. Creating Non Input Items Display item, Push Buttons
 - e. Label Boiler Plate Graphics

- Record Group and LOV** (3)
- a. Working with Record Groups
 - b. Creating LOVs, LOVs Wizard
 - c. LOV Properties

- Editors and Alerts** (3)
- a. Types of Editors
 - b. Alerts, Properties

- Menu and Trigger** (3)
- a. Creating POP UP Menu
 - b. Menu Properties
 - c. Attaching Forms and Reports to menu.
 - d. Trigger, Trigger Validation

- Report** (6)
- a. Design and Running Report
 - b. Parameter Report
 - c. Group Report
 - d. Matrix Report
 - e. Tabular Report.

Reference Book:

Oracle PL/SQL by Example, Rosenweig, Pearson Education



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

Functional Electives for Semester III (Web Management [A])

3.5 A] C#.NET

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Chapter 1: The .Net framework

(Lectures : 5)

- a) Introduction to .NET framework
- b) The Origin of .Net Technology
- c) Common Language Runtime (CLR)
- d) Common Type System (CTS)
- e) Common Language Specification (CLS)
- f) Microsoft Intermediate Language (MSIL)
- g) Just-In –Time Compilation (JIT)
- h) Assemblies
- i) Managed Code
- j) Garbage Collection

Chapter 2 : C# as a Language

(Lectures : 10)

- a) Introduction to C #
- b) Advantages & Disadvantages of C#
- c) Programming Structure of C#
- d) Structured Programming Language vs. Object oriented Programming Language.
- e) Difference between C++ and C#,
- f) Basic Constructs – Variables, Data types, Operators, arrays, functions
- g) Control Statements (if statement, if....else statement, nesting of if....else statement, the else if ladder, switch statement, the ?: operator), Looping Construct(while statement, do statement, for statement, for each statement)

Chapter 3 : Object Oriented Programming in C#

(Lectures : 15)

- a) Class and Object
- b) Properties, Methods and Events
- c) Constructors and Destructors
- d) Inheritance
- e) Access modifiers: Public, Private, Protected, Friend.
- f) Polymorphism.
- g) Overloading and Overriding.
- h) Abstract classes, Sealed Classes, Static classes

- i) Interfaces.
- j) Structures, Enumerations, Delegates
- k) Multithreading

Chapter 4 : Exception handling

(Lectures : 4)

- a) Types of errors
- b) Syntax of exception handling code
- c) Try and catch block
- d) Multiple Catch Blocks
- e) Finally and throw statements

Chapter 5 : File handling

(Lectures : 4)

- a) Implement File Input & Output operations using FileStream Class
- b) StreamReader Class and StreamWriter Class
- c) BinaryReader Class and BinaryWriter Class
- d) DirectoryInfo Class and FileInfo Class

Chapter 6 : Windows Applications in C#.NET

(Lectures : 5)

- a) Introduction to GUI Programming
- b) Windows Forms
- c) GUI Components/ Controls (Text Boxes, Buttons, Labels, Check Boxes, Radio Buttons, List Boxes, Combo Boxes, Picture Boxes, Scrollbars, Menus, Built-in Dialogs, Image List, Tree Views, List Views, etc.)

Chapter 7 : Databases access using ADO.NET

(Lectures : 5)

- a) Introduction to ADO.NET
- b) Components of ADO.NET
- c) ADO.NET Data Providers
- d) The SqlConnection Object
- e) The SqlCommand Object
- f) Reading Data with the SqlDataReader
- g) Working with Disconnected Data

Chapter 8 : Deployment of Project

(Lectures : 2)

- a) Deployment process
- b) Creating DLL, & packing with setup.

Reference Books:

1. Illustrated C# 2008, Solis, Publication APRESS, ISBN 978-81-8128-958-2
2. Professional C# 4.0 and .NET 4 by Christian Nagel, Bill Evjen, Jay Glynn, Karli Watson, Morgan Skinner, WROX
3. Beginning C# Object-Oriented Programming By Dan Clark , Apress

4. ADO.NET Examples and Best Practices for C# Programmers, By Peter D. Blackburn
Apress
5. Database Programming with C#, By Carsten Thomsen, Apress

Reference Sites:

- 1) http://en.wikibooks.org/wiki/C_Sharp_Programming
- 2) <http://www.csharpkey.com/csharp/>
- 3) <http://www.academictutorials.com/ado.net/>



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

Functional Electives for Semester III

(Application and Database Management [B])

3. 5 B] VB.NET

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1. Introduction to VB.NET (4 Lectures)

- a. Event Driven Programming
- b. .NET Framework
- c. The Just-In-Time Compiler
- d. .NET Framework class library introduction

2. VB.NET Development Environment (4 Lecture)

- a. Creating Applications
- b. Building Projects
- c. Using simple components
- d. Running VB.NET applications

3. Mastering VB Language (6 Lectures)

- a. Data, Operators, Conditionals and Loops.
- b. Procedures, Exception Handling.

4. Object Oriented Programming in VB .NET (10 Lectures)

- a. Class and Object
- b. Properties, methods and events.
- c. Constructors and Destructors
- d. Method overloading
- e. Inheritance
- f. Access modifiers : Public, Private, Protected, Friend.
- g. Overloading and Overriding.
- h. Interfaces.
- i. Polymorphism.

5. Windows Applications in VB .NET (8 Lectures)

- a. Windows Forms

- b. Text Boxes, Buttons, Labels, Check Boxes, and Radio Buttons.
- c. List Boxes, Combo Boxes. Picture Boxes, Scrollbars, Splitters, Timer
- d. Menus, Built-in Dialogs
- e. Image List, Tree Views, List Views, Toolbars, Status Bar and Progress bars.

6. ADO .NET

(10 Lectures)

- a. Database : Connections, Data adapters, and datasets, Data Reader,
- b. Connection to database with server explorer
- c. Data binding with controls like Text Boxes, List Boxes, Data grid etc.
- d. Navigating data source
- e. Data Grid View, Data validation

7. Crystal Report

(8 Lectures)

- a. Connection to Database, Table, Queries, Building Report, Modifying Report,
- b. Formatting Fields and Object
- c. Header, Footer, Details, Group Header, Group footer, Summary
- d. Working with formula fields, Parameter fields, Group, Special fields
- e. Working with Multiple Tables, SQL in Crystal Report, Report Templates

References-

- Programming using VB .Net- Wrox Publication
- The Complete Reference -Visual Basic .NET – Jeffrey R. Shapiro
- Murach's VB.NET database programming with ADO.NET -Anne Prince and Doug Lowe
- Mastering Crystal Report - BPB Publication
- Crystal Report – The Complete Reference :- Tata McGraw Hill



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FACULTY OF COMMERCE & MANAGEMENT
M.B.M. (C.M.) Semester III

3.6 Lab - V (3.1 & 3.3)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100
[Required Lectures: 50 hours]

Practical based on 3.1 : Software Designing & Development

Study following systems in detail -

1. Sales Order Processing System
2. Library System

Perform following for above systems and using any CASE Tool -(Microsoft Visio/ERWin/Rational Rose)

Draw DFD

Draw ERD

Generate table structures with constraints.

Draw UML Diagram using MS-Visio and create project of source code.

Note: Study of other business systems is also desirable.

Practical Lab on 3.3 : Advanced Graphics & Animation

- 1) Creating scene with an cartoon drawing .
- 2) Demonstrating use of frame by frame Animation.
- 3) Demonstrating use of symbols and Filters.(Use Motion Tween Animation)
- 4) Drawing a house with a pencil.(Use Shape Tween Animation)
- 5) Demonstrating use of Guide Layer & Mask Layer.
- 6) Creating an e-Card of Birthday Wishes.
- 7) Create a banner for Website.
- 8) Demonstrating Motion of Animal (Any Animal Walking, Running etc.)
- 9) Creating Animation facial expression with the help of smiley.
- 10) Create a carton animation using light box and converting it into flash Animation .
- 11) Create Flash Website Template.
- 12) Create an Advertisement.
- 13) Create a Flash presentation on any current issues. (Global warming, air pollution, no smoking, save trees etc.)
- 14) Create a snowfall using Action script in flash.
- 15) Create attractive 3D animation.



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M.B.M. (C.M.) Semester III

Functional Electives for Semester III (Web Management [A])

3.7 A] Functional Elective Lab - VI (3.4(A) & 3.5(A))

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Practical Based on 3.4(A) Scripting languages

1. Write a JavaScript for exception handling.
2. Write a JavaScript program to show use of Popup Boxes (Alert, Confirm, Prompt).
3. Write a VBScript program by using Procedures (sub procedures & function procedures).
4. Write a Java/VB Script program for checking client validation (email, not null, check numeric value, etc.)
5. Write a Java/VB Script program to display even and odd numbers from given range.
6. Write a Java/VB Script program to calculate factorial of given number.
7. Write an ASP script to create Cookies and retrieve the values from cookies.
8. Write an ASP Script to check Browser capabilities.
9. Write an ASP Script for insertion and updating the record in database.
10. Write an ASP Script for deletion and displaying all records from database.
11. Create ASP Application by using AdRotator Component.

Practical Based on 3.5(A) C#.NET

1. Write a program to print "NMU, Jalgaon" given number of times.
2. Write a program to show use of different operators.
3. Write a program to show use of Looping Constructs.
4. Write a console application to read command line parameters.
5. Write a program to show use of Constructor and Destructor.
6. Write a program to show use of Function Overloading.
7. Write a program to demonstrate Inheritance.
8. Write a program to show use of Sealed Class.
9. Write a program to show use of Exception Handling
10. Write a program to show Multithreading.



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester III

Functional Electives for Semester III

(Application and Database Management [B])

3.7 B] Functional Elective Lab – VI (3.4(B) & 3.5(B))

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Practical Based on 3.4(B) Oracle & D2K

1. Create table, Insert Records and perform simple SQL
2. Create table with various constraints as PRIMARY KEY, REFERENCES KEY, and CHECK & NOT NULL Constraints
3. Write down SQL by using
 - i. GROUP BY
 - ii. HAVING CLAUSE
4. Write down SQL by using
 - i. Aggregate functions
 - ii. Date functions
 - iii. String functions
5. Write down PL/SQL for FOR, WHILE LOOP and IF.. END IF .
6. Write down PL for Implicit & Explicit cursors.
7. Write down PL for Stored procedure & Function.
8. Create Simple Data Entry form with Validation.
9. Create Master Detail data entry Form
10. Create a Form with menu.
11. Design Simple Report.
12. Design Master Detail Report.
13. Design Matrix Report

Practical Based on 3.4(B) VB.NET

- Write a program to demonstrate class and objects.
- Write a program to demonstrate different control structures.
- Write a program to demonstrate use of different controls.
- Write a program to create simple calculator.
- Write a program to demonstrate different control events
- Write a program to demonstrate data binding.
- Write a program to demonstrate database connectivity.
- Write a program to demonstrate Navigation of data.
- Write a program to demonstrate simple Crystal Report.
- Write a program to demonstrate parameterized Crystal Report.



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FACULTY OF COMMERCE & MANAGEMENT
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4.1 Quality Control and Software Testing

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100
[Required Lectures: 50 hours]

Introduction : (06)

Concept and evaluation of quality control, Measurement & Metrology, precision vs accuracy. TQM : Basic Concept, Quality control , Quality Assurance and Quality Management and Total Quality Management. Implementation of TQM . ISO 9000 and its series, Zero defect. Taguchi method, Six Sigma concepts. Other Factors in Quality : Human Factors such as attitude and errors. Material-Quality, Quality circles, Quality in sales & service.

Fundamentals of Testing (03)

Human and errors, Testing and Debugging, Software Quality, Requirement Behavior and Correctness, Fundamentals of Test Process, Psychology of Testing, General Principles of Testing, Test Metrics

Role of Testing in SDLC (03)

Review of software development models (Waterfall Models, Spiral Model, W Model, V Model) Agile Methodology and Its Impact on testing, Test Levels (Unit, Component, Module, Integration, System, Acceptance, Generic)

Approaches to Testing - I (05)

Static Testing
Structured Group Examinations
Static Analysis
Control flow & Data flow, Determining Metrics

Approaches to Testing - II (10)

Dynamic Testing
Black Box Testing
Equivalence Class Partitioning, Boundary Value Analysis, State Transition Test, Cause Effect Graphing and Decision Table Technique and Used Case Testing and Advanced black box techniques
White Box Testing
Statement Coverage, Branch Coverage, Test of Conditions, Path Coverage, Advanced White Box Techniques, Instrumentation and Tool Support
Gray Box Testing, Intuitive and Experience Based Testing

Test Management (08)

Test Organization
Test teams, tasks and Qualifications
Test Planning

Quality Assurance Plan, Test Plan, Prioritization Plan, Test Exit Criteria
Cost and economy Aspects
Test Strategies
Preventive versus Reactive Approach, Analytical versus heuristic Approach
Test Activity Management, Incident Management, Configuration Management
Test Progress Monitoring and Control
Specialized Testing: Performance, Load, Stress & Security Testing

Testing Tools (10)

Automation of Test Execution, Requirement tracker, High Level Review
Types of test Tools
Tools for test management and Control, Test Specification, Static Testing, Dynamic Testing,
Non functional testing
Selection and Introduction of Test Tools
Tool Selection and Introduction, Cost Effectiveness of Tool Introduction

Testing Object Oriented Software (05)

Introduction to OO testing concepts, Differences in OO testing

References:

- 1. Cem Kaner, Jack Falk, and Hung Quoc Nguyen, *Testing Computer Software, Second edition*, Wiley, New York, 1999.
- Practical Software Testing: A Process-Oriented Approach, Burnstein, Springer, ISBN 978-81-8128-089-3
- Edward Kit, *Software Testing in the Real World: Improving the Process*, Addison Wesley, 1995.
- Glenford J. Myers, *The Art of Software Testing*, Wiley, New York, 1979.
- Elfriede Dustin, Jeff Rashka, and John Paul, *Automated Software Testing: Introduction, Management, and Performance*, Addison Wesley, Reading, Mass., 1999.
- Frank P. Ginac, *Customer Oriented Software Quality Assurance*, Prentice-Hall, Upper Saddle River, NJ, 1998.
- Alka Jarvis and Vern Crandall, *Inroads to Software Quality: "How To" Guide and Toolkit*, Prentice-Hall, Upper Saddle River, NJ, 1997.
- Stephen H. Kan, *Metrics and Models in Software Quality Engineering* Addison Wesley, Reading, Mass., 1995.
- Michael R. Lyu, Ed., *Handbook of Software Reliability Engineering* McGraw-Hill, New York, 1996.
- William E. Perry, *How to Test Software Packages*, Wiley, New York, 1986.
- Stephen R. Schach, *Classical and Object-Oriented Software Engineering with UML and Java, Fourth edition*, McGraw-Hill, Boston, 1999. Textbook for COSC 158 Systems Analysis.
- Robert L. Baber, *Error-Free Software: Know-how and Know-why of Program Correctness*, Wiley, New York, 1991. Program proving.
- Richard Fairley, *Software Engineering Concepts*, McGraw-Hill, New York, 1985.
- John Musa, *Software Reliability Engineering*, McGraw-Hill, New York, 1989. Assumes an organization at least at CMM level 3.

- Jerry Peek, Tim O'Reilly, and Mike Loukides, *Unix Power Tools*, O'Reilly, Sebastopol, CA. Especially SCCS, p. 366.
- *Thomas C. Royer, Software Testing Management -- Life on the Critical Path*, Prentice Hall, Englewood Cliffs, NJ, 1993.
- *Edward Yourdon, Structured Walkthroughs*, Yourdon Press, Englewood Cliffs, NJ, 1989.
- *Software Testing Foundations*, Andreas Spillner, Tilo Linz, Hans Schaefer, Shoff Publishers and Distributors
- *Software Testing: Principles and Practices* by Srinivasan D and Gopalswamy R, PearsonEd, 2006
- *Software Engineering – A practitioner's approach* by Roger S. Pressman, 5th Edition, McGraw Hill
- *The art of software testing* by GJ Myers, Wiley.



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

Functional Elective Paper 3 for Semester IV

(Web Management [A])

4.2 A] E-Commerce and Website Management

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

E Commerce :

1. An overview of E- Commerce- Operating System Services, Developer Services, Data Services, Application Services, Store Services, Client Services.

Types of E Commerce Solutions- Direct Marketing and Selling, Supply Chain Integration, Corporate Procurement, EDI.

2. Applications of Electronic Commerce- Application of E Commerce in Direct Marketing and Selling, Value Chain Integration, Supply Chain Management, Corporate Purchasing, Financial and Information Services, Obstacles in adopting E-Commerce Applications, Future of E Commerce.

3. E-Strategy: Information and Strategy, The virtual value chain, seven dimensions of ecommerce strategy, planning E-commerce project, E-commerce strategy and knowledge management, E-Business Strategy and Data Warehousing and Data Mining.

4. Customer –effective Web design: Requirements of Intelligent Websites, Website Goals and Objectives, planning the budget, analyzing website structure, fixed versus flexible webpage design, choosing a page size ,website development tools, design alternatives, outsourcing web design, testing and maintaining websites.

5. Electronic Payment Systems-Overview of Electronic Payment Systems, Cybercash (Customer to Merchant Payments, Peer to Peer Payments, Security).Smart Card (Card Types, Closed or Open Security, Privacy, Card Costs, Non Card Costs), Electronic Banking, Electronic Fund Transfers.

Website Management :

Domain Management: Domain types, domain search, domain registration, renewal, legal issues in domain management.

Web Server Management : Web server, web space, types of web server, hosting web site on server, security issues, understanding IP addressing system, maintenance of server

Website: structure, types, characteristics of good website, stages of website development, developing website using tools, portal – definition, need , advantage

Searching fundamentals, search engine, multilingual search, translation of search results

Email services and its management

Introduction to Content Management, Crowd Sourcing

Blog ; Concept, usefulness and development

Use of Wikipedia, IBM Web sphere, social networking for business, chatting, document sharing site, video conferencing tool

References :

- E Commerce by C S V Murthy.
- E-Commerce, 6/E Kenneth Laudon Carol Guercio Traver, *Azimuth Interactive*, Prentice Hall
- **E-Commerce: Fundamentals and Applications**, Henry Chan (The Hong Kong Polytechnic Univ.), Raymond Lee(The Hong Kong Polytechnic Univ.), Tharam Dillon (The Hong Kong Polytechnic Univ.), Elizabeth Chang (The Univ. of Newcastle, Australia) ISBN: 978-0-471-49303-7
- Web Services: Principles and Technology, Michael Papazoglou, Jul 2007, Paperback, Pearson
- Web Services A Technical Introduction, Harvey M. Deitel, *Deitel & Associates, Inc.* Paul J. Deitel, *Deitel & Associates, Inc.* ,B. DuWaldt L. K. Trees , ISBN-13: 9780130461353, Publisher: Prentice Hall



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

Functional Electives Paper 3 for Semester IV

(Application and Database Management [B])

4.2 B] Data Mining & Data Warehousing

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Introduction to Data Mining

[4 Lectures]

Basic Data Mining Tasks, DM versus Knowledge Discovery in Databases, Data Mining Issues, Data Mining Metrics, Social Implications of Data Mining, Overview of Applications of Data Mining

Introduction to Data Warehousing

[5 Lectures]

Architecture of DW, OLAP and Data Cubes, Dimensional Data Modeling-star, snowflake schemas, Data Preprocessing – Need, Data Cleaning, Data Integration & Transformation, Data Reduction, Machine Learning, Pattern Matching

Data Mining Techniques

[5 Lectures]

Frequent item-sets and Association rule mining: Apriori algorithm, Use of sampling for frequent item-set, FP tree algorithm, Graph Mining: Frequent sub-graph mining, Tree mining, Sequence Mining

Classification & Prediction

[16 Lectures]

Decision tree learning: [3 hrs]

Construction, performance, attribute selection

Issues: Over-fitting, tree pruning methods, missing values, continuous classes, Classification and Regression Trees (CART)

Bayesian Classification: [6 hrs]

Bayes Theorem, Naïve Bayes classifier, Bayesian Networks Inference

Parameter and structure learning

Linear classifiers [4 hrs]

Least squares, logistic, perceptron and SVM classifiers

Prediction [3 hrs]

Linear regression, Non-linear regression

Accuracy Measures

[5 Lectures]

Precision, recall, F-measure, confusion matrix, cross-validation, bootstrap

Introduction to Software for data mining and applications of data mining [5 Lectures]

R, Weka, Sample applications of data mining

Clustering**[5 Lectures]**

k-means , Expectation Maximization (EM) algorithm, Hierarchical clustering, Correlation clustering

Brief overview of advanced techniques**[5 Lectures]**

Active learning, Reinforcement learning , Text mining, Graphical models, Web Mining

Reference Books:

1. Data Mining – Introductory and Advanced Topics, Margaret H. Dunham, S. Sridhar Pearson Education
2. Pattern Recognition and Machine Learning Christopher M. Bishop Springer 2006
3. Intelligent Data Mining: Techniques and Applications: Ruan, D.; Chen, G.; Kerre, E.E.; Wets, G. (Eds.), Springer
4. Data Mining Techniques, Michael Berry, Gordon Linoff, Wiley India, ISBN 8126505176
5. Tom Mitchell, —Machine Learning||, McGraw-Hill, 1997
6. R.O. Duda, P.E. Hart, D.G. Stork. Pattern Classification. Second edition. John Wiley and Sons, 2000.
7. Raghu Ramkrishnan, Johannes Gehrke, Database Management Systems, Second Edition, McGraw Hill International
8. [Research-Papers]: Some of the relevant research papers that contain recent results and developments in data mining field
9. Ian H.Witten, Eibe Frank. Data mining : Practical Machine Learning Tools and Techniques, 2nd ed., Morgan Kaufmann series in data management systems.
10. Jiawei Han, Micheline Kamber Data Mining: Concepts and Techniques, Morgan Kaufmann Publishers



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

Functional Electives Paper 4 for Semester IV

(Web Management [A])

4.3 A] ASP.NET

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Chapter-1 Introduction to ASP.NET [04]

What is ASP.NET?

ASP vs. ASP.NET

Upgrading HTML Pages to ASP.NET

Upgrading ASP Pages to ASP.NET

Chapter-2 Essentials of ASP.NET [04]

Types of web sites in Visual Web Developer

ASP.Net Web Page Model (Single Page Model, Two Page Model)

Server Side Script Execution

Chapter-3 Objects and Controls [09]

Working with Web form controls

HTML Server Controls

Validation Controls

AdRotator Controls

Detect Browser Capabilities

Page Level Errors and Application Level Errors

Control Events, Connect Multiple Event to Single Event Handler

Chapter-4 Intrinsic Objects under ASP.NET [04]

Request Object

Response Object

Session Object

Application Object

Server Object

Chapter-5 State Management [07]

Page Level – ViewState

User Level – Session

Application Level – Application

Website Level – Cookies

Cleaning the Session State
Global Application Class (global.asax)
Web Configuration File (web.config)

Chapter-6 Data Access with ADO.NET [08]

Overview of ADO.NET Objects,
Create and retrieve Database Connections
SqlDataSource Controls
ASP.NET Data-Bound Controls
GridView, Repeater, DataList, Details View, Form View

Chapter-7 Master Pages & skins [03]

Master Page overview
How to Create Master Page
Configure Content Page
Themes and Skins in ASP.NET

Chapter-8 Security and Configuration [06]

Using the CreateUserWizard control
Using the LoginStatus control
Using the Login control
Using the LoginView control
Web.Config vs. Machine.Config

Chapter-9 Web Services [05]

Introduction to XML Web Services
Creating Web Services with Visual Studio .NET
Testing a Web Method, Consuming a Web Service in Client Application

REFERENCE BOOKS:

References:-

- i. ASP.NET and VB.NET Web Programming, by Crouch Matt J, Addison Wesley 2002.
- ii. Programming ASP.NET, J.Liberty, D.Hurwitz, (3rdEd), O'REILLY, 2006
- iii. SAMS Publication Series
- iv. www.asp.net
- v. www.w3schools.com



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

Functional Electives Paper 4 for Semester IV

(Application and Database Management [B])

4.3 B] Database Administration & Security

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1. SQL Revisited:
DDL, DML & DCL Statements.
2. Architecture :
Outline Of Oracle Architecture And Its Main Components
3. Installation Of Oracle Database :
Installation Of Server & Client
4. Administrating User Security :
Managing User, Granting & Revoking Privileges
5. Managing Oracle Instances :
Table, Sequence, View, Synonym, Index
6. Managing Concurrency :
Concurrency Management With The Help Of Locks
7. Database Backup & Recovery :
Backup Types & Recovery Methods
8. Import & Export Of Database :
Importing And Exporting Database, Table, User
9. Database Performance Management :
Performance Tuning Of Database
10. Managing Database Storage Structures :
Management Of Table Space
11. Managing Language Issues In Database :
Multilingual Data Management

Reference Books

- Oracle DBA Certification Guide by Oracle Press
- OCP Guide by Oracle Press



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

Functional Electives Paper 5 for Semester IV

(Web Management [A])

4.4 A] PHP And AJAX

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Chapter 1 – Configuring & Installation [02]

Web architecture, web Server (xampp Server, apache server), Web Browser, Introduction to Web Development: Open Source, Proprietary, Technologies, Introduction to PHP & its installation, configuration (php.ini, httpd.conf)

Chapter 2 – PHP Language Basics [12]

Structure and Syntax, Using HTML, Constants and Variables, Passing Variable between Pages, Using if/else, Switch, Loops, String, Operators, Includes, Functions. Arrays syntax, foreach Constructs, Using PHP \$_GET, PHP \$_POST Working with Forms: Processing Forms Form Validation Emailing Form Data Linking Form Together, Hidden Form Fields, Validating User Input Handling and Avoiding Errors, Files & Directories

Chapter 3- Using PHP with MySQL [08]

Introduction to MySQL, installation & configuration with PHP, MySQL Structure and Syntax, Interacting with Databases, Modifying Database Records Using PHP, MySQL Connect, Create, Insert, select, Where, Order by, Update, Delete, Using PHP and Arrays of Data: foreach

Chapter 4- OOPs Concept in PHP [06]

Introduction, Advantages, class & object, data member, data fields, inheritance, constructor & destructor, abstract classes, final classes, exception handling

Chapter 5 – Advanced PHP [10]

Emailing in PHP, File Handling function, File uploading, Sending Free SMS to Mobile, loading PHP application on web server By FTP. Web services

Chapter 6- Ajax [04]

Introduction, Creating Ajax Object in different Browser, using the ajax object

Chapter 7 – CMS Technology in PHP [08]

Introduction of CMS, Joomla Installation & use, Plug-in of Joomla, Various manager in Joomla

REFERENCE BOOKS:

1. Beginning PHP5, Dave Mercer, Allan Kent, Steven Nowicki, David Mercer, Dan Squier, Wankyu Choi, Wiley Publishing(Wrox) ISBN: 0-7645-5783-1
2. “Beginning PHP, Apache, MySQL Web Development”, Michael K. Glass, Yann Le Scouarnec, Elizabeth Naramore, Gary Mailer, Jeremy Stolz, Jason Gerner, Wiley Publishing(WROX), March 2004, ISBN: 978-0-7645-5744-6
3. “PHP, MySql Web Development”, Luke Welling, Laura Thompson, Sams, second edition
4. PHP for Beginners, Ivan Bayross, Sharanam Shah, THE X Team , SPD
5. www.w3schools.com
6. www.basicphpprogramming.com



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

Functional Electives Paper 5 for Semester IV

(Application and Database Management [B])

4.4 B] Java

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

1] Introduction to JAVA

(4 Lectures)

- a) Features of Java
- b) Java Virtual Machine
- c) Java and Internet
- d) Comparison between C++ and Java
- e) Java Development Tools and API

2] Programming Concepts of Basic Java

(6 Lectures)

- a) Identifiers and Keywords
- b) Data Types in Java
- c) Input Output in Java
- d) Control structures, decision making statements
- e) Arrays
- f) String and its methods
- g) Command Line Arguments

3] Objects and Classes

(6 Lectures)

- a) Structure of class
- b) Constructors
- c) Object Fundamentals
- d) Inheritance with its types
- e) Access modifiers
- f) Polymorphism , Function Overloading and Overriding

4] Language Features

(6 Lectures)

- a) Abstract Class, static , final
- b) Interfaces
- c) Wrapper Classes
- d) Packages (importing packages and classes, User defined packages)

5] Exception Handling

(4 Lectures)

- a) Types of Exceptions
- b) Handling exception using try, catch,
- c) finally, throws keywords
- d) Creating own exception

6] Multithreading (4 Lectures)

- a) Multithreading Concept
- b) Thread Life Cycle
- c) Thread Priorities

7] Applets (4 Lectures)

- a) Applet Life Cycle
- b) Applet Tag & its attributes
- c) Security issues related to applet
- d) Advantages of applet

8] Event handling (4 Lectures)

- a) Event Delegation Model
- b) Events(like mouse, key, action event etc.) Sources & Listeners,

9] AWT and Swing component (8 Lectures)

- a) Containers, Frames and Panels
- b) GUI Programming Model ,Working with Graphics class Methods
- c) Layout managers (FlowLayout, BorderLayout, GridLayout)
- d) MVC Model, Swing Components (JTextbox,JButton, JTextArea, JCombobox, JRadioButton, JCheckbox, JListBox)

10] JDBC (4 Lectures)

- a) JDBC Model
- b) JDBC drivers
- c) Establishing connection with database
- d) **Creating a jdbc Statement object,**

References-

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-Cay S Horstmann

-Gary Cornell

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-E. Balguruswamy

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-Prentice Hall

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-Herbarte Schildt

Java-2 Black Box

-Publication –Tata MacGrawhill



North Maharashtra University, Jalgaon

(NACC Accredited 'B' Grade University)

FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

(Web Management [A])

4.5(A) Functional Elective Lab - VII (4.1 & 4.2(A))

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Practical's based on 4.1 Quality Control and Software Testing

Important Note: The concerned teacher (conducting this laboratory course) should provide the required software (properly installed and correctly working) along with a sample set of appropriate type of programs (minimum 5 sample programs) to be tested using the respective software to the students. This should be observed in case of each of the assignment sets given below.

Interested teachers/students also can visit the link given below to get more information about free and open source software testing tools other than the one's listed below. URL for the same is <http://sourceforge.net/search/?q=software+testing>.

Assignment Set 1

JUnit: JUnit is a testing tool for Java. It helps you write down, structure, and run your test cases.

<http://www.junit.org/>

Installing JUnit is very easy. Get JUnit by either:

- downloading the distribution from www.junit.org
- in case you run Linux, check whether your distribution offers JUnit (Ubuntu does), and install it.

In either case, make sure you use JUnit4 or higher. No further installation is needed!

1. You will be given a java program/s by your Teacher in-charge. With respect to the code /program given write test cases using Black box technique for a number of methods using their specifications. Analyse the specifications in order to divide the set of possible inputs into different situations. Then write a set of test cases for each method, which covers the different cases well. For each test case, give a comment which describes what situation it tests. Report your results as a test class which runs all test cases via JUnit
2. For this assignment, you will be using the source code of the methods. For each method you should first derive a suite of test cases using white box technique which together have full statement coverage of the source code. Then you should write additional test cases (if any are needed) which together with the ones already there have full branch coverage of the code. The test cases should be executable with JUnit

just like in part 1 of the assignment. If any of the test cases for a method fails, try to find the bug and correct the source code.

Assignment Set 2

Prerequisite:

The Teacher in-charge should first demonstrate how to compile and debug the code using gcc compiler and gdb/ddd debugger on Linux environment. They also are required to train students to understand use of the profiler.

For this assignment students will be given a code written in C which contains set of functions, loops, etc. Students are expected to compile the program and debug the program for various set of inputs. As the later part of this assignment students need to make use of GCOV Which is a tool they can use in conjunction with GCC to test code coverage in their programs. GCC and GCov are bundled with every Linux distribution. Sometimes with few distributions if it unavailable one can install g++.

Assignment Set 3

Selenium (<http://selenium.openqa.org/>) is a test tool for web applications. Selenium tests run directly in a real browser such as Firefox or Internet Explorer. IDE for Selenium can be downloaded from the URL <http://www.openqa.org/selenium-ide/>
Note: video tutorials also can be viewed from <http://wn.com/Tutorial Selenium IDE>

Assignment Set 4

PHPUnit: This is a unit testing framework for PHP. This is a unit-testing framework for PHP based on the "JUnit" framework for Java. (<http://sourceforge.net/projects/phpunit/>)

- Expert PHP 5 Tools, Packt Publishing, Dirk Merkel A very practical book, which throughout its seventh chapter builds with the reader practical examples of unit tests with PHPUnit.
- PHP Objects, Patterns and Practice, Third Edition, Apress, Matt Zandstra, Chapter 18 is devoted to PHPUnit.
- Pro PHP Refactoring, Apress, Francesco Trucchia, Jacopo Romei, chapters 5 and 6 are devoted to PHPUnit and Selenium RC
- Students are expected to write test cases using following tools.

Assignment Set 5

Canoo WebTest: Used for functional testing of web pages, WebTest is an open source testing framework built on top of HttpUnit. It allows tests to be defined in XML as Ant targets. (URL: <http://webtest.canoo.com/webtest/manual/Downloads.html>)

Assignment Set 6

JSystem: JSystem is an open source framework for writing and running automated system testing. JSystem includes: 1. Services Java API - exposes JSystem services 2. JSystem Drivers- Java modules used to interfaces with the system under test. 3. JRunner - GUI application interface used for creating and running tests scenarios. 4. JSystem Agent - Execution engine used to run scenarios on a distributed setup. 5. JSystem Eclipse plug-in -

accelerates the development environment setup and enforces JSystem conventions. JSystem is based on JUnit (tests and steps) and Ant (execution engine). (Downloadable URL: <http://www.jssystemtest.org/>)

Assignment Set 7

Maveryx: Maveryx is a free and open source Test Automation Framework for functional and regression testing of Java applications. Maveryx eliminates the GUI Map dependency. Testers do not have to capture and maintain any GUI Map. GUI objects described in the scripts are identified and located directly at runtime during the test scripts execution. Maveryx supports approximate matching to identify the GUI objects even in case of few or partial information given by the tester in the test scripts. Maveryx works with Eclipse, NetBeans, JUnit, IBM Rational Functional Tester, etc. (Downloadable URL: <http://maveryx.sourceforge.net/>)

Practical's based on 4.2 E Commerce and Website Management

1. Perform domain search
2. Search for web space and prepare comparative chart
3. Develop your blog
4. Translate search results in Hindi/Marathi into English and vice versa.
5. Practical based on email management
6. Develop attractive website using tool
7. Participate in Video conferencing using tools like Skipe
8. Draw following Web Diagram using MS Visio
 - a. Conceptual Web Site
 - b. Web Site Map



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

(Application and Database Management [B])

4.5(B) Functional Elective Lab - VII (4.1 & 4.2(B))

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

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Practical's Based on 4.2 Data Mining and Data Warehousing

1: Implementing the data mining algorithms with machine learning tool weak (Waikato Environment for Knowledge Analysis) or Tanagra or other related tool

1. Association rule mining with apriori algorithm
2. Decision tree classifier
3. partitinal clustering with K-means
4. Hierarchical clustering
5. Naïve Bayes classifier

2: Data warehousing labs with OLAP tool

1. Aggregations and OLAP operations: SQL and aggregations; aggregation functions; grouping, roll-up, Slicing, and pivoting.
2. Materialized views
3. Fundamentals of ETL using external tables
4. Software Partitioning using Partitioning tables and indexes
5. Schema design and creating and using bitmap indexing in data warehouse



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FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

(Web Management [A])

4.6(A) Functional Elective Lab – VIII (4.3(A) & 4.4(A))

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Practical based on 4.3(A) ASP.NET

1. Demonstration of creating a simple web form
2. Demonstrate how to handle Application Level Errors.
3. Demonstrate how to check Browser Capabilities.
4. Demonstrate the use of Server.Transfer and QueryString
5. Demonstrate how to use SiteMapPath control.
6. Demonstrate how to use TreeView control.
7. Demonstrate use of Master Pages.
8. Demonstrate use of global.asax
9. Demonstration of GridView Data Control.
10. Demonstration of ASP.NET objects (HTTPApplicationState, HTTPSessionState)
11. Demonstrate use of Publish web site Utility (Deployment of Web Project).

Practical based on 4.4(A) PHP & AJAX

1. Write a PHP Script To display Resume on web browser.
2. Write a PHP script to display table of 1 to 10
3. Write a PHP script to create a Simple Login Window with validation.
4. Write a PHP script to Demonstrate inbuilt & user define Function.
5. Creation of MySql database demonstration of various SQL queries(create table,insert, update, delete)
6. Accessing MySql data from PHP script: Displaying tables and fields along with their types and constraints, table data in tabular format.
7. Write a PHP script to Demonstrate OOPS Concept In PHP.
8. Write a PHP script to Demonstrate Sending a Email.
9. Write a PHP script to Demonstrate File uploading on web server.
10. Write a PHP script to Demonstrate Web services.
11. Write a Script to demonstrate Ajax Object.
12. Create a website By using CMS Technology.



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M.B.M. (C.M.) Semester IV

(Application and Database Management [B])

4.6(B) Functional Elective Lab - VIII (4.3(B) & 4.4(B))

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

[Required Lectures: 50 hours]

Practical based on 4.3(A) Database Administration & Security

1. Create user and grant privileges to user. Revoke privileges from user.
2. Create tables and insert/update/delete/select records.
3. Create and use view, synonym & sequence.
4. Grant privileges on table to user.
5. Perform database backup & restoration activity.
6. Exporting and importing data.
7. Managing table space of user.
8. Make concurrent access of data.
9. Use multilingual table.
10. Fine tune Database for better performance.

Practical based on 4.4(B) Java

1. Create a java program for demonstrating array and its methods.
2. Create a java program for demonstrating string methods.
3. Create a java program for demonstrating polymorphism.
4. Create a java program for demonstrating static data members.
5. Create a java program for demonstrating user defined packages.
6. Create a java program for demonstrating exception handling.
7. Create a java program to demonstrate applet life cycle
8. Create a java application for different swing controls.
9. Create a java application for handling mouse events.
10. Create a java application for handling Key events.
11. Create a java application for database connectivity.



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FACULTY OF COMMERCE & MANAGEMENT M.B.M. (C.M.) Semester IV

4.7 : Project (Based on respective Specialization)

60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

Project will be based on specialization opted by student.

Group Project is not allowed.

Outline of the Project is required to be submitted before Semester 3 practical Examination in Hardcopies as well as in soft copy.

Use of CASE tool is expected. Use of testing tools is desirable.

Students have to submit Project Report in hard copies as well as in pdf format to the college & college should submit it to university.

Project Marking Scheme for MBM (Computer Management)

Marks are Out of 100 (Convert to out of 40 for internal and to out of 60 for external)

Criterion	Performance	Total marks	Marks given
Quantum of Work	Not enough for Project	0	10
	Just right	3	
	Good amount of work done	6	
	Very-good amount of work	10	
Understanding of project/task objectives	No understanding of project/task objectives	0	10
	Fair amount of understanding	3	
	Clear understanding of various aspects	6	
	Detailed understanding of the all aspects of the project	10	
Approach adopted	Technically inept, with no motivation to improve	0	10
	Reasonable level of skills demonstrated	3	
	Technical competence demonstrated	6	
	Outstanding demonstration of technical skills, creative approach	10	

Effort	No evidence of interest in the work	0	10	
	Reasonably good effort	3		
	Conscientious effort	6		
	Excellent amount of effort	10		
Initiative and self-motivation	No Evidence	0	10	
	Evidence of some contribution of ideas	3		
	Significant contribution towards developing/refining/doing the task allocated	6		
	Sufficient evidence of handling the tasks independently and efficiently	10		
Achievement of objectives	Not much progress	0	10	
	Adequate but not enough	3		
	Good progress and made best use of the opportunities present	6		
	Outstanding performance	10		
Report Content	Not Submitted	0	10	
	Mostly sound but a lot of scope of improvement	3		
	A very well structured report	6		
	Comprehensive and detailed report	10		
Presentation	Not presented	0	15	
	Okay, but not an overall understanding of what constitutes a presentation	5		
	Well presented	10		
	Very well presented, with clear understanding of goals	15		
Q & A	Not participated	0	15	
	Could handle but confused	5		
	Could handle competently	10		
	Could handle professionally	15		